

Agarwal, Prachi; Mba, Sand Kalu; Lemma, Alberto

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Advancing implementation of the AfCFTA Protocol on Digital Trade in Nigeria

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Report

Advancing implementation of the AfCFTA Protocol on Digital Trade in Nigeria

Prachi Agarwal, Sand Mba Kalu and Alberto Lemma

July 2024

Supporting Investment and Trade in Africa (SITA)



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About the authors

Dr Prachi Agarwal is a Senior Research Officer with the International Economic Development Group at ODI.

Sand Mba Kalu is the Executive Director at Africa International Trade & Commerce Research (AITCR).

Alberto Lemma is a Research Fellow at ODI.

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Acronyms

3MTT	Three Million Technical Talent
AfCFTA	African Continental Free Trade Area
AICTR	Africa International Trade & Commerce Research
B2C	business-to-consumer
CBN	Central Bank of Nigeria
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
FDI	foreign direct investment
FMCDE	Federal Ministry of Communications and Digital Economy
FMCIDE	Federal Ministry of Communication, Innovation and Digital Economy
FMITI	Federal Ministry of Industry, Trade, and Investment
GDP	gross domestic product
GII	Global Innovation Index
ICT	information and communication technology
ILO	International Labour Organization
IMF	International Monetary Fund
ISO	International Organization for Standardization
IT	information technology
ITU	International Telecommunication Union
IXP	internet exchange point
MLETR	Model Law on Electronic Records
MSMEs	micro, small, and medium enterprises
NAC-AfCFTA	National Action Committee on AfCFTA
NBS	National Bureau of Statistics
NCC	Nigeria Communications Commission
NGO	non-governmental organisation
NIMC	National Identity Management Commission
NIN	National Identification Number
NITDA	National IT Development Agency
NITEL	Nigeria Telecommunications
NOTN	Nigerian Office of Trade Negotiations
OECD	Organisation for Economic Co-operation and Development
PPP	purchasing power parity
R&D	research and development
SPS	sanitary and phytosanitary
UNCTAD	United Nations Conference on Trade and Development
US	United States
WDI	World Development Indicators
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

Executive summary

The African Continental Free Trade Area (AfCFTA) is a milestone in the continent's economic integration and development.

Envisioned as a catalyst for intra-African trade, job creation and sustainable growth, the AfCFTA represents a concerted effort by African nations to harness their collective potential and overcome historical barriers for success. The **Protocol on Digital Trade** lies within the broader framework of the AfCFTA. Recognising the transformative potential of digital technologies in driving economic growth and facilitating trade, the Protocol seeks to establish a regulatory framework conducive to digital trade within the African continent. It aims to make it possible to address challenges, seize opportunities and ensure that digital transformation becomes a driver of inclusive and sustainable development across Africa.

The rapid progress of digitally delivered services in Africa highlights significant opportunities for expansion, despite the sector's small global presence. Digital trade expansion, driven primarily by outsourcing business processes and embracing digital technologies, could potentially surge by \$74 billion between 2023 and 2040, amplifying Africa's global market presence and fostering inclusivity, particularly benefiting micro, small and medium enterprises (MSMEs), women and youth.

In recent years, **Nigeria has emerged as one of Africa's most dynamic and promising destinations for digital-related investment.** The World Economic Forum notes that 92% of all venture capital investment (in terms of dollar value) in Africa's technology sector goes to just four countries – namely, Nigeria, Egypt, Kenya, and South Africa.

Nigeria's digital economy has experienced significant growth in the past 20 years, driven by reforms in the telecommunications and financial sectors that began in the early 2000s. It has since emerged as one of the **most vibrant and fastest-growing sectors in Africa**: between 2017 and January 2023, the number of internet users grew from ninety-seven million to 122 million. This has facilitated the growth of digital trade by providing more access to online platforms and services, increasing investments in digital infrastructure, and creating a vibrant digital entrepreneurship ecosystem in areas such as **fintech, e-commerce, digital services, and the gig economy**. The e-commerce sector in Nigeria has also witnessed significant growth, with **e-commerce platforms like Jumia, Konga and others gaining**

popularity. These platforms facilitate the buying and selling of goods and services online.

The digital economy ecosystem is multidimensional and cross-sectoral in nature. Nigeria's digital economy encompasses a diverse array of sectors and activities, ranging from e-commerce, fintech and digital payments to telecommunication services, software development and digital content creation. Start-ups and tech hubs across major cities like Lagos, Abuja and Port Harcourt are driving innovation and disrupting traditional industries, while multinational tech giants are increasingly recognising Nigeria as a strategic market for expansion and investment.

Nigeria, with a large and youthful population, present a vast pool of talent, with creative skills to innovate and entrepreneurial intellect to stimulate and propel economic growth in the digital economy. The Nigerian government has articulated a vision for leveraging digital technologies to enhance productivity, improve service delivery and create new economic opportunities for its citizens.

The AfCFTA's Protocol on Digital Trade represents a transformative opportunity for Nigeria, Africa's leading economy and tech hub, to drive innovation, enhance trade efficiency and promote sustainable economic growth. Nigeria's economic resilience and potential are evident from its history of robust gross domestic product (GDP) growth and recovery from economic downturns. However, vulnerabilities as a result of external shocks and reliance on the oil sector underscore the importance of economic diversification and digital transformation. Adopting the AfCFTA Protocol on Digital Trade offers Nigeria a strategic pathway from which to leverage its digital economy for broader market integration, potentially catalysing significant economic benefits. Key areas of impact include spurring economic growth, fostering digital infrastructure development, reducing trade costs, and enhancing digital inclusivity.

The adoption of the Protocol, coupled with enhancements in digital connectivity, is poised to significantly boost Nigeria's economy. Projections from an extrapolation (causal chain analysis) of similar estimates calculated by OECD (2023) for high-income and emerging countries that were signatories to an RTA with an e-commerce chapter show that being party to such an RTA could significantly boost trade by approximately 10% and 15% respectively. This was further developed in Lemma (2024)¹ to estimate that **Nigeria's GDP could**

¹ This estimation is based on two approaches. The first assesses the potential direct benefit of participating in a regional trade agreement (RTA), including e-commerce. This can be used to estimate GDP, export and employment impacts. The second uses indirect impacts to estimate the effects of increased digitalisation rates. The two are then combined to provide an overall impact estimate. These estimates are approximate and show a potential impact on Nigeria's economy. As mentioned the estimates emerged from an extrapolation activity that calculated the average impact of signing an RTA with an e-commerce provision. Further gap analysis on the specific provisions of the AfCFTA DTP and the current digital ecosystem of Nigeria will need to be conducted to get proper estimates. No impact analysis to determine the impact of the AfCFTA DTP on Nigeria was conducted by the authors.

see an increase of approximately 11.7% to 12.8% above baseline figures, underlining the substantial economic growth achievable through focused digital and trade policy reforms. **Employment prospects appear even more promising, with potential increases ranging from about 15.4% to a remarkable 40.9%**, highlighting the transformative impact of digitalisation and trade liberalisation on job creation. Furthermore, **Nigeria's exports are expected to grow substantially, with estimates suggesting an increase of 16.9% to 59.8% over current levels**. This growth reflects the significant benefits that improved digital infrastructure and active participation in the AfCFTA could bring to Nigeria's global trade position. These findings emphasise the critical role of policy interventions in harnessing digital and trade advancements to stimulate economic growth, generate employment and boost export capabilities, marking a pivotal step towards a more integrated and digitally inclusive African economy.

To maximise these benefits, Nigeria must prioritise digital and trade policy reforms, invest in digital infrastructure and enhance digital skills. This approach will not only strengthen Nigeria's position in the digital economy but also contribute to the continent's economic integration and development. The AfCFTA Protocol on Digital Trade is thus a pivotal initiative for Nigeria's future economic trajectory, offering a roadmap for sustainable growth and digital innovation.

However, while the digital trade economy presents opportunities for Nigeria, **the country also faces the challenge of consolidating its leading position in the region's digital economy**, participating more broadly across the entire value chain. The challenges include inadequate infrastructure, cybersecurity threats, regulatory alignment, and digital literacy gaps. High-speed internet and reliable infrastructure (at both the backbone and last-mile levels) also represent a major challenge to Nigeria's digital trade ambitions, one that includes logistics reliability, quality of postal services, property identification issues, road infrastructure and dematerialisation of payments, as well as the need for a legal framework to secure the various players in the e-commerce supply chain. Moreover, **Nigeria is one of the most restrictive nations in Africa** with regard to digital trade.

Nigeria ranks 109 out of the 132 economies on the 2023 Global Innovation Index published by the World Intellectual Property Organization. However, it performs well in terms of innovation and digital trade, as evidenced by its scores on high-tech and information and communication technology services exports, which actually generate value in dollar terms. **The key point to note is the size of the domestic market, which is a major strength.**

Nigeria has implemented several regulations and policies aimed at promoting digital trade and fostering the growth of the digital economy. The Federal Ministry of Communications, Innovation and Digital Economy is responsible for regulating, formulating, and promoting policies for the digital economy in Nigeria.

Nonetheless, **the level of awareness across firms on the Protocol on Digital Trade remains limited**, and this signifies a considerable knowledge gap in Nigeria. To this end, an effective dissemination strategy must be put in place to ensure successful implementation of the Protocol. This could include information on the items included in the Protocol, such as data localisation, payment gateways, cybersecurity, and verification and authorisation processes. Additional policy recommendations made in this study can be summarised as follows:

- Develop a broad-based **digital trade policy** through a collaborative process involving all relevant stakeholders (public, private, civil society, academia and MSMEs).
- Support **inter-ministerial collaboration** on Protocol implementation.
- Reform the **domestic regulatory environment** to align with international best practices, covering all relevant policy areas with regard to digital trade, with a strong focus on building trust and data management.
- Expedite establishment of relevant **national digital laws** to enhance the level of internalisation of the Protocol.
- Develop or **adopt specific international standards** that are interoperable with other AfCFTA state parties' adopted standards. This is especially useful regarding electronic trade documents, invoicing, and electronic authentication standards.
- Strengthen the capacity of relevant regulatory bodies **to enforce intellectual property rights, copyrights, and trademarks**.
- **Enhance the environment for innovation** and attracting investments in innovative enterprises.
- Create specific regulations on **consumer protection** in the digital economy.
- Establish a national regulatory framework for **data management, governance, and privacy**.
- Increase **transparency** in the rules and regulations governing e-commerce.
- **Encourage businesses to use digital platforms** for trade through capacity-building and monitoring programmes.
- Increase **adoption of paperless trade** in Nigeria to boost intra-African digital trade under the AfCFTA.
- **Prioritise female empowerment** under the AfCFTA Protocol:
 - Encourage participation of women entrepreneurs in digital trade.
 - Provide internal and external training and build trade capacity at all levels – public, private, and non-governmental organisation.

- Initiate a digital trade programme that focuses on enhancing digital literacy among women and youth by providing training.
- Enable engagement in digital jobs and entrepreneurship.

1 Background and introduction

The African Continental Free Trade Area (AfCFTA) is a milestone in the continent's economic integration and development. Envisioned as a catalyst for intra-African trade, job creation and sustainable growth, it represents a concerted effort by African nations to harness their collective potential and overcome historical barriers for success. Formally launched in 2018, the AfCFTA builds on efforts to foster regional cooperation and economic solidarity across Africa. It represents the largest free trade area in terms of the number of participating countries since the formation of the World Trade Organization (WTO). With most African Union member states as signatories to the agreement, the AfCFTA's scope is broad, aiming to eliminate tariffs on 90% of goods traded between African nations, thus creating a single market for goods and services.

The Protocol on Digital Trade ('the Protocol') lies within the broader framework of the AfCFTA. Recognising the transformative potential of digital technologies in driving economic growth and facilitating trade, the Protocol seeks to establish a regulatory framework conducive to digital trade within the African continent. It aims to make it possible to address challenges, seize opportunities and ensure that digital transformation becomes a driver of inclusive and sustainable development across Africa.

Despite the sector's relatively small presence on the global stage, digitally delivered services within Africa have developed rapidly. This growth within the continent highlights significant avenues for opportunity and potential expansion in this sector. In 2022, the continent accounted for just 0.9% per cent of the world's exports of these services, a figure lower than Africa's approximately 3% share of global goods exports and gross domestic product (GDP). Despite this, Africa has seen an average annual increase of 7.3% in exports of digitally delivered services since 2015, slightly below the global average of 8.6%. Countries such as Morocco and Ghana have experienced significant growth in this sector since 2015 (WTO).

Digital trade expansion is driven primarily by outsourcing business processes and the widening scope of IT services. Throughout the continent, there has been a shift towards embracing digital technologies more extensively, with projections indicating a potential surge of \$74 billion in digital services exports between 2023 and 2040 (WTO). This anticipated upswing could amplify Africa's global digital

services market presence. Augmented digital connectivity, coupled with a sturdy regulatory framework, has the potential to substantially slash trade expenses by up to 25% (WTO). Furthermore, digitally transmitted services offer an alternative avenue to navigate some obstacles impeding trade in Africa, such as outdated transportation infrastructure and relatively high barriers to trading merchandise. By facilitating direct engagement between suppliers and consumers, digital trade fosters inclusivity, particularly benefiting micro, small and medium enterprises (MSMEs), women and youth. Notably, a significant majority of businesses exclusively involved in e-commerce in Africa are under female ownership.

2 Nigeria's digital economy

The digital transformation of the global economy is characterised by digitisation (i.e. the creation of a digital representation of physical objects or attributes such as paper documents) and digitalisation (i.e. the enablement or improvement of processes by leveraging digital technologies and digitised data). In other words, the digital transformation of international trade has been on a steady rise, with more businesses turning to online platforms and digital tools to facilitate their international trade interactions, operations, and transactions. Technology is now at the heart of almost every aspect of the trade, from manufacturing and production to documentation and payments (e.g. via digital platforms and marketplaces) to shipping and delivery (e.g. via real-time tracking).

In recent years, Nigeria has emerged as one of Africa's most dynamic and promising destinations for digital-related investment. The World Economic Forum notes that 92% of all venture capital investment (in terms of dollar value) in Africa's technology sector goes to just four countries – namely Nigeria, Egypt, Kenya, and South Africa (Dushime, 2024). With a youthful population, rapidly expanding connectivity and a burgeoning ecosystem of tech startups, Nigeria's digital economy holds immense potential to not just drive inclusive development, foster entrepreneurship and transform key sectors of the economy but also continue growing and evolving in the future (World Bank, 2019).

The digital economy ecosystem is multidimensional and cross-sectoral in nature. Nigeria's digital economy encompasses a diverse array of sectors and activities, from e-commerce, fintech and digital payments to telecommunication services, software development and digital content creation. Start-ups and tech hubs across major cities like Lagos, Abuja and Port Harcourt are driving innovation and disrupting traditional industries, while multinational tech giants are increasingly recognising Nigeria as a strategic market for expansion and investment. The Global Ecommerce Report notes that, out of the top 100 online retailers that sell to African countries (specifically, Algeria, Morocco, Egypt, Nigeria, Ghana, Kenya, Tanzania and South Africa), only 12 have their headquarters in Africa (RetailX, 2023) – and Nigeria is the headquarters of 2 popular online marketplaces in Africa, Jumia and Konga (Galal, 2024). Nigeria's increasing urbanisation, rising middle class, and growing consumer demand for digital services underscore the immense market opportunities in the digital economy landscape (Voice of Nigeria, 2021).

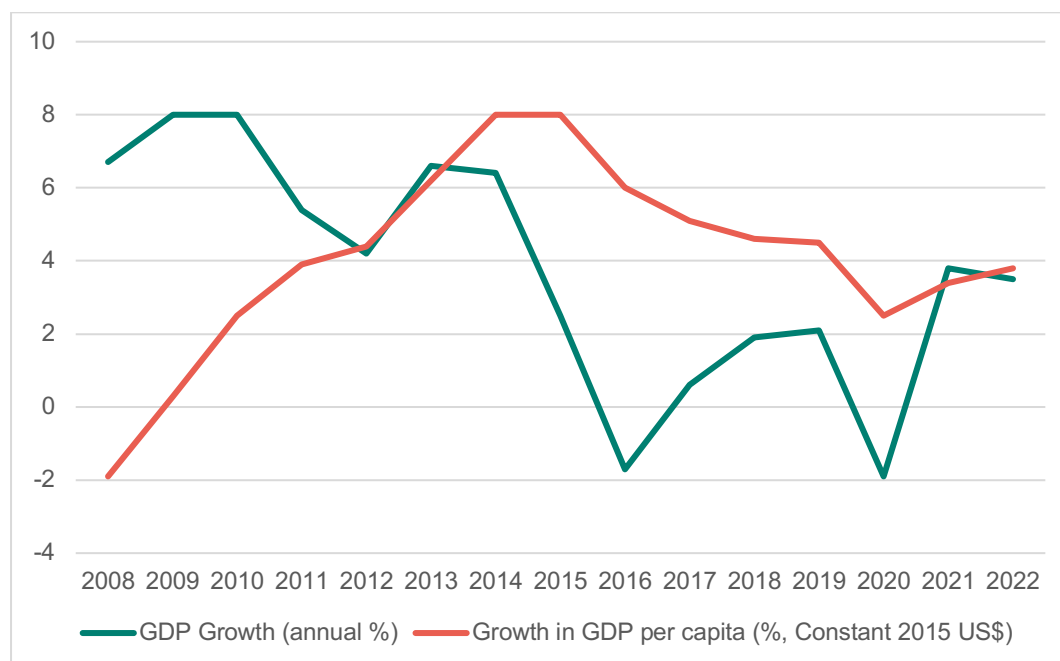
Nigeria, with a large and youthful population, presents a vast pool of talent, with creative skills to innovate and entrepreneurial intellect to stimulate and propel economic growth in the digital economy. The Nigerian government has articulated a vision for leveraging digital technologies to enhance productivity, improve service delivery and create new economic opportunities for its citizens. Initiatives such as the National Digital Economy Policy and Strategy, launched in 2019, underscore the government's commitment to fostering an enabling environment for digital innovation, investment, and entrepreneurship.

This section of the study provides a comprehensive overview of Nigeria's digital economy ecosystem. It highlights its size and importance as well as the emergence of homegrown unicorns and successful tech enterprises that underscore Nigeria's growing stature as a regional hub for digital entrepreneurship and innovation (World Bank, 2019). Moreover, the section covers the country's digital infrastructure, including increasing investment in broadband infrastructure; digital trade barriers; stakeholder mapping (Annex 2); current regulations; and policies and drivers of the digital economy, including opportunities, challenges and implications for socioeconomic development to drive inclusive growth, foster innovation and accelerate progress towards the Sustainable Development Goals.

2.1 Economic indicators

Figure 1 shows Nigeria's GDP growth in value (annual percentage) and GDP per capita (constant 2015 US\$) over 2008–2022.

Figure 1 Economic growth in Nigeria, 2008–2022



Source: WDI (2024)

The chart illustrates how the GDP growth rate fluctuates annually, with noticeable dips in 2016 and 2020. GDP per capita shows a gradual

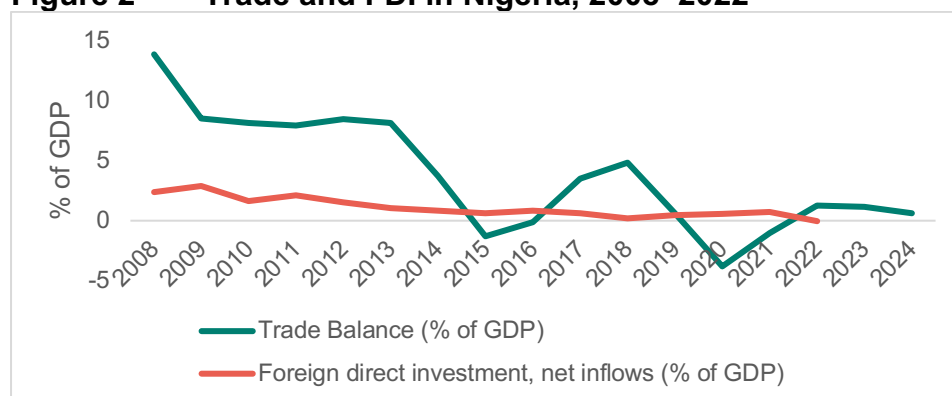
increase until around 2014, after which it experiences a decline and then a period of fluctuations, which could reflect changes in **economic conditions, population growth rates** and various other socioeconomic factors.

The chart reveals the **country's resilience and potential amid various challenges**. From 2008 to 2014, Nigeria experienced robust GDP growth, with the zenith reached in 2009 and 2010, indicating strong post-crisis recovery. This period of growth reflects a thriving economic environment that benefits from high oil prices and reforms in sectors such as telecommunications and services. However, from 2015 onwards, the country's economic vigour faced headwinds, marked by a significant downturn in 2016 owing to a combination of factors, including **lower oil prices, reduced production, and currency volatility**. This contraction underscores Nigeria's vulnerability to external shocks and its reliance on the oil sector.

Despite these challenges, the economy displayed signs of recovery in subsequent years, although the growth remained modest and uneven, as reflected in the fluctuations in GDP per capita. The dip in 2020 can be attributed to the global economic impact of the COVID-19 pandemic, which disrupted trade and caused a contraction across numerous economies. Yet Nigeria's quick rebound in 2021 and sustained growth into 2022 exemplifies the country's underlying **economic resilience and the potential for recovery through diversification and digitalisation**.

Incorporating the AfCFTA Protocol into Nigeria's policy framework could serve as a catalyst for further economic rejuvenation. By embracing digital trade, **Nigeria could diversify its economy, mitigate the impact of oil market volatility, and lay the foundation for sustained long-term growth**. The Protocol's focus on digital inclusivity and infrastructure development aligns with Nigeria's growth agenda, suggesting a promising avenue for bolstering economic resilience and prosperity.

Figure 2 presents a comparative analysis of Nigeria's trade balance as a percentage of GDP and FDI net inflows, also as a percentage of GDP, from 2008 through a forecast into 2024. Over this period, the trade balance begins at a high point in 2008, suggesting a strong surplus where the value of exports significantly exceeded the value of imports. This surplus, however, experiences a general decline over the years, with notable downturns around 2015 and again in 2020, the latter likely reflecting the global economic impact of the COVID-19 pandemic. There is a partial recovery observed post-2020 but the trade balance still hovers around a lower threshold, indicating that Nigeria's trade surplus has lessened over time, or that the economy may have experienced periods of trade deficits where imports surpassed exports.

Figure 2 Trade and FDI in Nigeria, 2008–2022

Source: WDI (2024); IMF Data (2024)

FDI net inflows show a slightly different trend, with higher percentages earlier in the period indicating robust foreign investment relative to the size of Nigeria's economy. There is a peak in 2009, after which there is a general downward trend until around 2016, followed by somewhat erratic fluctuations. Notably, there is a sharp drop in 2020, possibly the result of reduced investor confidence and global economic slowdown during the pandemic. A slight recovery seems to be in place by 2021 but levels have not returned to the highs seen in the earlier part of the timeline. The forecast for 2023 and 2024 shows FDI stabilising, yet at levels that are much lower than those recorded in the late 2000s.

The declining trade balance suggests a potential area of concern for policymakers, who might aim to bolster Nigeria's trade position through enhanced digital trade capabilities. Concurrently, the fluctuating FDI figures could reflect external economic shocks and investor sentiment, indicating **a need for a stable policy environment that can attract and retain foreign investment**, potentially through the digital trade enhancements proposed by the AfCFTA Protocol.

2.2 Size and importance of the digital trade ecosystem

Nigeria's digital economy has experienced significant growth in the past 20 years, driven by reforms in the telecommunications and financial sectors that began in the early 2000s. Prior to 2002, the country's telecommunications sector was operated by a single entity, Nigeria Telecommunications (NITEL), which was state-owned. However, the Nigerian government decided to break NITEL's monopoly and liberalise the sector, which opened it up to new players, and the country recorded its highest GDP growth in 2002, of 15.33% (Macrotrends, 2024). This policy decision marked a turning point in Nigeria's economic trajectory. The digital economy in Nigeria has since emerged as one of the most vibrant and fastest-growing sectors in Africa: between 2017 and January 2023, the number of internet users grew from ninety-seven million to 122 million. Internet

penetration stood at 55% (fluctuating) and mobile subscription at 87% (Statista, 2023).

This has facilitated the growth of digital trade by providing more access to online platforms and services (Kemp, 2023), increasing investments in digital infrastructure, and creating a vibrant digital entrepreneurship ecosystem in areas such as fintech, e-commerce, digital services, and the gig economy. The e-commerce sector in Nigeria has witnessed significant growth, with platforms like Jumia, Konga and others gaining popularity.

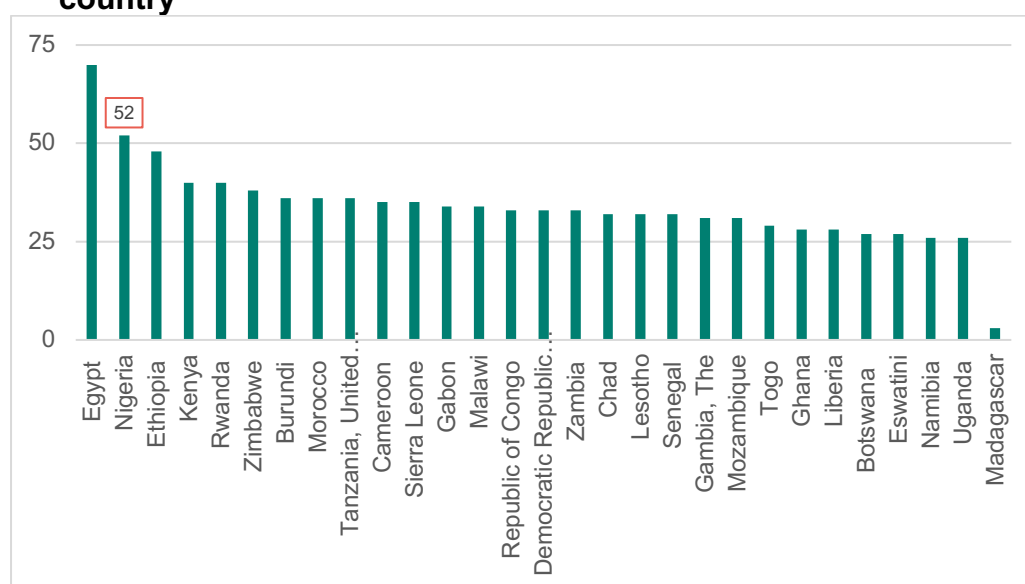
These platforms facilitate the buying and selling of goods and services online, contributing to the digital trade economy in Nigeria (Gwani, 2023). Nigeria is one of only four African countries (termed the 'big four') that account for over 90% of all venture capital investments in African tech startups, and it is currently home to five out of seven African tech unicorns (companies with a valuation of \$1 billion and above): Jumia, Opay, Interswitch, Flutterwave and Andela.

In order to understand the dynamics of Nigeria's DTE, the study explores the United Nations Economic Commission for Africa (ECA) and the European University Institute (EUI) collected regulatory data from the Digital Trade Integration (DTI) database for 29 African economies². When compared to other countries on the continent, Nigeria ranks second only to Egypt³ in terms of the number of digital trade restriction policies it has in place. In other words, Nigeria is one of the most restrictive nations in Africa, marked by high regulatory heterogeneity with regard to digital trade tariffs and online sales and transactions (Fig 3). This translates into low policy support for digital trade integration in Nigeria, as well as its weak performance in exports of ICT goods and services (UNECA, 2023; Box 1).

² These economies include Botswana, Burundi, Cameroon, Chad, Republic of Congo, Democratic Republic of the Congo (DRC), Egypt, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mozambique, Morocco, Namibia, Nigeria, Tanzania, Rwanda, Senegal, Sierra Leone, Togo, Uganda, Zambia, and Zimbabwe. The regulatory data is divided into 12 pillars², covering aspects such as tariffs, trade measures for ICT goods, public procurement of ICT goods and online services, foreign direct investment (FDI) in digital trade sectors, intellectual property rights (IPRs), telecom infrastructure and competition, cross-border and domestic data policies, intermediary liability, content access, quantitative trade restrictions for ICT goods and online services, technical standards for ICT goods and online services, and online sales and transactions. See more here: <https://dtri.uneca.org/assets/data/publications/Digital-trade-regulatory-environment-Opportunities-for-regulatory-harmonization-in-Africa-en.pdf>

³ Digital trade restrictions in Egypt are related mostly to FDI and intellectual property rights (UNECA, 2023)

Figure 3 Number of Digital Trade restrictive policies by country



Source: UNECA DTI database 2023

Box 1 Key highlights on Nigeria's digital trade

- **Share of ICT goods in total exports:** As a share of total exports, exports of ICT comprised a share of 0.1%, performance worse than far smaller countries like Malawi, DRC, and Burundi. ICT goods include computers and peripheral equipment, communication equipment, consumer electronic equipment, electronic components and other IT goods.
- **Share of ICT goods in intra-Africa exports:** ICT goods exports to other African countries suffered the same fate. In essence, Nigeria does not export ICT goods in any significant quantities to any part of the world.
- **Digitally enabled services exports (as a percentage of commercial exports):** As a share of total commercial exports, digitally enabled services amounted to about 37%, behind Eswatini, Gabon and Ghana. Digitally enabled services include telecommunications and financial, as well as information services.
- **Digitally enabled services exports (as a percentage of intra-Africa commercial exports):** With regard to exports of these services within the African continent, Nigeria recorded roughly a share of 28%. It is important to note that these are formal exports. These numbers do not typically account for informal exports of services.

Source: Authors' compilations based on UNECA (2023).

It should be noted, however, that restrictiveness does not necessarily equate to inability to participate in, or benefit from, digital trade. The US and China are among the most restrictive countries in the world when it comes to digital trade and trade in digital services. They both still account for more than 75% of the market capitalisation of digital platforms and for seventy of the world's biggest digital platforms, according to the Digital Economy Report (2021). The growth of their digital economies (and successful participation in digital trade) clearly is not restricted by their restrictive policies (which cut across all the pillars highlighted above).

While the Protocol on Digital Trade presents opportunities for Nigeria, the country also faces the challenge of consolidating its leading position in the region's digital economy, by participating more broadly across the entire value chain. The challenges include inadequate infrastructure, cybersecurity threats, regulatory alignment, and digital literacy gaps. High-speed internet and reliable infrastructure (both at the backbone and last-mile level) also represent a major challenge; this covers logistics reliability, quality of postal services, property identification issues, road infrastructure and dematerialisation of payments, as well as the **need for a legal framework to secure the various players in the e-commerce supply chain.**

It is worth noting that Nigeria's digital trade economy's size and importance can also be viewed from the perspective of the 2023 Global Innovation Index (GII) published by the World Intellectual Property Organization (WIPO)⁴. Nigeria ranks 109 out of the 132 economies ranked (14th most innovative in Africa of 32 African countries included in this edition of the GI). Narrowing down to a selection of relevant indicators (for digital economy/trade), Annex 1 provides a comparison of Nigeria against four of the top-ranked African countries.

The WIPO GI 2023 data further shows that Nigeria's major challenges lie with its market sophistication (12.39, 127th) when Nigeria is benchmarked against other middle-income economies and African country groupings for each of the seven pillars of the GI. This is followed by knowledge and technology output (9.93, 124th), infrastructure (18.73, 123rd) and institutions (32.9, 115th). Conversely, Nigeria's highest ranking is on human capital and research (27.8, 80th) business sophistication (24.50, 82nd). Table 1 presents Nigeria's performance on some of the other indicators.

⁴ This ranks countries on seven pillars: institutions; human capital and research; infrastructure; market sophistication; business sophistication; knowledge and technology outputs; and creative outputs (Annex 1). These are further broken down into eighty indicators. See more here: Global Innovation Index – WIPO (2023), <https://www.wipo.int/gii-ranking/en/nigeria>

Table 1 Nigeria's performance on digital economy indicators

Indicator	Rank
Applied tariff rate, weighted average, %	131
Operational stability for businesses	128
Government effectiveness	125
Regulatory quality	124
ISO 9001 quality/PPP\$ billion GDP	124
University–industry research and development (R&D) collaboration	122
ICT access and use	119
Labour productivity growth	118
Product and export complexity	118
ICT use	117
ICT services exports, % of total trade	116
Rule of law	112
FDI net inflows, % of GDP	111
ICT services imports, % of total trade	100
State of cluster development	96
High tech exports, % of total trade	96
Business sophistication	82
Human capital and research	80

Source: WIPO (2023)

However, **its strength lies in the size of its domestic market.** The domestic market scale indicator is one leveraged by both the US and China to grow their digital economies. Companies like Alibaba and Amazon have leveraged the opportunity of the enabling environment created in the domestic market to emerge as a global giant in scale. Leveraging this strength properly can result in knowledge and technology transfer, which deliver creative outputs. By these measures, **there is a need to address fundamental gaps to ensure Nigeria is able to sustain its leadership position in the digital economy.** Specifically, as this concerns competitiveness, and readiness to implement the AfCFTA Protocol on Digital Trade, Nigeria needs to address core issues regarding digital infrastructure and the regulatory and business environment.

2.3 Digital infrastructure development in Nigeria

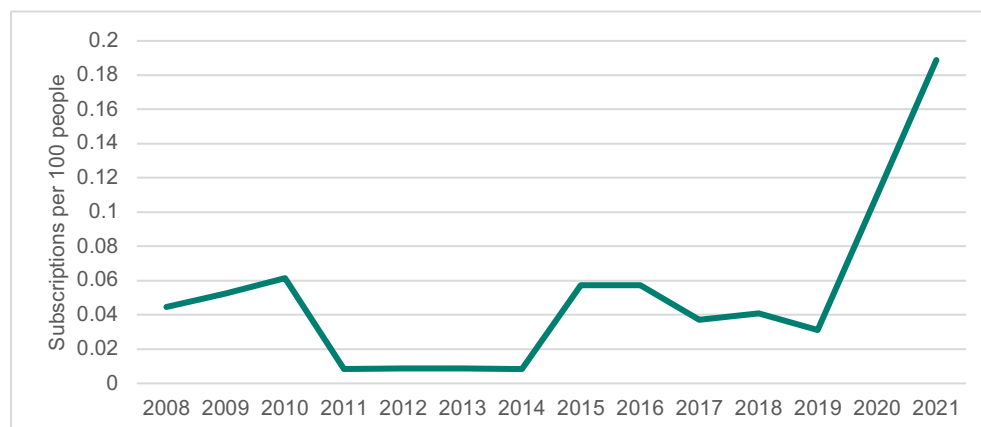
The trajectory of fixed-broadband subscriptions per one hundred people in Nigeria from 2008 to 2022 reveals a landscape punctuated by advancements and setbacks in digital infrastructure adoption (Fig 4). Initial growth in broadband subscriptions indicated promising development, yet the subsequent fluctuations and the stark data absence in 2020 suggest volatility in Nigeria's digital growth narrative.

The data suggests that Nigeria experienced an initial increase in fixed broadband subscriptions per one hundred people from 2008 to 2010, indicative of early development in internet infrastructure. Surprisingly, there is a sharp drop in 2011 and 2012, which is counterintuitive and might be attributed to data recording anomalies or significant changes

in the telecommunication policies or market dynamics. From 2013 onwards, there is an oscillation in the penetration rate, which could be owed to a range of factors, including economic fluctuations or shifts in consumer preference towards mobile broadband, which is common in many African countries.

In 2021 there is a marked increase, showing a higher penetration rate than in any previous year, possibly signifying a catch-up effect post-2020 data gap or a surge in broadband adoption, potentially fuelled by the increased demand for digital services amid the COVID-19 pandemic. Overall, the uneven progression underscores the urgency for strategic investment in consistent and reliable broadband services, which are foundational to Nigeria's aspirations under the AfCFTA Protocol. Such infrastructure is pivotal for ensuring Nigeria's competitive edge in the digital economy and for maximising the socioeconomic benefits envisioned by increased digital integration within the continent.

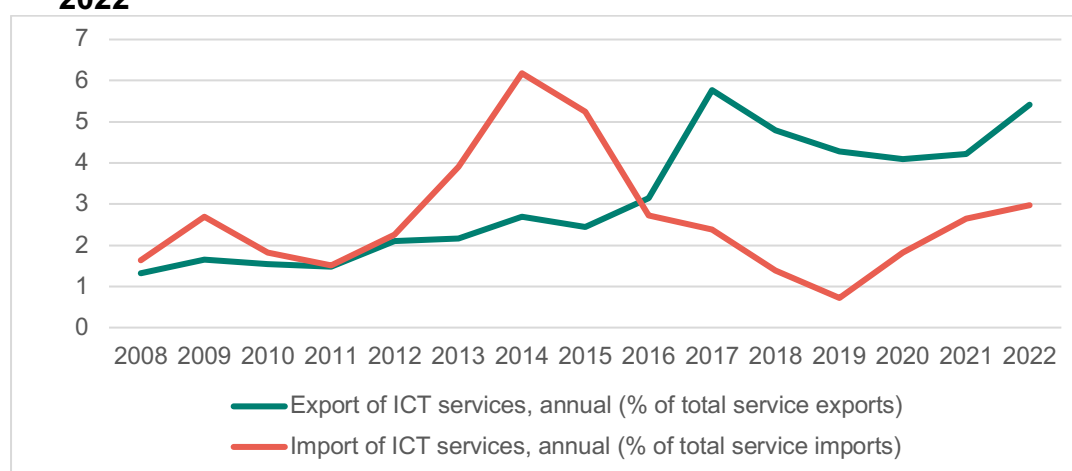
Figure 4 Fixed broadband subscribers in Nigeria, 2008–2022



Source: ITU Statistics (2024)

2.4 ICT services trade trends

Figure 5, on ICT services imports and exports as a percentage of total services exports and imports over the years, shows that, from 2008 to 2022, there was a notable upward trajectory in the export of ICT services. This suggests improved competitiveness or expansion in the ICT sector relative to other services sectors within the economy. A particularly remarkable increase occurred in 2017, of nearly double the figure of the previous year, which may indicate significant events such as policy changes, market expansions or technological advancements that substantially boosted ICT services exports. However, this surge was followed by a period of slight decline and then stabilisation, culminating in a minor rise in 2022, suggesting a possible market correction or a new balance within the sector.

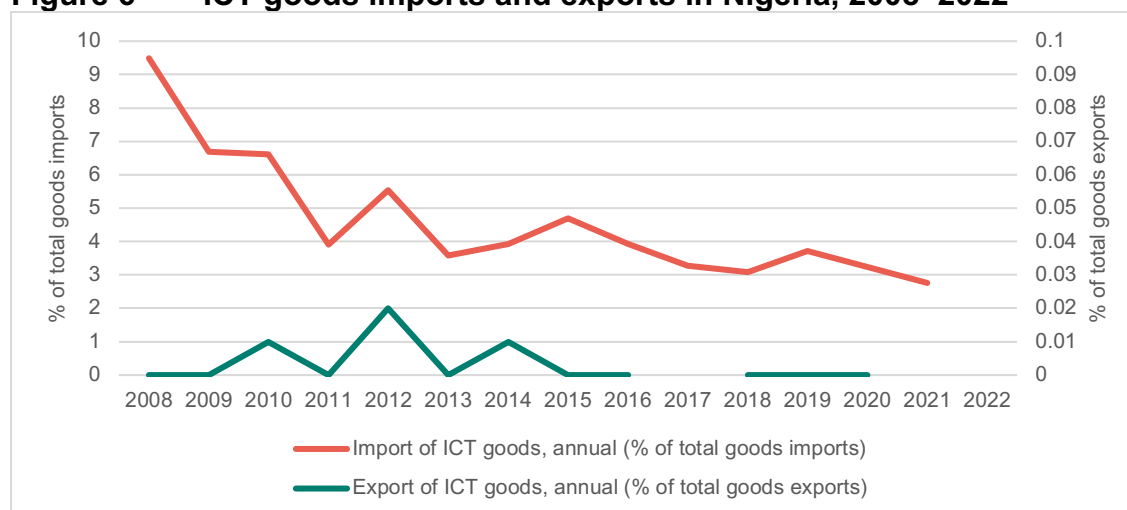
Figure 5 ICT service imports and exports in Nigeria, 2008–2022

Source: UNCTADStats (2024)

On the import side, ICT services exhibited more pronounced volatility, with a peak in 2014 possibly reflecting a period of heavy reliance on foreign ICT services, followed by a dramatic drop post-2016. This decline could denote a shift towards increased domestic production, improved efficiency in the ICT sector or changes in import policies. In 2020 and 2021, there was a noticeable decrease, which could be attributed to the global disruptions caused by COVID-19. However, 2022 showed signs of recovery to pre-pandemic levels, indicating either a return to previous trade patterns or adaptation to the new global economic landscape.

These shifting patterns in ICT services exports and imports can be interpreted through the prism of the AfCFTA Protocol's objectives. The rise in exports aligns with the goals of economic growth and an improved trade balance in the ICT sector. Concurrently, the fluctuation in imports may reflect strides in domestic digital infrastructure that diminish the need for foreign ICT services. The trends may also mirror the impact of policy and regulatory changes that align with the Protocol's initiatives, such as the harmonisation of digital trade regulations and the promotion of free data flow, tempered by data protection needs. Moreover, these trends could be affected by a growing emphasis on cybersecurity and data protection, with impacts on the level of trust in digital services and thus the trade percentages.

In considering the broader goals of the AfCFTA to boost economic integration, reduce trade barriers and foster a digital economy across the African continent, these data points become even more significant. **They hint at the gradual alignment of individual member states with the collective objectives over time, and a maturing digital trade landscape within Africa.**

Figure 6 ICT goods imports and exports in Nigeria, 2008–2022

Source: UNCTADStats (2024)

Analysing the data on the annual export and import of ICT goods as a percentage of total goods exports and imports from 2008 to 2022 (Figure 6) reveals a stark contrast between the two.

For exports of ICT goods, the figures are consistently low, with many years showing 0% contribution to the total goods exports. This indicates a nascent or minimal presence of ICT goods in the export sector for this economy over the examined period. However, in 2022 there is a slight uptick to 0.09%, which could signal the beginning of a change in the country's export profile or be the result of specific initiatives aimed at boosting the export of ICT goods.

In sharp contrast, the import data tells a different story. Starting at a high of 9.49% in 2008, it suggests a substantial dependence on imported ICT goods at the beginning of the period. This dependency, while fluctuating, remains a sizeable portion of total goods imports throughout the years. The highest decrease occurs between 2010 and 2011, dropping from 6.62% to 3.91%, which may reflect a shift in policy, a response to economic conditions or improvements in the domestic production of ICT goods. Despite the fluctuations, the data shows a general downward trend, reaching its lowest at 2.76% in 2022. This decrease could indicate a strengthening domestic ICT goods industry, a diversification of import sources or reduced demand for ICT goods.

The distinct divergence between ICT goods exports and imports over these years can provide insights into the country's trade strategy, production capacity and market demand within the ICT sector. While the country appears to rely less on imports over time, which could be a sign of growing self-reliance or strategic shifts in the economy, the negligible export numbers suggest there is potential for growth and development in the exportation of ICT goods. This could be a focus area for future economic development strategies, potentially tying into objectives laid out by trade agreements like the AfCFTA, aiming to bolster intra-continental trade and encourage the development of local

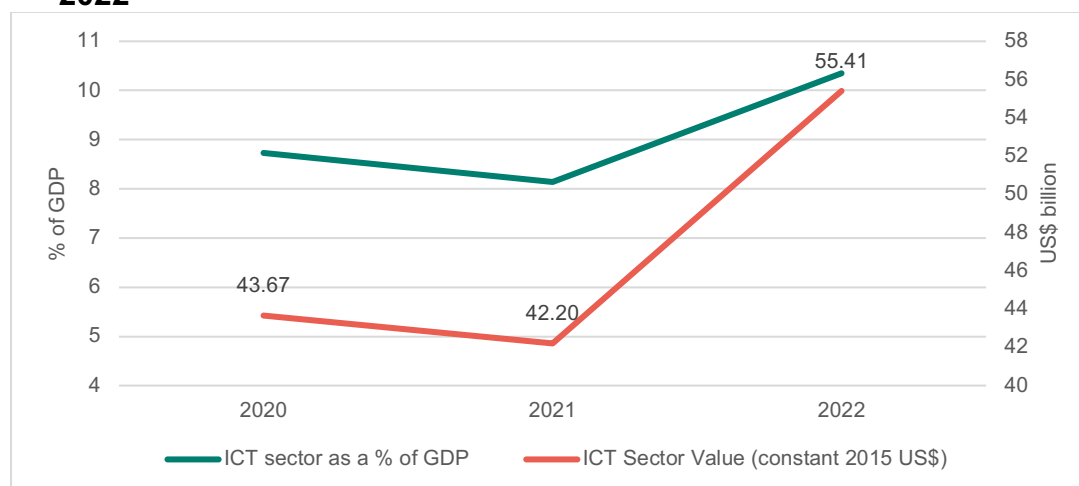
industries. The slight increase in exports in 2022 may be an early sign of such strategies beginning to bear fruit or other global economic trends affecting trade dynamics.

2.5 The ICT sector's contribution to the Nigerian economy

The ICT sector's contribution to GDP and its value in constant 2015 US dollars over a three-year period from 2020 to 2022 is illustrated in Figure 7. There is an interesting pattern here that gives insights into the health and trajectory of the ICT sector within this economy.

In 2020, the ICT sector constituted 8.7% of GDP with a value of \$43.67 billion in constant 2015 US dollars. The following year, in 2021, there was a slight decrease in both the percentage of GDP, dropping to 8.14%, and the sector's value, which declined to \$42.20 billion. This reduction may reflect several factors such as economic contractions, shifts in production within the ICT sector or broader structural changes in the economy.

Figure 7 The ICT sector's contribution to the economy, 2020–2022



Source: Authors' calculations based on NBS (2024)

However, in 2022 there was a notable rebound, with the sector's share of GDP jumping to 10.35% and its value increasing significantly to \$55.41 billion. This recovery suggests a strong resurgence in the ICT sector, possibly driven by factors such as increased investment, adoption of innovative technologies or a shift towards digital services post-pandemic.

The value in constant 2015 US dollars allows us to observe the real growth of the sector, adjusted for inflation and other economic changes, providing a clearer picture of its performance. The jump in 2022 is particularly impressive, indicating that the sector is not only recovering from the previous year's dip but also expanding in terms of its role in the economy. This could reflect a broader global trend towards digitalisation and an **increasing reliance on ICT goods and services**, which was accelerated by the COVID-19 pandemic and the

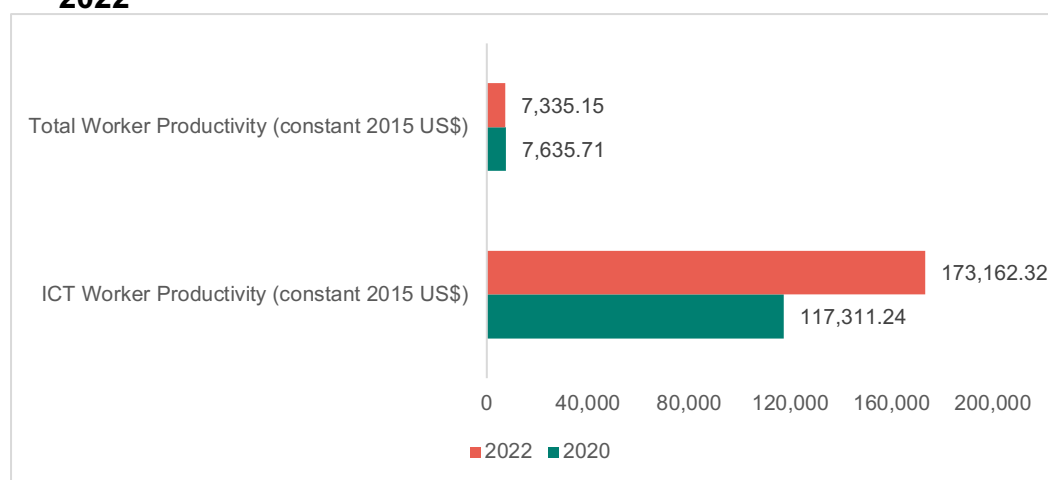
subsequent push for digital transformation across many sectors.

It could also signal the potential success of policies aimed at fostering the growth of the ICT sector or a shift in consumer and business behaviour that favours digital solutions.

2.6 ICT productivity in Nigeria

Figure 8 presents a comparison between ICT worker productivity and total worker productivity in constant 2015 US dollars for the years 2020 and 2022. In 2020, the productivity of an ICT worker was significantly higher than that of the average worker, standing at \$117,311.2, compared with total worker productivity of \$7,635.7. By 2022, ICT worker productivity had seen a substantial increase to \$173,162.3, which suggests a marked enhancement in efficiency, technological advancement, or value creation within the ICT sector.

Figure 8 ICT sector and total worker productivity, 2020 and 2022



Source: Authors' calculations based on ILOStats (2024) and NBS (2024)

Contrastingly, total worker productivity slightly declined during the same period, from \$7,635.7 to \$7,335.2. This decline could reflect broader economic challenges, a shift in the composition of the workforce, or structural changes such as automation, which might displace some labour while increasing overall output.

The stark difference between the productivity of ICT workers and that of the total workforce underscores the significant role the ICT sector plays in driving economic efficiency and productivity. The data suggests that investments in ICT can yield substantial gains in productivity. It also highlights the importance of enhancing the skills of the wider workforce to ensure the benefits of technological advancements are broadly shared across the economy.

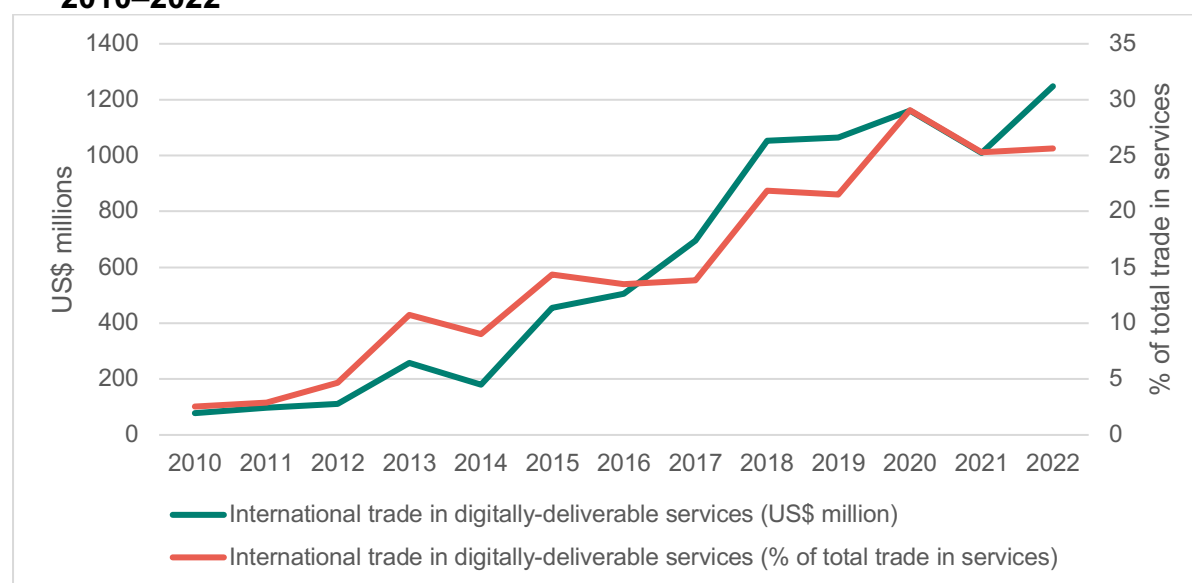
The increasing gap between ICT worker productivity and total worker productivity over these two years may also reflect the **critical importance of technology skills and digital infrastructure in modern economies**, potentially signalling an area where policy interventions could support broader economic growth and productivity.

2.7 International trade in digitally deliverable services in Nigeria

The data in Figure 9 shows a clear trend of growth in both the value and the proportion of digitally deliverable services in international trade from 2010 to 2022. Trade value starts at \$78 million in 2010 and grows to \$1.25 billion in 2022, suggesting a rapidly expanding sector. This expansion is even more pronounced when considering the percentage of total trade in services, which started at 2.54% in 2010 and grew to 25.66% in 2022.

The numbers show some fluctuations, particularly in 2014, where the trade value dipped from the previous year before rebounding sharply in 2015. However, the overall trajectory remains upward. The peak of 29.06% in 2020 as a percentage of total trade in services may be indicative of the accelerated digital transformation and reliance on digital services that occurred during the COVID-19 pandemic, as traditional services were likely disrupted, and digital alternatives gained more prominence.

Figure 9 International trade in digitally deliverable services, 2010–2022



Source: UNCTADStats (2024)

By 2021, there is a slight decrease in both value and percentage, which could signify market stabilisation post the initial pandemic surge, or possibly a shift in the economic landscape as the world began to adjust to new norms. Yet the value rises again in 2022, suggesting that the growth of digitally deliverable services continues to be robust and may represent a permanent shift in consumer and business behaviours towards digital platforms.

The increasing trend over the years highlights the growing importance of digital services in the global economy, aligning with global trends of digitalisation in trade. It also echoes the goals of trade agreements such as the AfCFTA, which aim to bolster digital trade. This growth

suggests that economies are becoming more service-oriented, particularly in sectors that can deliver services digitally, which is a transformative shift that could influence future trade policies, investment in digital infrastructure and digital skills development.

It is important to acknowledge that, while the category of digitally deliverable services encompasses those services that can be delivered remotely over digital networks, not all such services are actually delivered digitally in international trade. Figure 9 does not distinguish between potential and actual digital delivery, and as such the figures represent a broader capability for digital trade rather than its actualisation.

2.8 Digital trade barriers

Barriers to digital trade can take various forms (e.g. policy-related, infrastructural, technical, and non-technical). To such barriers are discussed in more detail below.

2.8.1 Mixed implementation of electronic customs

Nigeria has implemented an automated customs system, but key functions are yet to be implemented. As of 2023, traders can do the following online:

- pay customs duties and fees
- submit air cargo manifests
- submit customs declarations
- Traders are currently unable to fully do the following online:
- apply for and be issued preferential certificates of origin
- apply for customs refunds
- apply for and be issued import and/or export permits

Additionally, the implementation of an electronic single window system is still far from being a reality. This is especially a drawback for MSMEs, for which the costs of compliance represent a major challenge in international trade.

2.8.2 Incomplete implementation of Model Law on Electronic Records

In Africa, only seven countries have started any form of implementation of the UNCITRAL Model Law on Electronic Records (MLETR) 2017, Nigeria being one of them. However, there is no publicly available policy statement that indicates that Nigeria has adopted the implementation of MLETR. Previously, the Electronic Transactions Act (ETA) of 2011 in Nigeria established a legal framework for e-commerce transactions. This act recognizes the validity of electronic signatures and contracts and allows businesses to conduct commercial transactions without using paper-based methods, which align with the principle of MLETR. The primary objective of the

ETA is to create an environment that promotes equality, equal opportunities, and economic development. Additionally, it aims to facilitate the implementation of e-government services that could improve service quality, reduce costs, and increase transparency and efficiency in procurement.

2.8.3 Half or no measures on cross-border paperless trade

Nigeria has made some progress in implementing cross-border paperless trade. However, there are serious gaps. Specifically, the country has implemented to some extent (not fully, for any of the measures):

- legal instruments (laws and regulations) supporting electronic transactions
- paperless collection of payment from a documentary letter of credit
- electronic exchange of sanitary and phytosanitary (SPS) certificates
- online publication of emergency trade facilitation measures
- electronic application and issuance of SPS certificates
- trade facilitation measures for cross-border e-commerce

Nigeria has, however, made no progress on the following:

- electronic exchange of certificates of origin
- electronic exchange of customs declarations
- setting up a recognised certificate authority
- advance publication/notification of new trade-related regulations before their implementation
- advance ruling on tariff classifications and origins of imported goods
- authorities engaged in blockchain-based supply chain project covering trade finance
- electronic application, issuance, and exchange of eCITES (on the Convention on International Trade in Endangered Species of Wild Fauna and Flora)
- publication of existing import–export regulations on the internet

Considering that Nigeria already implements online submission of customs declarations, the fact that it does not electronically exchange these customs declarations with other authorities is a problem of legality and lends to the lack of interoperability.

In summary, the **barriers to digital trade in Nigeria are numerous but are surmountable with government commitment** and strong stakeholder participation to foster an inclusive and resilient digital ecosystem that benefits all stakeholders.

2.9 Current regulations and policies to promote the digital economy

Nigeria has implemented several regulations and policies aimed at promoting digital trade and fostering the growth of the digital economy. FMCIDE is responsible for regulating, formulating, and promoting policies for the digital economy in Nigeria. It oversees three major agencies that are responsible for regulating the sector: NCC, NITDA and the National Broadcasting Commission. However, FMCIDE works in collaboration with other relevant ministries, government agencies and stakeholders, such as FMITI and agencies under it, which include the National Action Committee on AfCFTA (NAC-AfCFTA), NOTN and others.

The digital economy in Nigeria is governed by several government agencies that establish regulations, guidelines, and policies. While many such frameworks have been put in place to support the growth of the sector, some of them require some level of modification to effectively promote digital trade in Nigeria under AfCFTA Digital Trade Protocol.

The **Nigerian National Broadband Plan 2020–2025** was designed in 2013 with the goal of delivering data download speeds across Nigeria of at least 25Mbps in urban areas and 10Mbps in rural areas. It is a national policy of the federal government of Nigeria aimed at accelerating broadband penetration across the country. It sets targets for expanding broadband infrastructure, reducing the cost of internet access, and promoting digital inclusion, particularly in underserved and rural areas. Furthermore, it seeks to achieve effective coverage for at least 90% of the population by 2025, at a price not exceeding N390 per 1GB of data (2% of median income or 1% of minimum wage).

The **National Digital Economy Policy and Strategy** was established in 2019 and lays out a roadmap for transforming Nigeria into a major 'participant in the growing digital economy.' It provides a comprehensive framework for advancing the digital economy across various sectors. It outlines strategies to promote digital literacy, expand broadband infrastructure, enhance digital skills development, and create an enabling environment for digital innovation and entrepreneurship.

The **Nigerian Data Protection Regulation** was established in 2019 under the guardianship of NITDA to serve as the primary data protection legislation in Nigeria. It establishes data protection principles and requirements for organisations managing personal data, including provisions related to data security, consent, and data subject rights. Compliance is essential for businesses operating in Nigeria's digital ecosystem.

The draft bill on **Nigerian Electronic Transactions** established in 2011. The legislation was enacted to provide a legal framework for electronic transactions in Nigeria, including electronic commerce,

digital signatures, electronic contracts, and other related matters. It recognises the validity and enforceability of electronic contracts, signatures, and records, thereby facilitating electronic transactions and promoting confidence in digital trade (BusinessDay, 2024).

The **National Identity Management Commission Act** established the National Identity Management Commission (NIMC) in 2007, with the mandate to create, manage, maintain, and operate the National Identity Database, to register and issue National Identification Numbers (NINs) and to provide identity verification services in Nigeria. NIMC plays a crucial role in the implementation of identity management policies and programmes aimed at enhancing security, promoting development, and facilitating efficient service delivery in Nigeria. The NIN serves as a unique identifier for individuals and is increasingly important for digital identity verification and authentication in digital transactions.

The **Financial Inclusion Strategy** was established in 2012. It was developed by CBN in collaboration with other stakeholders to promote greater access to financial services, improve financial literacy and enhance the overall financial inclusion of underserved and excluded populations in Nigeria. The strategy aims to reduce the financial exclusion rate, increase the uptake of formal financial services, and foster economic development and poverty reduction through improved access to financial products and services for all segments of society. This initiative promotes the licensing of mobile money operators, agent banking regulations and the implementation of the Shared Agent Network Expansion Facility to drive the adoption of digital payments and enhance financial access for underserved populations (CBN, 2018).

These regulations and policies demonstrate Nigeria's commitment to promoting digital trade, fostering innovation, and leveraging digital technologies to drive economic growth and development. Continued implementation and enforcement of these measures, along with ongoing efforts to address emerging challenges and opportunities in the digital economy, are essential for realising Nigeria's digital trade potential.

3 Results from stakeholder consultations

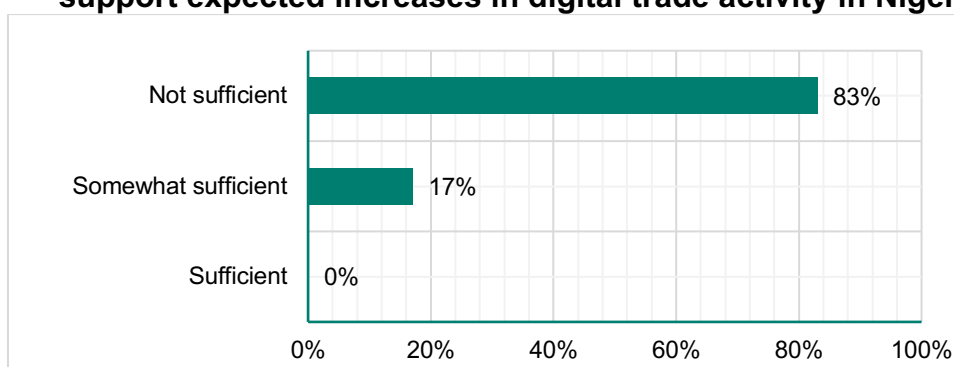
Stakeholder engagements for data gathering to support the implementation of the AfCFTA Protocol on Digital Trade in Nigeria were conducted to capture the experiences of Nigerian stakeholders, assessed their awareness level of the AfCFTA Digital Trade Protocol (DTP), identify the challenges of digital trade in Nigeria, evaluate the potential impact on digital trade, and gauge the readiness of stakeholders to leverage the opportunities and benefits of trading under AfCFTA DTP. To achieve the survey's objectives, a comprehensive mixed methodology was adopted, which involved both qualitative and quantitative data collection techniques. The data gathering, which spanned from February 9, 2024, to March 15, 2024, included participation from the public sector, private sector, and non-governmental organizations. Two focused group discussions (FGDs)/stakeholder engagements (SEs) were also conducted in Lagos and Abuja on March 5, 2024, and March 7, 2024, respectively. This detailed methodology ensured a thorough and comprehensive data collection process.

Prior to the data collection, pre-project training was conducted for all analysts involved in the process to ensure data quality. Pilot surveys were also conducted after the training, to ensure the survey questions were appropriately sequenced. A total of thirty stakeholders participated in the survey, while approximately eighty-seven stakeholders across public sectors, private sectors, and NGOs also took part in the focus group discussions/stakeholder engagement held in Lagos (55 stakeholders) and Abuja (32 stakeholders). These stakeholders represented various organizations, including the Federal Ministry of Industry, Trade and Investment (FMITI), the Federal Ministry of Communications, Innovations and Digital Economy (FMCIDM), the National Information Technology Development Agency (NITDA), Nigerian Customs Service (NCS), Nigeria Data Protection Commission, Digital Bridge Institute, Africa Fintech Network, Nigeria Export Promotion Council, Paystack, MainOne, Interswitch, Galaxy Backbone, Paradigm Initiative, Terragon Group, Union Bank, Yaraa, Afex Exchange, Uber, Code for Africa, and many others. The findings from this empirical research provided comprehensive insights into the current state and potential of digital trade in Nigeria.

3.1 Digital infrastructure

Digital infrastructure is a key element in establishing a functional and prosperous digital trade ecosystem. Without access to fast and affordable internet, people cannot participate effectively in businesses that rely on digital technology, which is often global in nature. The WTO's 2023 handbook on measuring digital trade explains that consumers and businesses must have access to dependable digital infrastructure as well as the skills and knowledge to use digital technologies in productive ways in order to engage in and benefit from digital trade. When we refer to digital infrastructure, we are referring to both its availability and sufficiency.

Figure 10 Is the current digital infrastructure sufficient to support expected increases in digital trade activity in Nigeria?



Source: Authors' compilations from stakeholder consultations

As Figure 10 shows, our respondents overwhelmingly believe that the current digital infrastructure is not sufficient to support expected increases in digital trade activity. Specifically, 83% are of the view that the current digital infrastructure in Nigeria is not sufficient to support expected increases in digital trade activity, while 17% answered 'somewhat sufficient.' This is an indication that **poor infrastructure remains a major impediment to digital trade development in Nigeria**. This perception aligns with the identified challenges and areas for improvement.

This is an opportunity for the Nigerian government and private sector to **show their commitment to the development of digital trade support** infrastructure in order to facilitate a smooth flow of goods and services across the borders, reduce transaction costs and increase the competitiveness of Nigerian products and services under the AfCFTA.

Some of the key points on the state of Nigeria's digital infrastructure are highlighted below.

3.1.1 Connectivity and access to internet connectivity

Generally, internet connectivity happens at three levels – first mile, middle mile, and last mile. The **first mile** pertains to the infrastructure that connects a country to the rest of the world – that is, international connectivity. Nigeria has made considerable progress in expanding its internet connectivity by investing in various undersea fibre-optic cables

to connect it to international networks. Between 2004 and 2023, the country increased the number of fibre optic cables from one to eight. These cables connect Nigeria to the rest of the world via Europe, Asia, and the Middle East, and they have landing points in Lagos. The recent landing of MTN's 2CableAfrica in Qua Iboe, Akwa Ibom and Lekki in Lagos has increased the country's installed fibre optic broadband capacity to over 100Tbps (the figure ranges from 40Tbps to 100Tbps, depending on the source). Meta, the parent company to Facebook, is still expected to land its cable in Nigeria.

With the right supporting infrastructure, such as the **middle mile** infrastructure, Nigerians across the country should be able to access the internet at high speeds and relatively lower costs. However, the middle mile infrastructure is currently lacking in capacity, which prevents the effective translation of the installed capacity of the first mile into reality. In fact, Nigeria currently uses less than 10% of its installed international connectivity capacity owing to middle-mile infrastructure challenges (the country still lacks a national backbone to convey traffic across the country) to underserved areas (FMCDE, 2020).

In the absence of a national backbone infrastructure, the middle mile in Nigeria is effectively under construction. Investments in this sector have, however, focused largely on major urban areas and inter-city routes, effectively ensuring that quality of service in rural areas will remain weak.

The government has shown a strong commitment to addressing this issue and ongoing efforts include licensing infrastructure companies like InfraCos and encouraging investments in the national backbone infrastructure. The deployment of internet exchange points (IXPs) is a potential workaround that is expected to provide cost savings and boost connection speeds for all users. Currently, there are eight exchange points, located in Lagos, Abuja, Port Harcourt, Kano, and Enugu. In 2019, Nigeria was designated as the regional IXP for the Economic Community of West African States region (UNCTAD, 2022a).

The shortcoming in Nigeria's digital infrastructure is the **overt focus on expanding mobile broadband infrastructure, with less attention to expanding access to fixed broadband**. Fixed broadband offers stronger, more durable, and cheaper high speeds with better quality of service than does mobile broadband. Currently, the fixed broadband penetration rate is less than 1% in Nigeria and is centred around major cities and urban areas. Lagos has the highest penetration rate for fixed broadband in Nigeria, perhaps unsurprisingly, owing to its status as the major commercial city of Nigeria and host to the infrastructure linkage point.

Last-mile infrastructure deployment remains largely underdeveloped. Hence, the country's reliance on mobile internet via GPRS, EDGE, UMTS and LTE technologies, provided by the leading mobile

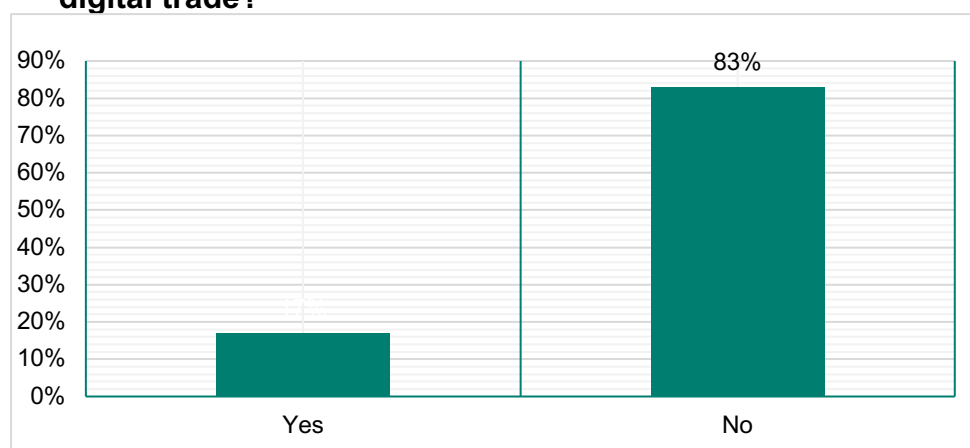
operators (MTN, Airtel, Glo, Ntel, Etisalat). Other connectivity options are provided by fixed wireless operators relying on technologies like EVDO and HSPA, and internet service providers connected to WiMAX and fibre-optic (fixed-to-the-x, FTTx) solutions. Given infrastructure issues discussed here, it is not uncommon to hear phrases like ‘no signal,’ ‘lost network,’ ‘network failure’ or ‘down time’ with regard to mobile internet, especially in rural areas.

Access to reliable electricity is another challenge that has clearly hampered the growth of the digital infrastructure and the economy in Nigeria. As of 2020, up to twenty million households in Nigeria do not have access to power, and 55% of rural areas are without electricity (USAID, 2019). Policy interventions using federal, subnational, and private sector investments should be targeted at these areas to bridge the infrastructure gaps that exist.

3.1.2 Digital literacy and usage

Internet penetration statistics typically offer raw data on the number of internet subscribers/users. On this metric, Nigeria’s internet penetration of 55–60% of the population means that roughly 40% (more than eighty million people) of the country’s population do not use or have access to the internet.

Figure 11 Is there enough skilled labour to support enhanced digital trade?



Source: Authors’ compilations from stakeholder consultations

As Figure 11 shows, respondents were asked if Nigeria had enough skilled labour to support enhanced digital trade activities in the country: 83% said no, current skilled labour was not enough against 17% who said yes. Nigeria does not have enough skilled labour to support enhanced digital trade activities, in fact, beyond basic data subscription, usage of the internet in Nigeria is still largely basic. Relative to those in other regions and African countries, Nigerians spend more time on the internet consuming data products. For example, more time is spent on the internet accessing and posting comments on chat sites (including blogs, online forums, etc.) than is spent on professional networks, selling, or buying goods online, conducting market research or planning a trip. The highest scores

(apart from participating in social media) are recorded for downloading software and applications; streaming or downloading images, movies, and videos; and playing online games.

In late 2023, the Federal Ministry of Communication, Innovation and Digital Economy (FMCIDE), through the National IT Development Agency (NITDA), and in line with the nation's digital economy policy and strategy 2020–2030, launched a digital literacy initiative, the Three Million Technical Talent (3MTT) programme.⁵ This aims to train as many as three million Nigerians in advanced digital skills including data analysis, machine learning and artificial intelligence, and front end development, among others.

According to the senior adviser on policy to the minister of communications, innovation, and digital economy:

The objective of 3MTT is to increase the pool of technical skills professional in Nigeria. It is a massive injection of capacity-building to meet the requirements of the digital economy. So, it is creating opportunities for the first time taking tested models to deploy on a large scale to bring in the largest dragnet to build critical skills into technical talent development for the digital economy and by implication digital trade.

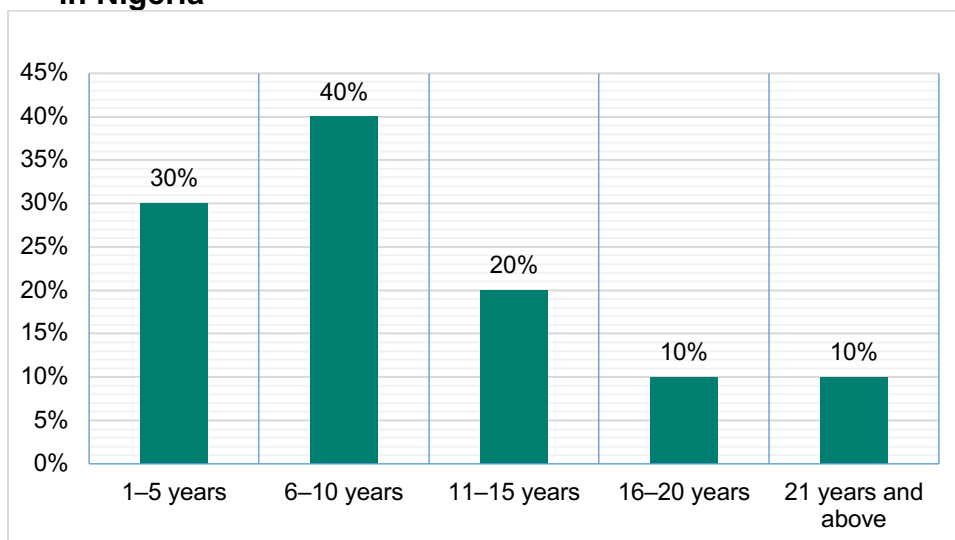
Initiatives such as the federal government Digital Bridge Institute and similar private sector-driven initiatives can help bridge the significant digital skills gap in Nigeria. This is crucial as the country aims to play a greater role in the data value chain and the African digital economy. However, a potential drawback is that such interventions tend to focus mainly on urban areas, particularly Lagos, Nigeria's established tech startup capital. Advanced digital literacy programmes then cater to the needs of Lagos' growing tech startup ecosystem. To address this, effective implementation of the nation's digital and data economy strategies and policies, as well as **increasing investments in digital literacy and infrastructure**, is necessary. This will lead to a rise in the number of digitally skilled individuals in Nigeria.

3.2 Stakeholder mapping of the digital trade ecosystem

These stakeholders play a role in enabling, implementing, and/or regulating digital trade in Nigeria. The industry is still young and emerging in Nigeria and across Africa, with the average age of private sector operators in the digital trade ecosystem being less than 20 years.

⁵ <https://nitda.gov.ng/3mtt/>

Figure 12 Number of years of digital trade business operations in Nigeria



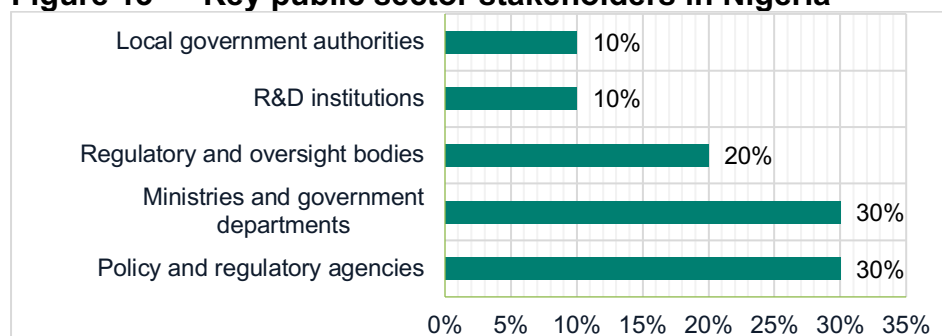
Source: Authors' compilations from stakeholder consultations

According to Figure 12, collectively, 80% of digital trade business operations in Nigeria commenced in the past 15 years across the digital economy ecosystem.

3.2.1 Public sector actors

The public sector stakeholders in Nigeria's digital economy can be divided into five categories. Their mapping highlights the importance of coordination among government agencies, regulatory bodies, and research institutions.

Figure 13 Key public sector stakeholders in Nigeria



Source: Authors' compilations from stakeholder consultations

Box 2 Public sector actors

Federal Ministry of Communication, Innovation and Digital Economy (FMCIDE)

Federal Ministry of Industry, Trade, and Investment (FMITI)

Federal Ministry of Marine and Blue Economy

Federal Ministry of Agriculture

Nigeria Communications Commission (NCC)

Nigerian National Assembly

Nigeria IT Development Authority (NITDA)

Nigerian Office of Trade Negotiations (NOTN) A. Central Bank of Nigeria (CBN)

Nigeria Customs Service

Nigeria Data Protection Commission

Nigeria Export Promotion Council

NEXIM Bank

Nigeria Ports Authority

Standards Organization of Nigeria

Nigeria Copyright Commission

Trademarks, Patents and Designs Registry

State ministries of trade and/or commerce

Figure 13 and Box 2 present the key public sector stakeholders in Nigeria's digital economy. The first category, policy, and regulatory agencies, takes up at 30% of the total stakeholders present. These agencies play a significant role in setting policies, regulations, and standards for the digital economy. They are responsible for formulating and implementing strategies to promote digital innovation, technology adoption and economic development.

The second category is ministries and government departments, which also represent 30% of the total. These entities are responsible for creating and executing policies, programmes and initiatives aimed at advancing Nigeria's digital transformation agenda. They focus on fostering collaboration across government agencies and coordinating efforts to drive digital innovation and economic growth.

The third category is regulatory and oversight bodies, which account for 20% of the total. These entities enforce compliance with regulations, investigate financial crimes, protect data privacy rights, and ensure the integrity of Nigeria's digital financial ecosystem. Their

oversight functions are essential for maintaining trust and confidence in the digital economy.

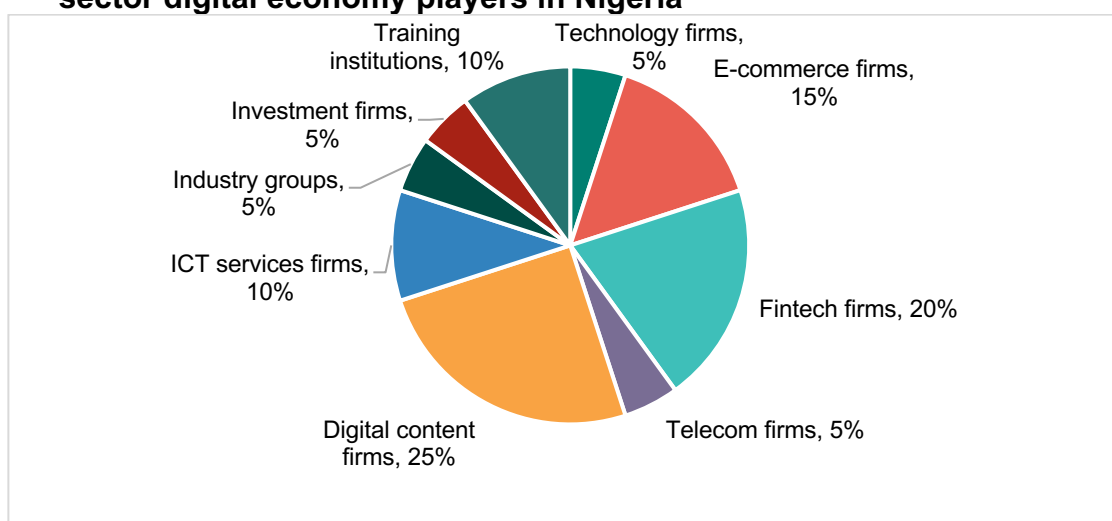
The fourth category is R&D institutions, which represent 10% of the total. These institutions promote technology transfer, innovation, and capacity-building in the digital economy. They contribute to research, education, and knowledge creation, supporting Nigeria's efforts to harness technology for economic development and societal advancement.

Finally, local government authorities constitute 10% of the total. These authorities play a significant role in promoting digital inclusion, socioeconomic development, and grassroots innovation. They implement ICT initiatives, digital infrastructure projects and capacity-building programmes at the community level, driving digital transformation in rural and urban areas.

3.2.2 Private sector players

The mapping of private sector stakeholders in Nigeria's digital economy highlights the diversity and complexity of the ecosystem, with various sectors, industries and entities contributing to innovation, growth, and development in the digital economy landscape.

Figure 14 Key areas of operation/specialisation of private sector digital economy players in Nigeria



Source: Authors' compilations from stakeholder consultations

Figure 14 shows the private sector stakeholders that are key players in Nigeria's digital economy. Digital content firms, represent 25% of the private sector stakeholders in Nigeria's digital economy. This reflects the growing importance of online media, streaming platforms and digital publishing in Nigeria's entertainment and media sectors, driven by the proliferation of smartphones and internet-enabled devices. Digital content providers and platforms in Nigeria include Boomplay, IrokoTV, NaijaLoaded, Linda Ikeji's Blog and Pulse Nigeria, among others.

Fintech firms, which represent 20% of private sector stakeholders in Nigeria DE landscape, which is revolutionising the way financial transactions are seamlessly conducted across Nigeria. financial sector. This reflects the growing prominence of digital financial services, payment solutions and innovative fintech products in Nigeria's financial sector, driven by factors such as smartphone penetration and regulatory support for fintech innovation. The financial technology firms in Nigeria include Access Bank, Union Bank, First Bank of Nigeria, Interswitch, Flutterwave, Paga Moniepoint, Opay and Paystack, among others.

ICT services firms represent a moderate portion of the private sector stakeholders, with a 10% share. These provide IT consulting, software development, cybersecurity, and managed services to businesses across various industries, contributing to the digital transformation and technological advancement of Nigeria's economy. ICT services providers include MainOne, Phase3 Telecom, ipNX Nigeria Ltd, Cobranet Limited and Suburban Telecom, among others.

Conversely, training institutions represent 10% of the private sector stakeholders that effectively operate within Nigeria digital economy landscape. Covering universities, colleges, coding bootcamps and skills development centres, these play an essential role in building the talent pipeline, developing technical skills, and supporting workforce development in Nigeria's digital economy. Training institutions and online learning and edtech platforms include Andela Learning Community, Afrilearn, PrepClass and uLesson, among others.

Technology firms represent 5% of the private sector stakeholders that operate within the ecosystem. These firms are still significant players in driving innovation, developing digital solutions, and contributing to technological advancements in various sectors. Technology firms in Nigeria include Terragon Group, Yaraa and Farmcrowdy, among others.

Telecom firms also represent 5% of the private sector stakeholders in Nigeria digital economy landscape. While these firms play a crucial role in providing mobile and internet connectivity to consumers and businesses, the lower percentage may indicate that other sectors within the digital economy are more heavily represented in Nigeria's private sector landscape. Telecommunications companies in Nigeria include MTN Nigeria, Airtel Nigeria, Globacom and 9mobile.

Industry groups also represent 5% of the private sector stakeholders operating in Nigeria digital economy. These groups play critical roles in representing the interests of specific sectors within the digital economy, advocating for policies, standards and initiatives that promote growth and innovation in their respective industries. Examples include agri-tech and agribusiness, blockchain and cryptocurrency, and logistics and transport tech, health stack and more.

Investment firms also represent 5% of private sectors stakeholders operating in Nigeria digital economy landscape. These firms provide funding, capital and support to startups, technology companies and entrepreneurial ventures in Nigeria's digital ecosystem, driving innovation and growth through investment. Examples include venture capital firms, private equity firms, real estate, and infrastructure investment firms with a digital focus.

3.3 Drivers of the digital economy

The digital economy relies on the collaboration of several stakeholders. This section discusses the importance of various groups in driving the digital economy and implementing AfCFTA digital trade in Nigeria. The growth of e-commerce platforms in Nigeria has transformed the way goods and services are bought and sold, providing opportunities for businesses to reach a wider market and for consumers to access a broader range of products online (Oxford Business Group, 2022). Nigeria boasts of a large population of young people, who are tech-savvy and eager to adopt digital technologies, given the growth in internet penetration, the expansion of mobile networks and the availability of affordable smartphones for digital services and platforms (Adaramola, 2022). This demographic trend has resulted in a surge in demand for digital products and services, creating a dynamic market for tech startups and businesses (Akinyemi and Mobolaji, 2022).

One other driver of the digital economy in Nigeria is the CBN 2011 Guidelines on Point-of-Sale Card Acceptance Services for payment solutions in Nigeria, which have played a crucial role in driving digital trade in Nigeria. Services like mobile money, online banking and digital wallets have made it easier for businesses and consumers to engage in online transactions (Khando et al., 2022), likewise creating opportunities for MSMEs in Nigeria to expand to new markets.

3.3.1 The government of Nigeria (national and subnational)

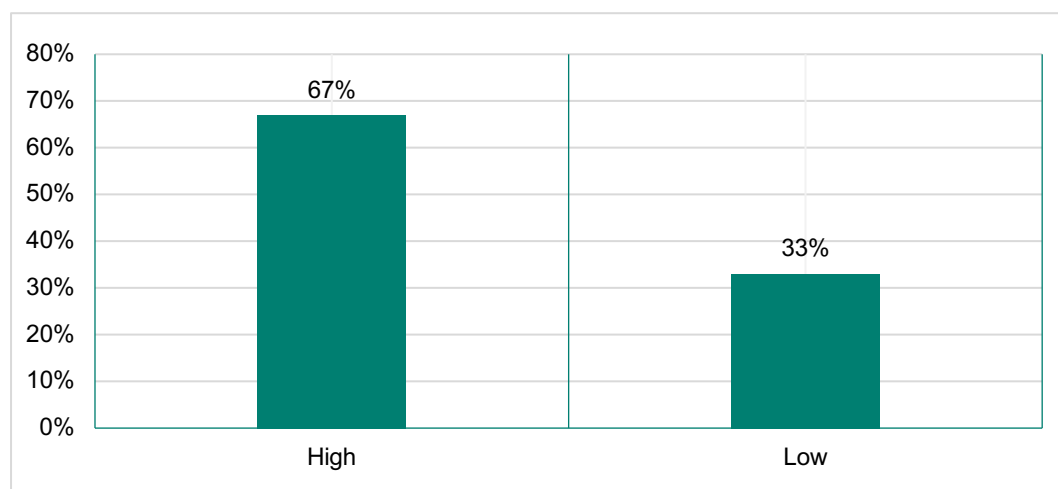
The Nigerian government has shown commitment to promoting the digital economy through various initiatives and policies. This includes investments in digital infrastructure, the establishment of innovation hubs and tech parks and efforts to improve the regulatory environment for digital businesses (Voice of Nigeria, 2021).

The government has been responsible for developing and implementing the legal frameworks that support platforms required for digital trade in Nigeria. Specifically, the Nigerian government at the federal level has implemented the following measures:

- implementing electronic systems for ports, including air, sea, road, rail, and inland ports
- implementing paperless customs declarations for national transit procedures such as inbound, outbound, and inland transit
- implementing a partial single window for import and export

- ensuring these technical systems are globally interoperable, which includes digital identities, payments, data models and semantics, communication protocols, connectivity, and security
- establishing governance rules and structures
- creating and/or supporting platforms for engaging stakeholders, especially the private sector, through the process
- building the capacity of paperless trade system users

Figure 15 Level of government involvement in the digital economy



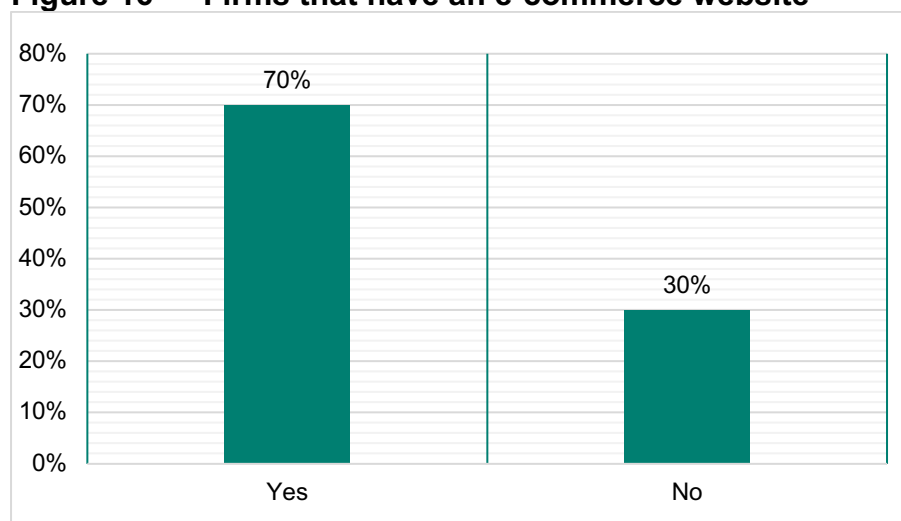
Source: Authors' compilations from stakeholder consultations

According to Figure 15, 67% of respondents believe the government plays a lead role in driving Nigeria's digital economy. This indicates the strong impact of government policies and regulations in Nigeria's digital economy ecosystem.

3.3.2 Private sector

The rise of mobile money and fintech solutions has played a significant role in driving Nigeria's digital economy. Mobile payment platforms and digital banking services have expanded financial inclusion, enabling greater access to banking services and facilitating e-commerce transactions (Sy, 2019).

Figure 16 shows 70% of respondents' businesses have e-commerce and online platforms to display their services and products, which is a major driver of the digital economy. Digital entrepreneurship has thrived in Nigeria despite the country's digital infrastructure challenge. The success of business-to-consumer (B2C) e-commerce platforms like Jumia and Konga shows that customers are willing to engage in the digital economy. However, digital solutions are highly concentrated in few industry sectors. Of the five tech unicorns in Nigeria, three are fintech solutions for the healthcare, travel, content creation, education, homes, and real estate sectors (Failory, 2024).

Figure 16 Firms that have an e-commerce website

Source: Authors' compilations from stakeholder consultations

The other 30% of respondents indicated that they did not have an e-commerce website but said they were working and saving towards having one. Within the context of the Protocol, the African market will be open only for service and product providers that have an e-commerce website or online presence. This is also an **opportunity for Africa-centric third-party e-commerce platforms to bridge the gap** for those that cannot afford personalised e-commerce platforms. However, caution must be exercised to ensure that large e-commerce aggregators promote MSMEs and young entrepreneurs in achieving scale and reaching new markets.

The private sector is a crucial factor in ensuring digital trade is implemented successfully in Nigeria. Including a broad range of actors, the private sector plays several roles in driving implementation. Specifically, the private sector:

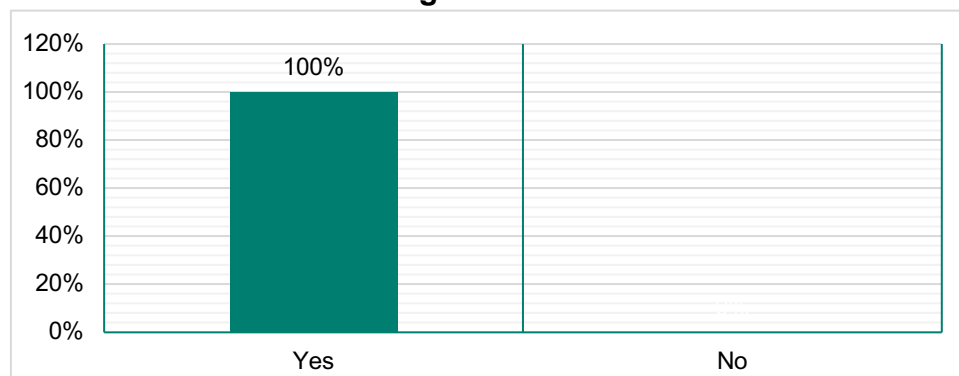
- engages the government on all technical matters relating to the digital trade economy
- informs the government on capacity needs and gaps relative to what is required to implement the digital trade economy
- builds capacity to engage in digital trade broadly
- identifies gaps it can plug, in partnership with other stakeholders, to ensure smooth implementation (including finance, human capacity, research, etc.)

Figure 17 shows that all respondents are aware that NAC-AfCFTA has the mandate to implement the provisions of the AfCFTA Protocol on Digital Trade in Nigeria. This was corroborated by a respondent from one of the government agencies:

*Of course, it is at the general levels. First, the most important thing is that the **Action Committee must identify markets for Nigeria and the markets where we have competitive***

***advantage...** to create opportunities in the area of fiscal assistance to businesses within the country to take advantage of the opportunity provided under AfCFTA and market intelligence.*

Figure 17 Are you aware of the NAC-AfCFTA as the AfCFTA coordination office in Nigeria?

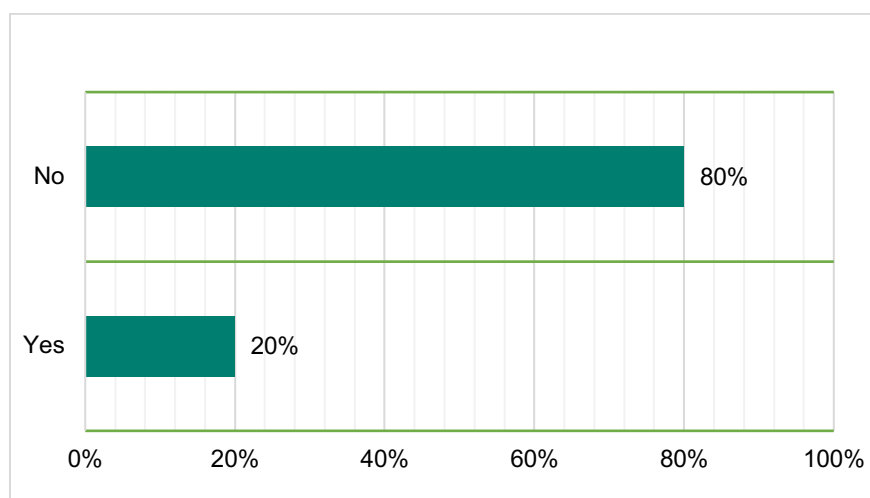


Source: Authors' compilations from stakeholder consultations

Figure 18a shows that 20% of firms are aware of the AfCFTA Protocol, while 80% are not aware of it. This distribution of awareness among firms highlights a **significant gap in knowledge regarding the Protocol**. The relatively low awareness level suggests there may be challenges in disseminating information on the Protocol to businesses operating within Nigeria.

To address this gap, an **awareness strategy is crucial**. Efforts to enhance communication strategies should target business associations and should include training and capacity-building programmes and emphasize the potential opportunities the Protocol offers for businesses to expand their market reach and competitiveness and drive innovation in the digital economy.

Figure 18a: Do you know about the AfCFTA Protocol on Digital Trade that has been negotiated?



Source: Authors' compilations from stakeholder consultations

3.4 Level of involvement in AfCFTA DTP negotiations

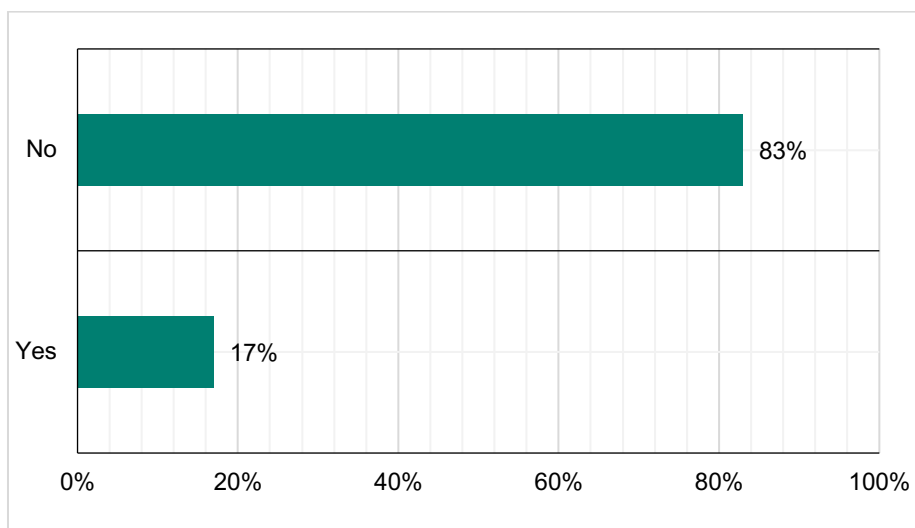
3.4.1 Public sector

As Figure 18a shows, 17% of public sector respondents said they participated in the negotiations and preparations for Nigeria's representation under the AfCFTA Protocol, while 83% stated that they were not consulted or involved. One public sector respondent stated:

To the best of my knowledge. It is possible that in the previous administration... in the initial phases when the AfCFTA was generally being discussed and negotiated, but not the Protocol on Digital Trade. I have not seen any file, report, or work stream on the ministry's engagement with the Protocol. It is a very unfortunate event. I did not. I cannot remember seeing anything on it. Right. And I should be aware.

According to Figure 18b, it appears that there was no thorough consultation with relevant public sector stakeholders. This has resulted in a fragmented approach to digital trade negotiations and may lead to varying national positions during implementation. This lack of cohesion may cause issues with interoperability and could potentially result in an increased lack of interest in digital trade policy harmonisation and wider adoption in Nigeria.

Figure 18b: Were you involved in negotiations or preparations for the Nigerian representation?



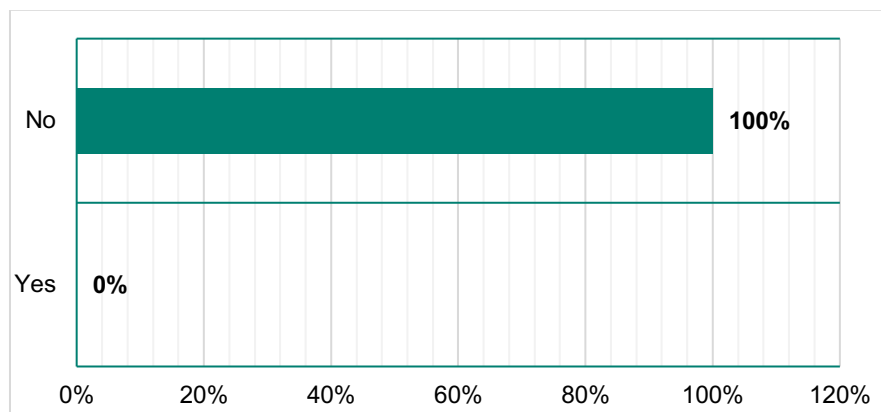
Source: Authors' compilations from stakeholder consultations

Figure 18c illustrates whether public actors have hosted sensitisation workshops for businesses, especially MSMEs, on the Protocol: none of them had. One respondent stated that:

We have hosted different stakeholder workshops for MSMEs in partnership with Nigeria Export Promotion Council; for small business, producers need to use raw standard data monetisation in the area of branding and also enabling opportunities or maybe processes to help their businesses or

their products to upscale to the level that will be acceptable for exports within the AfCFTA, but not on the AfCFTA Protocol on Digital Trade.

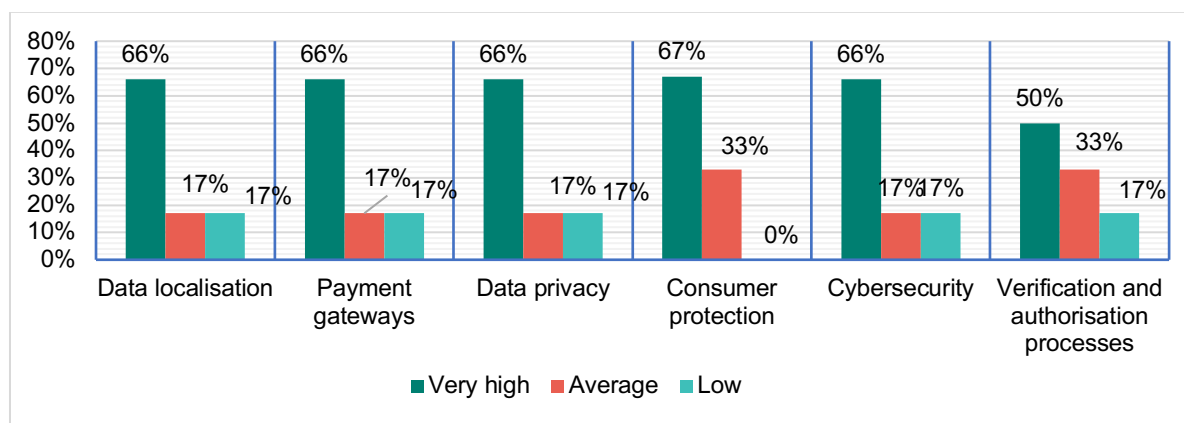
Figure 18c: Have you hosted sensitisation workshops for businesses, especially MSMEs?



Source: Authors' compilations from stakeholder consultations

The data in Figure 19 shows levels of understanding among public sector respondents regarding various aspects of the Protocol. It reveals valuable insights into the knowledge levels of stakeholders in key areas such as data localisation, payment gateways, data privacy, consumer protection, cybersecurity, and verification and authorisation processes (Annex 3).

Figure 19: How would you rate your knowledge on the following content of the Protocol?



Source: Authors' compilations from stakeholder consultations

A sizeable proportion of public sector respondents reported an extremely high level of understanding across multiple components of the Protocol. Specifically, 66% had a remarkably high understanding of data localisation, payment gateways, data privacy and cybersecurity. This suggests a **strong grasp on fundamental concepts related to digital data management and security within the public sector.**

Moreover, the findings highlight a consistent pattern across various aspects of the Protocol, with a notable portion of respondents demonstrating a high level of knowledge. For instance, 67% of respondents exhibited a very high understanding of consumer protection measures, indicating a robust awareness of the importance of safeguarding consumer rights in digital transactions.

However, the data also points to areas where there may be room for improvement in knowledge levels among public sector stakeholders. For instance, while the majority of respondents demonstrate a high understanding of verification and authorisation processes, a notable proportion – 33% – exhibited only an average level of knowledge in this area. This suggests a potential **need for targeted capacity-building initiatives or training programmes to enhance understanding and proficiency in authentication mechanisms and access control procedures.**

The findings underscore the **importance of continuous education and awareness-raising efforts to strengthen the regulatory capacity of public sector** stakeholders in the AfCFTA Protocol. By enhancing knowledge and expertise in key areas such as these, policymakers and regulatory authorities can better design policies that will meet the expectations of all stakeholders involved.

3.4.2 Private sector

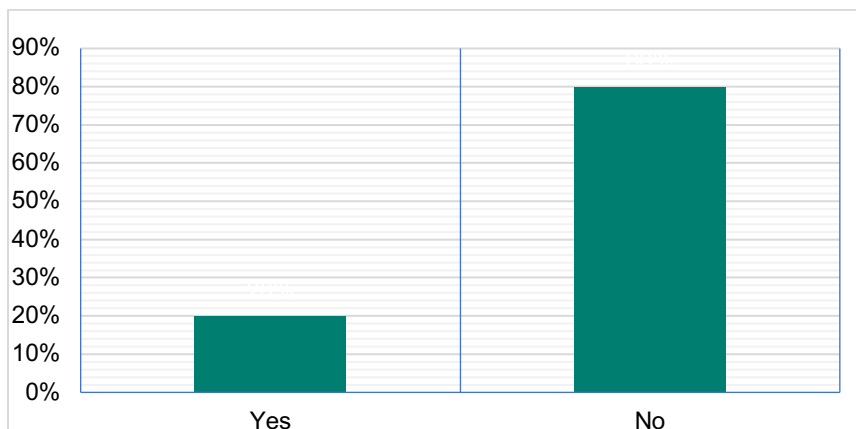
Figure 20 shows private sector responses on whether the firm was contacted directly or indirectly to be involved in preparing Nigeria's representation during the negotiations on the AfCFTA Protocol. Only 20% said yes. One private sector respondent stated:

I was not contacted, and I doubt that anyone within the organization was contacted, I very much doubt that.

Another private sector respondent said:

I was not aware. Okay, I am certainly sure that most financial institutions would have to have a representative, but I am actually not aware of all that because most thing that actually involves us would definitely go through the CBN and then distributed through a memo to the banks and other financial institutions as well.

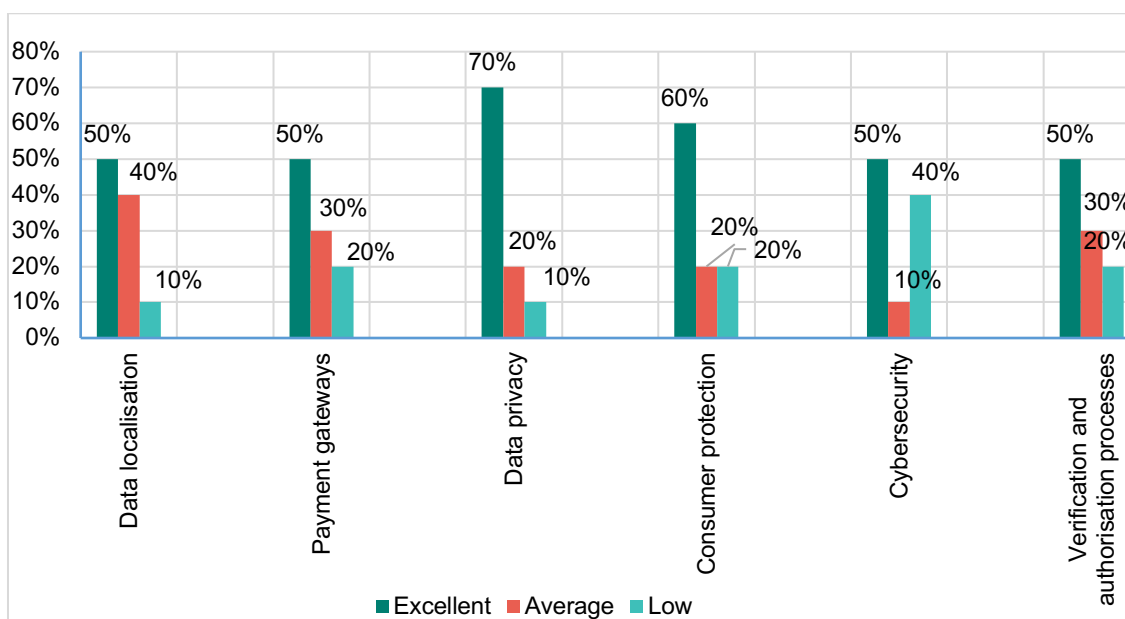
Figure 20: Were you directly or indirectly (e.g. through a trade body) involved in negotiations or preparations for the Nigerian representation?



Source: Authors' compilations from stakeholder consultations

The private sector knowledge level is analysed thematically with respect to data localisation, payment gateways, data privacy, consumer protection, cybersecurity, and verification and authorisation processes.

Figure 21a: How would you rate your knowledge on the following content of the protocol?



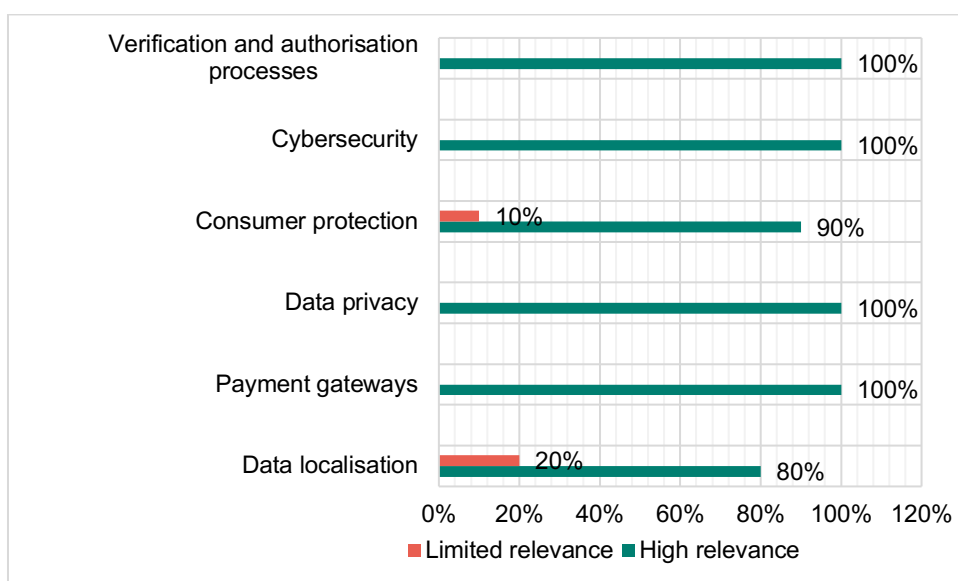
Source: Authors' compilations from stakeholder consultations

According to the data presented in Figure 21a, 50% of private sector stakeholders have an excellent level of awareness about data localisation, while 40% have an average awareness and only 10% have a low awareness. In terms of payment gateways, half of the stakeholders have an excellent level of awareness, while 30% have average awareness and 20% have low awareness. Data privacy has the highest level of awareness among stakeholders, with 70% having

excellent awareness, 20% having average awareness and only 10% having low awareness. Regarding consumer protection, 60% of stakeholders have excellent awareness, while 20% have average awareness and 20% have low awareness. In the case of cybersecurity, 50% of stakeholders have an excellent level of awareness, 10% have average awareness and 40% have low awareness. Finally, concerning verification and authorisation processes, half of the stakeholders have an excellent level of awareness, 30% have average awareness and 20% have low awareness.

Data privacy and consumer protection have the highest levels of awareness among private sector stakeholders, with 70% and 60%, respectively, having an exceptional understanding. This suggests **private stakeholders are well aware of the importance of protecting consumer data and ensuring consumer rights**. Cybersecurity has a notable discrepancy, with 40% of stakeholders having a low awareness. Given the increasing threats posed by cyberattacks, efforts should be made to **improve awareness and understanding of cybersecurity measures** among stakeholders. **Payment gateways and verification/authorisation processes also show room for improvement** in awareness levels, especially among those with low awareness percentages. Data localisation appears to have moderate awareness levels across stakeholders. Overall, this analysis suggests that, while there are areas of strength, such as data privacy and consumer protection, there are also areas that require more attention and education, particularly in cybersecurity and aspects of financial transactions like payment gateways and verification processes.

Figure 21b: Which of these areas do you find most relevant to your business operation?



Source: Authors' compilations from stakeholder consultations

According to Figure 21b, 80% of private sector respondents consider regulations on data localisation important for their operations. Additionally, 100% said that payment gateways, data privacy, cybersecurity, and verification and authorisation processes were essential for their operations; 90% confirmed that consumer protection was relevant to their businesses. However, 20% of respondents claimed that data localisation was not significant for their operations, while 10% said consumer protection was not essential. This implies that payment gateways, data privacy, cybersecurity, and verification and authorisation processes are crucial for most digital trade in Nigeria and across Africa. Therefore, appropriate reforms should be implemented to ensure full compliance with these vital elements.

3.5 Barriers to digital trade

Table 2 lists those identified by respondents during the consultation process.

Table 2 **Nigeria's digital trade barriers**

Poor infrastructure and inadequate regulation of the digital economy
High electronic transaction fees, outdated policies, currency differences
Policy inconsistency, product regulation, tariffs, Labour Law, technical problems, unhealthy government interference
Limitations in cross-border payment and data localisation
Lack of market access, currency differences, language barriers
Authorisation and verification process challenges
Payment channels, Visa restrictions and insurance of Visa
Lack of digital technology understanding and regulations
Lack of coherent policy and regulation implementation
Inadequate electricity supply
Lack of understanding of digital technology, internet service provider, fraud, environment
Restrictions on free flow of data, market access, network backup
Lack of critical digital skills, inadequate broadband infrastructure, limited access to internet

Source: Authors' compilations from stakeholder consultations

4 Economic impacts of the Protocol

The AfCFTA Protocol on Digital Trade is a landmark initiative with the potential to redefine the economic landscape of Africa, to foster a more integrated and digitally inclusive continent. As Nigeria stands at the forefront of this transformative journey, it is imperative to assess the economic implications of the Protocol on one of Africa's largest and most dynamic economies. This analysis seeks to explore the ways in which the Protocol could catalyse Nigeria's digital and economic integration into the broader African market. By leveraging its position as a leading tech hub and one of the continent's largest economies, Nigeria is uniquely poised to capitalise on the opportunities digital trade presents, thereby driving innovation, enhancing trade efficiency, and promoting sustainable economic growth.

This section looks at the direct and indirect economic impacts of the Protocol on Nigeria, and its potential to spur economic growth, foster digital infrastructure development, reduce trade costs, and enhance digital inclusivity, thereby outlining a roadmap for Nigeria's digital trade strategy within the AfCFTA framework. This analysis is based on Lemma (2024) that develops a framework to assess the impact of the AfCFTA Protocol on Digital Trade on the continent.

4.1 Estimating the potential impacts of the Protocol on Nigeria's economy

Research indicates that African countries could experience a substantial increase in their exports, of between 15% and 16.9%, by adopting an AfCFTA protocol that includes significant e-commerce and digital trade considerations (Were, 2015; Abendin and Duan, 2021; Bunje et al., 2022; OECD, 2023). Applying these projections to Nigeria, where the exports of goods and services totalled approximately \$69.09 billion in 2022, we can anticipate a considerable positive impact on the country's economy.

For Nigeria, an increase in exports by these projections could notably boost the nation's GDP per capita. Drawing from similar estimates made for Ghana, we could expect an increase in Nigeria's GDP per capita by approximately 11.7% to 12.5%. Using Nigeria's GDP per capita in constant 2015 US dollars (\$2,449.6) as a baseline, we can project an increase to about \$2,735.69–\$2,756.02.

To analyse the potential effects on employment, we must first estimate the expected GDP growth by applying the projected increase in exports to Nigeria's GDP. Then, using the employment-to-GDP ratio, we can infer potential employment growth resulting from this economic enhancement. With Nigeria's GDP in constant 2015 US dollars being approximately \$535.34 billion and a workforce of about 72.98 million in 2022, we can estimate the following:

- **GDP increases:** If exports rise by 15% to 16.9%, Nigeria's GDP might increase to between approximately \$615.64 billion (for a 15% increase) and \$625.53 billion (for a 16.9% increase).
- **Exports increase:** The value of Nigeria's exports could potentially grow to between \$79.35 billion (a 15% increase) and \$80.78 billion (a 16.9% increase).
- **Employment increases:** If Nigeria's GDP grows proportionally with exports, the subsequent increase in employment can be approximated. Assuming that every 1% increase in GDP would correspond to an equivalent percentage increase in employment (given constant labour productivity and no changes in labour market conditions or technology), Nigeria could expect to see an additional range of employment proportional to the GDP increase. With the projected increase in GDP owing to the rise in exports after adopting the AfCFTA Protocol, the potential increase in employment can be estimated at the low end to generate about 10.95 million additional workers and at the higher end approximately 12.33 million additional workers.

These projections are based on economic models and assumptions and serve as indicative figures (Lemma, 2024). Actual outcomes may differ depending on real-world complexities, including changes in labour productivity, technological advancements, market conditions and the overall economic environment. Therefore, while these estimates provide a framework for potential growth, they should be interpreted considering possible variances in real economic conditions.

4.2 Estimating the potential impacts of the increased digital penetration on Nigeria's economy

As Nigeria engages with the Protocol, enhancing the nation's digitalisation, such as boosting internet accessibility, is a crucial complementary effort. National reforms aiming to deepen participation in the digital economy could amplify the growth impacts already expected from joining a digital trade regional agreement (IMF, 2023).

To gauge the impact of such national-level reforms in Nigeria, we consider the measure of digital penetration – essentially, the proportion of the population with regular internet access. Numerous studies have linked increases in digital penetration with positive economic outcomes. For instance, a 1% rise in digital penetration may spur employment growth up to 2.4%, a wide-ranging estimate underscoring digital access as a significant driver of job creation (Kim et al., 2022). The broader economic influence of increased digital

penetration includes potential rises in exports and imports, estimated at 0.2–4.3% for exports and 0.1–1% for imports, respectively. Such digital deepening is also correlated with GDP growth, up to 0.3%.

Applying these insights to Nigeria, a 10% enhancement in digital penetration could significantly bolster the economy. This improvement, representative of wider internet reach, could lead to potential employment increases proportional to the growth in digital penetration. With a 10% enhancement in digital penetration in Nigeria, the potential increase in employment could range from, on the low end, approximately 291,929 additional workers to, on the high end, approximately 17.52 million additional workers.

On the trade front, a 10% increase in digital penetration could elevate Nigeria's exports by an estimated \$138 million to \$2.97 billion, signifying a profound impact on the country's global trade dynamics. Furthermore, this digital advancement could augment Nigeria's GDP by approximately \$10.7 million, to \$1.606 billion. These projections highlight the expansive economic benefits of advancing digitalisation, particularly when combined with active participation in digital trade agreements at the regional level.

4.3 Estimating the potential combined impacts of the AfCFTA and increased digitalisation for Nigeria's economy

Using the model presented in Lemma (2024), the combined impact of adopting the AfCFTA Protocol and boosting digital connectivity in Nigeria by 10% could contribute significantly to economic growth. Nigeria's GDP in constant 2015 US dollars is already at approximately \$535.34 billion. Implementation of the AfCFTA Protocol is anticipated to increase exports by 15%, to 16.9%, correlating with a potential increase in GDP per capita by 11.7%, to 12.48%. This suggests a revised GDP figure ranging from approximately \$598.07 billion to \$602.19 billion owing to the AfCFTA Protocol alone. Additionally, enhancing digital connectivity is likely to further affect employment, exports, imports, and overall GDP, with each metric responding to increments in internet and broadband penetration.

Upon incorporating the effects of a 10% increase in digital connectivity, applying the more modest estimate of a 0.002% GDP increase per 1% rise in digital penetration, this could add an additional \$10.7 million to Nigeria's economy. At the higher end, with a 0.3% GDP increase per 1% rise in digital penetration, the additional increase could be as much as \$1.606 billion. Therefore, taking both the AfCFTA and digitalisation into account, the combined impact on Nigeria's GDP could range from approximately \$598.08 billion to about \$603.81 billion.

In terms of exports, the initial projection is an increase to between \$79.4 billion and \$80.7 billion as a result of the AfCFTA Protocol. A 10% rise in digital connectivity could add another \$1.38 billion to \$29.7

billion, leading to a potential growth in Nigeria's total exports to between \$80.78 billion and \$110.4 billion.

The combined potential increase in employment for Nigeria, considering both the impact of the AfCFTA Protocol and a 10% increase in digital penetration, could range from approximately 11.24 million to 29.85 million additional workers. This takes the lower estimate of the impact from the AfCFTA and the digital penetration at the lower end and combines it with the higher estimate from both factors at the upper end.

The analysis of the projected impacts of adopting the AfCFTA Protocol and enhancing digital connectivity in Nigeria reveals significant potential increases over the baseline figures:

- For **GDP**, the projections suggest notable enhancement, with the **low estimate representing an approximate 11.7% increase** and the **high estimate around a 12.8% increase** over baseline GDP. These figures highlight the considerable economic growth that could be achieved through strategic digital and trade policy interventions.
- In terms of **employment**, the potential increases are even more pronounced. The **low estimate could see an approximate 15.4% increase** in the workforce while the **high estimate might result in a 40.9% increase**. This underscores the transformative potential of digital penetration and trade liberalisation on job creation in Nigeria.
- Regarding **exports**, the analysis forecasts substantial growth, with a **low estimate indicating a 16.9% increase** and a **high estimate showing a 59.8% increase** over baseline exports. This emphasises the significant impact that enhanced digital connectivity and participation in the AfCFTA could have on Nigeria's position in the global trade landscape.

These key findings underline the importance of digital and trade policy reforms in stimulating economic growth, creating employment opportunities, and enhancing export capabilities in Nigeria.

4.4 Policy considerations

As Nigeria navigates the prospects of the AfCFTA Protocol, policymakers need to consider the manifold economic ramifications meticulously. This Protocol holds the promise to revolutionise the continent's economy by knitting together a more cohesive and digitally empowered Africa. Nigeria, given its stature as a pivotal technology hub and economic powerhouse in Africa, is in a strategic position to reap the Protocol's benefits, potentially driving innovation, streamlining trade processes, and achieving sustainable economic expansion.

Understanding the economic impact of the AfCFTA on Nigeria necessitates an exploration of the myriad ways it could stimulate Nigeria's digital and economic assimilation into the larger African

market. Nigeria's advantage as a prominent tech hub coupled with its significant economic scale bestows upon it a unique opportunity to harness the potential of digital commerce.

This analysis has aimed to decipher the direct and collateral economic impacts that the Protocol may have on Nigeria. The goal is to map out a pathway for Nigeria's digital commerce strategy within the ambit of the AfCFTA. Economic indicators coupled with the evolution of digital infrastructure portray Nigeria's economic health and the trajectory over time. For example, variances in GDP growth and per capita income over the past years highlight dips linked to economic downturns, demonstrating the ebb and flow of economic vigour. Such fluctuations, amid other socioeconomic variables, underscore the need for diversification and robustness in economic strategies.

The data on Nigeria's economic performance is revealing, showcasing resilience and potential despite various adversities. Initial vigorous GDP growth signalled a booming economy that later faced challenges because of external shocks and reliance on singular economic sectors, like oil. However, Nigeria's rebound post these shocks, particularly after the COVID-19 pandemic, illustrates the inherent economic robustness and underscores potential for revitalisation through diversification and the leveraging of digital technologies.

By integrating the AfCFTA Protocol into Nigeria's strategic planning, there lies a potent opportunity for economic revival. **Adoption of digital commerce is not merely a path to diversifying the economy but also a buffer against the volatility of the oil market,** paving the way for enduring economic growth.

5 Policy implications of the Protocol: how to enhance implementation in Nigeria

Digital trade in Africa is rapidly growing, specifically in digitally delivered services, but it still accounts for only a small fraction of global trade. The AfCFTA Protocol is an ambitious initiative to transform the way digital trade is conducted across the continent, covering data flows, the regulatory environment, electronic trade documents, payments, intellectual property rights and cybersecurity measures among other things.

Different African countries have varying levels of readiness to participate in AfCFTA digital trade, but the general expectation is on the government to ensure that digital trade operates smoothly and seamlessly with other member states while providing a foundation for individual countries to develop policies to support implementation at the domestic level. Across the continent, it is expected that the Protocol will enhance the use of digital technologies, which is projected to increase digital services exports by \$74 billion between 2023 and 2040, doubling Africa's global share (WTO, 2023b).

The impact of the Protocol on Nigeria's trade and economic ecosystem will be positive or negative depending on the country's ability to implement its provisions. Both private and public sector respondents expressed positivity regarding the benefits of the Protocol for their businesses and the economy.

A private sector respondent said:

I think for us in terms of opportunities to be essentially a larger marketplace, right, with a lot more ease. So as opposed to this situation where we have had to register in Nigeria, and then go to Kenya, go to Ghana, there is a certain ease that will come with the implementation of the Protocol. Wherever we can access this market a lot easier. The potential economic benefits to our organisation will also include an increase in the volume of digitally ordered and digitally delivered services across the continent, African countries will harmonise the regulatory environment in individual countries. In this regard, the Protocol is crucial to ensure that the final framework is in alignment with best practices to ensure interoperability.

The impact of the Protocol can best be understood when viewed from a wider digital economy perspective. In practical terms, it is expected that it will:

- enable African businesses to transact online with ease with buyers and sellers in any African country
- enable member states to attract domestic and foreign investment in their digital economy
- promote inclusiveness in digital trade, eliminating barriers to women and youths' participation in the digital economy
- provide Nigeria with a framework that establishes robust cross-border data privacy and protection measures, set standards for data breach reporting, data handling and consent mechanisms
- create an enabling environment for e-commerce by addressing challenges relating to electronic signatures, dispute resolution, consumer protection and online payment systems
- emphasise the need to invest in digital skills development, broadband networks, and the enhancement of internet access, so as to provide sufficient digital infrastructure and connectivity, which is essential for the digital economy
- address the protection and enforcement of intellectual property rights regarding cross-border digital services and products

Finally, findings from the survey indicate that the Protocol will have the following potential impact in Nigeria (Table 3):

Table 3 Potential impact of the AfCFTA Protocol

Potential impact	Relevant Protocol item
Strengthened enabling environment for digital trade, such as cybersecurity provisions	Digitally deliverable services
Increased consumer trust	Digitally ordered goods and services
Comprehensive privacy protection provision	Digitally ordered goods and services
Online consumer protection provisions	Digital trade flows
Addressing unsolicited commercial electronic messages	Digitally ordered goods and services
Lower market entry barriers to other African countries	Digital trade flows
Facilitating small businesses' participation in digital trade	Digital trade flows
Rules-based provisions regarding market access and national treatment of ICT services	Digital trade flows
Reduced transaction costs for businesses by facilitating electronic transactions	Digitally delivered goods and services
Reforms to domestic electronic transaction framework provisions	Digitally delivered services
Reforms to provisions related to electronic invoicing	Digitally delivered goods and services
Reduced cross-border digital trade costs	Digital trade flows
Removal of data localisation restriction	digital related activities
Africa rules related to cross-border transfer of data	Digital trade flows
Provisions encouraging paperless trading	All delivered goods and services.

Source: Authors' compilations from stakeholder consultations

5.1 Public sector view

The digital economy is very dynamic. Digital trade is a fast-evolving area. The need to create a regulatory environment that allows the digital economy to thrive alongside digital trade cannot be overemphasised. The Protocol aims to create an environment that supports the growth of the digital trade sector, with government agencies and regulatory bodies playing a key role. However, digital trade in Nigeria faces several challenges, such as policy inconsistency, lack of a supportive regulatory environment and bureaucratic bottlenecks. These issues need to be addressed to ensure the growth of the digital economy in Africa benefits everyone and leads to shared prosperity.

5.2 Changing role of government agencies and regulatory bodies

As previously discussed in this report, the role of the public sector is multidimensional as it relates to the digital economy and, more specifically, to digital trade. Underpinning a successful implementation of the Protocol in Nigeria is the need to develop the country's specific digital trade policy that mainstreams existing policies and regulations to align with the Protocol.

The role of government agencies and regulatory bodies under the Protocol should be to create an enabling environment that will support the sector's growth. As part of Nigeria's readiness to implement the AfCFTA Protocol, government policy such as the **Nigerian National Broadband Plan**, the **National Digital Economy Policy and Strategy** and the **Nigerian Data Protection Regulation** should be reviewed to effectively support Protocol implementation in Nigeria by addressing funding constraints, regulatory bottlenecks, low levels of digital literacy, cybersecurity risks, infrastructure deficits in rural areas, socioeconomic disparities affecting digital inclusion and regulatory gaps in enforcement.

Furthermore, the review mechanism for implementation of the Nigerian Electronic Transactions Act, the NIN and the Financial Inclusion Strategy in Nigeria faces various challenges, such as inadequate infrastructure and insufficient technological capabilities to support electronic transactions; security concerns related to electronic payments and data privacy; challenges in resolving disputes arising from electronic transactions through legal mechanisms; issues with digital identity verification and authentication in digital transactions; limited access to financial services in rural areas; low levels of financial literacy; and inadequate infrastructure and technology to support digital financial services.

The government needs to galvanise human resources and provide an enabling environment that can give private sector players the confidence to invest in developing infrastructure. In formulating a digital trade policy/strategy, it is necessary to ensure Nigeria's approach strikes the right balance between competing interests

(including those from other state parties) and broad participation of stakeholders (public debate with the private sector, civil society organisations and other stakeholders is important).

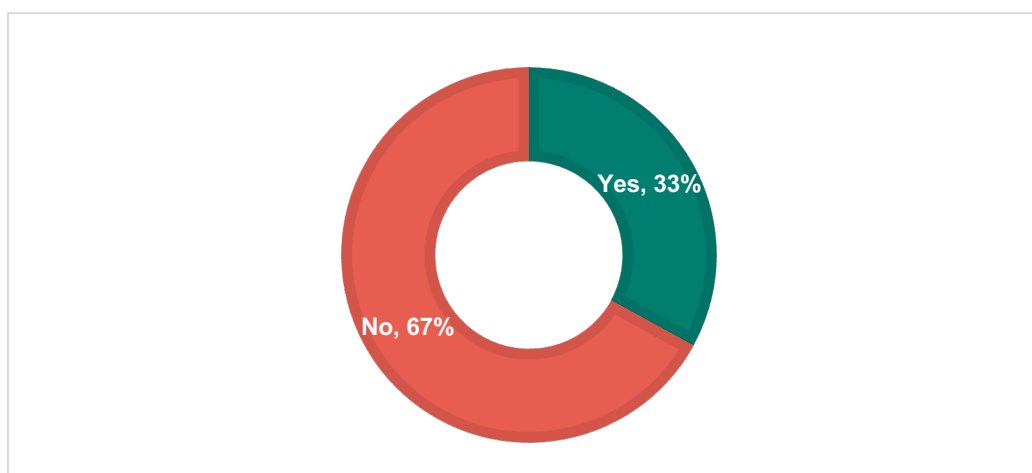
Figure 22 reveals that 67% of public sector entities that manage digital trade-related services do not have an official or specialist unit within ministries, departments and agencies that can offer valuable insights into the knowledge that will benefit the ecosystem. One respondent said:

No, we do not have an official or unit that manage digital trade, but the process is on to set up a digital economy department, which will support elements of trade. I mean, trade is not the primarily primary, you know, sort of... but then it understands that trade is significant. So, there are efforts to set up a digital economy, there's also department but then there's also effort to set up a digital trade desk, within the office of the minister, right, to support conversations around trade and Nigeria's engagement on digital trade.

Another public sector respondent said:

Yes, we have a unit that manages digital trade, basically, what we did is to actually create that unit within the ICT unit. The ICT unit is directly under the director general's office. So, in the course of our interface, our relationship with Google and the rest, the unit was created under the ICT department to manage issues related to digital trade.

Figure 22: Do you have an official or department that manages digital trade?



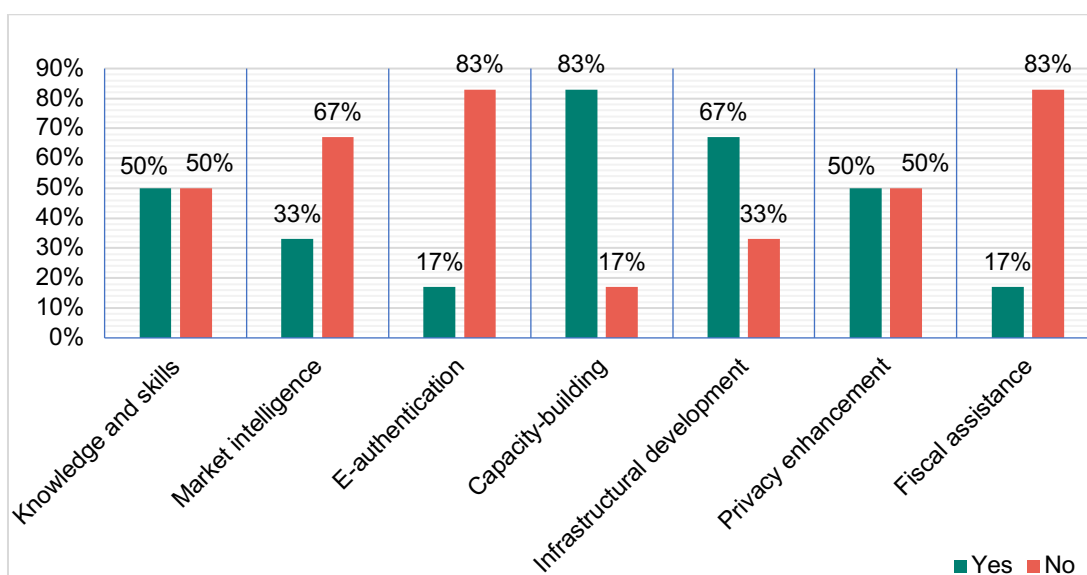
Source: Authors' compilations from stakeholder consultations

The findings underscore the **need for the public sector to develop its own capacity and broad understanding of the Protocol, to ensure regulatory harmonisation or alignment**. Furthermore, there is a need to examine existing policies, laws, and regulations (as highlighted in Section 2 of this report) with a view to evaluating their fitness to support the implementation of the Protocol in Nigeria, and

address the gaps identified in the policy and regulatory environment/framework.

As Figure 23 shows, there is a diverse range of support and services provided by Nigeria's public sector to Nigeria's private sector in the domestic digital economy ecosystem. On the provision of knowledge and skills support, 50% of public sector respondents stated that they were actively supporting private sector players in this aspect. In terms of market intelligence, 33% of public sector entities reported offering this service to the private sector. For e-authentication services, only 17% mentioned offering such services to the private sector. Capacity-building emerged as a major area of support, with 83% of respondents acknowledging that they offered such programmes. Infrastructure development is offered by 67%, privacy enhancement by 50% and fiscal assistance by only 17% of public sector respondents.

Figure 23: Was assistance provided to private sector players?



Source: Authors' compilations from stakeholder consultations

This analysis highlights the varied roles and responsibilities of Nigeria's public sector in supporting the private sector within the digital economy ecosystem, with capacity-building and infrastructure development emerging as key areas of focus for many public sector entities. **Regulatory bodies, in particular, need to be part of the policy formulation processes to ensure terms and objectives are clearly defined, understood, and articulated** in published documents that provide guidance to the private sector.

5.3 Importance of inter-ministerial collaboration

It is acknowledged that the efficient regulation of digital trade is necessary for digital trade ecosystem stability, which will help build online trust and stimulate economic growth. This efficient regulation of the digital trade ecosystem can be achieved through **inter-ministerial collaboration**. It is important to create a synergy that will

accommodate all stakeholders and enable an environment for innovation and interoperability in the wider digital economy.

One of the major challenges facing the Nigerian government is the inability of the public sector to collaborate effectively among different ministries. This results in a missed opportunity to capitalise on cross-sector expertise and access to more information on the Protocol. When ministries work together, they can combine their respective expertise and mandates to create effective regulatory frameworks. However, if regulations are inefficient or their implementation is ineffective, it can hinder commercial innovation, slow down the adoption of digital technologies and restrict economic growth. One of the public sector respondents said:

Inter-ministerial collaboration will lead to job creation, and increase the number of MSMEs, digital trade and of course the... overall development condition and standard of living.

This collaboration is essential for ensuring a comprehensive and cohesive approach to addressing the complexities and challenges of digital trade in the following keyways:

- a coordinated approach to policy development and implementation, allowing different government departments to work together towards common goals, such as promoting digital innovation, facilitating cross-border trade, and protecting consumer rights in the digital economy
- the avoidance of duplication of efforts, policies, and regulations
- a streamlined decision-making process
- policies and regulations that are clear and consistent, creating the sort of conducive regulatory environment that can allow businesses to thrive and take advantage of the opportunities offered by digital trade (and the Protocol)
- inter-ministerial memoranda of understanding that can foster an environment of collaboration and information-sharing, to avoid issues of information siloes and data islands, which can significantly hinder the positive impacts of the Protocol
- a shared understanding of 'legitimate reason' for certain actions: In several instances in the Protocol, state parties are given liberty to restrict data flows, impose digital taxes, localise data or review source code, providing there is a 'legitimate reason' for such action. State parties are expected to develop an annex outlining what constitutes legitimate reason. Inter-ministerial collaboration (especially between state parties) can help parties develop a shared understanding of what constitutes a legitimate reason and help identify and justify all pre-existing regulatory measures that could result in either party breaching the provisions of the Protocol
- alternative solutions for regulators to thorny issues such as data localisation to achieve shared objectives

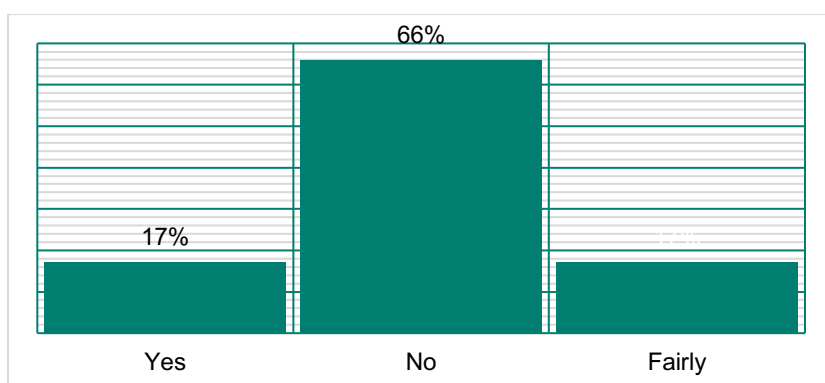
5.4 Proposed policy changes

Proposed policy changes should include a comprehensive, detailed, and measurable digital trade framework that promotes a market-driven economy through a systematic but progressively liberal approach. This policy should encourage collaboration between private and public sector players at the same time as adherence to the principles of transparent and free trade.

Trade is a valuable tool for driving sustainable development and diversifying the Nigerian economy away from overreliance on oil. Therefore, policy changes should prioritise supporting Nigeria's participation in AfCFTA digital trade by reforming and realigning long-standing policies that could hinder Nigeria from benefiting from the AfCFTA. Nigeria's digital economy is crucial for strengthening its geopolitical position and supporting economic growth, job creation and macroeconomic stability.

Nigeria, with the largest population of strong entrepreneurial youth on the continent, needs to create an environment that fosters digital innovation and enterprise. This will position Nigerian e-commerce firms with a focus on innovation to benefit from the AfCFTA. Additionally, Nigeria should seek collaborations with partner countries and firms to continue building out 5G networks and data storage infrastructures in the country.

Figure 24: Are the current rules and regulations in Nigerian digital trade sufficient to enhance Nigeria's digital trade exports?



Source: Authors' compilations from stakeholder consultations

According to the chart in Figure 24, 66% of respondents believe the current rules and regulations regarding digital trade in Nigeria are insufficient to boost Nigeria's digital trade exports. Only 17% think that the existing rules and regulations are enough to enhance Nigeria's digital trade exports.

To improve digital trade in Nigeria, some policies need to be reformed. These include those dealing with cross-border electronic transactions, investing in digital trade, licensing, and reforming the policy tax break on pioneer status. The reform should include the digital trade industry and its players, who focus on spreading innovation across Africa. It is

also necessary to review current taxation laws in Nigeria to create a favourable environment for private sector digital economy actors. The review should focus on issues such as **tax breaks for IT companies and the possibility of a pan-African e-commerce tax.**

Another proposed policy change is to **establish a national domestic regulatory framework tasked to build Nigeria's capacity** in analysing and using stored data in the context of the Africa digital economy landscape. The National Office for Technology Acquisition and Promotion, an agency under the aegis of the Federal Ministry of Science and Technology, established by Decree 70 of 1979, is responsible for the acquisition, promotion, and development of technology in Nigeria. In line with the demands of a rapidly Africanisation and liberalising world and the changing dynamics under the AfCFTA, the Nigerian government should recognise the importance of enhancing the nation's productive capacity and competitiveness of Nigeria digital trade exports.

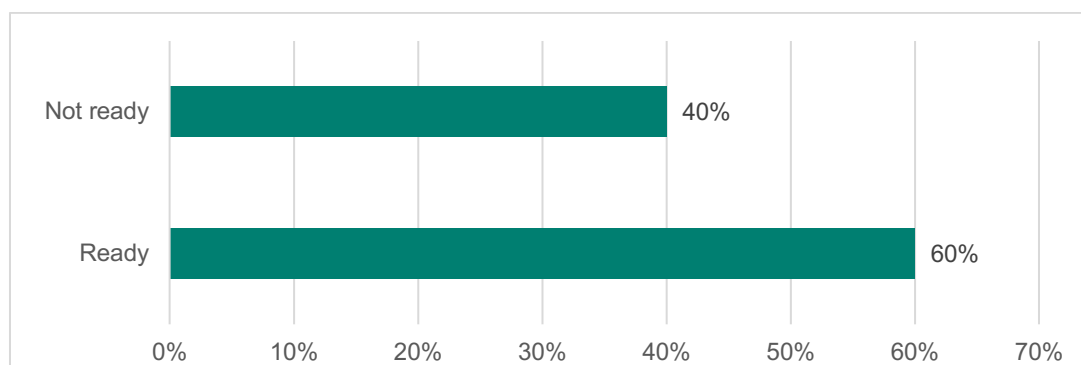
5.5 Private sector view

The Protocol is designed to promote intra-African digital trade and enhance cooperation on cross-border digital activities among state parties. It will shape businesses' operational landscapes, influencing how they engage in digital transactions, manage regulatory frameworks, and leverage digital technologies to drive efficiency and growth. It is important to note that digital trade involves data and information flow across borders, which requires market rules to be interoperable. This will provide traders with the assurance that the rules will not suddenly flip on them. For foreign investors, this is a critical point on which investment decisions will be made.

As Figure 25 shows, respondents were queried about their organisation or sector's preparedness for the forthcoming implementation of the Protocol. The data reveals that 60% of respondents expressed confidence in their readiness to engage in trade activities under the new Protocol; the remaining 40% felt unprepared for trade operations under the AfCFTA's digital trade framework.

This disparity in readiness levels offers valuable insights into the existing landscape: the majority of businesses indicating readiness are likely those already involved in trading activities with other African countries. Conversely, among those who indicated a lack of readiness, there appears to be a reliance on the expectation of receiving support, particularly in the form of capacity-building initiatives, to effectively engage in trade operations under the AfCFTA Protocol.

Figure 25: How do you perceive the readiness of your organisation/sector for anticipated implementation of the Protocol under the AfCFTA?



Source: Authors' compilations from stakeholder consultations

This analysis underscores the importance of targeted capacity-building efforts and support mechanisms to bolster the preparedness of businesses and sectors that are currently less equipped to navigate the complexities of digital trade within the AfCFTA framework. Such initiatives can play a pivotal role in fostering inclusive participation and maximising the benefits of the AfCFTA Protocol across diverse sectors and organisations within the continent.

5.6 Enhancing operations

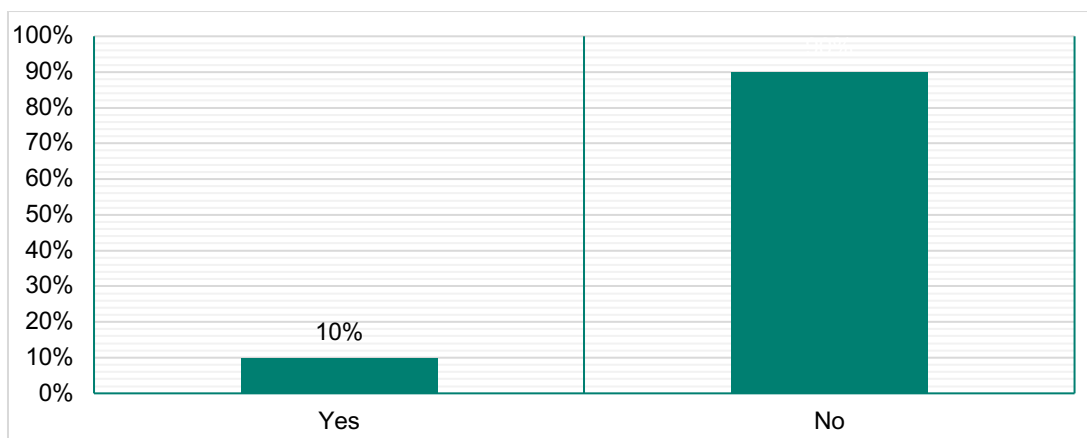
The Protocol will spearhead the initiative to bridge the digital divide and address the problem of uneven access to internet connectivity and digital infrastructure by creating an enabling environment for investment inflow to digital trade-related investment. It covers crucial areas such as data governance, data protection, cross-border data flows, online consumer protection, cybersecurity, and emerging technologies.

Private sector entities in Nigeria will need to adapt their operations to comply with these regulations, ensuring data security, privacy, and protection in their digital transactions. By promoting intra-African digital trade, the Protocol will open new market opportunities for businesses in Nigeria. Operators will need to align with the Protocol to capitalise on the expanded market reach, drive sales growth and enhance market diversification through digital channels. While the Protocol aims to streamline digital trade practices, businesses in Nigeria may face initial challenges in adapting their operations to comply with the new regulations.

Respondents were asked how the implementation of the Protocol would affect their business. Most said, 'hopefully, positively.' One respondent said:

Well, I mean, I believe the Protocol will give us a platform to increase our export and a bigger market to play. So, we expect to make more money across Africa.

Figure 26: Since the AfCFTA, have you adjusted your business' digital trade strategy to be able to benefit from its provisions?



Source: Authors' compilations from stakeholder consultations

The implication is that most **private sector players, both big and small, believe the Protocol will lead to increased revenue generation and transform the prospects of their business.**

However, it is revealing to note that Figure 26 shows that most businesses are yet to adjust their business strategy to benefit from the Protocol: 90% have not yet done so. One respondent even stated that their corporate strategy was sufficient for them.

Investing in compliance measures and digital infrastructure may be necessary to ensure operational efficiency and cost-effectiveness in the long run. The Protocol emphasises the adoption of innovative technologies and digital tools to drive operational efficiency and competitiveness. Private sector entities in Nigeria will need to embrace digital transformation, integrate digital solutions into their operations and leverage technology to enhance productivity and customer engagement (Lemma et al., 2022).

The Protocol will establish harmonised rules and common principles that aim to create a transparent, secure, and trusted digital trade ecosystem. For businesses in Nigeria, this means operating within a more standardised regulatory environment that can facilitate smoother cross-border transactions and compliance with digital trade regulations.

5.7 Increasing revenue

The AfCFTA Protocol is poised to have profound impacts on the revenue generation of Nigerian private sector operators and Africa at large. The Protocol is aimed at promoting intra-African digital trade and enhancing cooperation on digital transactions among state parties by creating a transparent, secure, and trusted digital trade ecosystem.

The Protocol aims to reduce or eliminate trade barriers in the ICT goods and services market. The innovation report highlights that

Nigeria's share of intra-African trade in these goods is negligible, which means countries with existing strengths in this area will have a competitive edge over Nigerian ICT vendors. This could negatively affect the revenues of local players, but it could also encourage them to scale up and become regional players.

On the other hand, when asked how the Protocol would affect daily operations or revenue streams, one respondent stated that:

The Protocol will have a positive impact on revenue because it will take away a lot of stresses and cut costs possibly of our business operation. No. I mean, definitely it is going to cut costs.

The Protocol will provide Nigerian MSMEs with access to a larger market, which could be a game-changer for them. A respondent collaborated this by stating:

I believe the Protocol will give us a platform to increase our exports and access a bigger market to play in. So, we expect to make more money across Africa.

The Protocol initiative will support seamless B2B e-commerce platforms. Another respondent mentioned that:

The more economic activities happen, the better it is for the government in the long run, not just to focus on revenue generation.

A respondent within the digital trade logistics value chain said:

With an adequate level of logistics and last-mile delivery, this is an opportunity for us to ensure that governments in member states are doing the right things to support multimodal transport. This will enable a lot of people in Nigeria, especially in a price-sensitive market, to move in a very affordable way and increase demands.

A respondent from the financial sector stated that, through the Protocol:

Banks actually belong at the forefront of global trade facilitation and play a pivotal role in supporting international trade and reaping significant advantages by generating revenue, mitigating risks, enhancing market expansion, and supporting MSMEs, economic development, market research, intelligence, liquidity, and international trade products.

The respondent went further to mention that the Protocol would:

... bridge the gap for the unbanked and also enhance convenience and efficiency, fostering innovation and collaboration on blockchain-based digital banking systems.

The Protocol will reduce procurement costs, bridge information gaps, increase market access and revenue, and reduce barriers to entry. Implementing the AfCFTA will lead to revenue gains for businesses while access to data could positively affect innovation capabilities in critical sectors. A respondent from the enterprise resource sector noted that they would definitely see:

... an accelerated impact of the AFCFTA Protocol in Nigeria on the revenue stream of our businesses, with the right supporting policies.

5.8 Large corporations vs MSMEs

International trade can be expensive for businesses, even for the larger ones. For MSMEs, which represent 90% of African businesses, the cost can be too high (UNCTAD, 2022b). The expenses come from complying with border regulations, accessing new markets, shipping, and logistics, and navigating non-tariff barriers like product quality and labelling standards.

The AfCFTA Protocol has the potential to have different impacts for large corporations and for MSMEs in Nigeria, shaping their participation in the digital economy and trade landscape. Understanding these implications is crucial for assessing the Protocol's overall effects on the business environment.

MSMEs in Africa employ at least 60% of the workforce. In some countries, like Ethiopia, Kenya and Uganda, the share goes up to 90% (UNCTAD, 2022b). Although data on MSMEs engaging in intra-Africa trade is not comprehensive, these businesses play a crucial role in individual African economies. Therefore, integrating them within the intra-African trade structure can help boost their productivity and innovative capacity, despite them typically being limited in their capacity to participate in international trade. Table 4 presents our findings on opportunities and risks large businesses and MSMEs may face when attempting to expand to other state parties under the Protocol.

Table 4 Opportunities and risks for enterprises in digital trade

Indicators	Large corporations	MSMEs
Opportunities	With established digital infrastructure and resources, they can expand their market reach beyond national borders.	New avenues to participate in international trade through digital platforms. Reducing trade barriers and enhancing digital connectivity can help MSMEs access global markets, attract international customers, and diversify their revenue streams.
	Access new markets, increase sales and enhance global presence.	
	Streamlining cross-border digital transactions, reducing trade barriers, and promoting digital innovation. Competitive edge in the digital marketplace, enabling them to capitalise on the growing digital economy.	MSMEs require support and capacity-building to fully understand the Protocol. Training on digital skills, e-commerce practices and compliance with digital trade regulations can empower them to compete effectively in the digital marketplace.
Risks	They may face increased competition and compliance costs associated with aligning operations with the regulatory requirements outlined in the Protocol. Ensuring data privacy and cybersecurity measures compliance. Expected to invest in areas beyond their scope and legal liability against non-compliance	May face some compliance costs associated with aligning operations with regulations. Data privacy rule in state parties' territory.
	Risk involved in adhering to cross-border data flow regulations that entail significant investments to protect intellectual property rights mechanisms and tax system.	Cultural difference from home country and in ability to cope and remain efficient, including in intellectual property rights protection. Risk regarding tax system compliance.

Source: Authors' compilation from stakeholder consultations

5.9 Reducing poverty and empowering women through digital trade (cross-cutting issues)

In Nigeria, women are the primary decision-makers when it comes to most household spending. As a result, they play a crucial role in shaping market trends and the broader economy. Technological innovation, fintech and digitalisation can be powerful tools for enhancing their financial literacy and access to essential services. This includes mobile apps, which women can use to make informed consumer and investment decisions.

Empowering youth and women through digital trade in Nigeria could have profound implications for poverty alleviation and gender equality. This can be achieved by creating jobs and economic well-being, especially for marginalised groups like women and youth.

Policies with long-term objectives can significantly empower youth and women in this regard. Such long-term policy objectives could include opportunities that digital trade presents in sectors such as ICT, fintech

and e-commerce to create a new avenue for employment, particularly for youth and women.

Digital trade can facilitate broader market access for MSMEs owned by women, enabling business expansion and income generation. Promoting access to digital financial services can help women entrepreneurs manage their finances effectively, invest in their businesses and improve economic well-being, which ultimately reduces poverty levels. Currently, more than 70% of female traders in West Africa (ECOWAS includes Nigeria) participate in informal cross-border trade, which can be addressed by implementing digital trade protocols (ECOWAS, 2023).

This study encourages greater participation of women and youth in the digital economy, making the following recommendations:

- Prioritise a female empowerment policy under the AfCFTA Protocol in response to economic gender inequality. Although almost half of the population of Nigeria comprises women, only 30% of them are employed in the formal sector. **Nigeria's Gender Inequality Index** is more than 60% lower than it could be if the country had full gender equality. It is also reported that women in Nigeria view entrepreneurship positively (NOTN, 2022). Therefore, providing **equal access to digital education and resources for women and youth to actively participate in the digital economy** will promote gender equality in the workforce and entrepreneurship among youths.
- Encourage digital trade as a way to empower women entrepreneurs to establish and grow businesses, access digital platforms and e-commerce tools, and overcome traditional barriers that have held them back. The AfCFTA Protocol will address the challenges facing African women in intra-African and regional trade, such as limited access to resources and financing, and gender wage gaps, thereby enhancing economic empowerment and gender equality.
- Take steps to promote economic empowerment among women and youth in Nigeria's digital economy ecosystem. This includes initiatives at the national level. Nigeria has many highly educated young people who are unable to participate in cross-border export trade, especially in the fast-growing e-commerce sector. This is because of a mismatch between academic curricula and professional trade skills, as well as limited access to finance and information. To address this challenge, the *NAC-AfCFTA should provide both internal and external training and build trade capacity at all levels – public and private and in non-governmental organisations (NGOs)*. It could **initiate a digital trade programme that focuses on enhancing digital literacy among women and youth** by providing training to enable them to engage in digital jobs and entrepreneurship and to contribute to gender equality in the digital economy.

- Empower youth and women through digital trade initiatives in Africa, which not only address poverty by creating economic opportunities but also play a crucial role in advancing gender equality by promoting women's participation in the digital economy and entrepreneurship. These initiatives are essential for fostering inclusive growth, reducing inequalities, and driving sustainable development in Africa.
- To ensure Nigerian youth are well-equipped to participate in international digital trade, NAC-AfCFTA should collaborate with other government departments, agencies at the federal and subnational levels, development partners, the private sector, and NGOs to organise workshops and professional training. NAC-AfCFTA should develop a *female-focused action plan, aimed at mainstreaming youth and women in the national implementation strategy for the Protocol in Nigeria*, including establishing courses on enhancing youth and women's understanding of the Protocol.

6 Conclusions

The AfCFTA represents a milestone in the African continent's economic integration and development. Envisioned as a catalyst for intra-African trade, job creation and sustainable growth, it represents a concerted effort by African nations to harness their collective potential and overcome historical barriers for success. The Protocol on Digital Trade lies within the broader framework of the AfCFTA. Recognising the transformative potential of digital technologies in driving economic growth and facilitating trade, it seeks to establish a regulatory framework conducive to digital trade within the continent. It aims to address challenges, seize opportunities, and ensure that digital transformation becomes a driver of inclusive and sustainable development across Africa.

In recent years, Nigeria has emerged as one of Africa's most dynamic and promising destinations for digital-related investment: 92% of all venture capital investment (in terms of dollar value) in Africa's technology sector goes to just four countries – namely Egypt, Kenya, Nigeria, and South Africa.

The digital economy ecosystem is multidimensional and cross-sectoral in nature. Nigeria's digital economy encompasses a diverse array of sectors and activities, from e-commerce, fintech and digital payments to telecommunication services, software development and digital content creation. Startups and tech hubs across major cities like Lagos, Abuja and Port Harcourt are driving innovation and disrupting traditional industries, while multinational tech giants are increasingly recognising Nigeria as a strategic market for expansion and investment.

Nigeria, with a large and youthful population, presents a vast pool of talent, with creative skills to innovate and entrepreneurial intellect to stimulate and propel economic growth in the digital economy. The Nigerian government has articulated a vision for leveraging digital technologies to enhance productivity, improve service delivery and create new economic opportunities for its citizens.

Nigeria's economic indicators and the development of its digital infrastructure reveal a complex picture of resilience and potential amid challenges. The country has experienced periods of robust GDP growth, particularly from 2008 to 2014, buoyed by high oil prices and reforms in sectors like telecommunications. However, economic downturns in 2016 and 2020, driven by external shocks such as oil price volatility and the global impact of the COVID-19 pandemic, have highlighted Nigeria's vulnerabilities. Despite these challenges, Nigeria

has shown signs of economic recovery, underpinned by its ability to bounce back from adversity, which underscores the importance of diversifying the economy and leveraging digital technologies for growth.

The AfCFTA Protocol on Digital Trade presents a strategic opportunity for Nigeria to enhance its economic integration with the broader African market. By capitalising on its strengths as a tech hub and major economy, Nigeria can harness the potential of digital trade to foster innovation, improve trade efficiency and support economic expansion. This integration could catalyse significant direct and indirect economic impacts on Nigeria, including spurring economic growth, fostering digital infrastructure development, reducing trade costs, and enhancing digital inclusivity.

Analyses of Nigeria's trade balance and FDI trends, along with the development of its digital infrastructure, indicate potential areas for policy intervention. The decline in trade balance and fluctuating FDI figures suggest a need for policies that enhance Nigeria's trade position and attract stable foreign investment, which the digital trade enhancements proposed by the AfCFTA Protocol could address. Furthermore, the trajectory of fixed broadband subscriptions and ICT services trade trends highlights the ongoing digital transformation in Nigeria, underscoring the importance of investing in digital infrastructure and services to support economic growth.

The potential economic impacts of the AfCFTA Protocol on Nigeria are substantial. By enhancing digital connectivity and participating in digital trade agreements, Nigeria could see considerable growth in exports, GDP per capita and employment. Projections suggest that adopting the Protocol could lead to a significant increase in exports and a corresponding boost in GDP per capita and employment, highlighting the transformative potential of digital trade for Nigeria's economy.

To maximise the benefits of the Protocol, Nigeria must focus on policy reforms that support digital and trade integration. This includes investing in digital infrastructure, enhancing digital skills and creating a conducive policy environment for digital trade. By doing so, Nigeria can capitalise on the opportunities presented by digital trade to drive economic growth, enhance competitiveness, and promote inclusive development.

However, while the digital trade economy presents opportunities for Nigeria, the country also faces the challenge of consolidating its leading position in the region's digital economy, by participating more broadly across the entire value chain. The challenges include inadequate infrastructure, cybersecurity threats, regulatory alignment issues and digital literacy gaps. High-speed internet and reliable infrastructure (both at the backbone and last-mile levels) also represent a major challenge that undermines Nigeria's digital trade ambitions. Issues are related to logistics reliability, quality of postal

services, property identification, road infrastructure and dematerialisation of payments, as well as the lack of a legal framework to secure the various players in the e-commerce supply chain.

Nigeria has implemented several regulations and policies aimed at promoting digital trade and fostering the growth of the digital economy. FMCIDE is responsible for regulating, formulating, and promoting these. Nonetheless, awareness across firms on the Protocol remains limited, and this represents a considerable knowledge gap in Nigeria. With this in mind, an effective dissemination strategy must be put in place to ensure successful implementation of the Protocol. This could cover information on the items included in the Protocol, such as data localisation, payment gateways, cybersecurity, and verification and authorisation processes.

The policy recommendations made in this study can be summarised as follows:

- Develop a broad-based **digital trade policy** through a collaborative process involving all relevant stakeholders (public, private, civil society, academia and MSMEs), taking all stakeholders' concerns into account. Such a policy, based on the AfCFTA Protocol, will focus on the country's development priorities, creating a shared understanding for all stakeholders.
- The AfCFTA Protocol gives state parties the liberty to be as strict as possible (within limits), providing they can provide justification that is acceptable to other state parties, or as liberal as they choose (also within the boundaries of the Protocol's scope). A domestic trade policy is therefore needed to spell out clearly to investors, entrepreneurs, digital economy actors and other stakeholders the country's regulatory objectives and the way it intends to achieve those objectives within the scope of the Protocol.
- Reform the domestic regulatory environment to align with international best practices, covering all relevant policy areas with regard to digital trade, with a strong focus on building trust.
- Expedite the establishment of relevant laws.
- Establish a formal mechanism in-country that allows businesses in Nigeria to flag or challenge existing bad faith practices by other state parties and escalate complaints, including a governance framework that allows for structured and good faith engagement with the AfCFTA Secretariat and other state parties.
- Develop or adopt specific international standards that are interoperable with other state parties' adopted standards. This is especially useful regarding electronic trade documents, invoicing, and electronic authentication standards. It could lead to increased adoption of paperless trade in Nigeria, boosting not just the country's intra-African trade but also its extra-African trade.

- Strengthen the capacity of relevant regulatory bodies to enforce intellectual property rights, copyrights, and trademarks, with a view to enhancing the environment for innovation and attracting investments in innovative enterprises.
- Create specific regulations on consumer protection in the digital economy and strengthen the capacity of consumer protection bodies to address infractions within the digital economy. When consumers know there are ways to pursue legal redress, this will help build trust in digital trade.
- Prioritise the localisation of MLETR.
- Prioritise the publication of official online versions of trade policies and domestic rules that affect cross-border digital transactions alongside the deposited natural language texts. This has the potential to significantly enhance transparency and trust.
- Require and/or encourage businesses to use digital platforms for trade (including government digital platforms and private commercial platforms).
- Prioritise policies aimed at boosting the confidence of stakeholders in digital trade.
- Support businesses to engage in digital trade through capacity-building and monitoring programmes.
- Use the power of government bodies to create an enabling environment for innovation.
- High-level support for inter-ministerial collaboration will promote the effective implementation of the AfCFTA Digital Trade Protocol in Nigeria. This collaboration should involve the Federal Ministry of Communications, Innovation and Digital Economy, the Federal Ministry of Industry, Trade and Investment, the Federal Ministry of Finance and National Planning, the Ministry of Science and Technology, the Federal Ministry of Justice, and the Nigerian Governors' Forum. By working together, these entities and their relevant Departments and Agencies can ensure that the NAC-AfCFTA has the coordinated support needed to mobilise the private sector and NGOs to advance Nigeria's digital trade agenda under AfCFTA.
- Establish a national regulatory framework for data management
- Prioritise female empowerment under the AfCFTA Protocol and encourage the participation of women entrepreneurs in digital trade. NAC-AfCFTA should provide both internal and external training and build trade capacity at all levels – public, private and NGO. It could initiate a digital trade programme that focuses on enhancing digital literacy among women and youth by providing training to enable them to engage in digital jobs and entrepreneurship and to contribute to gender equality in the digital economy.

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Annex 1: Comparison of Nigeria against select economies in Africa based on ranking

Indicator	Nigeria (109)	Mauritius (57)	Egypt (86)	South Africa (59)	Kenya (100)
Operational stability for business	128	9	96	96	104
Government effectiveness	125	36	97	72	91
Regulatory quality	124	27	99	75	96
Rule of law	112	34	76	58	86
ICT access	119	51	83	67	92
ICT use	117	62	99	88	111
Logistics performance	82	89	56	18	
University–industry R&D collaboration	122	88	50	36	64
High-tech imports, % total trade	97	87	75	49	59
ICT services imports, % total trade	100	14	72	22	118
FDI net inflows, % GDP	111	64	73	31	115
Citable documents H-index	60	113	47	31	53
Software spending, % GDP	88	83	72	28	84
High-tech manufacturing, %		107	57	56	82
Production and export complexity	118	65	68	69	89
High-tech exports, % total trade	96	84	81	59	85
ICT services exports, % total trade	116	38	65	95	24
ISO 9001 quality/bn PPP\$ GDP	124	38	92	59	90
Trademarks by origin/bn PPP\$ GDP	111	17	77	78	89
Industrial designs by origin/bn PPP\$ GDP	70	74	51	75	85
Creative goods exports, % total trade	103	62	38	55	87

Source: Global Innovation Index, WIPO

Annex 2: Nigerian stakeholder mapping

A. Telecoms operators (including mobile and fixed wireless operators, and ISPs)	B. Digital solutions
<p>MTN Nigeria Glo Nigeria Airtel Nigeria 9mobile NTEL GLOBALCOM 21st Century Technologies 101 Communications Limited Big Picture Nigeria Limited Alpha Technologies Ltd Airworld Technologies Limited BillyRonks Global Limited Brass-Wave Global Limited Bricklinks Africa Plc Broadbased Communications Ltd BrowsePoint Telecom Nigeria Limited CallMe Nigeria Limited Cedarview Communications Limited Cyberspace Limited EMTS Limited (9Mobile) FNL Engineering Limited Friends Wireless Limited Glo mobile Globacom Limited GTS InfoTel Nigeria Limited Imbil Telecom Solution Nigeria Ltd Inq Digital Nig Ltd (fmr Vodacom) iPNX Nigeria Limited Interconnect Clearinghouse Nig. Limited Interra Networks Limited Interconnect Clearinghouse Nig. Limited IT Sky Solutions Limited Mafab Communications Limited MYD Technologies Limited MTN Nig. Comm Plc (Mobile Lines) NATCOM Dev. & Inv. Ltd (nTel) Nationwaves Telcom Nigeria Limited Realife Telecommunications Limited Reston Communication Services Ltd RouteCall Communications Limited Skyway Technology & Services Ltd Smile Communications Nigeria Ltd</p>	<p>Union Systems – Optimus – trade finance Zinox – supply chain management solution Kobo360 – logistics/cargo tracking/delivery GetCapsa – digital invoice marketplace Codeware – supply chain management Omnibiz: retail distribution Fiducia – supply chain financing marketplace Tracc systems: supply chain visibility, supply chain analytics, shipping label generation, workflow automation, real-time visibility, digital documents Jetstream: shipment finance, logistics, visibility for shipments Gloopro: e-procurement, supply chain automation, Interswitch – reseller for Finastra in Nigeria, which also provides supply chain financing solutions Sabiroad – digital logistics Kwik – last-mile delivery in Nigeria Topship – shipping Vendease – logistics for restaurants CMA-CGM: accepting fully electronic bills of lading Jumia – B2C e-commerce Konga - B2C e-commerce Wakanow – online travel Travelstart – online travel Afex DashLuck Webdesign Creatixx Digital Fovero Digital Technologies Brand Envoy Africa Xpertech Solutions Group Mobirevo CEPED ICT CENTRE BrainPath Revent Technologies Descasio Xown Solutions Ltd OBIWEZY SLOT Jiji Buycar.ng Digital Rights Lawyers Initiative (DELI) BudgIT Nigeria</p>

Spectranet Limited	Eden Life
Swift Telephone Networks Limited	Transnational Corporation of Nigeria (Transcorp)
Telvida International Systems Ltd	Nwanndo
Temlio Communication Limited	The Place Nigeria
Tizeti Network Limited	Ikook
TNT Global Technologies Int'l Ltd	Glovo
Galaxy Backbone	Paradigm Initiative Nigeria (PIN)
Trucall Solutions Limited	Centre for Cyber Awareness and Development (CECAD)
Vezeti Services Limited	Digital Bridge Institute (DBI)
SWIFT Networks Limited	Andela
Netcom Africa	TechCabal
Huawei Technologies Nigeria	Code for Africa
Econet Wireless Nigeria	Microsoft Nigeria
Information Technology Association of Nigeria (ITAN)	Oracle Nigeria
Cellulant Nigeria	Google Nigeria
Rack Centre	Terragon Group
Softcom Limited	Ventures Platform
MainOne	Nolly land
CWG Plc	RushingTap
	NewAgeComedyHouse
	Kan Gar
	Digital Africa
	Opera Software Nigeria
	Hotels.ng
	TeamApt Limited
	Africa Prudential Plc
	Max.ng

C. Payment and fintech sector

Opay
 Flutterwave
 Monipoint
 All Commercial Banks/MFB
 Paga
 INTERSWITCH
 Digital Financial Services Lab (DFS Lab)
 Union Systems Limited
 Union Bank of Nigeria
 Renmoney
 PAYSTACK
 Unified Payment Services Limited
 Ericsson Nigeria
 VANSO Nigeria
 Paga
 Wema Bank
 Access Bank
 Africa Fintech Network
 Deloitte Nigeria
 SystemSpecs Limited
 SureRemit
 Ruby Finance
 ETranzact International Plc

E. Health and well-being

AFRIHEALTH
 DRO HEALTH

D. Business communities, industry groups and civil society actors

International Chamber of Commerce
 NACCIMA
 Paradigm Initiative
 African Women Entrepreneurship Program
 Organization of Women in International Trade
 Institute of Export Operations and Management
 Association of Nigerian Women in Business
 Association of Women in Trade and Agriculture
 NACCIMA Businesswomen Group
 Manufacturers Association of Nigeria
 Chambers of Commerce
 NECA
 NESG
 Fashion Designers association of Nigeria
 National Union of Textile Garment and Tailoring Workers of Nigeria
 Nigerian association of small and medium enterprises
 Nigerian Association of Small-Scale Industrialists (NASSI)
 Miners Association of Nigeria

F. Agriculture

Thrive Agric
 Crop2cash

NIGCOM HEALTH
MOBIHEALTH
WHISPAHEALTH

Afex
Agromall
BeatDrone
Farmcrowdy
Verdant Agric Tech
Trade Buza
Hello Tractor

G. Logistics

Gokada
Trans-Nationwide Express Plc (TRANEX)
Red Star Express
GIG Logistics
CourierPlus Services Limited
Brain Express
EasyDispatch
Fasta Logistek Limited
Kwik delivery
Team United Express Ltd

H. Training and education

Centre for Cyber Awareness and Development
Techherng
W.TEC (Women's Technology Empowerment
Centre)
Studylab 360
Ulession
RODUCATE
Prepclass
AFRILEARN
EDUFIRST
FLEXISAF EDUSOFT

Annex 3: Key concepts of digital trade and economy

Data localisation refers to the practice of storing and processing data within the physical boundaries of a specific country or region, often enforced through laws, regulations or policies mandated by governments. Instead of allowing data to be transferred freely across borders or stored in servers located anywhere in the world, data localisation requirements mandate that certain types of data must be stored and processed within the jurisdiction where it was generated or where it pertains to.

Payment gateways are technology platforms or services that facilitate online transactions by securely authorising and processing payment transactions between merchants (sellers) and customers (buyers). Essentially, payment gateways function as intermediaries between the merchant's website or application and the financial institutions involved in the transaction, such as banks or credit card networks.

Data privacy refers to the protection of individuals' personal information and sensitive data from unauthorised access, misuse, or disclosure. It encompasses the rights of individuals to control how their personal data is collected, used, stored, and shared by organisations, governments, or other entities.

Consumer protection refers to the set of laws, regulations, policies, and practices designed to safeguard the rights and interests of consumers in transactions with businesses, suppliers, and service providers. The primary goal of consumer protection is to ensure fair, transparent, and ethical practices in the marketplace, thereby promoting consumer confidence, trust, and welfare.

Cybersecurity refers to the practice of protecting computer systems, networks, devices, and data from unauthorised access, cyberattacks, data breaches and other digital threats. It encompasses a range of technologies, processes, practices, and measures designed to safeguard digital assets and ensure the confidentiality, integrity, and availability of information in cyberspace.

Verification and authorisation processes are fundamental components of access control systems, particularly in the realm of cybersecurity and information security. While they are closely related, they serve distinct purposes in ensuring individuals or entities have appropriate access to resources, systems, or information.