GSMA

The role of mobile technology in driving the digital economy in Nigeria

A partnership between mobile service providers and government to support Nigeria's future growth and prosperity

GSMA

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1. Executive Summary and Key messages

Digitalisation is one of the Nigerian Government's key strategies to achieve the country's socio-economic objectives.

The Federal Ministry of Communications, Innovation & Digital Economy (FMCIDE) Strategic Plan 2023 – 2027 articulates a clear ambition for digitalisation and provides a comprehensive programme and set of targets.[1] This recognises the role that digitalisation can have in economic growth, job creation and increased tax revenues across the economy.

The adoption of digital technologies by individuals and businesses has been shown to enhance productivity and raise household incomes. Consumers in Nigeria would benefit from increasing adoption and use of digital technologies. The faster the rate of digital adoption in Nigeria, the more quickly and extensively the country will benefit from these effects.

1 See Ministry of Communications, Innovation and Digital Economy Strategic Plan 2023 - 2027 https://fmcide.gov.ng/wp-content/uploads/2023/11/blueprint.pdf. Noting also the digital economy was a key pillar in the since elected government's APC Manifesto 2023: Renewed Hope Action Plan for A Better Nigeria, p. 49 – 52,

The telecoms sector is a major contributor to the economy of Nigeria and provides the foundations for the digital transformation process.[2]

The mobile telecoms sector accounted for 13.5% of total GDP in 2023, including the direct value-added by wider ICT industries and the impact of the sector in enhancing the productivity of other sectors. Overall, the mobile sector's total contribution to GDP is estimated at 33 trillion NGN in 2023, with 2.4 trillion NGN in tax revenue contributions.[3]

A successful digital economy would have a material impact on the economy of Nigeria over the next 3-5 years. It is estimated that growth in digitalisation in agriculture, manufacturing, transport, trade and government will result in an increase in GDP of around 2 percentage points by 2028. This would also create nearly 2 million jobs and raise an additional NGN 1.6 trillion in tax revenue.

Improving the policy environment through the initiatives described in this report would stimulate growth and development of the sector and the broader economy. It would boost coverage and adoption of mobile broadband, resulting in an additional 15 million internet users by 2028.

The mobile sector faces some major challenges across multiple areas of its business.

The financial performance of the mobile industry in Nigeria has slowed down in recent years after a long period of sustained growth.[4] It faces a number of significant challenges:

- The overall financial performance of the industry in recent years has not been sufficient to support the capital-intensive nature of the business.
- Revenue in Naira has stopped growing as the number of subscribers has increased. Falls in ARPUs indicate pressure on prices and reductions in average usage.
- Operating costs have increased significantly in the recent period. The primary driver of this has been increases in the cost of power for sites due to the rapid increases in the price of fuel, high and increasing costs of tax compliance because of the complex and overlapping tax structure within the country, and increased demand for forex due to contractual obligations for rollout that are denominated in USD.
- The cost of building and operating fibre-optic networks has increased because of the difficulty and expense of obtaining Rights of Way (RoW) from state authorities and the very high number of fibre cuts, primarily caused by construction work and vandalism. [5]
- Underlying these trends in revenue and operating costs has been the deteriorating macroeconomic situation in Nigeria. The high levels of inflation have pushed up the cost of many inputs into the mobile service providers' businesses.

Mobile service providers need to generate sufficient revenue to cover their operating costs and support this level of capex over the medium-term. If this is not realised, they are likely to cut back on either capital or operating expenditure or both. This results in a shrinking sector which leads to subscribers receiving a poorer quality of service and delays in coverage expansion.

In the short term, it would result in a reduction in the amount of tax revenue generated by the sector. In the medium term, a slow-down in digital adoption will forfeit all of the productivity gains and service delivery improvements that go with digitization.

2 ICT means Information Communication Technologies and is a common term for last 2 decades. Increasingly, it is also referred to as digital.

3 See Section 3A for a more detailed explanation of this estimation.

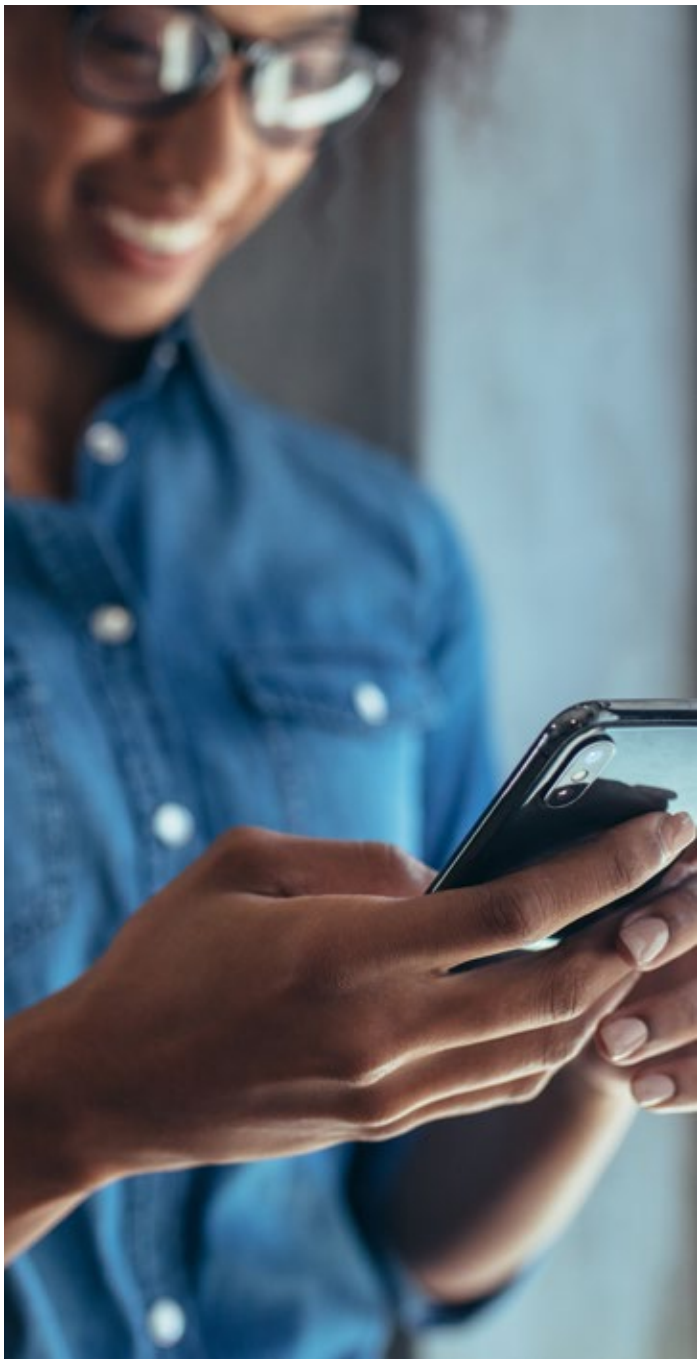
4 MTN Nigeria announced a N137 billion loss for the period ended December 31, 2023, down from a N348 billion profit in 2022, and further reported forex losses for first quarter 2024 (https://nairametrics.com/2024/04/30/mtn-nigerias-net-forex-losses-rises-to-staggering-n1-39-trillion/). Airtel's operating profit fell by 7% between 2022 and 2023, despite an increase in its number of subscribers and flat ARPUs (Airtel Africa plc Results for the year ended 31 March 2023 11 May 2023; p 14).

5 Techcabal article 19 April 2024: "₦27 billion in losses to MTN and Airtel due to damage to and repair of fibre cuts last year". Nigeria will criminalise fibre damage after causing ₦27 billion loss (techcabal.com)

The sector would further benefit from a policy and regulatory environment that takes account of the impact on the financial and operational sustainability of service providers.

Decisions on issues such as tax, regulatory fees, spectrum fees, customs duties and other government levies all have an impact on this. In particular, the current approach of the regulation of both wholesale and retail mobile tariffs by the Nigerian Communications Commission (NCC)[6] does not allow for the adjustment of tariffs to reflect the changing cost of inputs into the businesses and facilitate investment into improved network coverage and quality of service. By international standards, the NCC's approach to retail tariff regulation is not considered to be standard practice.[7]

In addition to the financial sustainability of the industry, further progress on the national strategy for digitalisation could be made through a partnership between the sector and the Government. The sector can contribute in specific ways to the Government's strategic initiatives. The Government, the NCC, and all federal and state ministries and regulatory authorities can, in turn, support the sector to deliver on these initiatives. This can be done by improving the sector's regulatory environment and its investment climate. Together, this will further support the Government's digital economy objectives.



6 See Section 108 Nigerian Commuications Act, NCC Regulations for Competition Practices.

7 Many countries, globally, adopt a regulatory framework that enables competitive markets and protects consumers, addressing anti-competitive behaviour and barriers to competition. Regulators undertake periodic reviews of the sector and, if so, apply proportionate regulation to address potential harm that may arise from it. In this context, regulators focus tariff regulation only on wholesale services such as call termination which are usually set at cost-orientated rates. Periodic reviews of these wholesale tariffs ensure that they reflect the cost of delivering these network services. This arrangement allows operators to set retail prices in a way that reflects both costs and market forces: See GSMA | Competition Policy | Public Policy; See Chapter 2 Digital Regulation Handbook (itu.int).

Through this partnership service providers are offering to support the Government in achieving its digital economy objectives but are also requesting policy changes by the Government.

How service providers can offer to support the Government in achieving its digital economy objectives

Continued investment in high-capacity communications infrastructure, including 4G and 5G networks and fibre-optic cable infrastructure

The service providers will continue investing in digital infrastructure to support the digital economy in Nigeria, provided that the economic and regulatory environment improves in a way that supports sustainable investment.

Development of and participation in public-private partnerships on digital public services and applications programmes

These can be integrated with digital payments, including e-government, education, healthcare smart cities, and security. A regulatory sandbox approach should be adopted for such services.[8]

Design and implementation of digital applications to support private sector development and formalisation of the economy

Service providers are able to support the adoption of digital technologies in the private sector through their commercial relationships with all businesses in Nigeria from large enterprises down to microentrepreneurs. A regulatory sandbox approach should be adopted.

When complemented by the digitalisation of government registration processes, this will accelerate digital transformation and support the process of formalisation of the economy and broadening the tax base.

Delivery of enhanced Quality of Service (QoS)

The sector recognises that delivery of high QoS is non-negotiable. Delivery of this should primarily be through market forces. However, the sector may benefit from a NCC consultation with service providers on a strategy for improving the quality of service that customers experience, including a progressive evolution from a QoS to a Quality of Experience (QoE) framework, and an action plan to address underlying barriers to QoS and QoE.

8 Regulatory sandboxes are generally not subject to the full regulatory regime, receive more regulatory guidance, and is subject to terms and time periods outlined by the Regulatory authority. Similar to launched last year by the Central Bank of Nigeria for fintech. See Pg 20 – 21 Digital Regulation Handbook (itu.int). See World Bank Global Experiences from Regulatory Sandboxes Report: https://documents1.worldbank.org/curated/en/912001605241080935/pdf/Global-Experiences-from-Regulatory-Sandboxes.pdf. See Kenya capital markets regulatory sandbox See Nigeria Central Bank regulatory sandbox Home | Regulatory Sandbox (cbn.gov.ng)

Policy changes that the sector is requesting in order to be able to deliver its support to the Government's digital economy objectives.

Implementation of Critical National Infrastructure legislation

Section 3(1) of the Cybercrime Act 2024 provides the President with the powers to designate certain computer systems, and/or networks as constituting Critical National Information Infrastructure, by order published in the Federal Gazette, on the recommendation of the National Security Adviser. This should be prioritised and accelerated for enactment and implementation.

Simplification and improvement of the RoW charging and administration process, harmonised across the country

- All government authorities (at national and sub-national levels) should apply the national maximum RoW fee of N145 per/LSQM adopted by the National Economic Council (NEC) for the deployment of fibre across all states in Nigeria.
- There should be a single point of contact in each state for the RoW application process.
- The duration for the approval process should be digitalised and limited to a maximum of one month.

Simplification and reduction of the tax burden on the mobile sector

Acknowledging the important work being conducted by the Presidential Committee on Fiscal Policy and Tax Reform, it is recommended that a comprehensive review of the level and impact of taxation on the sector and the Government's digital economy objectives is undertaken. This includes reducing to a single digit tax system, as directed recently by the President, and other recommendations made by Association of Licensed Telecommunications Operators of Nigeria (ALTON) submission to the Committee in September 2023.[9]

Adapting the regulatory environment that is more supportive of sustainable investment, and would benefit customers, the Government and the wider economy

- Change the basis for charging for spectrum fees from USD to Naira;
- Remove retail tariff price control regulations, and focus tariff regulation on wholesale services such as interconnection. In the interim, if retail price controls are retained, there should be:
  - (a) periodic tariff reviews, ensuring assessment of costs of service provision, to allow for adjustments to reflect the changing cost of inputs into the businesses and facilitate investment; and
  - (b) the introduction of a more pro-competition tariff regulation where upper and lower price bands are set by NCC, and allows service providers to launch services without prior NCC tariff approval, provided tariffs are within such bands; and
- Introduce regulatory sandbox approach to enable sector innovation in digital applications and services.

9 ALTON recommendations include: 1) harmonize RoW charge agreement across all States; 2) removal of changes in the Value Added Tax Act, which now subjects radio and television masts, transmission lines, and cell towers (base stations) to VAT; 3) Reconsider and lower Finance Act 2023's increase of the Tertiary Education Tax Trust Fund from 2.5% to 3%; 4) Remove Withholding Tax at 10% on income of Tower Infrastructure Providers; 5) Suspension of excise duty on telecoms services is welcomed and should be completely removed from the Finance Act; 6) Lower the Import Levy on Goods from outside Africa for sector; 7) Recent amendment to Section 32 of the Companies Income Tax Act removes capital allowance on telecommunication goods and services, and should be re-instated; 8) Lower 7.5% VAT on diesel importation for the sector; 9) Insert comprehensive constitutional amendment to clarify the powers of federal, state, and local governments regarding taxation, alleviating the ambiguity surrounding tax obligations.

2. Nigeria's Economic Development and Digital Transformation Strategy

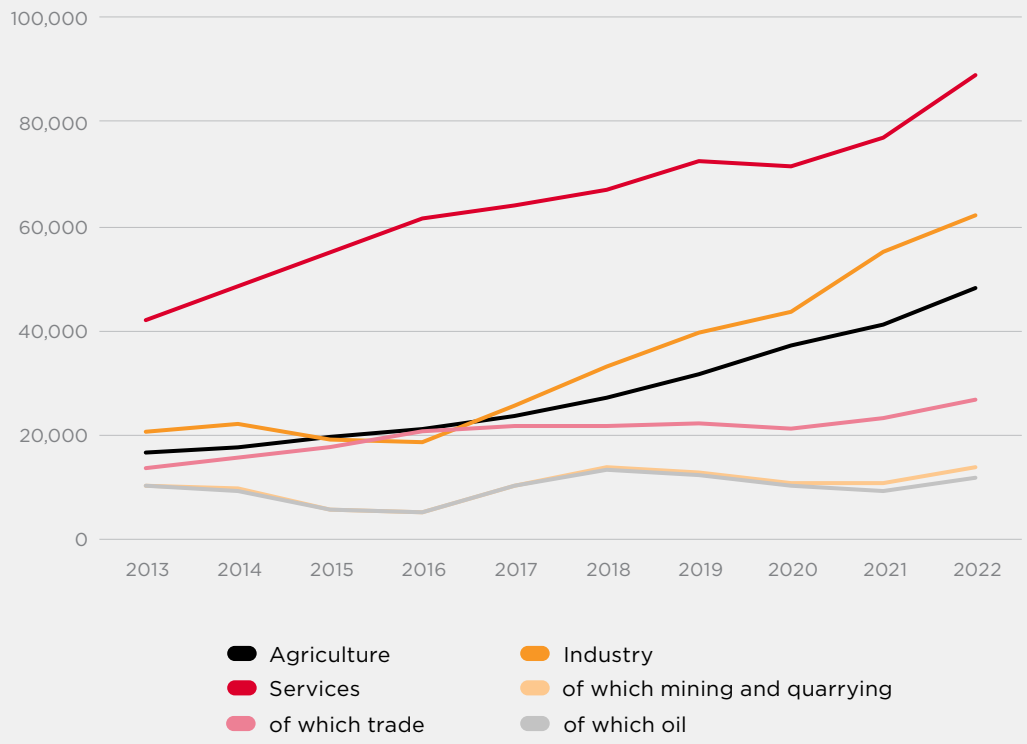
A. Economic challenges facing Nigeria

Nigeria is Africa's largest economy with a GDP estimated at USD 477 billion in 2022.[10] However, despite its position as a regional economic powerhouse, the country is facing major challenges to its future economic development. Some of these are long-term structural problems. Others are more short-term, reflecting recent macroeconomic shocks that the country has experienced.

One of the key long-term challenges for the country is its dependence on the oil industry for economic growth and tax revenues. The oil industry represented 6% of GDP in 2022 and contributed 45% to general government revenues.[11] This concentration of economic activity in one sector has created instability in the country's economy and government revenue streams which have fluctuated with global oil prices and the success of the industry. Oil production has been declining steadily for the past two decades having peaked in 1997.[12] Despite being an oil exporter, Nigeria is therefore benefiting less than before from cycles of higher oil prices.[13]

Figure 1

Evolution of GDP by sector



GDP at current market prices by economic activity (Naira Billion).
Source: NBS.

10 IMF WEO. The total GDP of Nigeria measured in USD at current prices has dropped significantly since 2022 as a result of the rapid depreciation of the Naira vs the USD.
11 IMF, Staff Report for the 2022 Article IV Consultation, Table 2, page 13, January 12, 2023.
12 World Bank, Nigeria Economic Memorandum, 2022
13 World Bank, Nigeria Economic Memorandum, 2022

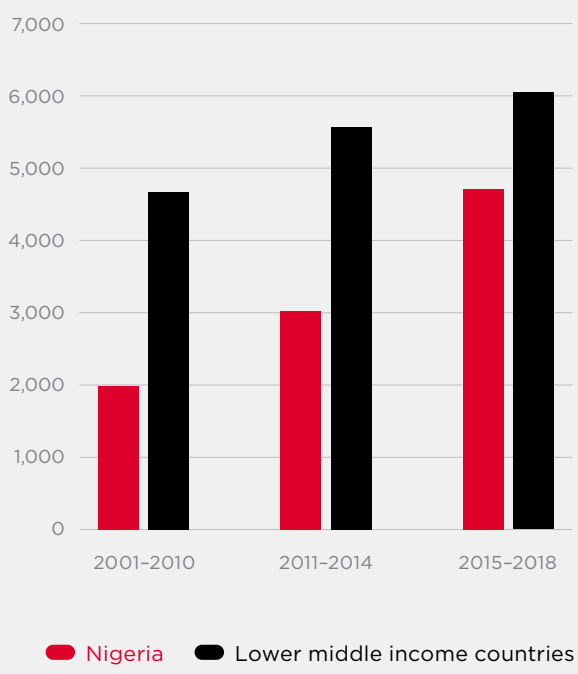
A second long-term challenge for the country is low levels of productivity. There are a range of factors that contribute to this problem, including a lack of infrastructure, low levels of FDI, governance issues and a shortage of appropriate skills. One further problem is the relatively small number of large companies which are typically a source of productivity growth in developing economies. Nigeria's business landscape is dominated by small and microenterprises. There are also very high levels of informality with the majority of enterprises not registered with any government authority.[14] These factors all contribute to low productivity in the economy.[15] Further, productivity has historically not grown as quickly as in many other low and middle-income countries (Figure 2).

Nigeria has recently experienced economic shocks which are creating major challenges for the country. High inflation and rapid depreciation of the Naira combined with reductions in the value of oil exports have had a major impact on the economy. At the same time, poverty rates have increased and public finances have come under significant strain.

Inflation averaged 24.5% in 2023 and increased further to 31.7% in February 2024. The value of the Naira fell by 96.7% against the US dollar following the liberalisation of the foreign exchange market. This has created difficulties for companies operating in Nigeria with significant increases in costs and customers spending less because of the pressure on their incomes. Diesel and petrol prices rose by 66.4% and 257.1% respectively in 2023, reaching N1,416.8/litre and N600/litre which has put a major strain on most businesses, including those in the digital sector.

Figure 2

Industry value-added per worker (Manufacturing)



Source: World Bank, Nigeria Economic Memorandum, 2022

14 World Bank, Nigeria Economic Memorandum, 2022; section 3.3

15 Research indicates that productivity of firms is driven by size and by informality. Small firms produce less value-added per worker than large firms. Similarly, informal firms produce less value-added per worker than formal firms. See World Bank, Nigeria Economic Memorandum, 2022: section 3.3 for more details.

B. Nigeria's Economic Strategy

In the face of these serious economic challenges, the Government has embarked on reforms aimed at stabilizing the macroeconomic environment, including partial removal of the petrol fiscal subsidy and unification of the foreign exchange market. At the same time, it is focusing on strengthening macroeconomic fundamentals, pursuing structural reforms, and creating an environment conducive to private sector growth and job creation. The Presidential Fiscal Policy and Tax Reforms Committee was established to propose measures for boosting domestic revenue, supporting investments in critical sectors like infrastructure, health, and education.[16] Efforts to tighten monetary policy and refocus the Central Bank of Nigeria on price stability are underway.[17]

Beyond macroeconomic stabilisation, long-term economic transformation will require investment in infrastructure and human capital to boost investment and productivity across sectors, strengthening public services and investments, reducing insecurity, improving the business environment, and increasing openness to trade.

Since 2016, the Government has had a temporary programme of cash transfers through the National Transfer Programme, also known as the Household Uplifting Programme. The Government recently announced that they would be restarting the programme, albeit temporarily, to mitigate the effects of higher gasoline prices. The Government announced that it would roll out cash transfers of N25,000 (about US$32) per month to 15 million recipients and their families (directly benefiting over 67 million Nigerians) for three months. The 2023 Budget included 400 billion Naira for these cash transfers indicating the commitment of the Government to shielding the poorest members of society from the effects of the economic crisis and the measures taken to address it.[18]

The Government is pursuing fiscal consolidation and has prioritized strengthening non-oil revenues to diversify its revenue sources away from crude oil, through increases in the rate of VAT and excise duties.[19] Improving tax administration and collection efficiency, enhancing compliance, and reducing leakages through digitalisation are critical actions identified by the Strategic Revenue Growth Initiative (SRGI).[20]

The country operates under fiscal federalism. Under this system, government revenue is distributed centrally from the Federal Government to subnational entities - States and Local Government Agencies (LGA) - according to a vertical and horizontal formula.[21] The Federation Account includes revenues from oil, corporate income taxes, custom and excise duties and VAT revenue from state governments. The total Federal Government revenue as a percentage of GDP stood at just below 10% in 2022, much lower than the regional average.

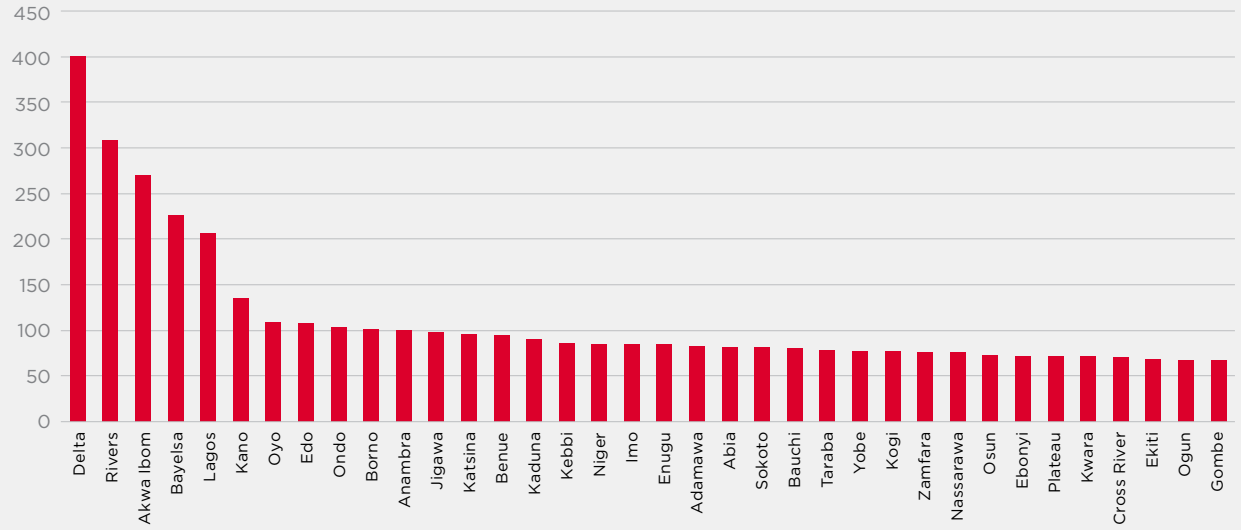
The formulas to assign federal revenues to States are complex. They include a constitutional requirement that 13% of gross oil revenue be shared among oil producing states in proportion to their production volumes, a vertical allocation of around 53% for the Federal Government, 27% for states and 20% for LGAs.[22] The horizontal allocation then determines how much of this disbursed revenue should go to each State and LGA based on factors such as population, landmass and social development. Federal Government and States also raise internally generated revenues (IGR) from personal income taxes and regulatory fees such as withholding tax ("WHT")[23] and RoW, representing around 20% of state revenues, on average.[24]

16 https://www.imf.org/en/News/Articles/2024/02/09/pr2443-nigeria-imf-exec-board-concludes-pfa
17 https://www.worldbank.org/en/country/nigeria/overview
18 World Bank Nigeria Development update 2023. Also: https://projects.worldbank.org/en/projects-operations/project-detail/P151488 .
19 IMF Article IV.
20 https://www.firs.gov.ng/wp-content/uploads/2023/04/MTP-2021-to-2024.pdf
21 Archibong, Belinda, 2019. "Explaining divergence in the long-term effects of precolonial centralization on access to public infrastructure services in Nigeria," World Development, Elsevier, vol. 121(C), pages 123-140; ean-François Maystadt & Muhammad-Kabir Salihu, 2019. "National or political cake? The political economy of intergovernmental transfers in Nigeria," Journal of Economic Geography, Oxford University Press, vol. 19(5), pages 1119-1142.
22 www.neiti.gov.ng
23 WHT on transactions for corporates is paid to Federal Inland Revenue, while WHT on transactions by individuals and partnerships is paid to State Inland Revenue.
24 Protests paper.

Figure 3

Tax revenue allocation by State, 2023

Billions



Distribution of Revenue Allocation to State Governments by Federation Account Allocation Committee, yearly data to February 2024. Source: Office of the Accountant-General of the Federation.

The oil and extractives sector is the largest single contributor to government revenue and oil producing states receive significantly more funds from it than others. Other large taxpayers in the private sector, including mobile service providers, have been targeted for increasing revenue generation in recent years through sector-specific levies such as the Electronic Money Transfer Levy and state-level taxes. The Electronic Money Transfer Levy was introduced in 2020 and applies to all electronic transactions through a one-off charge of N50 on electronic receipts or electronic transfer in the sum of N10,000.00. It represented 1.5% of the Federal Account in the year to February 2024.[25] The Cyber Crime Act 2015 was amended last year to apply 0.5% levy on all electronic transactions.[26]

Digitalisation will have a key role in supporting the Government's efforts to stabilise the Nigerian economy and stimulate economic growth. In the short-term, measures such as cash transfers to citizens can be done more quickly and efficiently using mobile money payments platforms. Beyond this, the digital sector is a source of investment and job creation which will contribute to the diversification of the Nigerian economy. Digital technologies also boost productivity growth in other sectors which will further contribute to the stabilisation and growth of the economy.

Digitalisation will support the Government's efforts to implement structural change in the Nigerian economy. One of the key priorities that has been identified in this area is to increase productivity in the agricultural sector. This will require – among other things - increased use of agricultural inputs, better storage facilities and more coordinated support across agencies. All of this can be more effectively achieved with the use of digital technologies to communicate and support small-scale farmers. Other priorities include efforts to reduce corruption and increase transparency among public sector employees. Initiatives such as these are all made easier through the use of digital technologies.[27]

25 https://kpmg.com/ng/en/home/insights/2022/12/the-electronic-money-transfer-levy-regulations--2022.html#:~:text=The%20Regulations%20provide%20for%20a,Bank%20of%20Nigeria%20(CBN). https://www.ibanet.org/not-so-novel-Nigeria-Electronic-Money-Transfer-Levy.

26 Senate moves to amend Cybercrimes Act, 2015 (vanguardngr.com)

27 See IMF, Staff Report for the 2022 Article IV Consultation; January 12, 2023,

C. Nigeria's Digital Economy Strategic Plan

The Federal Ministry of Communications, Innovation & Digital Economy (FMCIDE) published its strategic plan in October 2023 (Strategic Plan 2023-2027).[28] This plan targeted the Government's primary objective of raising productivity through technological innovation. The plan identifies five pillars: Knowledge, Policy, Infrastructure, Innovation Entrepreneurship and Capital, and Trade. Some of the targets identified under these pillars are summarised below in Table 1.

Table 1: FMCIDE Strategic Plan 2023-2027, Selected components

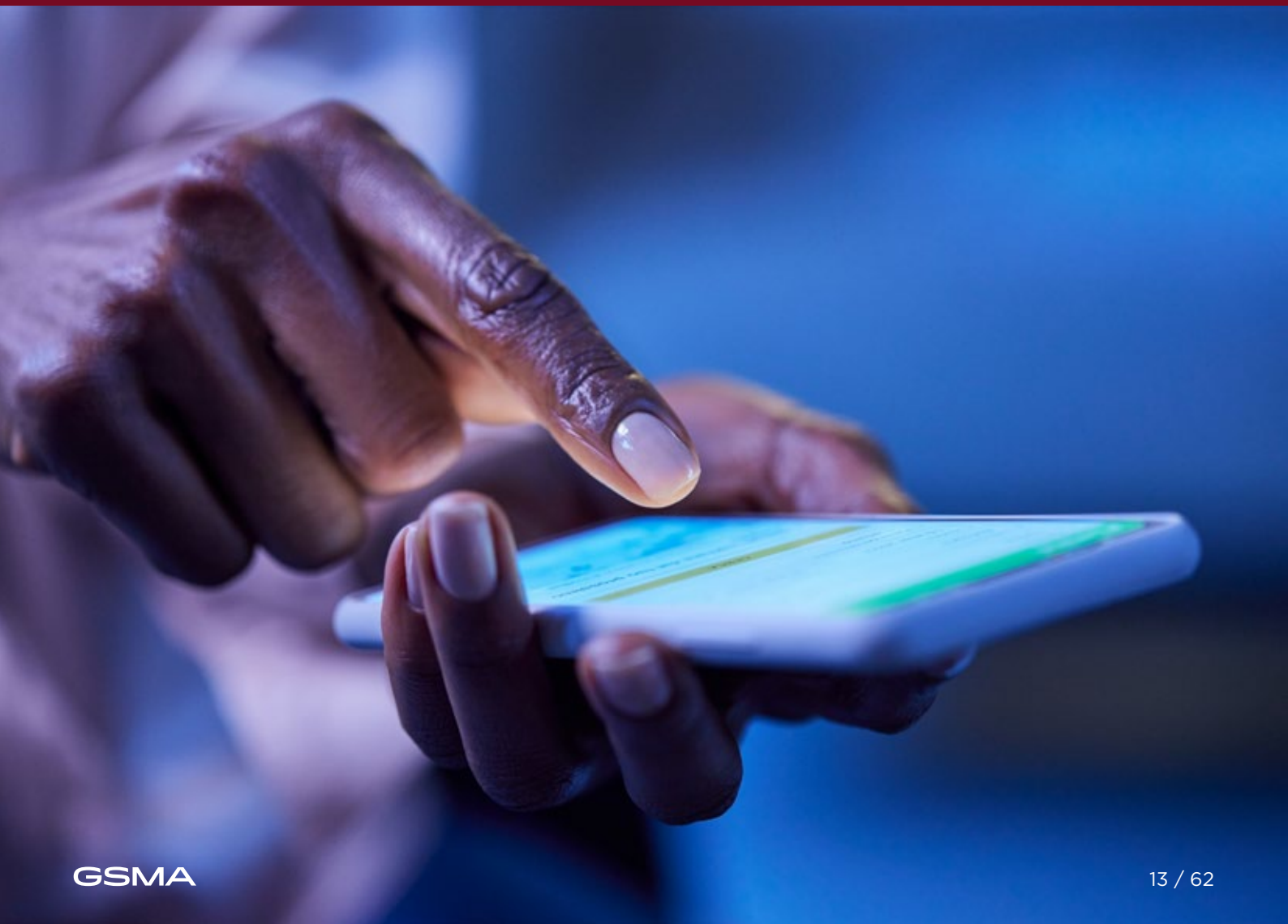
Pillar	Targets
1. Knowledge	• Train 3 million technical talents by 2027 • Increase digital literacy to 70% by 2027 • Position Nigeria in top 25 percentile of research in 6 key areas of technology
2. Policy	• Nigeria National Broadband Plan: 70% broadband penetration by 2025, download speeds of 25Mbps in urban and 10Mbps in rural areas by the end of 2025, 80% population coverage for broadband, 300-500% increase in broadband investment by 2027 • National Policy on Telecommunications: 22% contribution to GDP by telecommunications sector, 15% annual increase in investment into telecommunications, reduce take-up gap in rural areas from 61% to 20% by 2027, 100% increase in net revenue of telecommunications sector to Federal Government, 50% improvement in QoS. • National Digital Economy Bill • National Data Policy • National Digital Literacy Framework
3. Infrastructure	• Achieve 75% of fibre optic cable target set in NBP by end 2027, increase spectrum efficiency, 90% increase in broadband penetration.
4. Innovation, Entrepreneurship and Capital	• Increase capital raised by Nigerian tech start-ups to $5bn per year. • 25% increase in domiciliation of local tech start-ups
5. Trade	• Improve Nigeria's Economic Competitiveness Index (ECI) from 99th percentile to 75th percentile • Grow intra-African trade by 500% by 2027

This plan lays out a clear direction of travel for the digital sector in Nigeria. It summarises the main challenges and lays out the major steps that the Government will take in order to stimualte industry growth. It combines a focus on broadband connectivity with the supporting ecosystem of skills and the legal and regulatory framework for the digital economy. It also clearly identifies the need for investment and growth of the telecommunications sector in order to fill coverage gaps, increase broadband speeds and improve the quality of service. Funding remains a challenge as some of the initiatves contained in it will require significant resources which have not yet been earmarked. However, if funding is secured to ensure that the intiatives are implemented, it is likely that the plan will have a significant positive impact on digital transformation in Nigeria.

This report examines these issues in more detail. It looks at the mechanisms through which the digital sector supports the Government's national and sector objectives. It then focuses on specific policy issues and analyses how these affect development of the sector and the wider Nigerian economy.

28 Accelerating our Collective Prosperity through Technical Efficiency A Strategic Plan for the Federal Ministry of Communications, Innovation & Digital Economy

3. The Role of Telecoms in Supporting Nigeria's Economic Development



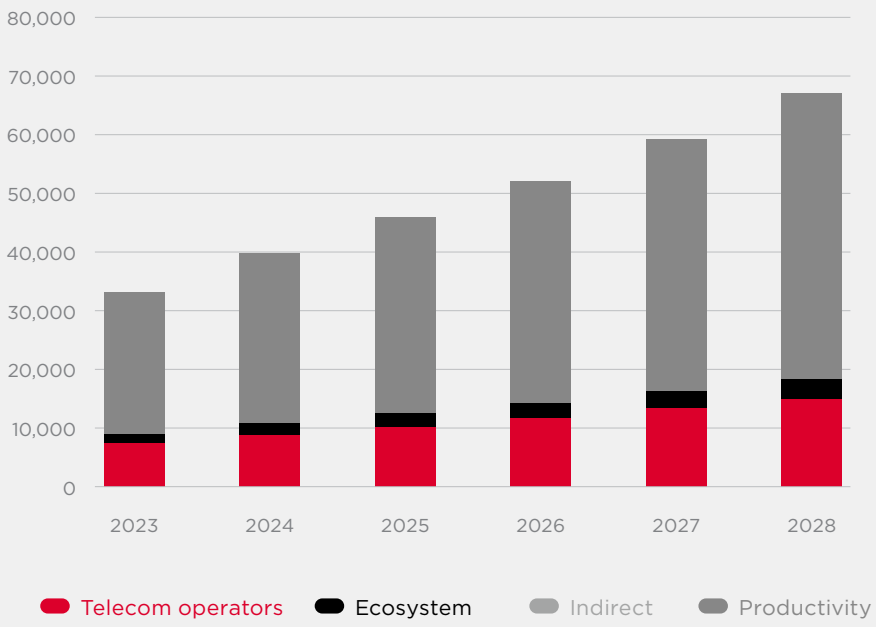
A. The digital sector's contribution to the Nigerian economy

The digital sector makes a contribution to the overall economy that is broader than the direct value-added by companies in the sector itself. There are also the indirect impacts of suppliers and employees in the industry. But the largest contribution to overall GDP is through the impact that the sector has on the productivity of other sectors. If this is added to the direct contribution to GDP, the total contribution of the sector to Nigeria's overall economic activity is much greater.

It is estimated that, in 2023, the telecoms sector was contributing 13.5% to the GDP of Nigeria.[29] Considering the direct and indirect contribution of the mobile ecosystem, as well as the productivity impact throughout the economy, **the telecom sector's contribution to GDP is estimated at 33 trillion NGN in 2023** (Figure 4).[30]

Figure 4

Direct, indirect and productivity impacts of mobile in Nigeria, billion NGN



Source: GSMA Mobile Economy SSA, IMF WEO and authors calculations. GDP at constant 2023 NGN.

29 Authors' calculations and https://ncc.gov.ng/statistics-reports/industry-overview . It is assumed that the NCC figures include direct, indirect and productivity impact of the telecoms sector. While the National Bureau of Statistics calculates that the broader ICT sector contributes directly 10.5%.

30 GSMA, Mobile Economy Africa, 2023 and extrapolation to Nigeria's economy.

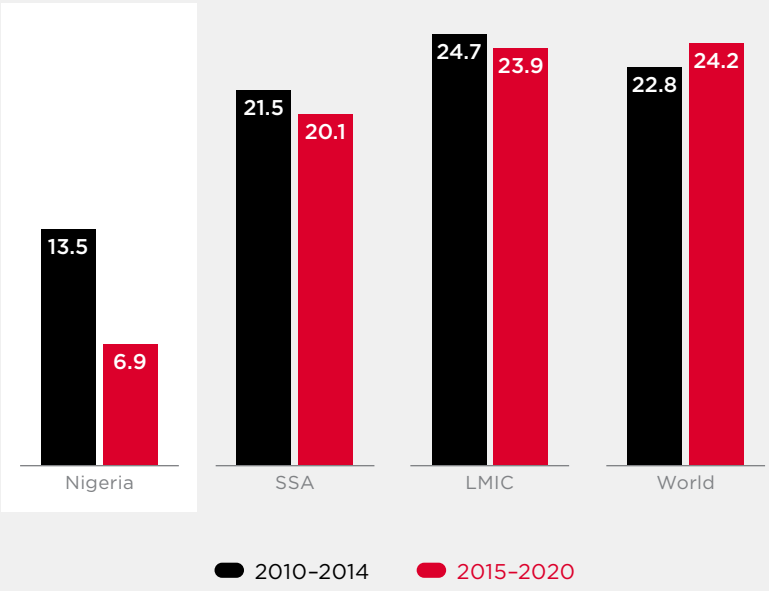
B. The role of mobile sector in increasing the tax base and rationalising public expenditure

The amount of revenue that the Government collects in Nigeria, as a percentage of GDP, is one of the lowest in the world (Figure 5).

Figure 5

Fiscal Revenues

Percent of GDP



Source: World Bank Country Economic Memorandum, 2022

Government revenue collection is concentrated in specific sectors and a small number of companies and individuals. These are particularly focused on the oil and gas industry, together with telecoms and large retail businesses. The oil and gas industry is estimated to have contributed 45% of total government fiscal revenue in 2023.[31] The telecoms industry is amongst the next biggest sectoral contributors.

This concentration of sources of government revenue creates volatility and vulnerability. It also leads to increasing tax rates on those sectors at the expense of others. This is an ongoing challenge, and the country would benefit from formalisation, broadening the tax base and raising the amount of government revenue collected from other sectors. This is a key priority for the Government and the digital sector has an important role to play in achieving it.

In order to bring more companies and individuals into the tax net, they need to be part of the formal economy (i.e. they are registered with the appropriate government and regulatory bodies). This does not, of itself, mean that they will pay taxes. However, it is a necessary first step in the process of widening the tax base. Once a company or individual is registered, it is easier for tax authorities to bring them into the tax net and enforce tax compliance.

31 IMF, Staff Report for the 2022 Article IV Consultation, Table 2, page 13, January 12, 2023.

There are significant barriers to companies switching from informal to formal status. Multiple steps are usually required to register a business with significant fees payable to the Government. Once registered, a company is then more likely to be subject to other types of regulatory or licensing rules which raise the costs of doing business. Once registered, companies are also more likely to be required to pay taxes, further raising the cost of doing business.

Increasing the rate of formalisation involves a broad effort across government to create positive and negative financial incentives. Ideally, it should be as simple and as cheap as possible for companies to register as formal businesses so that the barriers to registering are reduced. This needs to be complemented by more efforts at compliance in which companies are penalised for not complying with rules.

Digitalisation has a major role to play in the process of registration with the authorities. The time and financial cost of registering a business can be further reduced if the business registration process is fully digitalised and if the customer journey is made as simple as possible. This will reduce leakage and corruption that is often involved in such processes. Similarly with tax compliance, requirements to register and file taxes electronically can reduce costs and improve the quality of service.

There are many examples from around the world of developing countries using digital technology to enhance formalization of businesses and grow tax revenues. In Peru, for example, the government implemented electronic payrolls to allow virtual submission of payrolls to the Labour Ministry. Only 26,000 firms were reporting payrolls to the Labour Ministry before this reform. After electronic payrolls were introduced, the number of firms reporting to the Labour Ministry increased to over 200,000.[32] Similar results have been seen in other developing countries such as Malawi and Benin.[33]

Digitalisation in Nigeria could play an important role in the efforts to increase the level of formalisation in the economy and to thereby broaden the tax base. In the context of the current economic crisis, using digital channels for managing interactions between the state and the private sector is essential. These processes can be designed and implemented rapidly, they are low cost to operate and result in greater efficiency and fewer opportunities for leakage and corruption.

Mobile service providers are key players in this process. They provide the basic communications infrastructure through which these channels operate. They also increasingly provide the financial payments platforms through which interactions with governments are mediated. Further investment in digital infrastructure and services is therefore needed to support efforts to transform the Nigerian economy more broadly. Increased uptake of telecom services and mobile internet have been shown to have a strong positive impact on the level of formalisation in an economy.[34]

32 ILO, New technologies and the transition to formality: The trend towards e-formality, 2018

33 World Bank Policy Research Working Paper 7900: Can Enhancing the Benefits of Formalization Induce Informal Firms to Become Formal? Experimental Evidence from Benin

34 ILO 2018, New technologies and the transition to formality: The trend towards e-formality, Table A.1.

C. Using digital technologies to transform government and the delivery of public services

The UN E-Government Digital Index (EGDI) 2022 ranks Nigeria as having "Middle EGDI" at 140 of 192 UN Member States, behind many African countries. Access to infrastructure, affordability of services and devices, under investment in digital services, and digital literacy and skills are cited as reasons for this.

The Government's Strategic Plan 2023 -2027 recognises the importance of accelerating the digital transformation of the delivery of public services. Some of the key programmes are summarised in Table 2.

Table 2: Government digital programmes

Programme	Summary
Public buildings connectivity through National Broadband Alliance for Nigeria (NBAN)	NBAN is focused on building public-private partnerships for universal services, specifically connecting key public institutions to drive internet adoption and improve return on investment for national backbone and middle mile fibre infrastructure. Nationally the Ministry has calculated, there to be the following key public institutions: 19,567 schools, 10,035 healthcare facilities, 5,394 religious centres, 1,584 markets, 507 government buildings. Currently there are planned pilots in initial 7 states: Edo, Ogun, Kwara, Katsina, Imo, Abia, Borno and Nasarawa – with investment cases and focus on addressing barriers including right of ways being developed.
OneGov online portal	One Gov (Services - 1gov.ng) provides access to 271 digital government services, including ID and passport registration, business registration, taxation, payment of government services. This is supported by the Government Contact Centre.
Open Data Portal	data.gov.ng provides non-sensitive datasets from government MDAs to the public, increasing transparency and inclusion. The Strategic Plan 2023 – 2027 sets a target of achieving 60% of government information to be digitalised by 2026.
Electronic document management system (EDMS);	The EDMS programme will move all government documents online, providing increased information security, reduced cost, business processes automation and improved access to information.
Population census 2023	2023 Census is Nigeria's first Digital Census, utilising the use of mobile handset devices data and geographic information systems to create digital census maps to inform Census enumeration process.
E-Government capacity building programme	More than 2000 public servants have been trained, at federal and regional levels.
National ICT / Digital Health Strategic Framework	The ministries responsible for health and the digital economy have partnered to update the National Digital Strategic Framework with objectives to enhance the quality of care, reduce operating and administrative costs, facilitate faster access to health information, increase communication through the internet and increase productivity of health personnel.
Smart City applications	Federal government and state governments, notably Lagos, are seeking to develop Smart City services including traffic management, public safety and emergency response. Utilising the location-based services provided by mobile networks, combined with the increased adoption of national identification documents. Recent research cites examples such as Singapore and highlights the need for telecoms network infrastructure investment and operations; and citizen engagement to increase awareness of the benefits, address data privacy concerns, and build trust in the use of such services.

Sources: https://fmcide.gov.ng/initiative/e-government-initiative/; MEDIA | Federal Ministry of Health and Social Welfare; https://nationalpopulation.gov.ng/2023-census; (PDF) Smart Cities Initiatives in Lagos, Nigeria: Are there Lessons to Learn from the Leading Smart Cities? (researchgate.net).

Accelerating digital government programmes will have a transformative impact. Nigeria has already seen improved efficiencies in payments and compliance through **e-taxation programmes, automation of processes**[35] and the use of digital technology for voter enrolment and registration for the 2023 elections.[36] Digitalisation of other government services will have a similar positive impact on efficiency, effectiveness and reach of public services.

Digitalisation of services in healthcare and education provide examples of the potential impact. A 2021 study found that Digital Health adoption in Nigeria (through digital applications, moving to paperless) could unlock between USD 700 million and USD 3.3 billion (4 to 10 percent of total projected healthcare spending) by 2030.[37] The Federal Ministry of Education launched TERAS, which provides digital education for tertiary education institutions in October 2023, sponsored by the Tertiary Education Trust Fund and with mobile service providers amongst the partners.[38] Airtel has partnered with the Government and UNICEF on digital learning programme across over 1000 schools.[39] MTN's Data-Smart digital literacy programme has trained over 15 million Nigerians.[40]

Another opportunity is to expand digital government payments, including mobile money. Studies have found that digitalizing government payments could achieve savings equivalent to 0.8–1.1% of GDP.[41] Similarly, it has been shown that countries that have adopted digital Payment 2 Government (P2G) services experience a 1.2–1.3 percentage point boost in direct tax revenue as a share of GDP.[42]

It is estimated that **digital government has the potential to add 814 billion NGN in additional tax revenues** for the Government of Nigeria if the policies described in this report were implemented, equivalent to almost 2% of total tax revenue by 2028.

Table 3: Potential impacts of digital government on tax revenue in Nigeria in 2028

Digital government revenue increase (NGN)	814 billion
% tax revenues	1.98%
% of GDP	0.16%

Constant 2023 NGN. See separate methodological document that accompanies this report.

Whilst digitalisation brings many benefits, it also raises **important public policy issues which governments, industry, and non-government organisations must work together on to protect citizens' interests and the planet.** Addressing e-waste is one such issue which is gaining increasing importance as part of digital strategies. **Nigeria currently ranks third highest in Africa in terms of e-waste generated (500 million kg) and is receiving over 500,000 containers of e-waste per month.** The Government is taking action, including changing legislation and regulation, by amending the National Environmental Regulations last year and establishing the E-waste Producer Responsibility Organisation Nigeria (EPRON) to coordinate programmes including the collection of fees to be paid by E-Waste producers to re-invest in collection and recycling.[43] The mobile sector has an important role and is undertaking e-waste programmes including recycling and reusing devices and network equipment as part of broader environmental impact programmes.[44]

35 https://guardian.ng/news/firs-announces-record-tax-revenue-collection-of-n5-5-trillion-in-six-months; E-Taxation and Tax Compliance in Nigeria: Periscoping Change Perspectives, December 2023, NG Journal of Social Development 12(1):29-42

36 How technology is changing the face of elections in Nigeria - Businessday NG

37 https://www.mckinsey.com/industries/healthcare/our-insights/how-digital-tools-could-boost-efficiency-in-african-health-systems

38 TETFund TERAS :: History (teras-network.net)

39 Airtel Africa and UNICEF announce multi-million dollar partnership to scale-up digital learning for children across Africa; Airtel, UNICEF partner to connect over 300,000 students to digital learning | The Guardian Nigeria News - Nigeria and World News — Technology — The Guardian Nigeria News – Nigeria and World News

40 MTN Group Sustainability Report 2022

41 Susan Lund, Olivia White, and Jason Lamb, The Value of Digitalizing Government Payments in Developing Economies, in Digital Revolutions in Public Finance, IMF 2017

42 UNU-WIDER Working Paper 2022/18 Does the adoption of peer-to-government mobile payments improve tax revenue mobilization in developing countries? Abdoul-Akim Wandaogo, 1 Fayçal Sawadogo, 2 and Jesse Lastunen 3 February 2022

43 The Global E-waste Monitor 2024 (itu.int)

44 See GSMA Report 2024 Making-Circularity-Work-How-digital-innovation-enables-circular-economy-approaches-in-waste-management-1.pdf (gsma.com); MTN Group Sustainability Report FY22, Page 21 https://www.mtn.com/wp-content/uploads/2023/04/MTN-Group-FY-22-Sustainability-Report.pdf; Airtel Africa FY23 Annual Report, Page 51 Airtel_Africa_Annual_Report_FY_2022_2023.pdf (airtelstream.net)

D. Raising productivity through the use of digital technologies

This section estimates the macroeconomic impacts of digitalisation in Nigeria for selected sectors of the economy, based on academic and policy research combined with data on the economy of Nigeria. Each impact is articulated through the digital pathways to economic transformation and mapped onto the Government's strategic objectives contained in National Development Plan (NDP 2021–2025),[45] the Strategic Revenue Growth Initiative (SRGI) and the FMCIDE's Strategic Plan 2023-2027. Ultimately, this will result in enhanced productivity growth, job creation and increased household incomes.

The policy objectives, impacts of digitalisation by sector and their relationships are mapped in Table 4 below, as well as the evidence used to quantify them. More details on the methodology and evidence review are contained in the separate methodological document that accompanies this report. The methodology and data sources for the impacts calculated in this section are also in the methodology document.

45 https://nationalplanning.gov.ng/wp-content/uploads/2021/12/NDP-2021-2025_AA_FINAL_PRINTING.pdf

Table 4: Mapping digitalisation to policy objectives and estimating the impact

Sector	Policy objectives	Outcomes of digitalisation	Impact relationship	Evidence rule
Agriculture	Agricultural development and agricultural productivity, access to markets, increase and diversify production	Precision agriculture, targeted information, better access to markets	Access to technology by farmers → productivity, profits	Access to technology and precision agriculture increase crop yields between 10.5% and 20%, and profits up to 23%
Manufacturing	Diversify and develop manufacturing, attract FDI, increase technology exports	Expand manufacturing capabilities, diversify production, increase FDI and exports	Adoption of new technologies by firms → productivity, GDP, exports	Application of industrial Internet of Things (IoT) and Industry 4.0 increases value-add between 15-25%
Transport	Improve trade links, infrastructure for transport and logistics, strengthen competitiveness of ports	Reduce transaction and logistics costs, border delays and tax leaks. Increases productivity and integration in GVCs	Digital platforms and infrastructure → increase productivity, port capacity, GDP	Transport upgrades increase incomes by 10%. Digitising ports reduces logistics costs by 15-25%. Digital customs increases revenue by 54% in 5ys
Trade	Economic diversification, strengthen trade and exports	Improves trade flows, growth of E-commerce and exports of ICT services and digitally delivered services	Digital trade → increased integration in AfCFTA, E-commerce and service exports	Potential to increase E-commerce value to 15% GDP and ICT exports value to 7% GDP
MSMEs	Strengthening competitiveness and formalisation of Micro, Small and Medium Enterprises (MSMEs)	Improves profits of MSMEs. Facilitates business registration, access to finance, formal contracts	Access to digital by MSMEs → increased incomes and formalisation	Technology adoption is associated with labour productivity of 2-4% for small firms
Healthcare	Increase access to healthcare, improve well-being, increase productivity of healthcare sector	Telemedicine, digital health records, digital payments for insurance contributions increase access to health services and productivity	Digital health → increased access to health services and productivity	Digital health solutions enable doctors to increase visits by 30%
Government	Strengthen domestic revenue mobilisation, prevent corruption, improve services delivery	Increases tax revenue and provides saving in public expenditure through better targeting, transparency and reduction of corruption	Mobile money, P2G, G2P adoption → increase GDP, tax revenue, reduce leakage	Mobile money adoption increases tax revenue by 12% on average. Digital ID for social protection decreases leakage by 41-47%

For details and references see Methodology Document that accompanies this report.

Impact of digitalisation on the agricultural sector in Nigeria

Strengthening the agricultural sector is important for job creation, food security, and social cohesion. Digitalisation can support diversification of food crop production, as well as improve agricultural productivity, both of which can be enhanced through information and training tools online, real time information on crops and weather patterns and precision agriculture delivered with digital tools. For example, access to technology and precision agriculture has been shown to increase crop yields between 10.5% and 20%, and profits up to 23%. Data analytics and machine learning technologies are able to process aerial imagery from drones and satellites, providing real-time insights on crop performance, pests, plant health, irrigation levels and delivering tailored expert knowledge to farmers.[46], [47]

Increased access to regional markets can also be facilitated by digital agricultural exchanges and support MSMEs in providing services to commodity value chains. Through mobile phones, farmers and fishermen can determine the most profitable market and equalise access to information, increasing profits by up to 8%.[48]

Box 1:

Hello Tractor, Nigeria: B2B renting and data analytics for farm machinery

Hello Tractor is a digital platform connecting tractor owners and farmers through a farm equipment-sharing app and GPS fleet management solution. This helps farming communities improve planning and preparedness amid unpredictable rainfall patterns.

Hello Tractor's digital platform enables farmers to request affordable tractor services through community-based agents, while tractor owners have the enhanced security of remote asset tracking and virtual monitoring. Hello Tractor has expanded to 16 African countries and grown to more than 4,500 tractors and combines, servicing more than a million farmers and 2.9 million acres, all organised through a network of more than 2,500 booking agents. Hello Tractor received a GSMA grant in November 2022 to optimise tractor service, harvesting and yield, and build a more resilient, adaptive community of farmers and tractor owners.

Hello Tractor has serviced more than 600 hectares by tractor; launched a mechanisation hub in Nassarawa State, Nigeria and created an additional 3,000 direct jobs and mechanised more than 300,000 farmers who produced nearly a million metric tonnes of food.

Source: https://www.gsma.com/mobilefordevelopment/digital-grantees-portfolio/hello-tractor/

The policies described in this report would increase the digitalisation of agricultural value chains and adoption of digital technologies by small scale farmers throughout Nigeria. This has the potential to add 3.3 trillion NGN to value-added in the agricultural sector, equivalent to 2.8% of the sector's value-add by 2028. It would result in additional employment in agriculture of around 1,056,000 people by 2028 and 273 billion NGN in additional tax revenues from the increase in value addition to the economy.

Table 5: Potential impacts of policies to increase digitalisation of agriculture in Nigeria in 2028

Digital agriculture value-add (NGN)	3.3 trillion
% Sector GDP	2.81%
% of GDP	0.66%
Employment	1.1 million
Tax (NGN)	273 billion

Constant 2023 NGN. See Methodology Document that accompanies this report.

46 South Africa Department of Science and Innovation (2022).
47 Ekekwe (2017) and Chatterjee (2018).
48 Jensen (2007).

Impact of digitalisation on manufacturing in Nigeria

Adoption of new technologies by manufacturing firms – referred to as industry 4.0 technologies such as IoT, 3D printing, virtual reality, data and analytics, AI and machine learning – **could allow Nigeria to expand manufacturing capabilities, support diversification and** increase labour productivity in the manufacturing sector. This is an important engine for growth but has remained stagnant in the country in recent decades.[49]

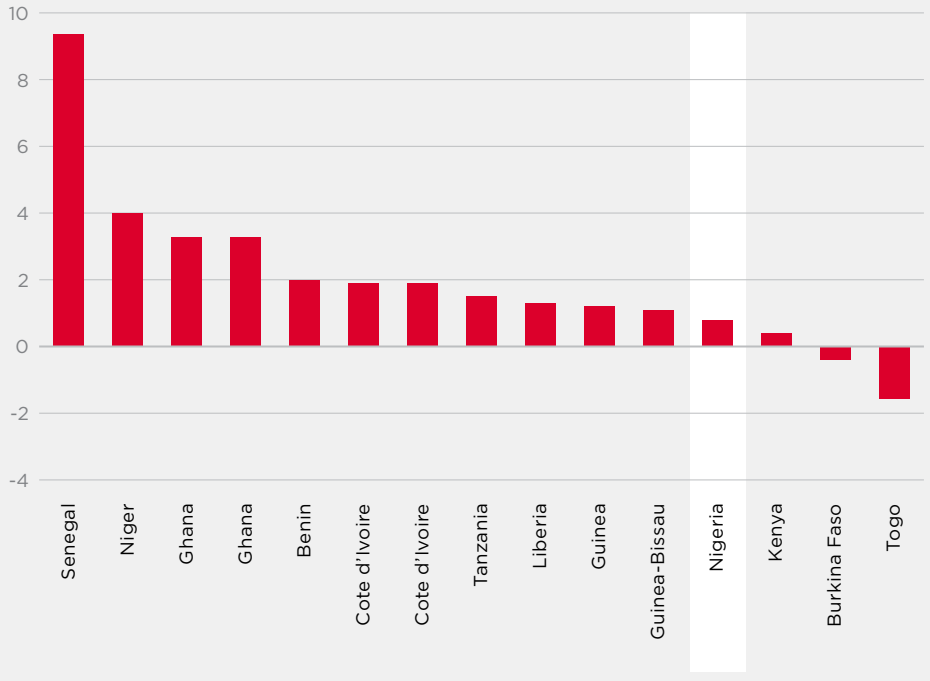
Implementing industry 4.0 technologies has been shown to increase labour productivity by 15% to 30%,[50] while the application of IoT in the manufacturing context alone could increase manufacturing productivity by 10-25%[51] and value-add by 20%.[52] Several use cases have been proved in Nigeria in recent years, thanks to the expansion of 5G networks for use in industry, mining and ports.[53]

Increasing private sector investment, FDI and exports are important drivers of improvements in manufacturing capabilities. High quality connectivity infrastructure and a large number of customers using the internet to find and buy products are drivers of increased FDI and innovation. Nigeria's FDI inflows as a share of GDP have dropped from over 2% a decade ago to less than 1%, one of the lowest rates among middle-income economies. This has largely been in response to macroeconomic instability and governance issues (Figure 6).[54]

Figure 6

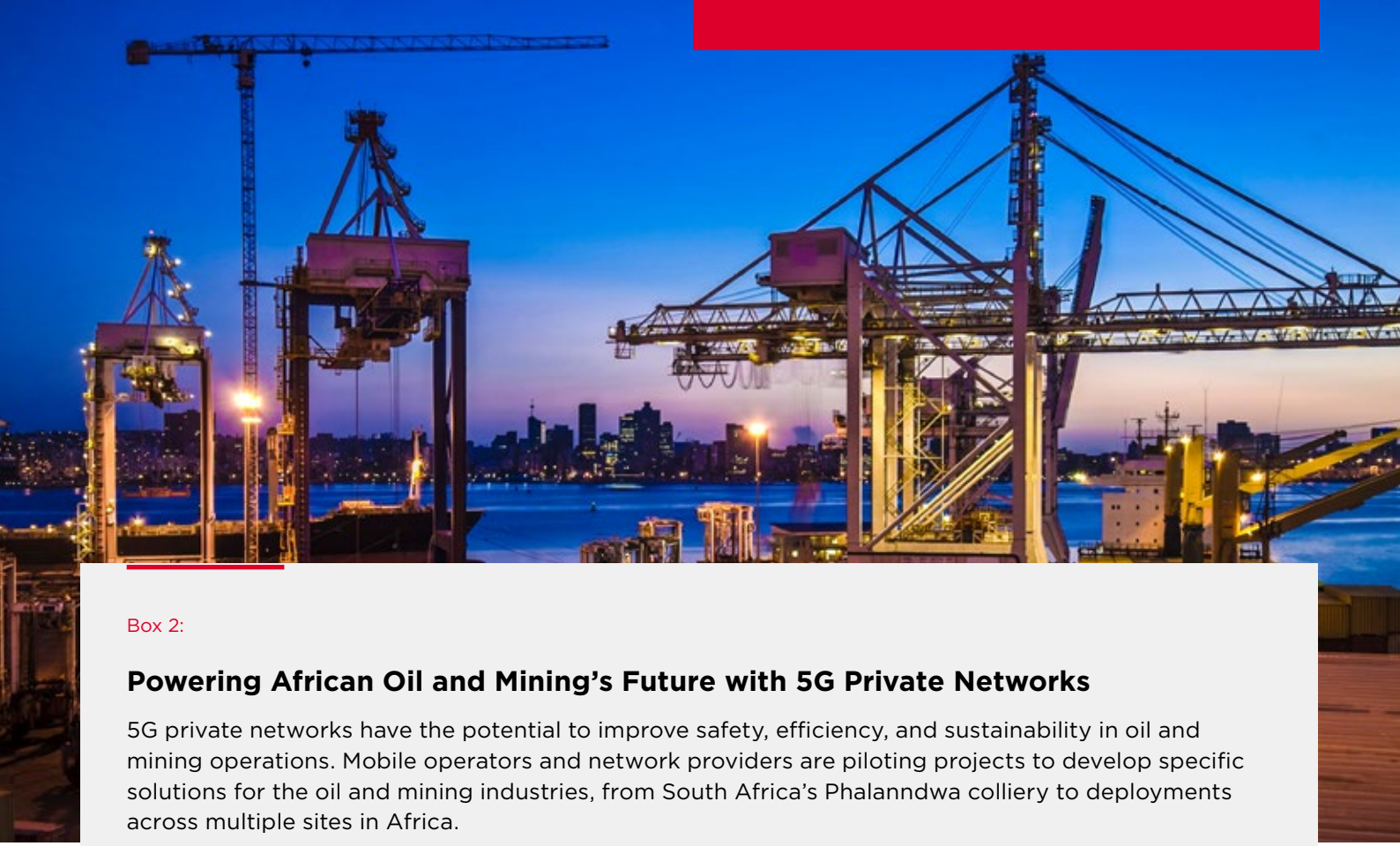
Country comparison of FDI flows

Foreign direct investment, net inflows (% of GDP)



Source: World Development Indicators 2022.

49 World Bank CEM Nigeria.
50 www.mckinsey.com/capabilities/operations/our-insights/capturing-the-true-value-of-industry-four-point-zero ; www.ptc.com/en/solutions/maximizing-revenue-growth
51 www2.itif.org/2018-manufacturing-digitalization.pdf
52 European Parliament Member's Research Service, "Industry 4.0: Digitalisation for Productivity and Growth," (European Parliament, September 2015), http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/568337/EPRS_BRI(2015)568337_EN.pdf.
53 https://www.ericsson.com/en/blog/1/2023/unleashing-sustainable-digital-transformation-in-nigeria
54 World Bank CEM Nigeria.



Box 2:

Powering African Oil and Mining's Future with 5G Private Networks

5G private networks have the potential to improve safety, efficiency, and sustainability in oil and mining operations. Mobile operators and network providers are piloting projects to develop specific solutions for the oil and mining industries, from South Africa's Phalanndwa colliery to deployments across multiple sites in Africa.

5G networks in oil fields and mines maximise operational efficiency through real-time data transmission and remote monitoring. They enable precision automation through sensors and autonomous vehicles and machinery, and optimization of production through more efficient data collection and analysis, enhancing decision-making for improved resource allocation and productivity. Downtime and equipment failures are minimised through the integration of AI-powered analytics.

Source: https://www.miningweekly.com/article/powering-african-minings-future-with-5g-private-networks-2024-02-05.

The policies described in this report would increase the digitalisation of the manufacturing sector in Nigeria. This has the potential to add 5 trillion NGN in industry value-add, equivalent to 3.3% of the sub-sector's value-add by 2028. This would result in additional employment in industry of about 465,000 people by 2028 and 417 billion NGN in additional tax revenues from the increase in value addition to the economy.

Table 6: Potential impacts of policies to increase digitalisation of manufacturing in Nigeria in 2028

Digitalisation of industry value-add (NGN)	5 trillion
% Sector GDP	3.3%
% of GDP	1.02%
Employment	465,000
Tax (NGN)	417 billion

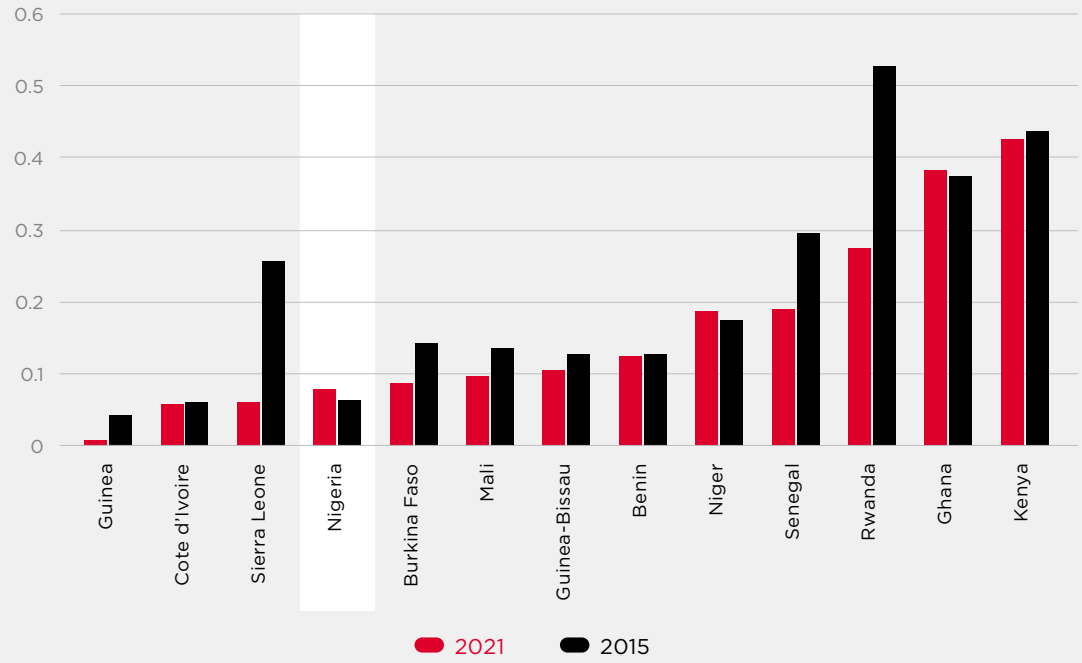
Constant 2023 NGN. See Methodology Document that accompanies this report.

Impact of digitalisation on trade in Nigeria

Despite being Africa's largest economy, Nigeria exports relatively little to the rest of the continent, primarily because of regulatory constraints and high trade costs including the cost of moving containers across the country. **Digitalisation can support efforts to expand trade and improve trade facilitation to take full advantage of regional integration** and multilateral agreements, such as the AfCFTA. In particular, **digitalisation can support the growth of trade in services, which currently represents less than 10% of total exports,** and could be an important driver of Nigeria's increased participation in GVCs.[55] Adoption of new technologies can expand the tradability of some services and enable growth in digitally-delivered services. The services sector could become a driver of structural change in the Nigerian economy, contributing to productivity, jobs and increased economic complexity.[56]

Figure 7

Exports of services, % GDP



Source: World Development Indicators.

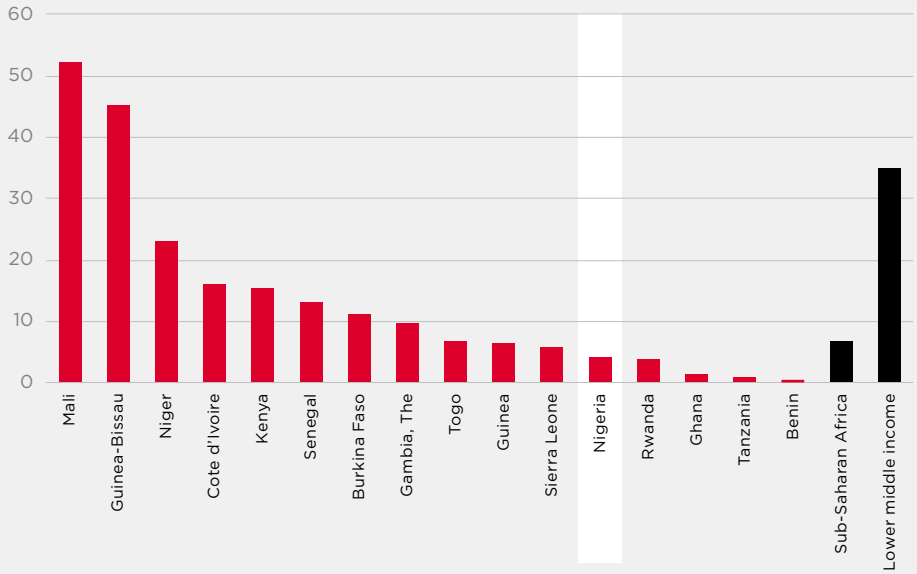
Information and communication services currently comprise only 4% of total service exports (Figure 8). This has the potential to grow and could significantly contribute to the growth in total service exports. Nigeria has a large supply of skilled workers who could take advantage of global opportunities through freelancing, micro-work and business process outsourcing (BPO). As the BPO industry in Nigeria evolves from basic process outsourcing to higher-end Business Process-as-a-Service (BPaaS), productivity and efficiency increase. In the future, this could be further enhanced by digital technologies such as AI and analytics. Such developments are being supported by investment into Nigeria by global technology companies such as Microsoft which helps integrate the country into global markets.[57]

Data localisation requirements can act as a barrier to growth in trade in digital services. To enable growth in such services, regulation of cross-border data flows will need to be carefully designed in a way that achieves essential policy objectives while minimising restrictions to trade.[58]

55 World Bank WDR 2020.
56 World Development report 2020, www.worldbank.org/en/publication/wdr2020 .
57 Microsoft, Enabling a Digital Nigeria, 2020.
58 WTO, IMF, Digital Trade for Development, 2023: https://www.wto.org/english/res_e/booksp_e/dtd2023_e.pdf

Figure 8

Information and communications technology exports as % of total services exports



Source: World Development Indicators.

Finally, through growth in digital payment services, E-commerce has emerged as a driving force in Nigeria's digital economy, increasing access to markets by large and small companies alike. **E-commerce allows the commercialization of new products, expands delivery services and significantly reduces transaction costs** related to purchasing, sales, operating, and inventory management. One example of this is Nigeria-founded startup Jumia which went public on the New York Stock Exchange and has now a market capitalisation of USD 350 million (Box 3).[59]

59 https://companiesmarketcap.com/jumia/marketcap/

Box 3:

Jumia Nigeria: from start-up to E-commerce giant and ecosystem catalyst

E-commerce marketplace Jumia set out to onboard Nigeria's MSMEs, drive customers to their websites, facilitating each element of the sales process for registered merchants, from taking orders to processing payments, and arranging delivery. It was one the first e-commerce marketplaces in the Africa, catering to the needs of informal, micro, and small vendors in enabling better market access while providing value to the customer by eliminating middlemen in the sales process.

Since the, Jumia has expanded to reach 5.7 million active customers across Africa, offering 220+ products and hosting over 64,000 active sellers. As its services have expanded, so have the opportunities for its value chain and ecosystem. For example, Jumia has between 77 and 563 pick-up points in each of their operating countries, including capital cities, secondary cities, and rural areas. Pick-up points provide several benefits, allowing customers to collect their orders for a reduced delivery fee from designated local shops which act as agents for Jumia. The agents provide customers with face-to-face interaction with Jumia, they can answer customer queries, and earn income for each delivery picked up from their shop.

Moreover, innovative start-ups have begun deploying innovative technologies to provide supporting services to E-commerce. For example, Nigeria start-up Zipline has partnered with Jumia to deliver E-commerce purchases through drones, reaching rural areas typically excluded from traditional delivery solutions.

Source: GSMA, E-commerce in Africa: Unleashing the opportunity for MSMEs October 2023; Jumia website.

The policies described in this report would increase the digitalisation of trade. This has the potential to add 873 billion NGN in value-add, equivalent to 1.34% of the sub-sector's value-add by 2028. This would result in additional employment in trade by over 183,000 people by 2028 and 72 billion NGN in additional tax revenues from the increase in value addition to the economy.

Table 7: Potential impact of policies to increase digitalisation of trade in Nigeria in 2028

Digitalisation of trade value-add (NGN)	873 billion
% Sector GDP	1.34%
% of GDP	0.18%
Employment	183,000
Tax (NGN)	72 billion

Constant 2023 NGN. See Methodology Document that accompanies this report.

Impact of digitalisation on the transport sector in Nigeria

Digitalising supply chains brings about improvements across economic sectors. With its natural and human resources and large domestic market, Nigeria has the potential to emerge as a logistics hub for West Africa and a springboard into regional value chains. This can be done by reducing transport costs, including by addressing delays and inefficiencies in border and port clearance, streamlining and automating procedures, as well as improving governance and information availability throughout supply chains.

In maritime transport, Nigeria can grow the share of container and traffic volumes by modernising existing ports through digital port infrastructure and digital border procedures. This has the potential to significantly increase customs and tax collection.[60] **The roll out of 5G networks in port infrastructure could improve the efficiency of the logistics activities of Nigeria's large port complexes,** by facilitating the implementation of new systems such as autonomous driving fleets, container positioning improvement, charging management systems, improved management of traffic lights in order to reduce congestion, use of virtual reality and sensors for improving port operations.[61]

Nigeria has improved its ranking in the Logistics Performance Index, reaching 88th position globally.[62] **Modernising and improving transport links through adoption of digital technologies would further enhance trade links to the sub-region** and integration into ECOWAS and AfCFTA, reduce transaction and logistics costs, increase productivity and integration in global value chains and access to global markets.

Digital innovation can also play an important role in delivering efficient and effective transport and mobility systems in cities, from GIS systems that support the development of multi-modal transit systems to real-time collection and analysis of traffic information, to smart traffic signage and automated fare collection for parking and public transport. For example, Africa's first Bus Rapid Transit system started in 2008 in Lagos, employing real time information and automated transactions through an integrated digital payment system using mobile money. It has since evolved into digital touch and pay apps and expanded across the continent.[63]

The policies described in this report would increase the digitalisation of the transport sector and digital port infrastructure. This has the potential to add 435 billion NGN to transport value-add, equivalent to 4.13% of the sub-sector's value-add by 2028. This would result in additional employment in transport of 161,000 people by 2028 and 36 billion NGN in additional tax revenues from the increase in value addition to the economy (Table 8).

Table 8: Potential impacts of policies to increase digitalisation of transport in Nigeria in 2028

Digitalisation of transport value-add (NGN)	435 billion
% Sector GDP	4.13%
% of GDP	0.09%
Employment	91,000
Tax (NGN)	36 billion

Constant 2023 NGN. See Methodology Document that accompanies this report.

60 https://nigerianports.gov.ng/

61 https://piernext.portdebarcelona.cat/en/technology/5g-connection-in-ports-sector-an-important-step-towards-digitalization/; https://www.linkedin.com/posts/eucompetitionpolicy_ipcei-eustateaid-eucompetition-activity-7137733386218999808-oRcl

62 https://lpi.worldbank.org/sites/default/files/2023-04/LPI_2023_report.pdf

63 Mobereola, D. (2009). Lagos Bus Rapid Transit: Africa's first BRT scheme. SSATP Discussion Paper No. 9. SSATP; How Touch and Pay (TAP) got 1.5 million Lagosians to adopt cashless bus rides (techpoint.africa)

Impact of digitalisation on healthcare in Nigeria

Digital solution for healthcare can deliver better well-being outcomes through improved access to healthcare services, as well as contributing to the economy via cost savings and increased productivity. Digital healthcare applications range from telemedicine consultations allowing doctors to consult with patients over a digital voice or HD video, to electronic health records that enable more accurate diagnoses and reduction in administrative costs. Digital payments can also support and improve processes for insurance claims and facilitate contributions to national health insurance requirements.

The policies described in this report would increase the digitalisation of the healthcare sector. This has the potential to add 145 billion NGN to value-add, equivalent to 4.95% of the sub-sector's value-add by 2028. This would result in additional employment in transport of 30,000 people by 2028 and 12 billion NGN in additional tax revenues from the increase in value addition to the economy.

Table 9: Potential impacts of policies to increase digitalisation of healthcare in Nigeria in 2028

Digitalisation of healthcare value-add (NGN)	145 billion
% Sector GDP	4.95%
% of GDP	0.03%
Employment	30,000
Tax (NGN)	12 billion

Constant 2023 NGN. See Methodology Document that accompanies this report.

Digital entrepreneurship and tech hubs

Nigeria has a vibrant start up ecosystem and thriving tech hubs from Lagos to Kano. It is Africa's largest market in terms of start-up numbers and funding, attracting USD 1.2 billion in 2022, equivalent to 68% of West Africa's share.[64] This represented 25% of Africa's total start-up funding, a much larger share than its share of Africa's population (15%) and GDP (17%).[65]

Successful start-ups have emerged across various sectors, such as FinTech, agriculture, health, education, and energy. Examples include Flutterwave in the Fintech space, mobility fintech Moove and agritech ThriveAgric, amongst many others. Successful start-up incubators in the country include ARM Labs Techstars Accelerator and The Foundry in Lagos, supporting growth of tech-enabled businesses, by building capacity and facilitating access to funding.[66]

The ambition of the Strategic Plan 2023-2027 is to increase funding raised by Nigerian tech startups by 50% to reach USD 5 billion per year by 2027. This rests on sustained investment in the digital ecosystem. **Access to ICTs and, in particular, mobile applications is essential to support this start-up ecosystem.** MSMEs benefit from better access to information and markets, leading to increased productivity and job creation. For formal firms, higher technology adoption is associated with labour productivity of up to 2% and reaching 4% for informal firms.[67] In addition, **start-ups have benefited from partnerships with mobile service providers in Nigeria:** MTN and ICT infrastructure providers such as Liquid Telecom have also launched in-house tech hub initiatives in the country.

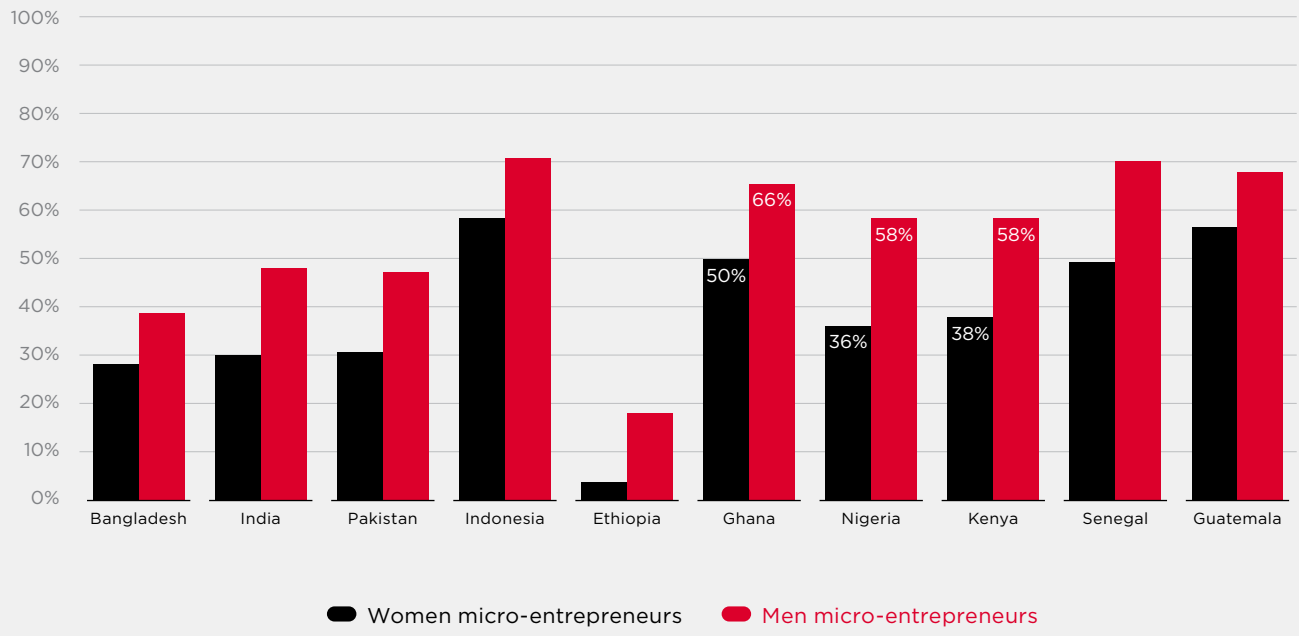
64 https://thebigdeal.substack.com/p/map2022western?utm_source=%2Fsearch%2Fnigeria&utm_medium=reader2
65 Ibid.
66 https://www.techstars.com/accelerators/arm-labs-lagos ; https://thefoundry.ng/ .
67 Cirera, Comin, and Cruz 2022. Also: Bhattacharya, 2019 and Mothobi, Gillwald, and Aguera, 2020.

Digital entrepreneurship provides new opportunities for job and skills creation as recognised by the Strategic Plan 2023-2027. The Nigeria Start Up Act will increase in the number of startups that have access to finance and learning resources in Nigeria. For example, the Digital Nigeria Training Portal was created to develop a knowledge pool within the country, generating local employment and nurturing knowledge across the community.[68]

However, challenges remain in Nigeria on adoption and awareness of digital technologies by micro-entrepreneurs. A survey by the GSMA of over 8,000 micro-entrepreneurs in Nigeria and other African countries in 2022[69], collected data on their **use of mobile for business. It found that, in Nigeria, only 58% of men micro-entrepreneurs are using the mobile internet while only 36% of women micro-entrepreneurs are using the technology.**

Figure 9

Mobile internet use by micro entrepreneurs



Source: World Development Indicators and IMF WEO October 2023.

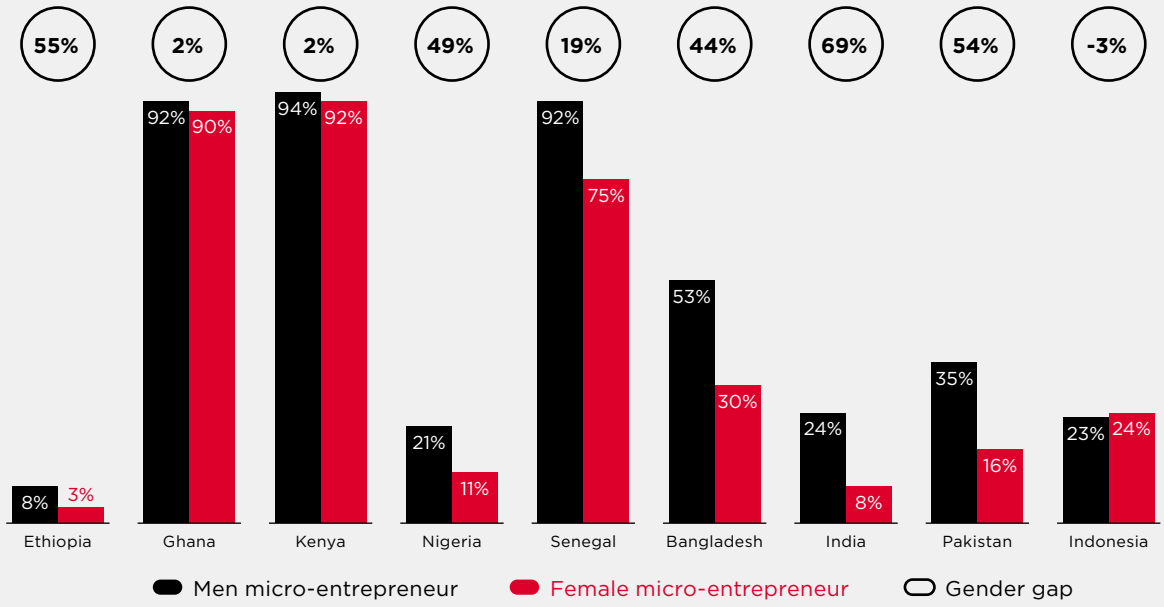
Mobile money adoption amongst MSMEs is equally lagging behind, with **only 16% of micro-entrepreneurs having a mobile money account.** A key driver of lack of adoption in Nigeria is awareness of the workings and the benefits of mobile and digital technologies. In the more mature mobile money markets of Ghana, Kenya and Senegal, awareness of mobile money among men and women micro-entrepreneurs is almost universal. However, in Nigeria awareness is much lower at 62% on average, with a significant gap between men and women entrepreneurs.[70]

68 https://nigeria.coding4employment.org/ and https://dtcnigeria.ng/ and https://nitda.gov.ng/digital-job-creation-centres/
69 GSMA, Understanding women micro-entrepreneurs' use of mobile phones for business Evidence from 10 low and middle-income countries, 2023.
70 GSMA, Understanding women micro-entrepreneurs' use of mobile phones for business Evidence from 10 low and middle-income countries, 2023.

Figure 10

Mobile money account ownership among micro-entrepreneurs

Percentage of micro-entrepreneurs surveyed



Source: GSMA Consumer Survey, 2022
Base: Micro-entrepreneurs surveyed. The gender gap in mobile money account ownership refers to how much less likely a woman is to have a mobile money account than a man. Mobile money questions were not asked in Guatemala due to low penetration of mobile money.
n=117 to 661 for female micro-entrepreneurs and n=160 to 1,083 for male micro-entrepreneurs

Finally, digitalisation has the potential to remove barriers to formalisation and increase the productivity of informal firms. One of the key objectives of the Government is to formalise the economy and make the MSMEs more competitive.

Digitalisation has the potential to reduce barriers to formalisation and increase the productivity of informal firms, including those involved in informal trade as well as formal and informal MSMEs in other sectors.

Box 4:

Y'ellopreneur: Supporting emerging entrepreneurs with digital skills

EY'ellopreneur is an initiative of MTN Nigeria Foundation, designed to provide capacity-building and funding opportunities to qualified Nigerian female entrepreneurs, implemented in collaboration with Bank of Industry (BOI).

The pilot initiative provided training, micro business loans/grants, and advisory/business support services for sustainability to 500 entrepreneurs across various sectors, including manufacturing/ processing, agriculture, ICT/ digital services, financial services, construction, logistics/transportation, energy and power generation, fashion, media and entertainment, and waste management.

The participants were offered an online entrepreneurship skills training programme, covering: Customer Experience and People Management; MTN Enterprise Business Solutions; Introduction to MoMo PSB; and Tax Compliance. The capacity building phase ended with the submission and evaluation of business plans, which culminated in the recommendation of the top 200 viable business plans for the business pitch. The pitch sessions will then select the top 150 businesses to receive equipment loans and grants.

Source: MTN Foundation, Annual Report, 2022.

Impact of digitalisation on the banking sector and financial stability

Mobile money growth in Nigeria has been driven by both mobile service provider-led and non-mobile service provider-led providers. These service providers are subject to different types of licences, with some restrictions on what activities each is allowed to undertake. This affects competition between them and reduces their overall positive impact on financial inclusion.[71]

In 2018, the Central Bank of Nigeria (CBN) introduced the Payments Service Bank (PSB) licence. This allowed mobile service providers to offer financial services. The licence is reserved for non-bank mobile money providers, 25% of whose operations must be in rural areas. PSBs can offer deposits and withdrawals, inbound remittances (but not forex transactions) and can issue debit cards – but not credit cards.

Among mobile service providers, Glo and 9Mobile were the first to be granted a PSB licence in 2020. In 2022, CBN issued PSB licences to SmartCash PSB (Airtel) and MoMo PSB (MTN). By 2023, SmartCash PSB and MoMo PSB had grown significantly with around 20 million registered customers each. OPay and PalmPay are the most prominent non-mobile service provider-led mobile money providers and have gained significant market share in Nigeria since receiving their mobile money licences, with around 30 million users each (Table 10). There are some differences between the regulatory framework that applies to non-mobile service provider led mobile money businesses and that which applies to mobile service provider-led mobile money businesses, for example by higher capital requirements and rural operations requirements for PSBs. These differences may be one factor that contributes to the differences in their relative performance in recent years.

Table 10: Mobile money providers in Nigeria

	Airtel	MTN	Opay	Palmpay
Registered mobile money accounts	**20m** (November 2023)	**19m** (March 2023)	**30m** (June 2023)	**30m** (October 2023)
Registered mobile money agents	**52,000** (March 2023)		**500,000** (June 2023)	**500,000** (October 2023)
Active mobile money agents		**227,000** (June 2023)		

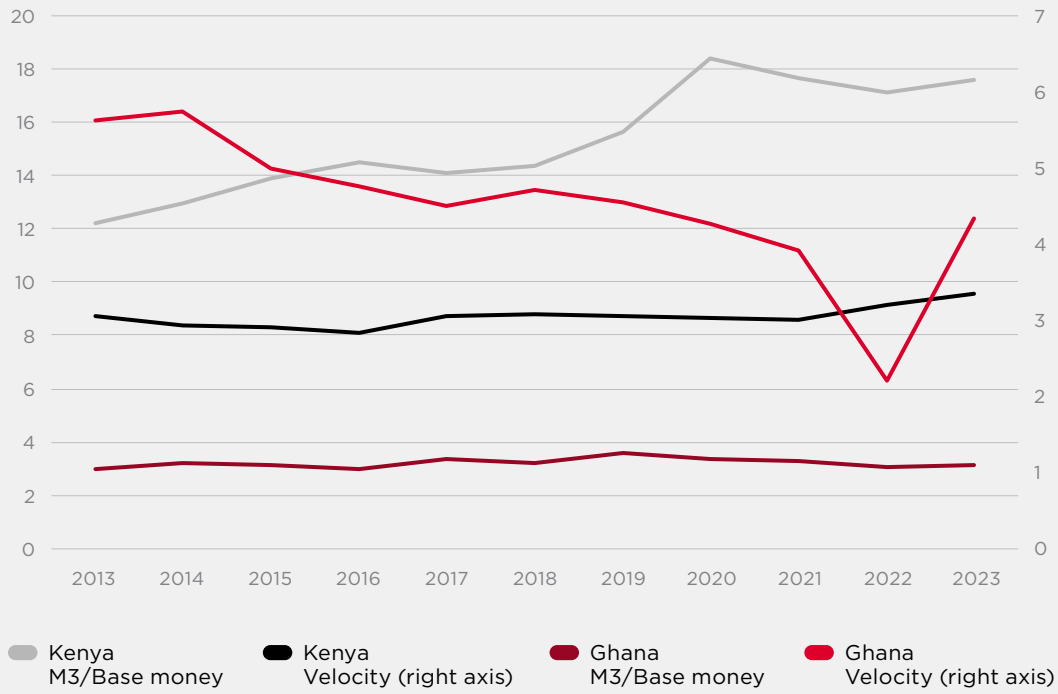
Source: GSMA, Mobile Money State of the Industry Report, 2024.

71 GSMA, Mobile Money State of the Industry report, 2024 and Sources: Ironsi, T. (2022). Understanding MTN Nigeria's Payment Service Bank (PSB) License.

The positive impact of mobile money on financial inclusion and economic growth is well documented.[72] In addition, mobile money has an important role to play in enabling more effective monetary policy by transferring currency and assets into the formal financial system and enhancing financial depth. In particular, mobile money is linked with a higher money multiplier, improving the effectiveness of monetary targeting.[73]

Figure 11

Impact of Mobile Money on Financial Stability



Source: Central Banks of Kenya and Ghana and authors' calculations. M3 is broad money; the money multiplier is the ratio of broad money to reserve money; Velocity of money is calculated as the ratio of nominal GDP to broad money.

Evidence suggests that mobile money is linked to a **decline in velocity of money, which is a sign of financial innovation, and an increase in the money multiplier** (M3/Base money), which improve transmission of monetary policy. Both of these effects can be observed for Ghana and Kenya, where mobile money is mature, with velocity of money broadly stable or decreasing, and the money multiplier gradually increasing. Furthermore, **mobile money services are complementary rather than substitutes to traditional commercial banking sector,** because of their 'high-volume, low-value' nature. In practice, mobile money expansion is associated with growth in the traditional commercial banking sector, pointing to further financial deepening.

72 Add from GSMA and World Bank.
73 GSMA, The impact of mobile money on monetary and financial stability, 2019.

Summary of productivity impact of policies to increase digitalisation

Overall, there is significant potential for increased digitalisation to make broad socio-economic contributions to Nigeria's future growth, including economic transformation across key sectors such as agriculture and manufacturing, through the deployment of precision agriculture and industry 4.0 technologies. The potential macroeconomic impacts if the policies described in this report were implemented are summarised below, while the rest of the report focuses on identifying policy reforms that can enable these effects to be realised.

Figure 12

Impact of policies to increase digitalisation of economic sectors in Nigeria following policy reforms

	Agriculture	Manufacturing	Transport	Trade	Healthcare	Government
Digital value add (NGN)	3.3 tn	5.0 tn	430 bn	870 bn	145 bn	-
% of sector GDP	2.8%	3.3%	4.1%	1.3%	4.95%	-
% of Total GDP	0.7%	1.0%	0.1%	0.2%	0.03%	0.2%
Employment	1.1 m	465 k	160 k	90 k	30 k	-
Tax revenue (NGN)	270 bn	420 bn	35 bn	70 bn	12 bn	810 bn

Source: Authors' calculations. See separate methodology document.

4. The Telecommunications Sector in Nigeria

A. The telecommunications sector in Nigeria

Telecommunications sector performance

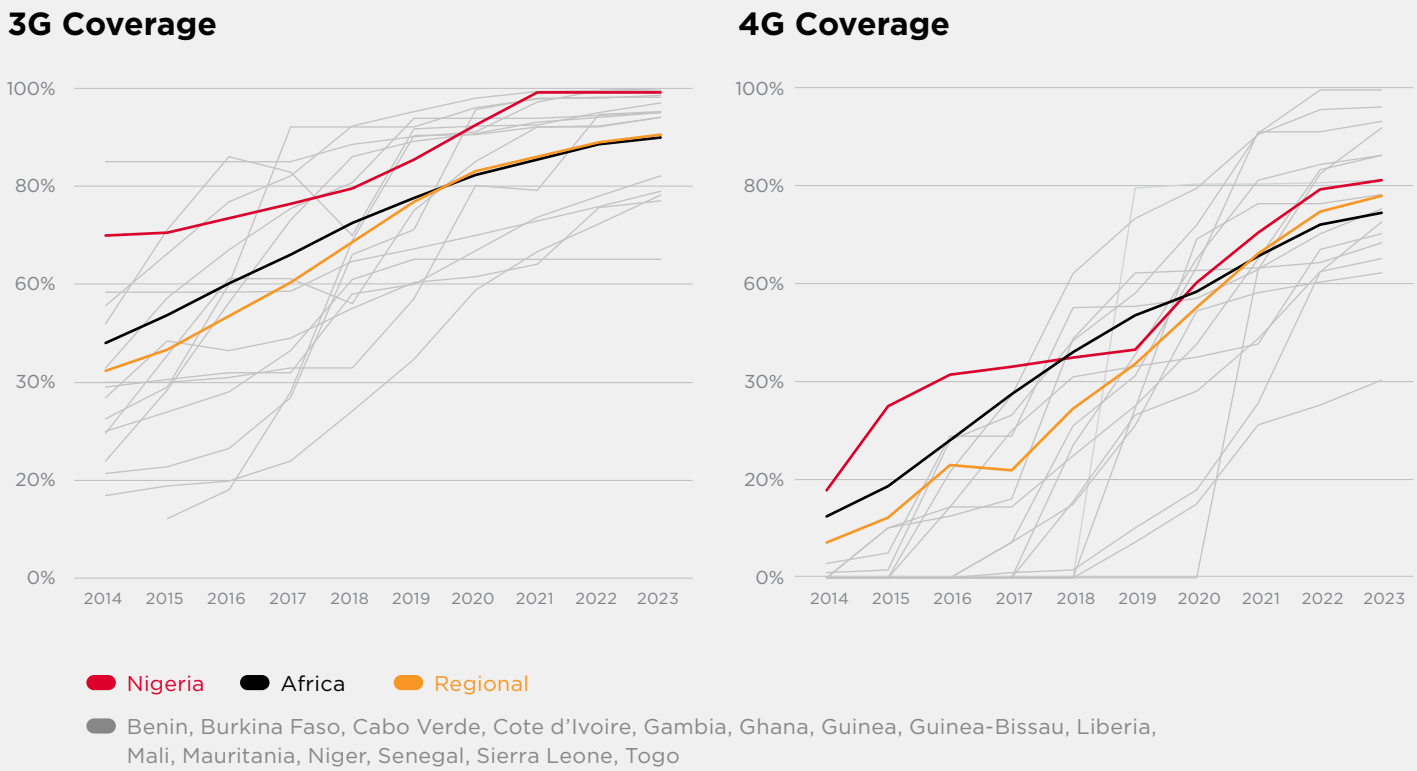
Nigeria has a very competitive telecommunications sector with several large mobile service providers and some significant fibre-only network operators. MTN is the largest mobile service provider with 37% subscriber market share. This is followed by Airtel, Globacom and 9mobile with 29%, 28% and 6% respectively. There are 218 million mobile subscriptions in total, and 92 million broadband internet subscriptions.[74,75]

The result of this competition has been rapid growth in mobile broadband coverage which has placed Nigeria ahead of regional comparators for both 3G and 4G (Figure 13).

Nigeria is also above the regional average for internet usage with around 29% of Nigerians using it (Figure 14).

Figure 13

Network Coverage by technology

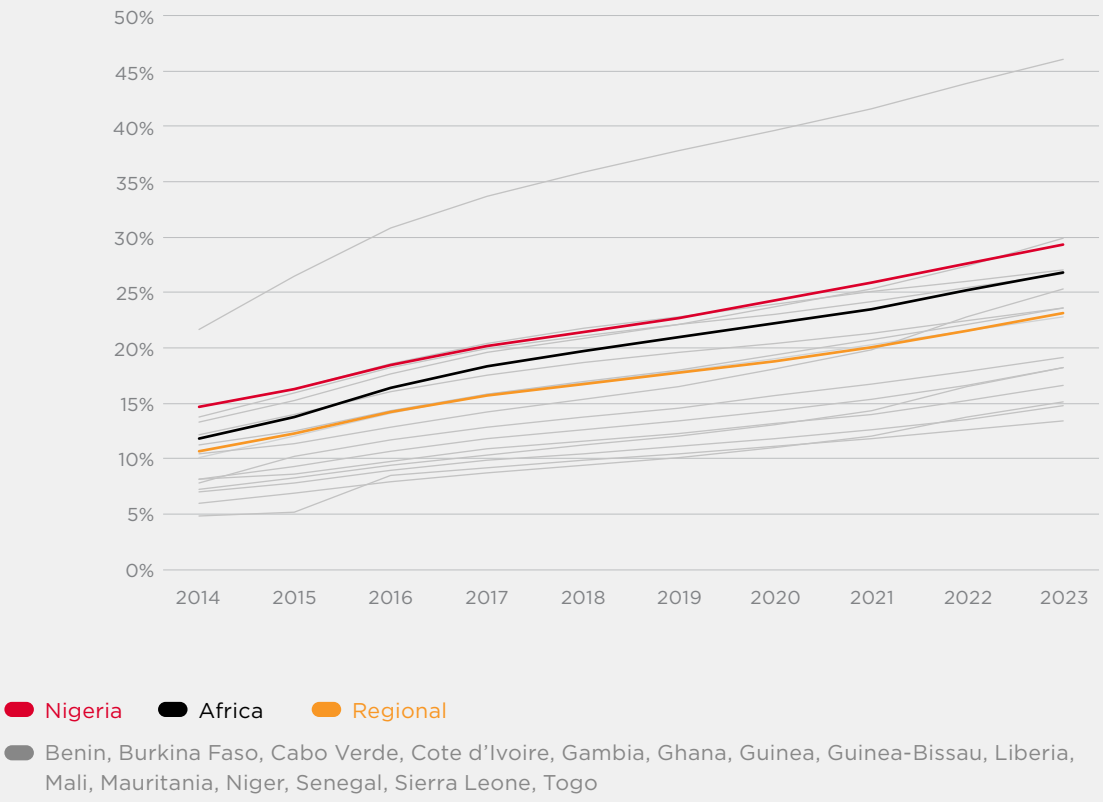


Source: GSMA Intelligence

74 Source: NCC
75 NCC also reports 161.5 million "internet subscriptions".

Figure 14

Unique mobile internet subscribers[76]



Source: GSMA Intelligence

76 Unique mobile internet subscribers refers to individuals who use the mobile internet. This is different from the total number of mobile internet subscriptions, because the latter can include individuals with multiple SIMs.

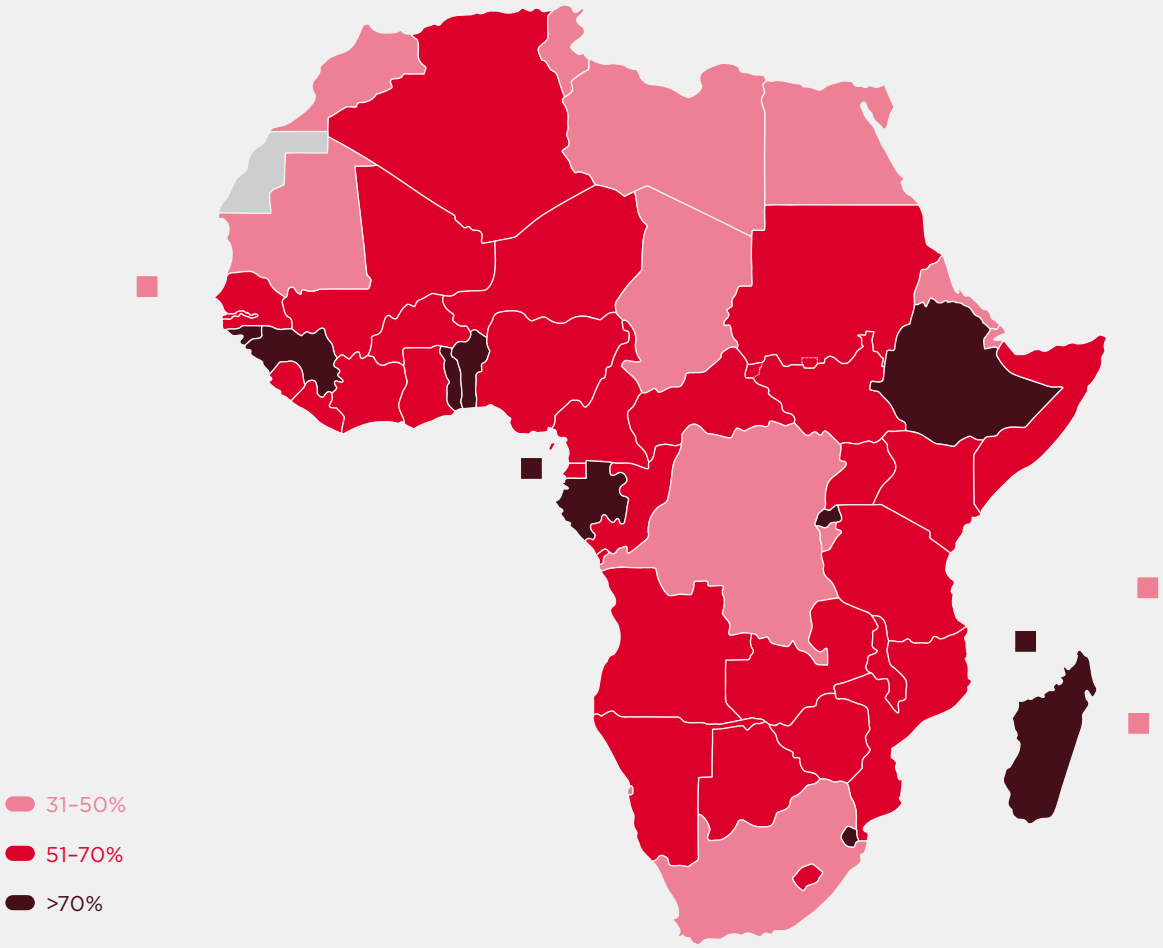
The difference between the number of people living within reach of the mobile broadband networks and those using it is referred to as the "usage gap". Nigeria is around the average for Sub-Saharan Africa on this measure. The mobile service providers have been successful in building out broadband network coverage but many people living within range of the networks have not yet adopted it (Figure 15). However, this gap is not uniform across all Nigerians. Recent surveys have found that women are 38% less likely than men to use mobile internet in Nigeria, compared to 36% in the region, and 19% in LMICs overall.[77]

The usage gap is driven by a range of factors. An important one is affordability – people may have the ability and desire to use the internet but cannot afford it. Such people may not have a smartphone or, if they do, they don't use it for internet. There are other groups of the population who do not see the value in it or are not able to access relevant content. These factors all contribute to this gap between the number of people who have access to the internet and the number of people who use it.[78]

Figure 15

Mobile internet usage gap, African countries

Percentage of population



Source: GSMA Intelligence

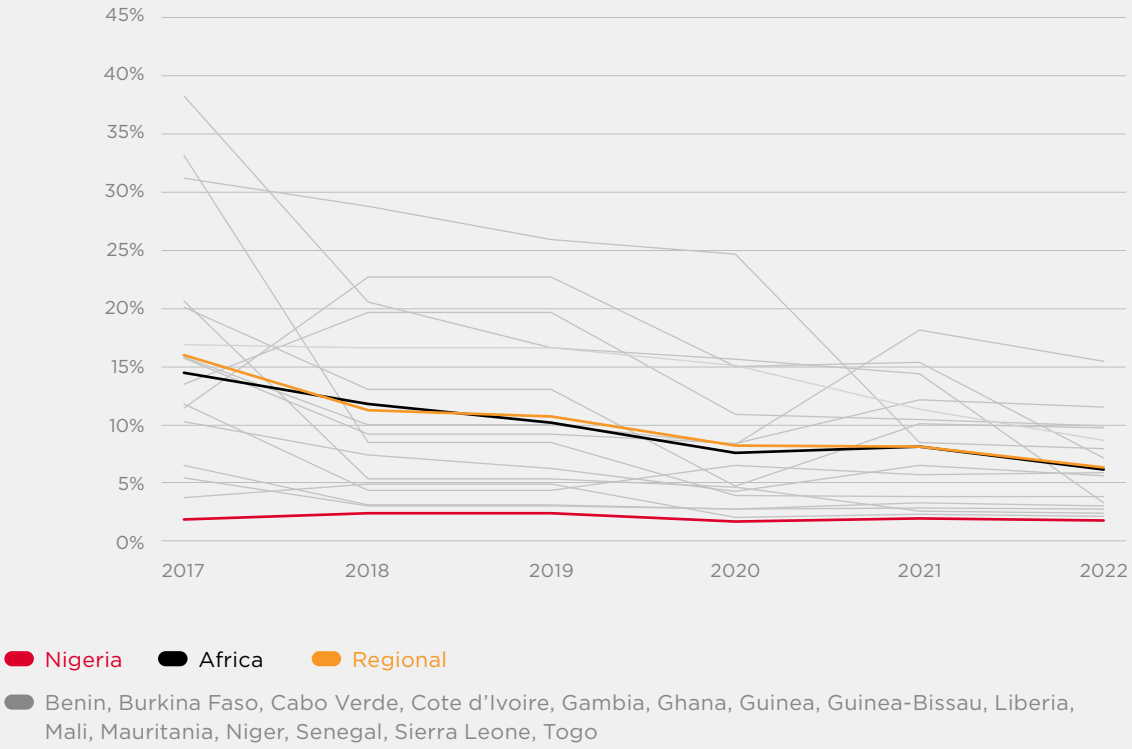
77 GSMA Intelligence
78 See GSMA, The State of Mobile Internet Connectivity 2023 Figure 7

Competition between mobile service providers in Nigeria has driven down prices for connectivity and Nigeria has some of the lowest cost data baskets in Africa. According to the ITU, the cost in Nigeria (as a % of GNI per capita) for a basic data-only package is the lowest in West Africa and well below the average across Africa. At 1.8% of GNI per capita, the cost of a basic data package is on a par with that in South Africa, although this is calculated on the basis of a significantly lower GNI per capita (Figure 16).[79]

Figure 16

Basic data cost

(% of GNI per capita)



Source: ITU

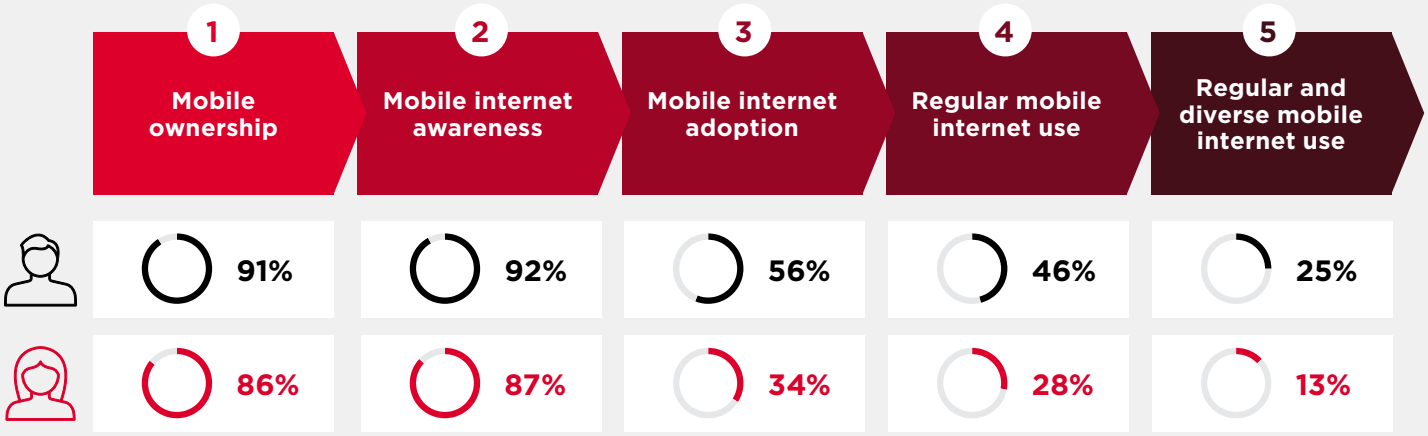
The performance of the mobile broadband networks in Nigeria is also reasonable in comparison with other countries in the region. Average speeds reported to Ookla by mobile internet users in Nigeria are 21Mbps, just below those measured in Senegal (at 23Mbps) and similar to those measured in Benin and Côte d'Ivoire.[80]

Consumer use of the mobile internet is not yet widespread in Nigeria. The GSMA has conducted consumer surveys in Nigeria and other African countries since 2017 about mobile internet adoption, usage and barriers preventing access to mobile internet services. In 2022, it found that only 25% of men and 13% of women in Nigeria engaged in regular and diverse use of mobile internet (defined as performing at least 3 mobile internet use cases daily).

79 ITU
80 Ookla Speedtest Global Index, October 2023.

Figure 17

Digital inclusion in Nigeria in 2022



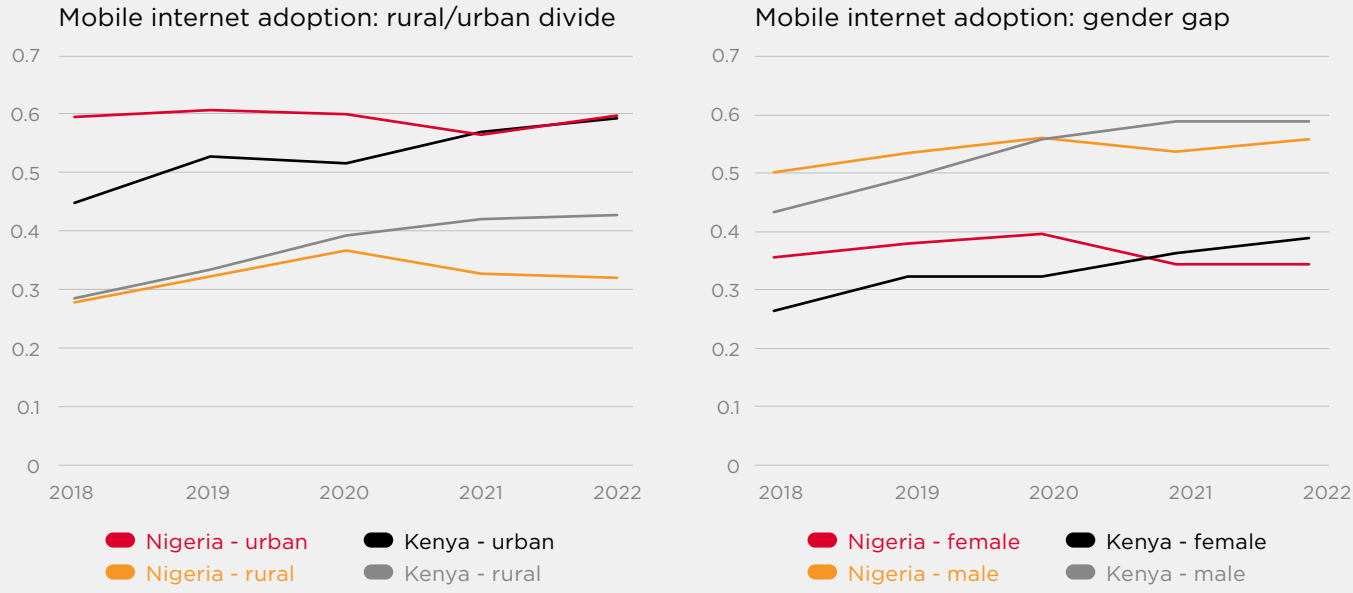
Regular mobile internet use is defined as performing at least one mobile internet use case daily. Regular and diverse mobile internet use is defined as performing at least three mobile internet use cases daily.

Source: GSMA Consumer Survey 2022.

Trends in internet adoption by underserved population groups in Nigeria and Kenya have been diverging. Kenya has been doing a better job of getting the rural population online. In terms of gender split, while more men and women are using mobile internet, the gender gap has been widening with much fewer women having access to mobile internet than men.

Figure 18

Mobile internet adoption (as a % of adult population) in Kenya and Nigeria, over time and by population segment



Source: GSMA Consumer surveys over time.

The most popular activities for Nigerians on the mobile internet are messaging and communications, followed by video streaming, gaming and news. The biggest barriers to further usage remain affordability and digital literacy.

Figure 19

Activities done online and barriers to mobile internet adoption in Nigeria

Use instant messaging	Make or receive calls online	Make or receive video calls	Watch free-to-access online video	Read the news	Play free games	Listen to free music online
94%	90%	85%	75%	80%	72%	54%

Get information about products and services	Access information to support my education, or that of my children and relatives	Manage or pay my bills	Order and/ or purchase goods or services	Access health services	Access government services	Look or apply for a job
67%	57%	59%	44%	41%	38%	37%

Affordability				Literacy and digital skills										Relevance			
Handset cost		Data cost		Reading/writing difficulties		Do not know how to access internet on a mobile		Do not know how to use a mobile		Do not have time to learn how to access internet on a mobile		Not sufficient support in learning to use internet		Internet is not relevant for me		Insufficient content in local language	
M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
52%	58%	36%	51%	43%	46%	30%	41%	19%	26%	24%	27%	15%	14%	30%	25%	13%	15%

Safety and security						Access													
Harmful content (self/ family)		Strangers contacting me		Information security		Internet drains my battery		Network coverage		Family does not approve		Access to agent support		Slow connection/ cannot do what I want		No access to internet enabled phone		Hard to find where to buy internet enabled phone	
M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
13%	15%	17%	19%	16%	17%	10%	18%	12%	10%	5%	16%	4%	6%	13%	13%	25%	27%	6%	8%

Source: GSMA Consumer Survey 2022.

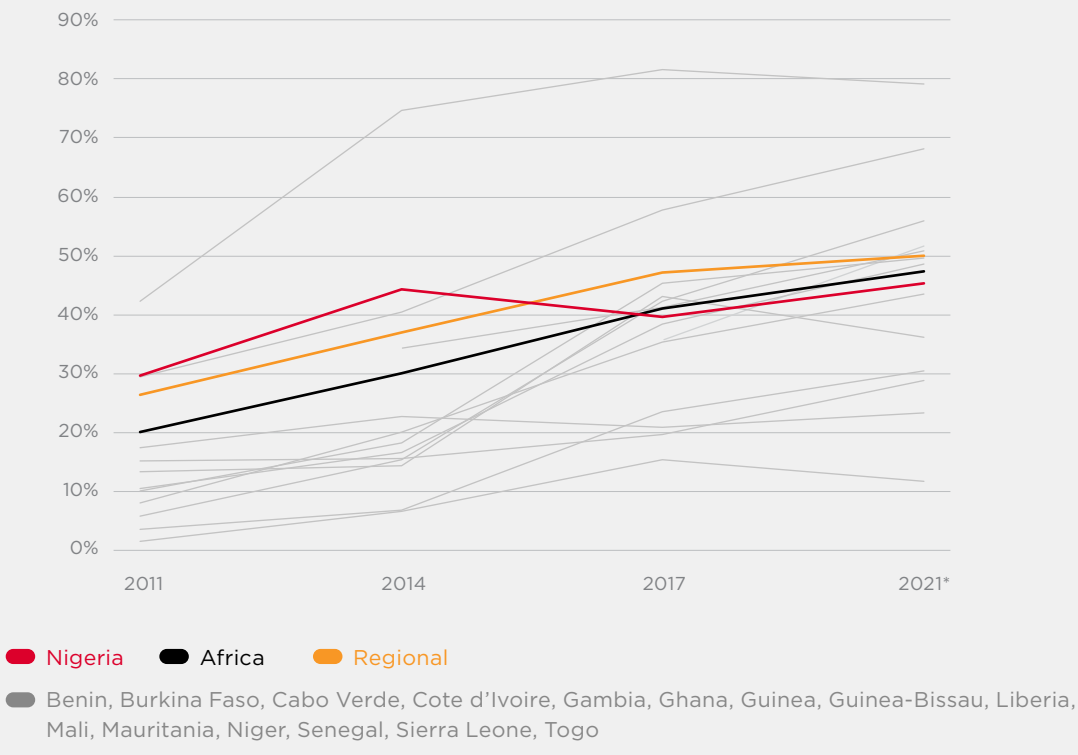
Mobile money

The growth of mobile money services in Nigeria has happened somewhat later than in many other countries in Africa due to licensing and regulatory restrictions. As a result, the level of financial inclusion in Nigeria was fairly stagnant between 2014 and 2021. Mobile money adoption has accelerated in other countries over the past 10 years, resulting in the level of financial inclusion catching up with Nigeria and – in many cases – overtaking it. A decade ago, Nigeria was a regional leader in financial inclusion but it is now positioned below the regional average (Figure 20).

Figure 20

Proportion of population with a financial services account, compared to other African countries

% of population with a financial services account, compared to benchmarks

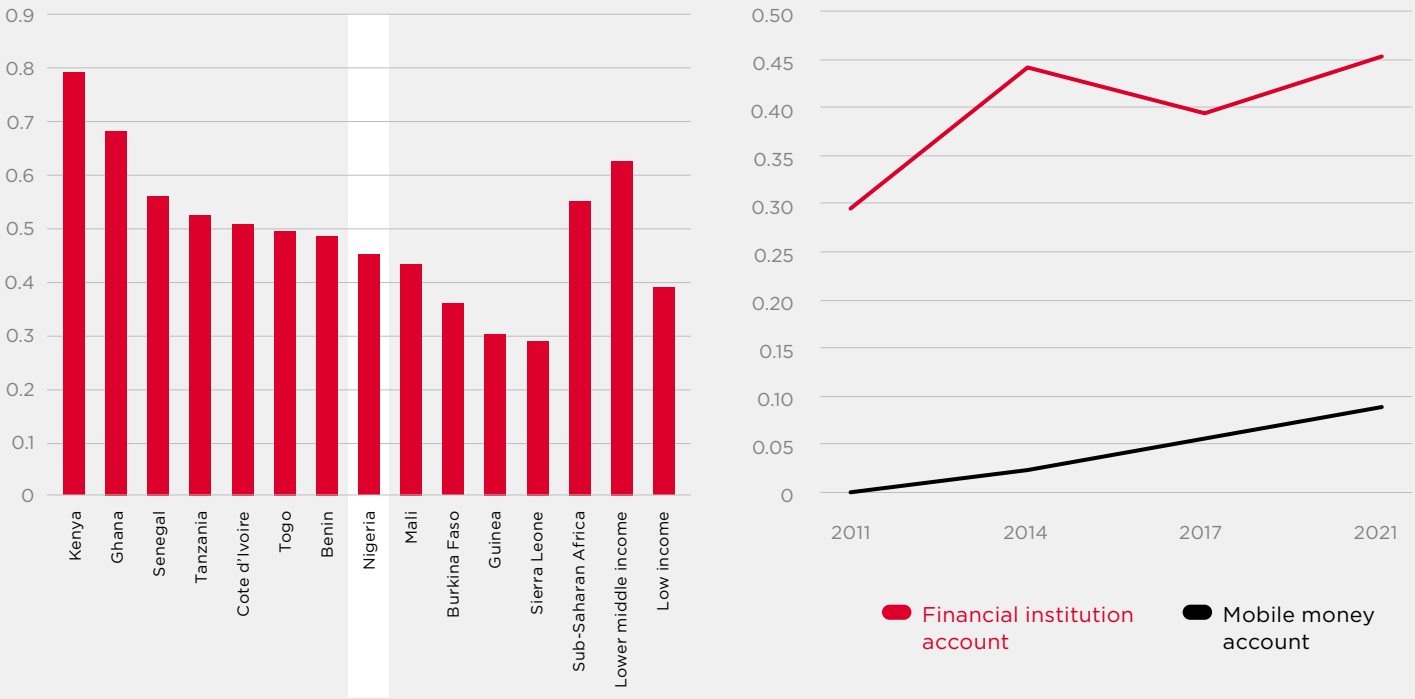


Source: Findex data
Note: Only considers population who are 15+. "All Financial services accounts" include both accounts at formal financial institutions and mobile money accounts. *Some countries reported in 2022 instead of 2021.

Following changes to licensing and regulations, mobile money is beginning to make a significant contribution to overall financial inclusion in Nigeria. Data up to 2021 indicates that the number of mobile money accounts was rising but was still outweighed by the number of accounts in financial institutions (Figure 21). Learnings from other countries, such as Kenya, Tanzania, and Ghana, show that allowing mobile money providers to provide new services such as micro credits can further accelerate and financial inclusion and contribute to the economy.

Figure 21

Financial account ownership in SSA countries (left, 2021) and evolution of financial inclusion in Nigeria (right)



Source: World Bank Global Findex. Percentage of adults with an account at a formal financial institution or mobile money account.

B. Challenges facing the telecoms sector

The telecoms sector in Nigeria faces a series of significant challenges. These range from operational factors that make it difficult to build and operate network infrastructure; unfavourable economic conditions; poor economic infrastructure and funding constraints. These factors all impact the financial sustainability of continued investment in the sector. Some of these challenges are long-term difficulties and affect many countries in Africa. Difficulties with connecting mobile sites to the electricity grid is one example which is common to many countries in the region. Similarly, very low incomes, particularly in rural areas, create problems of affordability and ability to pay for mobile services and devices.

However, **mobile service providers in Nigeria face some challenges that are either specific to Nigeria or worse than in other countries in the region.** The following sections discuss five of the major challenges facing the digital sector in Nigeria.

Rights of Way for fibre-optic networks

RoW are the permissions that service providers need to obtain from government authorities in order to build fibre-optic networks. These networks are an essential component of all modern communications networks and form an integral part of mobile networks everywhere around the world. They provide the high-capacity links that connect sites in a mobile network and carry traffic between major nodes. As the number of subscribers increases and the amount of data traffic that the network carries grows, the role of these fibre networks becomes more important.

The construction of fibre networks for a mobile service provider usually takes place along existing transport or other infrastructure corridors. In Africa, these are typically a combination of roads, pipelines and electricity transmission networks. Most of this infrastructure is publicly owned and therefore mobile service providers need permission from the relevant authorities before they can build.

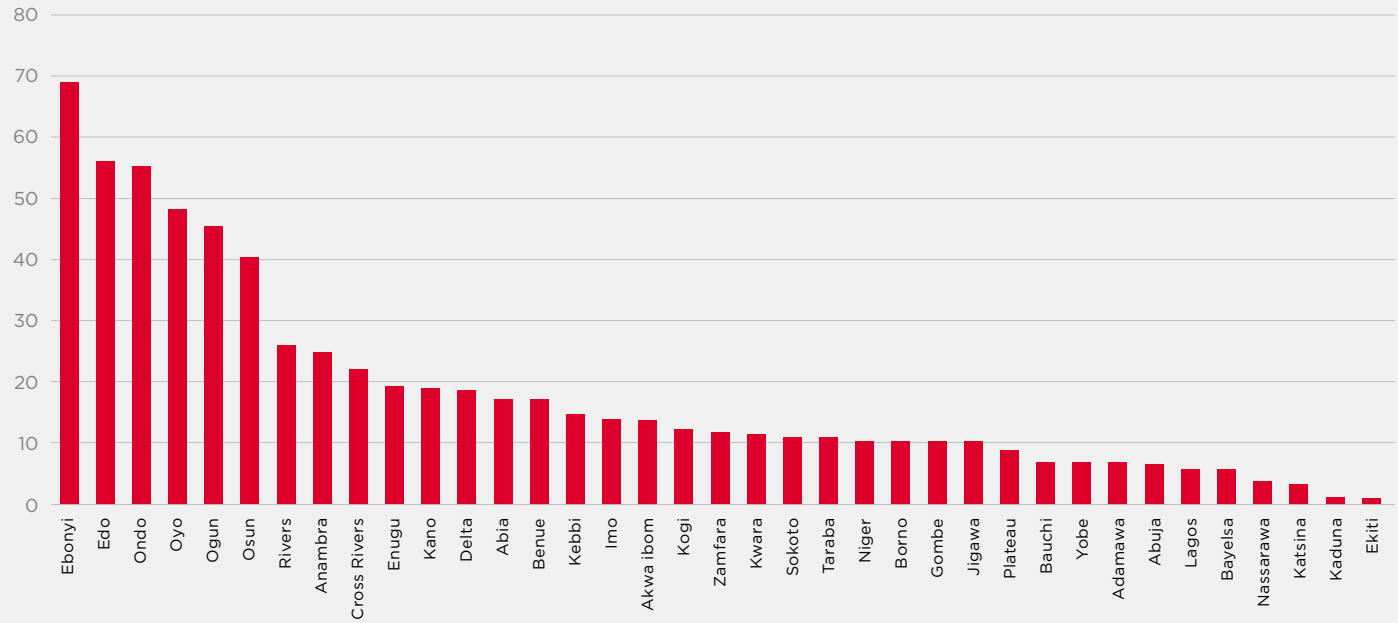
In Nigeria, mobile service providers are required to obtain permission from one or more government authorities in order to build networks and these authorities charge a fee for issuing the RoW. Although a national framework setting these fees has been agreed in Nigeria, in practice they are set by individual authorities at the state level and, in some cases, also at lower government levels. As a result, the total RoW fees that service providers incur when building fibre networks can be high and vary considerably, depending on where the network is located.

As of 2023, the most expensive RoW, in Ebonyi State, was 69 times more expensive than the price of RoW in the States with the lowest fees. Figure 22 shows the cost of RoW in each state, relative to the cost in the cheapest state (Ekiti).

Figure 22

Total cost (normalised) of Rights of Way by state (December 2023)

Normalised cost (Alton)



Source: ALTON
Note: Costs include administrative charges, management and Supervision and reinstatement fees. All costs are expressed relative to the value of the lowest cost state.

In addition to the problems caused by this variability in the fees charged for RoW, the overall effect of them is to significantly increase the cost of rolling out fibre networks. This represents a significant extra cost to service providers building fibre networks, ranging from an additional 1% in the cheapest states to over 70% in the most expensive.[81] The cost of RoW clearly can be very material and have the effect of pushing up the overall cost of building networks. Importantly, this is not limited to fixed broadband networks. Rather, it increases the cost of all broadband networks, including mobile. Since, mobile broadband is – by far -the most widespread means of accessing the internet in Nigeria, the higher cost resulting from fees for RoW is affecting all broadband users in the country.

In 2020, Nigeria's state governors agreed to reduce RoW rates to NGN 145 per metre.[82] However, only a limited number of states have implemented this agreement, with many states increasing RoW rates instead. It is estimated that, if charges for RoW were reduced in all States to the agreed level of NGN 145 per metre, it would reduce the cost of national network rollout by around 15%.[83] Minister Dr. Bosun Tijani, who has prioritised fibre broadband rollout through the National Broadband Alliance for Nigeria (NBAN)[84], recently stated that 3,000km of Nigeria's planned fibre-optic expansion had already been laid.[85] A further 500km could potentially have been laid at the same cost if service providers had faced RoW rates of NGN 145 per metre.[86]

81 This is based on an estimated average cost of fibre network build of $20,000 per km, excluding RoW. This figure is based on regional industry averages and is consistent with figures quoted in Nigeria, see for instance: Nigeria seeks $3 Billion investment to expand fibre connectivity – Voice of Nigeria (von.gov.ng) and https://technext24.com/2023/12/06/nigeria-target-95000km-fibre-optic-cable/.

82 Only seven States in Nigeria are implementing reduced Right of Way fees | TechCabal; Slashing right of way fees speeds up Nigeria's broadband roll-out (african.business)

83 Average of the reduction in RoW as a percent of total fibre cost across all states, weighted by population

84 FG to Build Broadband Alliance to Guarantee Affordable Access for All | The Federal Ministry of Communications, Innovation and Digital Economy (fmcide.gov.ng)

85 Nigeria seeks $3 Billion investment to expand fibre connectivity – Voice of Nigeria (von.gov.ng)

86 3,000/0.85 = 3,529km.

A further challenge facing service providers building fibre-optic networks is the length of time that it takes to obtain a RoW. The RoW approval process is lengthy and complex. Nigeria's first National Broadband Plan in 2013 found that RoW approvals could take up to two years to obtain and remains a priority area under the current National Broadband Plan 2020 -2025.[87], [88] This significantly increases both the time and the cost that it takes to roll out network infrastructure.

Effective, long-term solutions are needed to address the variability, cost, complexity and time involved in obtaining RoW approval. State level legislation needs to be harmonised, and any changes need to receive sufficient political backing that they outlive a single administration.

It is recommended that the following specific measures are taken:

- All government authorities (at national and sub-national levels) should apply the national maximum RoW fee of N145 per/LSQM adopted by the National Economic Council (NEC) for the deployment of fibre across all states in Nigeria.
- There should be a single point of contact in each state for the RoW application process. This process should be digitalised in all states in order to accelerate the process for managing RoW applications.
- The time taken to complete the approval process should be limited to one month.

Infrastructure security

Although fibre networks are an essential component of modern mobile networks, they are also more vulnerable to damage than other parts of the network. They typically run along roads and are easily damaged if – for example – construction work is taking place and is not tightly controlled. Such damage can have a major disruptive effect on networks. These fibre networks are part of the core networks and therefore carry very high volumes of data traffic between network nodes. Damage to cables therefore has widespread impacts on large parts of the network. It can result in network outages, slowing down of data rates and other types of disruptions.

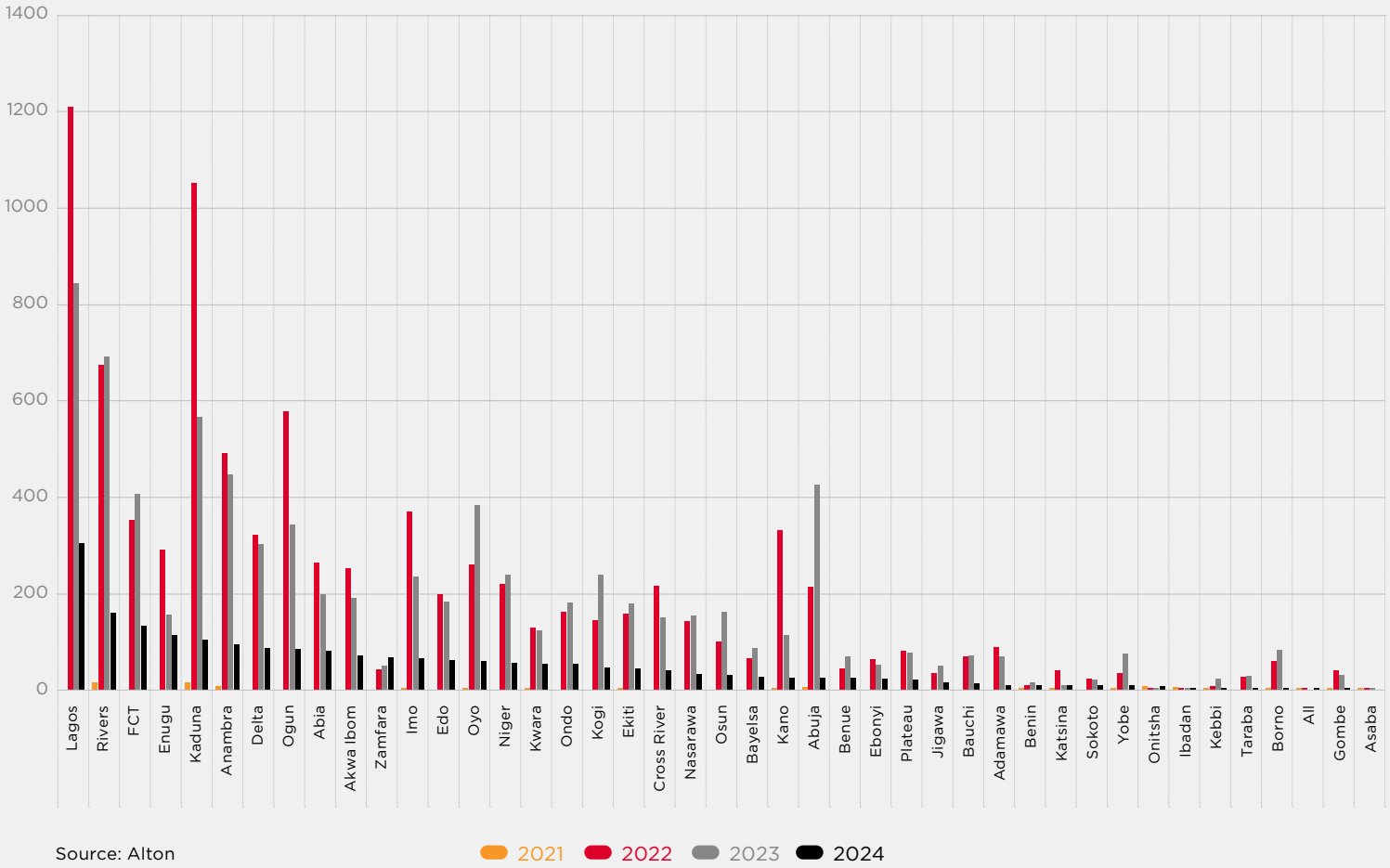
Many countries try to mitigate these problems by implementing systems of planning and authorisation for construction work that affects transport infrastructure. This prevents construction from taking place without measures in place to prevent damage to cables. In Nigeria, there is only limited protection for communications infrastructure. In most situations there are either no rules in place to manage the interaction between construction and existing cable infrastructure or there are rules, but they are not effectively enforced. As a result, there are very high numbers of cable breaks along the road network. Over 90% of these were caused by construction and sabotage/vandalism.[89]

The frequency of damage to fibre networks varies greatly between states. Some states, such as Lagos, Kaduna and Rivers, account for a much higher proportion of cable cuts than others. Approximately a third of all cable cuts in 2022 and 2023 were experienced in these three states alone (Figure 23).

87 Slashing right of way fees speeds up Nigeria's broadband roll-out (african.business)
88 National Broadband Plan 2020 - 2025, Pg 49, file (ncc.gov.ng)
89 Source: Alton

Figure 23

Annual number of fibre cuts



Source: Alton
Note: data for 2024 to April

Service providers have responded to the problem of excessive cable cuts in several ways. At the design and planning stage, they need to anticipate the likelihood of extensive cable damage by building additional protection to cable infrastructure. They build additional redundancy into networks, ensuring that there are multiple alternative routes available for traffic in the event of a break. Finally, they spend more on cable repairs and maintenance to respond to cable damage when it occurs. All of these measures have high costs associated with them.

The result is that fibre networks in Nigeria cost more to build and maintain than they should. These costs are very significant. MTN, for example, was required to relocate 1,069 km of fibre cables in FY22 and a further 1,433 km in FY23. The budgets for this activity were NGN 4.4 billion and 6.7 billion, respectively.

The impact of this damage to fibre-optic cables is far-reaching. Money spent on repairing cable breaks could have been spent on further extending the networks into currently underserved areas. Alternatively, it could have been redeployed to new mobile sites, also in rural areas. For example, if these funds had been spent on rollout rather than repairs, MTN could have built an additional 870km of new fibre.[90] The true cost of the failure to protect fibre network infrastructure is therefore in the missed opportunity to provide rural Nigeria with broadband coverage.

One approach to reducing the impact of excessive fibre cuts would be to provide fibre networks, and indeed all telecoms network infrastructure (including towers, poles, generators), with legal protection. Legislation that would designate telecoms networks as Critical National Infrastructure (CNI) has been under consideration in Nigeria but has not yet been approved. Such legislation would go some way towards reducing damage to telecoms network infrastructure caused by construction and sabotage. Given the role that these networks play in the life of hundreds of millions of Nigerians and in the country's economic development prospects, it would be reasonable to afford them some legal protection from excessive damage.

90 Assuming an average cost of fibre network build of $20,000 per km.

Mobile service provider taxation

Mobile service providers in Nigeria face a complex tax environment with multiple taxes levied at federal and state levels. [91] General taxes levied at the federal level include: Companies Income Tax, Capital Gains Tax, Withholding Tax, Stamp Duty, National Industrial Training Fund (NITF), Employees Compensation Scheme, Tertiary Education Trust Fund (TETFUND), National Housing Fund, Contributory Pension Scheme and Customs Duties.

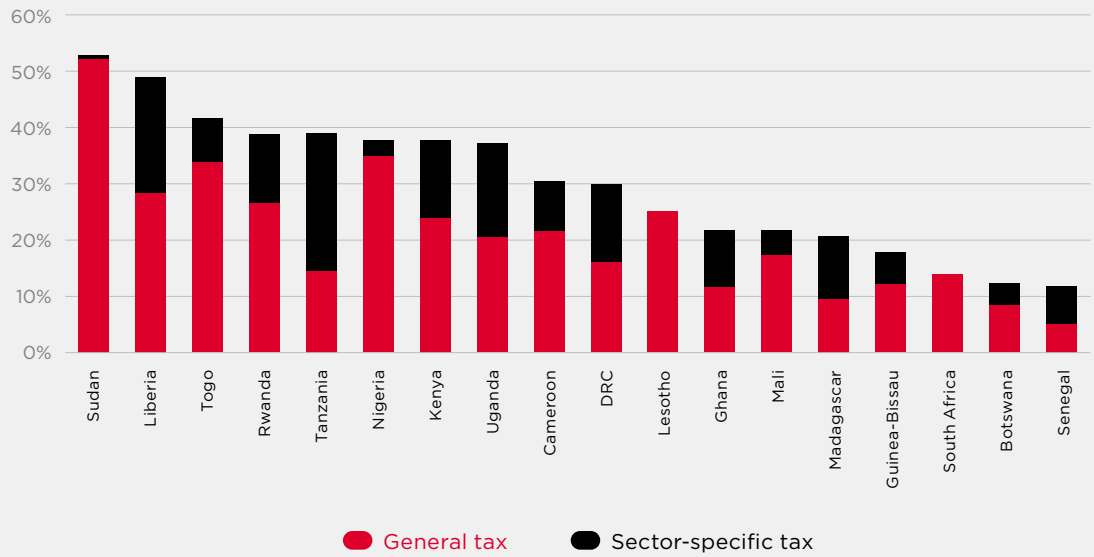
Sector specific taxes levied at the federal level include Annual Operating Levy (AOL), The National Cyber Security Fund (0.5% of electronic transactions undertaken by mobile service providers) and the National Information Technology Development Fund (NITDF) Levy (1% of the profit before tax of each year of assessment).

In addition, there is a wide range of taxes, fees and levies that are paid at the state level. These are highly variable across states and include items such as RoW fees and permits etc. In total, these add very significantly to the tax burden. In 2020, an NCC report found that state-level taxes, levies and fees paid by mobile service providers to state governments amounted to NGN 14.65 billion.[92] It is noted that the Federal Government has recognised this as a problem for the sector. As noted above, it has sought to encourage state governments to reduce RoW fees to a nationally standardised rate in recent years to support digital infrastructure deployment. However, it is also important to note that the majority of states have not implemented this.[93]

The burden of taxes, fees and levies in Nigeria is high in comparison to other countries in the region (Figure 24).

Figure 24

Tax and fee payments as a proportion of mobile sector revenues for selected countries in SSA (2021)



Source: GSMA[94]

91 52 taxes, unresolved N200bn USSD debt squeeze telcos - Businessday NG

92 NCC, A Compendium Of Taxes, Levies And Fees By State Governments On Telecoms Service Providers In Nigeria And Its Effect On The National Digital Economy Agenda, 2020.

93 Anambra Introduces Zero Right of Way Fees to Enhance Digital Adoption - Telecom Review Africa

94 GSMA, Mobile Tax Policy and Digital Development A study of markets in Sub-Saharan Africa October 2023

It is important to note that this comparison does not include all of the taxes payable at all levels. The list of taxes payable by service providers includes the ones listed below in Table 11.

Table 11: Total taxes and levies payable by service providers

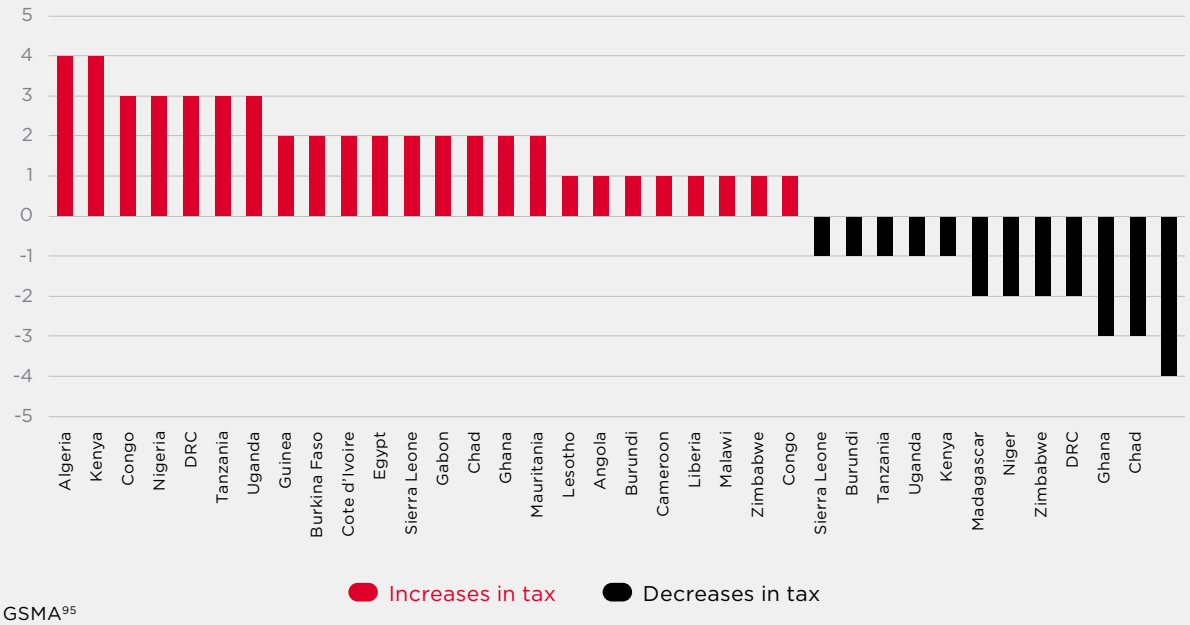
Aviation Height Clearance	Tenement Rate	Parking
Env. Impact Assessment	Building Fitness	Audit Fee
Business Premises	Infrastructure Maintenance	Hawking Permit
Sanitation Fees	Right of Way Charges	Shop Rate
Signage and Advert	Bridge Crossing	Social Services Levy
Fire Service	Employee Development Levy	Fumigation of the BTS
Sewage Fees	Operational Permit	Annual Renewal on Right of Way
Radio & TV	Withholding Tax	Corporate Social Development Levy
Way Leave	Community Access Fee	Annual Ground Rent
Water levy	Economy Development Fee	Annual Aviation Renewal
Annual Operating Levy (AOL)	Project Assessment Fee	Stamp Duties
NITDA Contribution	Effluent Discharge	Companies Income Tax
PAYE	Ecological fees	Nigeria Police Trust Fund Levy
Planning Permit	Environmental Sanitation levy	National Agency for Science and Engineering Infrastructure Levy
Building Permit	Capitation Fee	Tertiary Education Tax

It is clear from this that the burden of taxes and levies payable by the service providers is both high and complex.

It is also important to note that the overall tax burden on the mobile sector in Nigeria has been going up in recent years. There have been a number of changes to the tax rules which have served to increase the rates of tax that the industry pays (Figure 25).

Figure 25

Number of changes in taxes applied to the mobile sector by country (2017-2022)



Source: GSMA[95]

As noted above, the Federal Government has previously taken steps to try to harmonise and reduce the burden of tax and fees on the sector. However, this was limited to the initiative on RoW fees and was implemented in only a very limited way. The tax landscape faced by mobile service providers in Nigeria has therefore got worse rather than better in recent years.

Higher taxes feed through into higher costs, reduced investment and higher prices. A reduction in the overall tax burden either at Federal or State level would support the sector to invest and compete effectively. This would feed through into an increased rate of growth of internet adoption in the country as a whole, resulting in more than 1.5m additional unique mobile internet users by 2028.

Table 12: Mobile internet uptake with reduced taxation

Mobile internet users (m)	2023	2024	2025	2026	2027	2028
BAU	66.56	70.85	74.71	78.65	82.65	86.76
Reduced taxation	66.56	71.18	75.34	79.58	83.88	88.31
Y-on-Y difference to BAU	0%	0%	1%	1%	1%	2%
Increase in growth vs BAU	0%	+0%	+1%	+1%	+2%	+2%

We recommend a comprehensive review of the level and impact of taxation on the sector and the Government's digital economy objectives, and welcome the important work being conducted by the Presidential Committee on Fiscal Policy and Tax Reform, and the recent direction given by the President for the introduction of a single digit tax system.[96] This review should carefully consider the recommendations made by Association of Licensed Telecommunications Operators of Nigeria (ALTON) submission to the Committee in September 2023 (please see Section 5 of this report).

95 GSMA, Mobile Tax Policy and Digital Development A study of markets in Sub-Saharan Africa October 2023
96 Tinubu orders single-digit tax system - The Nation Newspaper (thenationonlineng.net)

Sustainable Investment

The mobile industry is capital-intensive. Service providers are required to maintain high rates of capital expenditure (capex) to operate and expand their networks and services. This capex is typically spent on a range of activities including expansion of network coverage, upgrading existing network infrastructure to support the latest generation of mobile network technologies, paying operating licenses, spectrum licenses and other regulatory fees, supporting innovation and improvement of customer services and investing into expanding non-network areas of the business such as the retail/distribution/customer service footprint, mobile money agents etc.

Businesses need to generate sufficient revenue to cover their operating costs and support this level of capex over the medium-term. If this is not realised, they are likely to cut back on either capital or operating expenditure or both. This results in a shrinking sector which has several negative implications. Subscribers would receive a poorer quality of service and would miss out on the benefits that come with technological advancement. People living outside of the current network footprint would also suffer as there will be delays in the expansion of coverage.

A sustained reduction in industry revenue has implications that go beyond just the service providers. In the short term, the amount of tax revenue paid by service providers is a function of its total revenue and profitability. When these fall because the industry is facing financial difficulties, the amount of tax revenue generated also falls. The direct contribution of the industry to the total GDP of the country is also reduced. This is further exacerbated by the impact on declining budgets for suppliers and direct and indirect employment.

A slowdown in the mobile industry will have a further negative impact on the GDP of the country. Growth in voice and data connectivity results in a long-term boost to GDP. If the industry suffers, this will feed through into lower rates of digital adoption and the country will miss out on the potential boost to GDP that it would have delivered.

The financial performance of the mobile industry in Nigeria has slowed down in recent years after a long period of sustained growth. MTN Nigeria announced a N137 billion loss for the period ended December 31, 2023, down from a N348 billion profit in 2022, and further reported forex losses for first quarter 2024[97]. Airtel's operating profit fell by 7% between 2022 and 2023, despite an increase in its number of subscribers and flat ARPUs.[98]

Many factors have contributed to the above results. Revenue in Naira has stopped growing as the number of subscribers has increased. However, falls in ARPUs indicate pressure on prices and reductions in average usage. Operating costs have increased significantly in the recent period. The primary driver of this has been increases in the cost of power for sites due to the rapid increases in the price of fuel, increased government fees and levies, and increased demand for forex due to contractual obligations for rollout that are denominated in USD.[99]

97 https://nairametrics.com/2024/04/30/mtn-nigerias-net-forex-losses-rises-to-staggering-n1-39-trillion/
98 Airtel Africa plc Results for the year ended 31 March 2023 11 May 2023; p 14.
99 Diesel and petrol prices rose by 66.4% and 257.1% respectively in 2023.

Underlying these trends in revenue and operating costs, has been the deteriorating macroeconomic situation in Nigeria. The high level of inflation has pushed up the cost of many inputs into the mobile service providers businesses.[100] This has been further exacerbated by the withdrawal of fuel subsidies which has significantly increased the cost of fuel which is a major input for mobile service providers.

One of roles of policymakers and regulators is to create an enabling environment that allows service providers to finance their activities on a sustainable basis. Decisions on issues such as tax, regulatory fees, spectrum fees, customs duties and other government levies all have an impact on this. Many countries, globally, adopt a regulatory framework that enables competitive markets and protects consumers, addressing anti-competitive behaviour and barriers to competition.[101] Regulators undertake periodic reviews of the sector and, if so, apply proportionate regulation to address potential harm that may arise from it.

In the mobile sector globally, it is not standard practice to regulate retail tariffs. This is because the level of competition and the dynamic nature of the market means that prices are determined by market forces. In this context, regulators focus on the wholesale tariffs that operators charge each other for services such as call termination which are usually set at cost-orientated rates. Periodic reviews of wholesale tariffs ensure that they reflect the cost of delivering these network services. This arrangement allows operators to set retail prices in a way that reflects both costs and market forces.[102]

In Nigeria, both wholesale and retail mobile tariffs are constrained by regulation.[103] In a low-inflation environment, cost-based and/or price-cap-regulated rates are not likely to change dramatically over time. However, when the costs of key inputs such as fuel, salaries and externally purchased items such as network equipment change significantly from one period to the next, the cost of delivering mobile services will also change. If regulated tariffs do not reflect these changes, the financial sustainability of the industry will likely be threatened.

It is recommended that the NCC re-consider this approach and remove retail tariff price control regulations. Instead, it should focus tariff regulation on wholesale services such as interconnection. This would be consistent with the current level of competition in the market and would be in line with international standards.

In the interim, if retail price controls are retained, **a periodic review of the tariff structure undertaken by the NCC to assess the cost of service provision, in accordance with the applicable legislation and regulations,**[104] **would support the long-term financial sustainability of the industry.** Such a review would allow for some adjustment of tariffs to reflect the changing cost of inputs into the businesses and facilitate investment into improved network coverage and quality of service.

Further, should retail tariff regulation continue, a more pro-competitive approach than the current one would be for the NCC to introduce upper and lower retail tariff bands. Under such a system, service providers would not be required to obtain prior NCC approval for new tariffs, provided that they were within the bands.

The sector would further benefit from a policy and regulatory environment that takes account of the impact on the financial and operational sustainability of service providers. The increasing cost of energy and the lack of complementary infrastructure are particular challenges that could be addressed – at least in part – by regulatory and policy measures.

Such measures to ease cost pressures on service providers could include:

- facilitating the importation and installation of green energy solutions for mobile sites;
- adjusting the price of key regulated inputs such as spectrum to reflect local current purchasing power; and
- protecting network infrastructure from deliberate and accidental damage (discussed elsewhere in this report).

100 MTN Group reported average inflation of 24.5% increase and 39.8% weakening of USD: NCN in Financial Year 2023 https://www.mtn.com/wp-content/uploads/2024/04/MTN-Group-FY-23-results-presentation.pdf

101 GSMA | Competition Policy | Public Policy

102 Chapter 2, ITU Digital Regulation Handbook 2020 Digital Regulation Handbook (itu.int)

103 See section 108 Nigerian Communications Act 2003 (ncc.gov.ng); Tariff Information (ncc.gov.ng)

104 Nigerian Communications Act 2003, Regulations for competition practices; https://www.ncc.gov.ng/accessible/documents/101-regulations-for-competition-practices/file

By supporting the mobile sector to reduce costs and sustain revenue in the face of cost increases, the Government will enhance the sustainability of capital investment and the operations of the business. This will promote competition and support further investment by the mobile service providers. Importantly, as mobile service providers invest in the latest generations of mobile network technology, they improve the quality of service that customers receive while also reducing costs. This improves the financial sustainability of the sector and supports future growth and expansion.

The consequence of a more financially sustainable environment would be increased investment into network coverage and capacity. It would accelerate investment into upgrading networks for the latest generations of mobile technology, particularly for the smaller operators in the Nigerian market. This would increase competitiveness and reduce costs, resulting in a 17% reduction in data prices and increase the number of individuals using mobile broadband by 1.8m (Table 13).[105]

Table 13: Mobile internet uptake with sustainable investment

Mobile internet users (m)	2023	2024	2025	2026	2027	2028
BAU	66.56	70.85	74.71	78.65	82.65	86.76
Sustainable investment	66.56	70.96	75.04	79.31	83.78	88.52
Y-on-Y difference to BAU	0%	0%	0%	1%	1%	2%
Increase in growth vs BAU	0%	+0%	+0%	+1%	+2%	+3%

Stimulating additional demand for mobile services

There are multiple digitalisation policies that the Government could adopt that would have the effect of stimulating demand for mobile internet and mobile money. Increased demand increases adoption and usage. Policies aimed at supporting demand and closing the usage gap could include interventions such as handset subsidies, digital skills training programmes, business support for SMEs, digitalisation of government services and programmes to increase adoption of new technologies by business and consumers, including mobile money. This is covered in more detail elsewhere in this report and the methodology annex.

It is estimated that implementing such policies to increase demand could result in at least 11 million additional mobile internet users in 2028. Table 14 below shows outputs from our modelling of the impact of a demand stimulation on mobile internet uptake.[106]

Table 14: Mobile internet uptake with demand stimulation

Mobile internet users (m)	2023	2024	2025	2026	2027	2028
BAU	66.56	70.85	74.71	78.65	82.65	86.76
Demand stimulation	66.56	72.65	78.51	84.65	91.05	97.78
Y-on-Y difference to BAU	0%	3%	5%	8%	10%	13%
Increase in growth vs BAU	0%	+3%	+6%	+9%	+13%	+17%

105 See the accompanying Methodology Document for assumptions.
106 See the accompanying Methodology Document for assumptions.

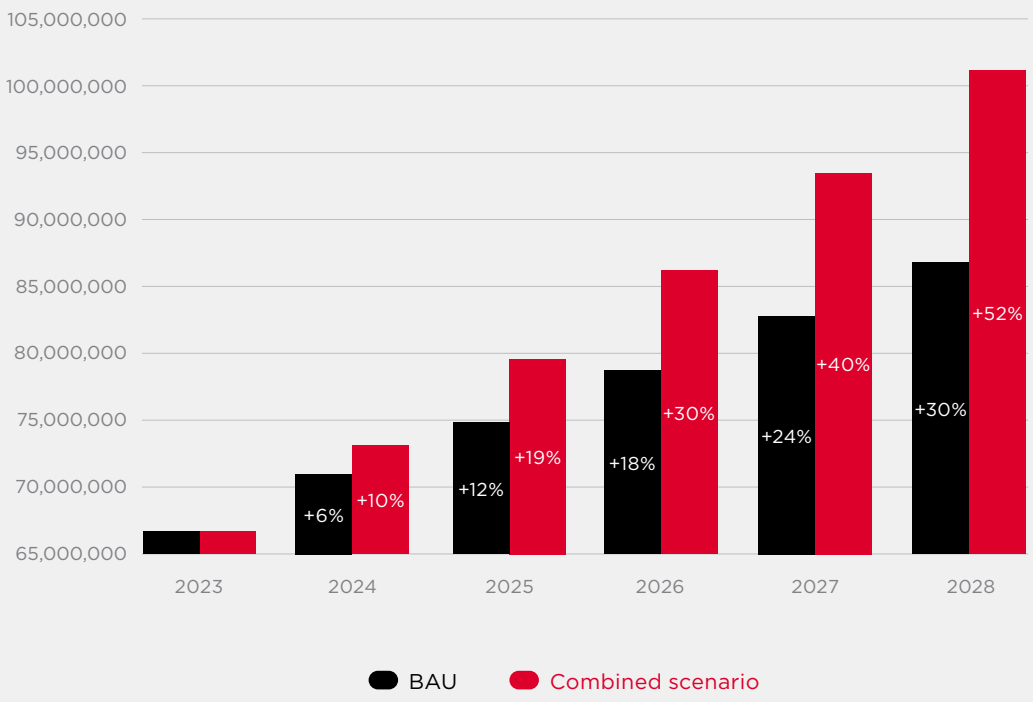
C. Modelling future developments in the telecoms sector

Taken together, the policy changes described above would have the effect of promoting growth and development of the sector. There are several different channels for this but the overall effect is to reduce costs, lower prices, promote investment and boost adoption of mobile broadband. The cumulative effect of these policies is shown in Figure 26.

As this report shows, the impact of such policies goes far beyond the telecoms sector. Greater adoption of broadband will result in productivity growth, job creation and enhanced tax revenues across the whole Nigerian economy.

Figure 26

Policy reform combined scenario, number of unique mobile internet users



Source: See Methodology Document that accompanies this report.

5. Policy analysis

An enabling policy and regulatory framework is critical to realising the full potential of Nigeria's digital transformation. This is recognised in the Strategic Plan 2023 – 2027, which sets out a comprehensive policy reform programme, and the Federal Ministry's National Broadband Alliance for Nigeria (NBAN):

Policy Reforms - Federal Ministry of Communications, Information, and Digital Economy Strategic Plan 2023 – 2027

- National broadband plan (80% coverage by end 2027; 25 Mbps download speed urban areas, 10 Mbps rural areas by 2025; (300-500% increased investment by end 2027).
- National policy on digital public infrastructure (Nigeria digital stack launched by 2025).
- National policy on telecoms (22% net GDP contribution by end 2027, 15% increase investment year on year, increase annual net revenue of telecoms sector by 100% by 2027, reduce unconnected in rural areas from 61% to <20% by 2027, achieve 50% improvement in QOS by end 2024).
- National blockchain policy.
- National digital economy bill (bill enacted by 2024, 50% of reforms implemented replacing paper processes by 2026).
- Nigeria Start-up Act.
- National AI strategy.
- National data strategy (60% of relevant government data digitalised and Open Data Platform by end 2026).
- National digital literacy strategy.
- NBAN: initial 7 pilots with investment cases including reforms to address barriers such as RoW.

Achieving this programme and to reap the wide-ranging benefits of digitalisation will require bold actions and partnerships from all parts of Government, public and private sector, balancing short-term objectives with long-term investment and development of the digital economy.

The Government correctly recognises that the mobile service providers provide some of the key foundations on which digital transformation process is built. Without universal access to digital connectivity, a broader digital transformation of the Nigerian economy will not be possible. The mobile sector is therefore a key partner for the Government in achieving its objectives.

Through this partnership, the mobile sector can contribute towards some of the key elements of the Government's plan. But, if it is to be successful in doing so, it requires the support of the Government and all applicable federal and state authorities in overcoming the severe challenges with the sector's financial stability and other critical obstacles that it currently faces.

The following tables summarises the key elements of this partnership. Under this, the mobile service providers are offering continued support of the Government's digital economy objectives but are also requesting for policy changes by the Government and regulatory authorities. This report has quantified their anticipated impact of these policy changes on the sector and beyond.

How service providers can offer to support the Government in achieving its digital economy objectives

Continued investment in high-capacity communications infrastructure, including 4G and 5G networks and fibre-optic cable infrastructure

The service providers will continue investing in digital infrastructure to support the digital economy in Nigeria, provided that the economic and regulatory environment improves in a way that supports sustainable investment.

Development of and participation in public-private partnerships on digital public services and applications programmes

These can be integrated with digital payments, including e-government, education, healthcare smart cities, and security. They include internal process redesign and automation, digital interfaces between government and citizens and between government and companies, digital payments applications and other forms of digital transactions, and digital literacy and skills programmes such as GSMA's MISTT.

A regulatory sandbox approach should be adopted for such services, as are increasingly being adopted for fintech and digital services in other countries and launched last year by the Central Bank of Nigeria for fintech. [107]

Design and implementation of digital applications to support private sector development and formalisation of the economy

Service providers are able to support the adoption of digital technologies in the private sector through their commercial relationships with all businesses in Nigeria from large enterprises down to microentrepreneurs. A regulatory sandbox approach to such technologies and applications would assist innovation and adoption.

When complemented by the digitalisation of government registration processes, this will accelerate digital transformation and support the process of formalisation of the economy and broadening the tax base.

Delivery of enhanced Quality of Service (QoS)

The industry recognises that delivery of high QoS is non-negotiable. Delivery of this should primarily be through market forces. However, the industry may benefit from engagement with the regulatory authority on this. This could be initiated through a consultation with service providers on a strategy for improving the quality of service that customers experience. This could include, for example, a progressive evolution from a QoS to a Quality of Experience (QoE) framework, including an action plan to address underlying barriers to QoS and QoE.

107 Regulatory sandboxes in the telecommunication sector enable technologies and business models to be tested for a specified period. Sandbox services are generally not subject to the full regulatory regime and may receive more regulatory guidance from authorities subject to terms and time periods outlined by the Regulatory authority. See Pg 20 – 21 Digital Regulation Handbook (itu.int). See World Bank Global Experiences from Regulatory Sandboxes Report: https://documents1.worldbank.org/curated/en/912001605241080935/pdf/Global-Experiences-from-Regulatory-Sandboxes.pdf. See Kenya capital markets regulatory sandbox How it Works (cma.or.ke). See Kenya communications authority Regulatory Sandbox | Communications Authority of Kenya. See Nigeria Central Bank regulatory sandbox Home | Regulatory Sandbox (cbn.gov.ng)

Policy changes that the sector is requesting in order to be able to deliver its support to the Government's digital economy objectives.

Implementation of Critical National Infrastructure legislation

Section 3(1) of the Cybercrime Act 2024 provides the President with the powers to designate certain computer systems, and/or networks as constituting Critical National Information Infrastructure, by order published in the Federal Gazette, on the recommendation of the National Security Adviser. This should be prioritised and accelerated for enactment and implementation. This includes proposed regulations to criminalise offences that damage fibre and increase penalties imposed on offenders.[108]

Simplification and improvement of the process for issuing RoW

A consistent and fair system of RoW charging and administration is needed across the entire country. In order to achieve this, the following measures should be implemented:

- All government authorities (at national and sub-national levels) should apply the national maximum RoW fee of N145 per/LSQM adopted by the National Economic Council (NEC) for the deployment of fibre across all states in Nigeria.
- There should be a single point of contact in each state for the RoW application process. This process should be digitalised in all states in order to accelerate the process for managing RoW applications.
- The duration for the approval process should be limited to a maximum of one month.

108 Nigeria will criminalise fibre damage after causing ₦27 billion loss (techcabal.com)

Simplification and reduction of the tax burden on the mobile sector

Acknowledging the important work being conducted by the Presidential Committee on Fiscal Policy and Tax Reform, it is recommended that a comprehensive review of the level and impact of taxation on the sector and the Government's digital economy objectives is undertaken.

This review should consider reducing to a single digit tax system, as directed by the President, and other recommendations made by Association of Licensed Telecommunications Operators of Nigeria (ALTON) submission to the Committee in September 2023, including:

- harmonize RoW charge agreement across all States;
- remove changes in the Value Added Tax Act, which now subjects radio and television masts, transmission lines, and cell towers (base stations) to VAT;
- Reconsider and lower the Finance Act 2023's increase of the Tertiary Education Tax Trust Fund from 2.5% to 3%;
- Remove Withholding Tax at 10% on income of Tower Infrastructure Providers;
- Suspension of excise duty on telecoms services is welcomed and should be completely removed from the Finance Act;
- Lower the Import Levy on Goods from outside Africa for the sector;
- Recent amendment to Section 32 of the Companies Income Tax Act removes capital allowance on telecommunication goods and services, and should be re-instated;
- Lower 7.5% VAT on diesel importation for the sector; and
- Insert comprehensive constitutional amendment to clarify the powers of federal, state, and local governments regarding taxation, alleviating the ambiguity surrounding tax obligations.

Taking these actions reduce the operating costs of the industry and free up additional revenue for investment into network infrastructure and services. It would feed also through into lower retail prices (subject to NCC tariff regulations).

Creation of a regulatory environment that supports sustainable investment

Adapting the regulatory environment to one which is more supportive of sustainable investment would benefit customers, the Government and the wider economy.

It is recommended that the following measures are adopted:

- Changing the basis for charging for spectrum fees from USD to Naira;
- Remove retail tariff price control regulations and focus tariff regulation on wholesale services such as interconnection. In the interim, if retail price controls are retained, there should be:
  - (a) periodic tariff reviews, ensuring assessment of the costs of service provision in accordance with applicable legislation, to allow for adjustments to reflect the changing cost of inputs into the businesses and facilitate investment into improved network coverage and quality of service (please Section 4 of this report for reasons for this); and
  - (b) the introduction of a more pro-competition tariff regulation where upper and lower price bands are set by NCC, and allows service providers to launch services without prior NCC tariff approval, provided tariffs are within such bands; and
- Introduce regulatory sandbox approach to enable sector innovation in digital applications and services.

The policy changes outlined above focus mainly on the supply side of the market. Successful implementation of these policies will enhance sector development, with a regulatory environment which supports sustainable investment, and digital adoption. However, on its own, there are limits on the pace at which this growth in adoption will take place. Affordability and limited willingness to pay are key constraints on digital adoption, particularly among low-income households.

Governments have a role to play in accelerating the adoption of digital technologies through demand-side initiatives. These generally are in the interests of government itself but also have the benefit of increasing demand for digital services. An example of this is the implementation of digital IDs. Initiatives like that are a key component of digital transformation of public service delivery but they also have the effect of stimulating digital adoption because citizens see it as in their interests to get a digital ID if it provides access to services. The table below provides examples of further demand stimulating initiatives that the Government could take in order to enhance digital adoption.

Pillar	Recommendations
Increasing adoption and access to digital technologies by consumers	• Support digital skills programmes across target populations (rural, gender, youth) including on AI. • Reduce affordability barriers - work with industry, universal service agency, and international investment institutions on measures and incentives (e.g. remove additional taxes on mobile services, subsidies to devices, zero-rated /lower cost data tariffs for digital government services, smartphone microloan and payment schemes, zero-rated/lower cost e-payment fees for priority government services). • Continued telecommunication infrastructure deployment and increased access points for digital government services – mobile network coverage and capacity, targeted fibre broadband, government administration and community hotspots, rural satellite, power supply, enabling regulatory framework and other measures to increase access. • Support initiatives to improve the affordability of broadband enabled devices. This may involve support to initiatives to established device assembly capability within Nigeria, if it is determined that the benefits of such a strategy would outweigh the costs to the government and consumers.
Increasing adoption and access to digital technologies by firms	• Support diversification of the economy through digitalisation. • Allocate funding and institutional capacity to development and adoption of digital initiatives for traditional sectors such as agriculture, trade, supply chain, manufacturing, tourism, including precision agriculture and Industry 4.0 initiatives. • Incentives to businesses to adopt digital technologies. In particular, support development of digital entrepreneurship schemes and adoption of digital technologies by SMEs. • Establish programs to promote R&D and technological innovation in the private sector through grants or incentives, and regulatory sandboxes. • Improve specific regulations for digital industries, such as digital business registration, taxes, IP rights, ensure private equity/venture capital (PE/VC) regulations allow funds to be formed as limited partnerships.

Pillar	Recommendations
Digital Government	• Continued execution of the digital transformation projects, working in partnership with industry across government departments at Federal and State levels. • Accelerate digital identification programme adoption, integrated with key digital government, smart cities, and public services programmes. • Integrate user-centricity and public contributions to e-government initiatives. • Allocate funding and institutional capacity to e-government initiatives. • Strengthen digital solutions to promote expense rationalisation and reduce leakages. • Improved platform performance (reduced platform downtime, increased speed times for transactions, data light versions for mobile devices) and customer experience with ease of use design principles for digital government platforms. • Enhanced digital literacy and skills programmes and public awareness information for government institutions (building capacity) and citizens. Embed digital skills training and information in digital government platforms. • Create regulatory sandboxes to encourage innovation and adoption in digital government services and applications.
Digital payments and financial services	• Increase digital government payment channels through mobile money. • Facilitate international remittances through consumer protection framework and AML regulation. • Remove E-levy to foster financial inclusion and investment in the payments system. • Facilitate cross-border trade by supporting cross border data flows through harmonised data protection frameworks and set localisation requirements to the minimum necessary to achieve essential policy objectives and in ways that minimise restrictions to trade. • A level playing field regulation framework for both non-MNO led and MNO-led PSBs, for example by lowering capital requirements for PSBs and removal of credit services restriction

Pillar	Recommendations
Increase confidence and trust in digital safety and security	• Encourage safe and responsible use of digital services and devices. • Protect customer data and privacy, adopting the African Union Convention on Cyber Security and Personal Data protection (Malabo Convention). • Prevent unauthorised access to networks and devices through increased security and integrity of physical and cloud infrastructure. • Protect consumers and prevent online harms. • Public awareness campaigns. • Provide tools and information, training (including embedded training in digital government platforms). • Implement regulatory and operational measures to build trust in digital payments
Domestic resource mobilisation	In order to unlock financing for digitalisation of the economy, consider policy options to unlock resources domestically such as: • Enhance transparency in the extractive sector through digitalisation of tax payments and records, digital verification of revenue data and reporting. • Improve access to the tax system by strengthening digital filing of tax returns, automatic calculation and digital payment of taxes. • Leverage digital property records to strengthen the property tax system. • Digitalisation of economic sectors will bring more revenue in the medium term
Digital green partnerships on climate change and e-waste	• Participate in international and continental initiatives, partnerships, and financing programmes to address climate change and e-waste, and to achieve National Determined Contributions. • Coordinated government, sector, and non-government organisation programmes and regulations at national level, including energy, e-waste, and adoption of digital green technologies. • See further information on GSMA policies and recommendations on climate change (GSMA-Climate-Policy-2023.pdf) and E-Waste (Making-Circularity-Work-How-digital-innovation-enables-circular-economy-approaches-in-waste-management-1.pdf (gsma.com)).

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