MTN at a glance

Belief Statement: "everybody deserves the benefits of a modern connected life"

Strategic Intent: "leading digital solutions for Africa's progress"

Service revenue of
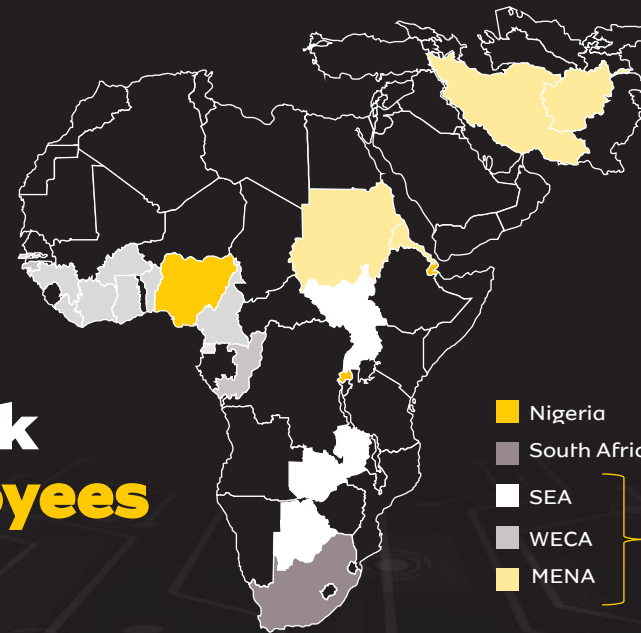**R196.5bn**

289m
Subscribers

137m
Active Data Subscribers

69m
MoMo Users

17k
Employees

Across 19 markets

R73.7bn
Data Revenue

R17.3bn
Fintech Revenue

~$2bn
Annual Capex Investment

- Nigeria
- South Africa
- SEA
- WECA — Markets
- MENA

"Most Valuable Brand in Africa"[^]

"Most Admired African Brand"[^^]

^Brand Finance, 2022; ^^Brand Africa, 2022;

2

Nigeria future global positioning

Goldman Sachs predicts that by 2075, Nigeria will be in the top 5 economies in the world – the digital economy is expected to be a crucial driver of this growth

World's largest economies (measured in US$)

Ranking	1980	2000	2022	2050	2075
1	United States	United States	United States	China	China
2	Japan	Japan	China	United States	India
3	Germany	Germany	Japan	India	United States
4	France	United Kingdom	Germany	Indonesia	Indonesia
5	United Kingdom	France	India	Germany	Nigeria
6	Italy	China	United Kingdom	Japan	Pakistan
7	China	Italy	France	United Kingdom	Egypt
8	Canada	Canada	Canada	Brazil	Brazil
9	Argentina	Mexico	Russia	France	Germany
10	Spain	Brazil	Italy	Russia	United Kingdom
11	Mexico	Spain	Brazil	Mexico	Mexico
12	Netherlands	Korea	Korea	Egypt	Japan
13	India	India	Australia	Saudi Arabia	Russia
14	Saudi Arabia	Netherlands	Mexico	Canada	Philippines
15	Australia	Australia	Spain	Nigeria	France

Nigeria's digital economy

The digital economy will drive inclusion & growth across all sectors

Nigeria's iGDP's contribution

Beyond serving the ambitious needs for digital players in Africa, the continent has a strong potential for exports of digital services with Nigeria playing a critical role

Nigeria's iGDP stands at ~6% of GDP and is expected to grow and reach 7-12% by 2050

Key benefits of digitisation

Digital is an imperative for all economic sectors to unlock their full potential for growth through productivity improvements, better access to markets and financing mechanisms

Digital levers support governments in making their services more efficient, less costly and more accessible to the general public

Source: McKinsey
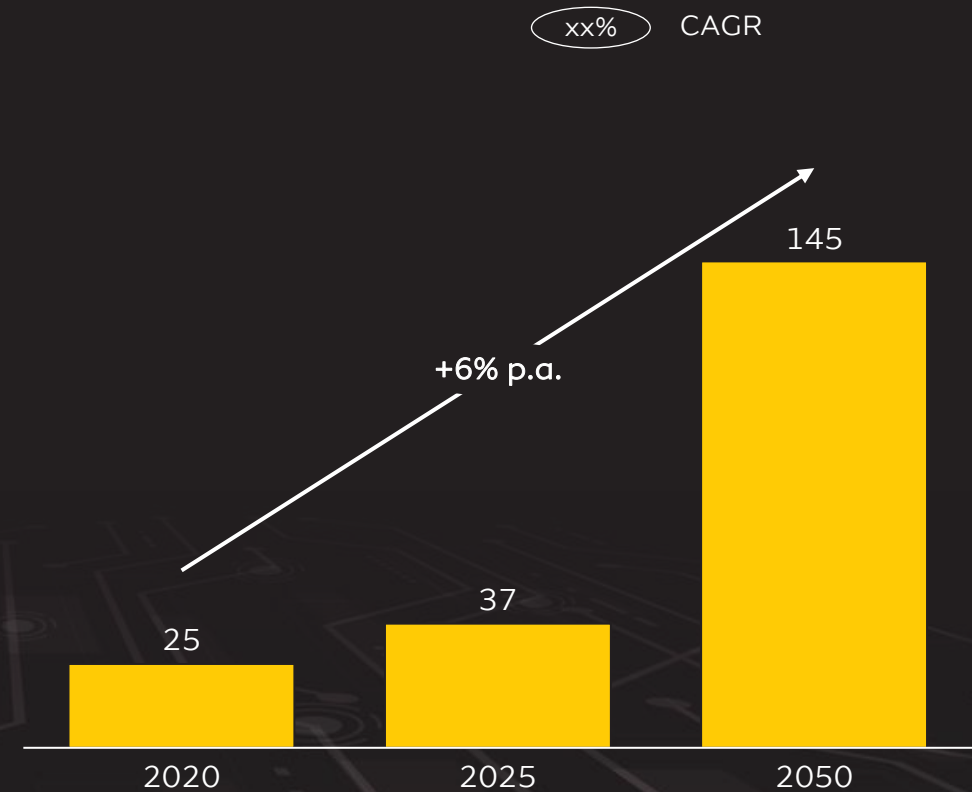
Nigeria's digital economy

Digital is now an imperative and is becoming a bigger part of the economy; Nigeria's potential iGDP is expected to exceed $100 bn by 2050

Split of the digital economy across the geographical areas, 2020

Region	%
United States	68%
Asia	22%
Other	5%
Europe	4%
Africa	1%
Total	100%
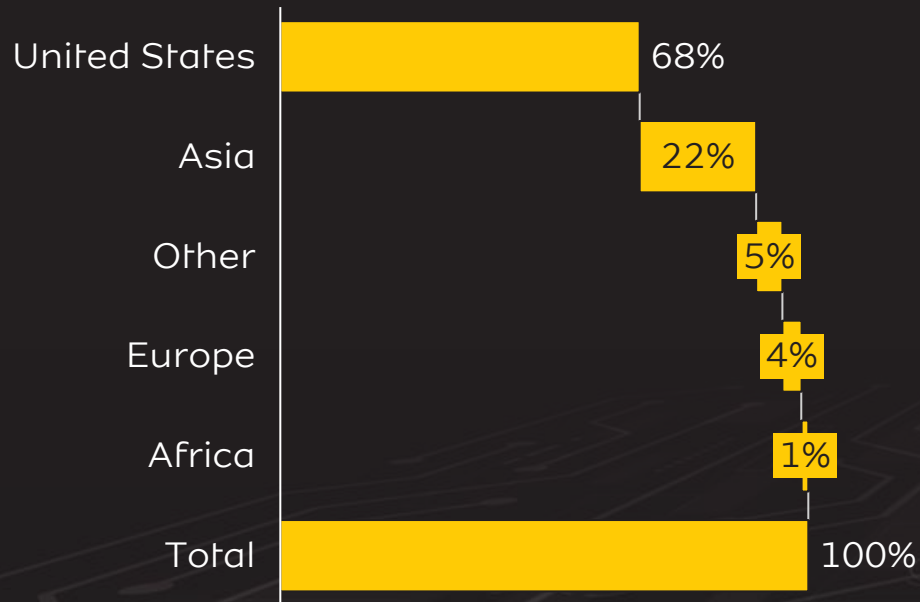
Nigeria iGDP potential, 2020-2050 projections ($bn)

xx% CAGR

+6% p.a.

Year	iGDP ($bn)
2020	25
2025	37
2050	145

Globally iGDP is estimated between 4-15% of the economy, depending on the country, making Nigeria (at 6%) on the lower end of the spectrum

Source: ITU, Google & IFC "e- Africa 2020", Accenture, "Africa iGDP forecast, Africa", The Inflection Point: Africa's digital economy is poised to take off, June 2022 - Endeavor

Government's digital enablement initiatives

President Tinubu has indicated his commitment to promote growth of ICT and the digital economy for shared prosperity of all Nigerians

A Create enabling environment for start-ups, investment attraction and promotion of digital literacy with the introduction of policies such as the **National Digital Economy Policy and Strategy (NDEPS), Nigerian Startup Act, National Identity Management (NIM)** and **NOTAP**

B **Streamline business registration processes, making it easier for entrepreneurs to start and grow** their ventures through the Presidential Enabling Environment Council

C **Attract investment into broadband expansion** to achieve 90% broadband penetration by 2025

D Government to **introduce policies to reinforce growth** by setting targets to increase the number of online businesses, improve logistics and delivery systems, as well as create policies that foster innovation and entrepreneurship

E **Increase the number of digital skills training programs, expand access to education,** and **encourage the private sector to invest in talent development** (through tax credits, holidays and reduced interest rate loans to businesses that hire a certain percent of youth in their workforce)

F **Harmonise regulatory frameworks, and create policies that encourage financial inclusion and digital payments** to drive growth of Fintech

G **Introduction of tariffs and other measures to safeguard ICT sector** such as **lower import tariffs** on semi-manufactured goods production lines such as the automotive, IT industries and smartphones
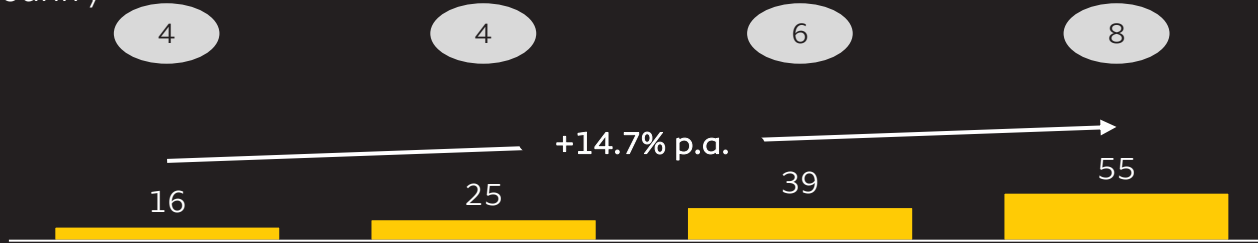
Ranking Nigeria's digital penetration

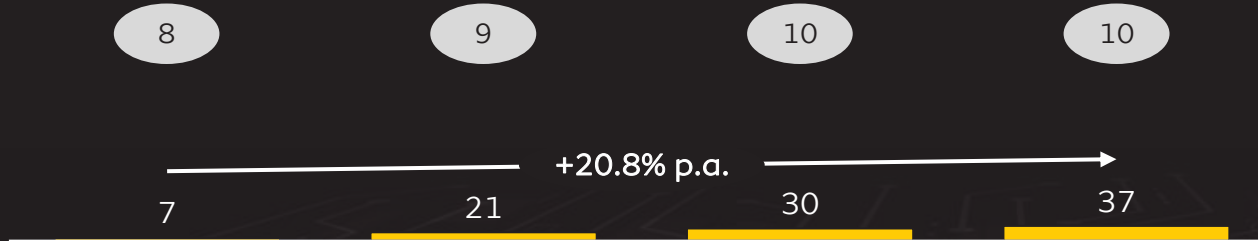*Digital penetration in Nigeria is increasing with opportunity to improve relative to peer group*

Nigeria's maturity

Benchmarks
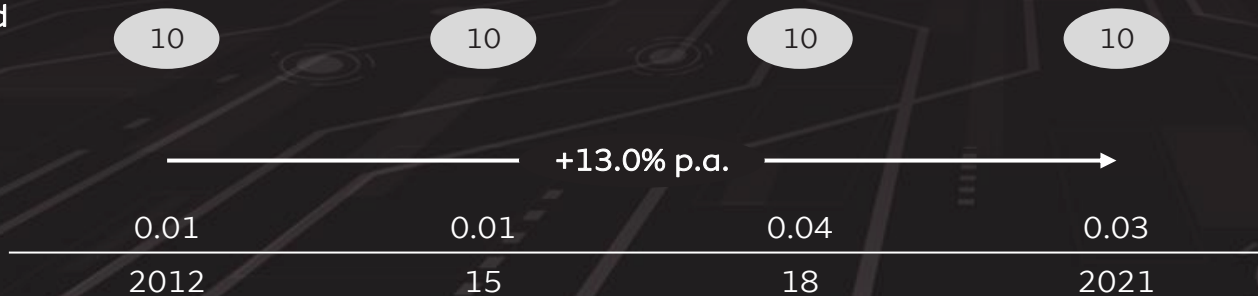
(X) Nigeria's ranking within a 10-country peer group[1]

	2012	15	18	2021		China	US
Nigeria's internet users, 2012-2021, % — ranking	4	4	6	8			
value	16	25	39	55	+14.7% p.a.	73	92
Active mobile-broadband subscriptions per 100 inhabitants, 2012-2021 — ranking	8	9	10	10			
value	7	21	30	37	+20.8% p.a.	99	169
Fixed broadband subscriptions per 100 inhabitants, 2012-2021 — ranking	10	10	10	10			
value	0.01	0.01	0.04	0.03	+13.0% p.a.	38	37

Benchmark years: 2021, 2021

Digitisation of public services

Public digital service adoptions are still less developed in Africa and in Nigeria

E-Governance Development Index (2020)

Legend:
- **Very high** (yellow)
- **Medium** (blue)
- **High** (grey)
- **Low** (black)

Category	Africa	Oceania	Americas	Asia	Europe
Very high	—	14%	20%	32%	—
High	26%	21%	66%	40%	23%
Medium	61%	64%	14%	26%	—
Low	13%	—	—	2%	—
Europe Very high					77%

E-Governance Development Global Rank (2022)[1]

Country	Rank
Indonesia	77
Vietnam	86
Morocco	101
Egypt	103
Ghana	106
Kenya	113
Cote d'Ivoire	120
Cambodia	127
Nigeria	140
Senegal	143

Nigeria lags in E-Government development compared to peers, ranking 9th among peer economies with a score of 45%

Government development of e-services has a direct impact on citizens, with outcomes like better healthcare and poverty reduction through improved public service delivery
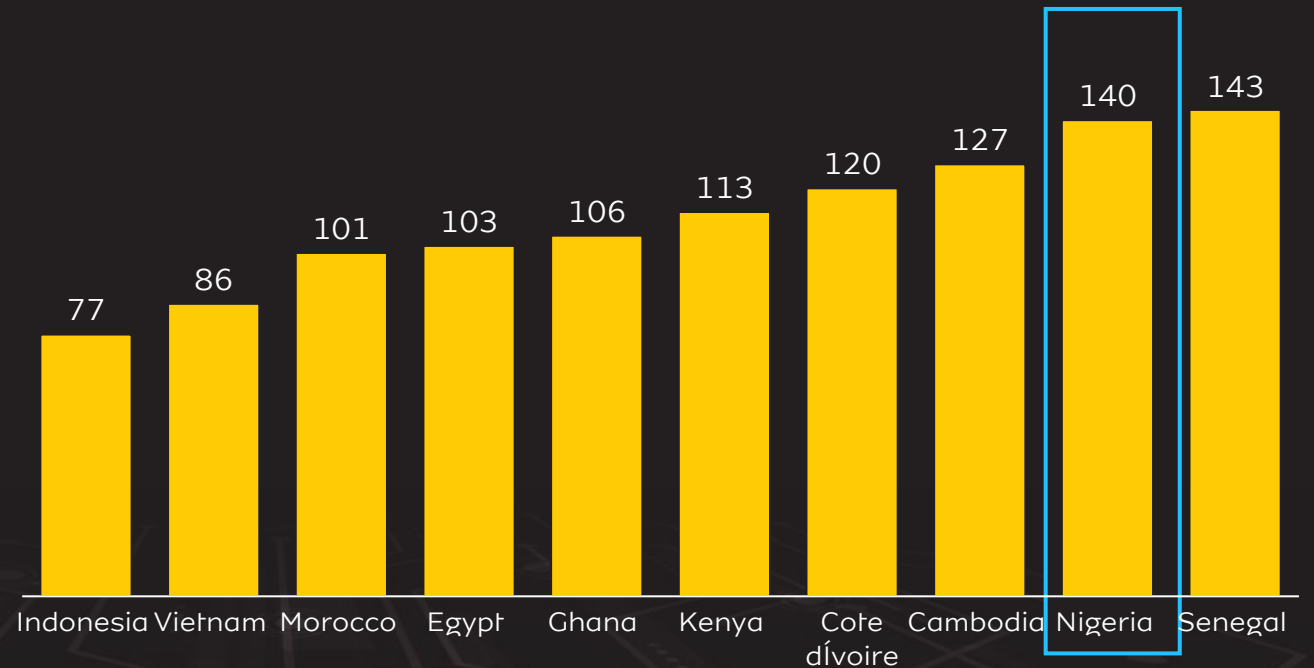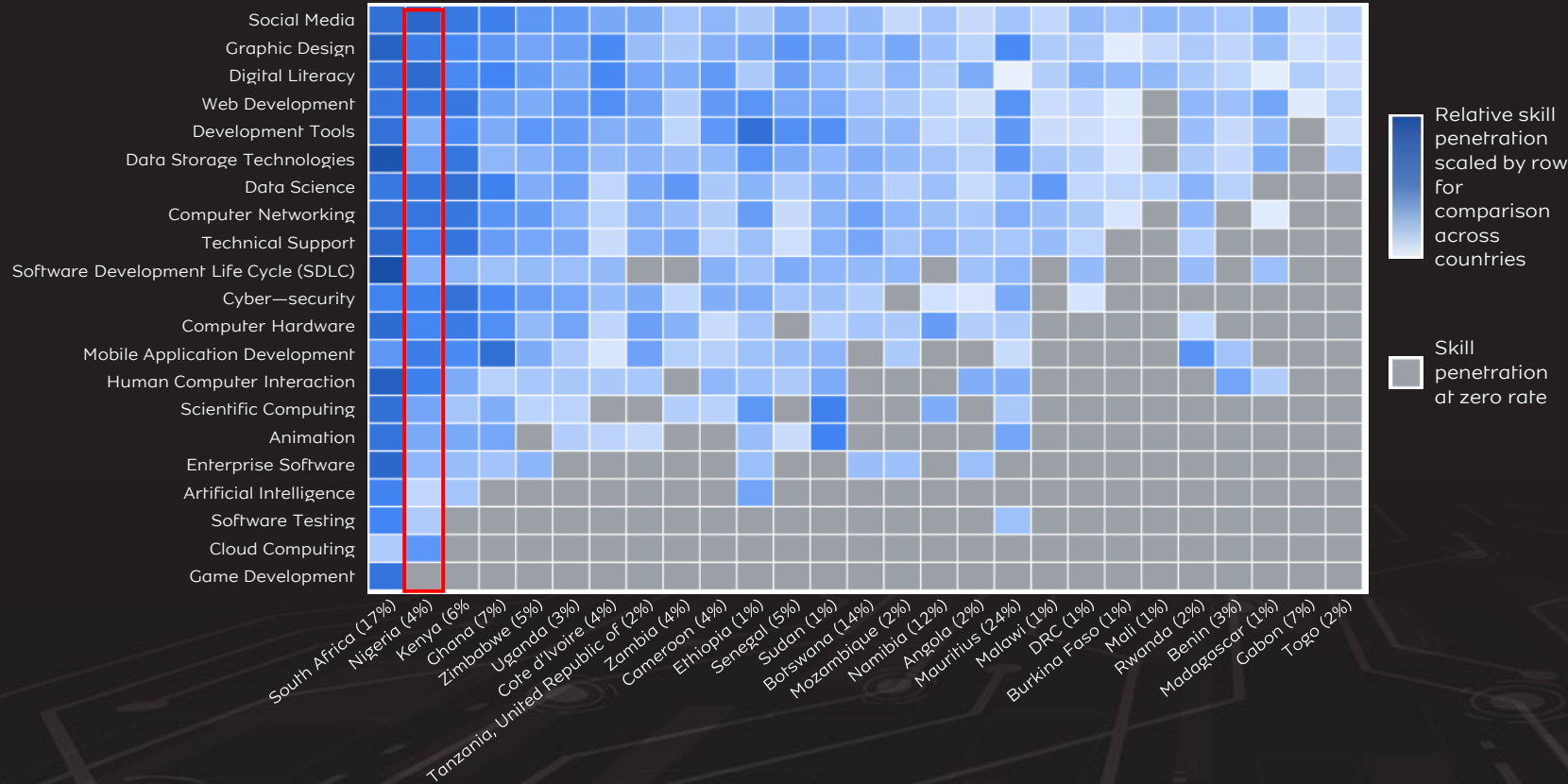
1. Total of 193 countries, 193 is the country that ranks lowest

Source: United Nations, BCG digital acceleration index

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Digital skills availability

There is a digital skills gap in Nigeria and across the African continent, especially in advanced skills such as AI & cloud computing

Digital skills in Sub-Saharan African Countries

Relative skill penetration scaled by row for comparison across countries

Skill penetration at zero rate

- Across the continent, **social media and graphic design** are the skills with the **highest penetration today**

- Advanced topics such as **artificial intelligence, scientific computing, and human-computer interaction** remain relatively **untapped**

- There will be an estimated **230 million "digital jobs"** in Sub-Saharan Africa alone by 2030

Note: Parentheses show the share of LinkedIn users in the total working-age population of each country. Relative penetration of digital skills is measured as the sum of the penetration of each digital skill across occupations in a given country, divided by the average global penetration of digital skills across the same occupations. Skill group penetration is defined as the percentage of the top-50 individual skills that belong to a given skill group (that is, if 5 of the top-50 skills for data scientists in South Africa fall into the artificial intelligence skill group, artificial intelligence has a 10 percent penetration for data scientists in South Africa).

Source: World Bank, "The Future of Work in Africa: Harnessing the Potential of Digital Technologies for All", 2019, Digital Skills in Sub-Saharan Africa, Spotlight on Ghana, IFC

9

Challenges to mobile internet adoption

Historically, data and handset affordability along with digital literacy were key barriers to mobile internet adoption. Significant improvements have been made over time on affordability

Key barrier to mobile internet adoption and use ⟩ Improvements in data and device affordability

Digital literacy

> 50% (in Nigeria and Africa as a whole) of mobile users who do not use mobile internet despite being aware of it report **literacy and digital skills as important barriers; ~50%** of mobile users who do not use mobile internet in Nigeria's urban areas report this as the top barrier to mobile internet use[1]

Nigeria handset affordability, 2020

11% Cost of an entry-level, internet-enabled device as a % of monthly income

We draw inspiration from Jio (largest operator in India) who is selling a $12 4G handset with smartphone capabilities

Nigeria changes in data affordability 2019 - 2022

91% Drop in the average cost[2] of 1GB of data[2]

1. Based on the following African countries: Kenya, Mozambique and Nigeria
2. below US$1

Source: GSMA state of mobile internet connectivity report (2021), OECD 2021

MTN's response to challenges with mobile internet adoption in Nigeria

MTN's CHASE framework aims to accelerate digital and financial inclusion by connecting the unconnected and ensuring that everyone reaps the social, economic and developmental dividends of being online

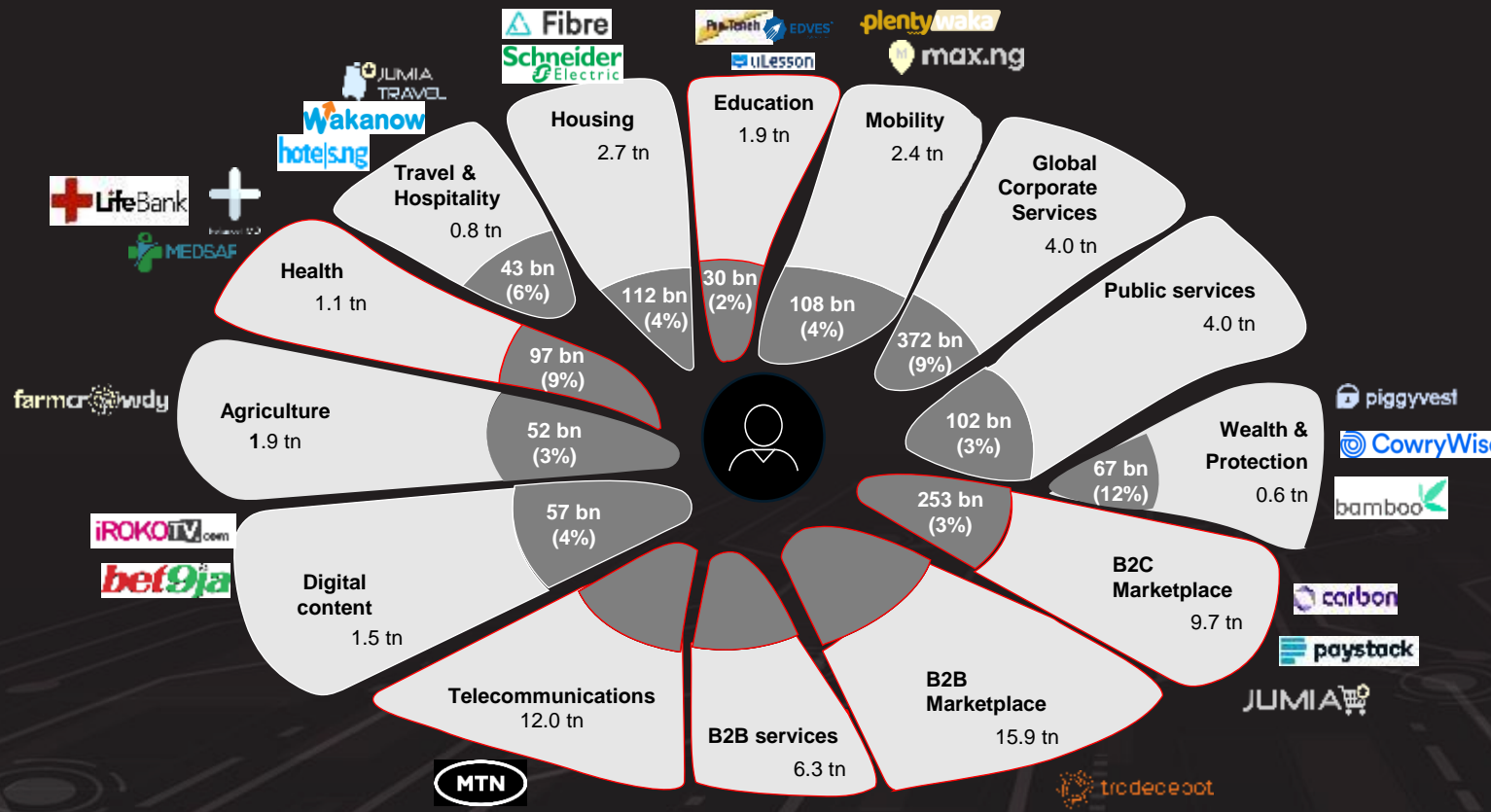| COVERAGE	HANDSETS	AFFORDABILITY	SERVICE BUNDLING	EDUCATION AND EASE OF ACCESS
Ensure sufficient and affordable data coverage in rural and low-income areas	Increase affordability and access to data-enabled devices	Increase data service affordability	Creating service offerings that are relevant and simple and meaningful to customers	Enhance digital literacy and ease with which data can be accessed
MTN Nigeria's population coverage (2G – 92%, 3G – 84%, 4G – 79%, 5G – 4%)	~40m smartphones on the MTN Nigeria network	1GB < 2% of household monthly income	~41m active data subscribers Try before you buy Bundling with data Ayoba App live	Data Smart programme driving digital literacy

Sector digitisation opportunities

Education, health, agriculture, e-commerce and financial & marketplace services will be key digitisation focus sectors

Illustrative   Not Exhaustive

Digital enabled sales revenues   Digital sales based revenues (% of digitally enabled sales)

Potential focus value pools

Nigeria digitally enabled and digital sales-based revenues by ecosystem and players[1,2,3]
2025 estimates, NGN

Housing 2.7 tn — 112 bn (4%)
Education 1.9 tn — 30 bn (2%)
Mobility 2.4 tn — 108 bn (4%)
Global Corporate Services 4.0 tn
Public services 4.0 tn
Travel & Hospitality 0.8 tn — 43 bn (6%)
Health 1.1 tn — 97 bn (9%)
Agriculture 1.9 tn — 52 bn (3%)
Digital content 1.5 tn — 57 bn (4%)
Telecommunications 12.0 tn — 372 bn (9%)
B2B services 6.3 tn
B2B Marketplace 15.9 tn — 253 bn (3%)
B2C Marketplace 9.7 tn — 102 bn (3%)
Wealth & Protection 0.6 tn — 67 bn (12%)

Observations

- Total revenue pools amount to NGN ~65tn of which only NGN3T is via digital sales (5%)
- **Top 3 outside of telco** are B2B marketplace, B2B Services, and B2C marketplace
  — These 3 drive 50% of digital-enabled sales
  — Each is significantly fragmented with no dominant player and ~6% of sales digital
- A robust digital financial services play will be foundational and will benefit any of these ecosystems

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1. Digitally enabled revenues are all distribution revenues that are influenced via digital channels through any point of the value chain. Digital sales-based revenues refers to revenues where transaction happens digitally. As reference points, GDP of Nigeria in 2019 ~USD 450 bn (value add) and projected to be ~USD 550bn in 2025. 2. Ecosystems are defined based on homogenous sets of client needs for B2C and B2B and includes a number of sub activities. Estimations are based on corporate sales data, GDP industry breakdowns and expert assumptions. Descriptions of ecosystems are covered in the appendix. 3. Examples of startups and other active players in Nigeria

Source: McKinsey analysis, IHS World Industry Service, Expert interviews

Sector digitisation opportunities – Education

Digital can help Nigeria to face its challenges in terms of education and provide answers to the large pool of school age population

⬤ Addressable through digital

Nigeria has growing education needs

~20mn — Out of school children in Nigeria

10% — Enrolment rate[1] in tertiary institutions in Africa compared to 54% in Latin America

1.5mn — of **teachers needed in Nigeria** to reach education goals by 2030, vs 15 mn total in sub-Saharan Africa

The main challenges in education that can be addressed through digital

1 **Access** to education at all levels with increased stress in remote and or rural areas

2 **Quality** of education offered

3 **Equity** across the board mainly around gender and wealth

4 Matching education to real needs of the market to ensure access to employment

1. Ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the tertiary level

Source: UNESCO (2021), UN (2017), Nigeria needs 1.4 mullion teachers by 2030, says UNESCO – The intellectuel online

Sector digitisation opportunities – Health

Nigeria is doing relatively better than Africa averages but lagging global standard on health, with multiple challenges which can be addressed through digital

 Addressable through digital

Nigeria lags behind on key health indicators

63 years — **Life expectancy** in Nigeria in 2019, vs. 73 globally but higher than Africa 56

536 — Maternal mortality ratio per 100K live births, the highest globally. Comparable regions have significantly lower i.e. 85 in Latin America and 135 in S.East Asia

1/22 — Women lifetime **risk of dying from pregnancy-related complications in Nigeria vs.1/39 in Africa** and 1/4,900 in the industrialized world

The main challenges in health that can be addressed through digital

1 Access to health services
- Improve financial access
- Support physical access esp. to hard-to-reach population

2 Quality of health services provided
- Promote tailored treatment
- Ensure prevention and awareness around health issues
- Develop more efficient health systems

3 Cost- and time- **efficiency**
- Optimize health systems to deliver care to a broader population incl. ops, equipment
- Promote awareness to limit needs

4 Resilience of heath systems and services incl. emergency situations, pandemics

Source: WHO, UNFPA

Sector digitisation opportunities – Agriculture

The agricultural sector has a great potential beyond its current size in Nigeria, and heavier use of digital tools could help unlock the potential

Addressable through digital

While Agriculture is one of the main employer in Nigeria, changes are required for a sustainable growth

>40%   of the Nigeria **workforce**

~24%   of Nigeria value added **(% of GDP), 2022**

4x   **Higher agricultural value-added per worker** in Nigeria (2019, $5,5 K) vs Africa (2019, $1.5K) and 1X world (2019, $4K)

The main challenges in agriculture that can be addressed through digital

1 Need to **increase productivity** while adapting towards **sustainable** practices
- Increase access to intrants
- Improve practices and implement best practices, incl. funding

2 Maximize **value creation** from production
- Select more value creating crops
- Support transformation incl. packaging, food-processing
- Understanding regulation and how to access market

3 Support **access to market** and strengthen regional integration
- Develop online platform for trade
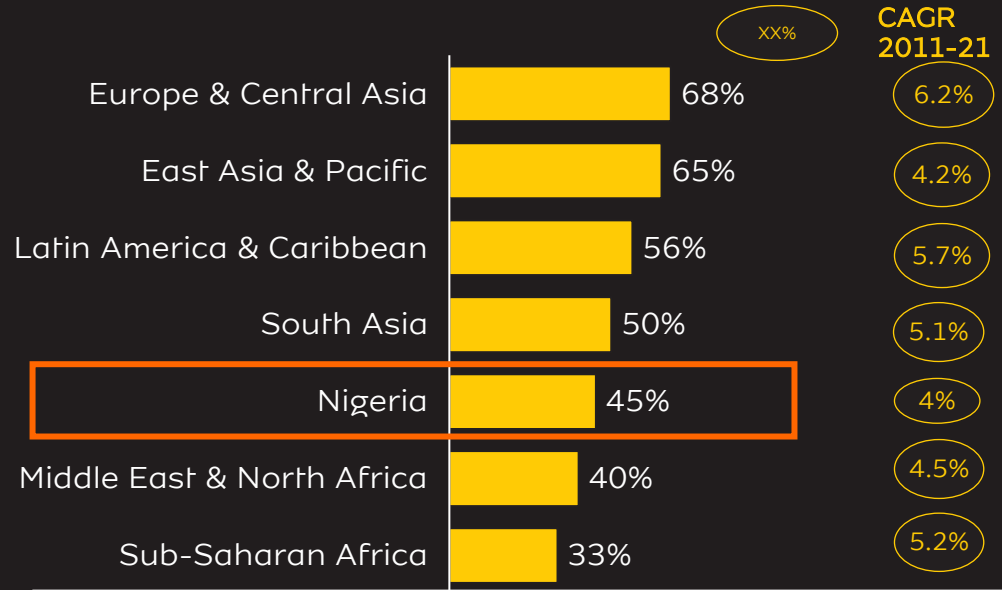- Create portal of information to promote transparency

Sector digitisation opportunities – Financial inclusion

There is opportunity for Nigeria to improve financial inclusion by leveraging digital solutions

Despite an annual growth of 4% over the last 10 years, financial services penetration is still low in Nigeria

Average percentage of the population (more than 15 years old[1]) with financial institution account, 2021

		CAGR 2011-21
	XX%	
Europe & Central Asia	68%	6.2%
East Asia & Pacific	65%	4.2%
Latin America & Caribbean	56%	5.7%
South Asia	50%	5.1%
Nigeria	**45%**	4%
Middle East & North Africa	40%	4.5%
Sub-Saharan Africa	33%	5.2%

3-5% Fintech services penetration (excl. South Africa)

The main challenges Nigeria is facing can be addressed through digital

1 Limited access to financial services (esp. credit) for people living in rural areas and for women

2 High credit interest rates leading to high cost to launch and scale business

3 Limited government tax revenues due to the high level of informal employment, as 8 out of 10 workers in Africa are informally employed

4 Low transparency of money flows, strengthening corruption and trafficking

5 Low level of financial education

1. Excluding high income

Source: International Labor Organization; Mckinsey report: Fintech in Africa - The end of the beginning

Technology mega trends

Nigeria will need to navigate a broad range of technology mega trends to build a world class digital ecosystem

MTN

Immediate / Medium Term
(0 to 3 years)

Trends that are already impacting the industry today or having medium term impact

5G	Cybersecurity
FWA / FTTH (Fixed connectivity)	Open Architecture & API
Artificial Intelligence	Data Sovereignty, Privacy & Transport
Cloud Computing	Robotics and Automation
Edge Computing	LEO / Direct to Cell

Long Term
(3+ years)

Trends that will have a more prominent industry impact in the long term

- AR/VR
- Blockchain
- Digital Currencies
- 6G and next generation network
- Artificial General Intelligence

Key policy and regulatory levers

Government policy should promote digital economy and facilitate inclusive growth

1 Spectrum roadmap should ensure sufficiency of spectrum resources to meet surging demand for mobile services in both the short and medium term

2 Speedy access to mid-band spectrum, in particular 3.5 GHz, given its importance to the future of 5G low latency

3 Accelerate access to sub-1 GHz spectrum to provide widespread rural mobile broadband services

4 Application of best practice principles of taxation as recommended by international organizations such as the World Bank and the IMF

5 Tariff regime that promotes a vibrant and competitive landscape and investment

6 A fair and transparent regulatory regime (licensing and taxation) for terrestrial, non-terrestrial and OTT services

7 Investment in and development of reliable grid power

Conclusion

1 Nigeria is forecasted to become the 10th largest economy in the world by 2050 and the 5th largest by 2075. Building a sustainable digital economy is key for this to be achieved

2 Digital economy is a sector with strong opportunities in Nigeria with an iGDP of 6% which is expected to double by 2050 to reach 145 bn USD and 12% (vs. 4 to 15% globally). There is significant headroom for Nigeria's growth given Africa still accounts for only ~1% of the global digital economy compared to 3.6% in Europe, 22% in China, 27% in Asia, and 68% in the United States

3 Nigeria has made significant improvements in digital penetration; 170 million mobile users, 55% internet penetration, with 37 active mobile-broadband and 0,03 fixed broadband subscriptions per 100 inhabitants

4 There are big opportunities in telecommunications, B2B services, B2B marketplace, B2C market; with particular focus on public sector service delivery (food security / agriculture, health and education)

5 Digital skills development is a significant area for Nigeria to advance development of the digital economy

6 Digital literacy and affordability remain key barriers to mobile internet adoption and use within Nigeria even though the number of smartphone users has increased

7 Approximately US$12bn-$15bn of infrastructure investment will be needed in the next 5 years to drive growth of Nigeria's digital economy

8 **A conducive policy and regulatory environment is critical for the building of a sustainable digital economy for Nigeria's future**

Additional Slides

Sector digitisation opportunities – Education

Globally, multiple countries have used digital solutions to support education

Examples of e-Education solutions

Primary, secondary & tertiary education

China

- **China** has developed an **online adaptive software** and launched **22 validated online course platforms**, empowered by **Artificial Intelligence** during COVID-19 pandemic

- Funds have been mobilized to provide **primary and secondary schools with free online courses**

Vocational and adult training

India

- **Deen Dayal Antyodaya Yojana (DAY)** was launched by India in 2013 to enable **access to gainful self-employment and skilled wage employment opp-ortunities to urban poor households**

- The program provides market-oriented skill training to urban poor, interest subvention on loans to set up micro enterprises, and support for establishing community institutions

Workforce upskilling

Singapore

- **The Professional Conversion Programmes** (PCPs), is a 3 months training program targeted at **companies undergoing business transformation**

- It aims at supporting workers at risk of redundancy or in vulnerable jobs due to the transformation for conversion programs

- Format include facilitated **classroom training** in TVET provider (Singapore Polytechnic), and **On-the-Job Training** (OJT) with participating company

Access to equipment

Philippines & Peru

Especially following, COVID-19 pandemic many governments launched interventions to support access to technology and digital equipment in education:

- Local governments in Philippines provided **tablets** to public school teachers and students (e.g., Quezon city gave 176K tablets for high school students)

- **Peru** distributed 800K **tablets** to children and 97K tablets to teachers in rural areas

Sector digitisation opportunities – Health

Globally, multiple countries have used digital solutions to improve healthcare

Examples of e-Health solutions

	E-health platform	**Telemedicine and virtual care**	**Medication authentication**	**Algorithm-enabled field diagnosis**
Example	🇸🇦 Saudi Arabia	🇮🇳 India	🇬🇭 Ghana	🇲🇿 Mozambique
	GE Healthcare introduced a platform to deliver actionable insights to practitioners by connecting data from multiple sources to help derive conclusions that contribute to better patient care	The **Indian Space Research Organization** works with multiple hospital systems (private, public and medical schools) to link 22 urban specialty hospitals with 78 rural hospitals via satellite and mobile technology	The **"mPedigree project"** allows consumers to verify the authenticity of their medicine by sending a barcode via SMS and receiving a verification that the medication is genuine	The **National Early Infant Diagnosis programme** allows health workers to use a mobile phone-based diagnostic tool (drug dosage calculator and reference materials) to diagnose and treat patients
Impact	Quality improvement of care	Improvement and increase of care provided in rural hospitals (incl. cardiac surgery through telemedicine); ~80% cost-saving in terms of travel to city for treatment	Detection of ~30% of counterfeit medication on the market	Time reduction for clinics to receive test results from labs (from 3 weeks to 3 days)

The adoption of digital health solutions in Africa has been **unprecedented** during the Covid-19 period

🇿🇦 **South Africa**
50-175x increase in telehealth service demand, in the period 2019-2020

🇺🇬 **Uganda**
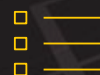500% increase in teleconsultations for Rocket Health

🇲🇿 **Mozambique**
The digital health platform Pensa reached 3million users (10% of the country population)

Cross-border: Africa CDC launched a Covid pass - "mutual recognition protocol" for COVID-19 testing and test results, and vaccination certificates

Sector digitisation opportunities – Agriculture

Globally, multiple players have launched digital agriculture solutions to support players

Examples of digital agriculture solutions

Knowledge exchange platform	Digital marketplace	Digital farmer register	Insurance

Farmer's Business Network created a crowd-sourced online platform for farmers to benchmark their data to find the best seeds and ag input products for local soil conditions

In India, **AgroStar** offers a technology platform for agronomic expertise, data analytics, and m-commerce; apps/ mobile allows farmers to buy seeds and CP inputs directly

The **government of Rwanda** registered all ~1.5Mn farmers in partnership with the **Bank of Kigali** into digital farmer registry with regularly updated farmer profiles incl. farm location, farm size and crop(s) grown to inform all the farmer-facing use cases

Tigo Payment Solution for Agriculture provides mobile solutions to improve communication and payment for local farmers n Rwanda. The solution includes mobile financial services like *Tigo Cash* providing buyers and cooperatives an interface to manage payments

Arifu has partnered with **Syngenta** to provide mobile-based agronomic advice to farmers

AgriKore (by Cellulant) is a blockchain-based payment and online marketplace system for farmers and agricultural traders

Zambia launched an integrated agricultural data platform to support their farmer e-subsidy scheme. This helps to improve baseline for statistics by building a joint-access national agriculture data platform

Pula provide insurance to farmers, mostly on small, micro-level in East Africa