

Nigeria | Equities | Telecommunications

Now for digital transformation

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Telecoms to take front role in Nigeria's economic diversification

Now more than ever, we believe that the Nigerian telecommunications sector is set to take a leading role in the government's effort to diversify the economy. On the back of significant investments by the mobile networks, the sector's contribution to GDP has risen steadily from c.7.7% in 2012 to c.10.9% in Q1 2020. It is now larger than that of the oil sector (9.5% Q1 2020 oil GDP). With respect to broadband, studies conducted by the International Telecommunications Union (ITU) indicate that a 10% increase in broadband penetration is likely to translate to increases of 2.0% and 1.8% in GDP for low-income and middle income countries.

Broadband target ambitious but achievable

The targets (of 90% broadband coverage at speeds of 10Mbps-25Mbps) stated in the national broadband plan 2020 is ambitious and audacious. Notwithstanding, we believe they are achievable. The plan's success will depend on the right mix of policy implementation, private sector-led infrastructure investment, and government incentives. Specifically, impediments to right-of-way access and cost must be removed.

Solid performance by operators in Q1; positive read-across for Q2

In contrast to other sectors that were hit hard by the economic outcomes of the COVID-19 pandemic, the sector was one of the few that recorded growth in Q1. Its essential role in easing the lockdown through the provision of digital tools for home working and social distancing resulted in a surge in demand for telecom services during the quarter. In Q1, MTN Nigeria (MTNN) and Airtel Nigeria (not covered) both delivered strong revenue growth of 17% y/y and 27% y/y respectively, mainly driven by stellar growth in data revenue - which were up by more than 50% for both firms. We believe that the solid performance carried on into Q2 on the back of strong data demand during the lockdown. With solid revenue growth of 17% y/y (data 40% y/y), Airtel's Q1 2021 (end-June 2020) results which were recently published provide positive read-across for the broad sector.

Potential downside risk to earnings from fx-linked costs

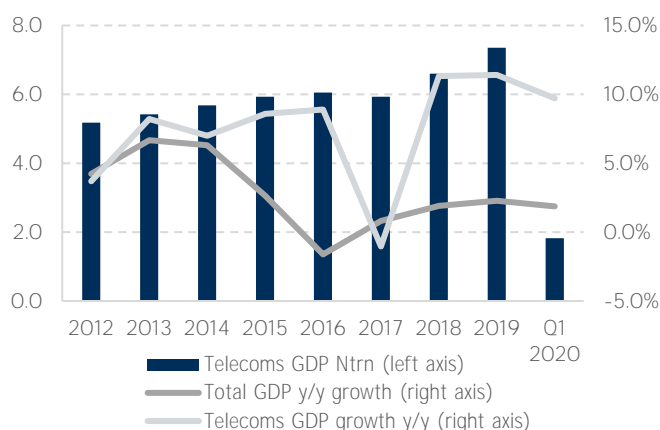
Due to fx liquidity pressures, we expect a rise in fx-linked costs to exert downward pressure on the earnings of telecom operators. Recently, MTNN disclosed that the NAFEX rate of c.N385/US\$ will now be applied to dollar-linked tower costs (vs. CBN's official rate of N360 previously). The rate was only recently reviewed to N360/US\$ in April (from N307 previously). However, we believe that the revenue growth from the surge in data traffic will more than offset the rise in costs. Regardless, our estimates are conservative. For MTNN, we forecast 2020 revenue and PBT growth of 13% y/y and 6% y/y respectively,

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Sector represents a catalyst for economic growth and progress

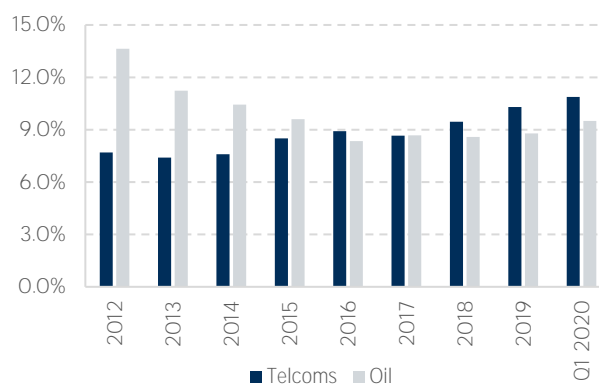
The Nigerian telecoms sector remains one of the key drivers of economic growth and progress. In contrast to other sectors that were hit hard by the deterioration in the macroeconomic environment arising from the COVID-19 pandemic, the sector was one of the few that recorded growth in Q1 2020. Its essential role in easing the lockdown via the acceleration of digital tools required for home working and social distancing resulted in a surge in demand for telecoms services in Q1. Consequently, telecoms GDP growth of 9.7% y/y for the quarter was second only to the 24.0% y/y growth delivered by financial institutions. Underscoring its significance and relative importance is the fact that it is now larger than the oil sector - 10.9% of Q1 2020 GDP 2020 vs. 9.5% for oil sector GDP.

Telecoms sector contribution to Nigeria GDP



Source: NBS, CBN, FBNQuest Capital Research

Contribution to GDP - Telecoms vs Oil



Source: NBS, CBN, FBNQuest Capital Research

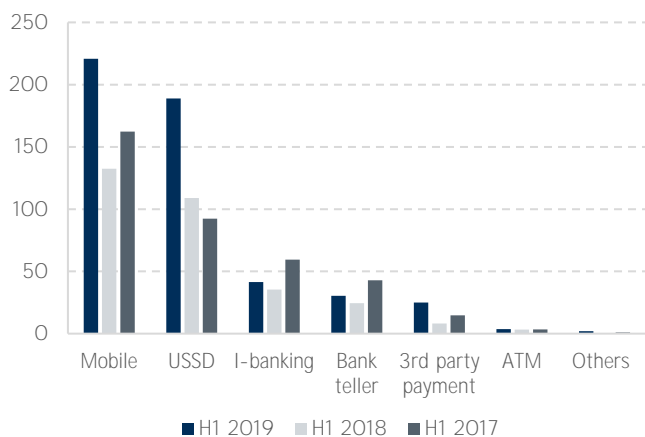
Between 2011 and 2017, the sector’s growth slowed visibly to single digits (on the back of high mobile telephony penetration >70%) from the strong double-digit y/y growth recorded in the early years of the GSM rollout. However, the sector has seen a resurgence in recent years, thanks to the increased usage of mobile apps, video content and e-commerce, all of which are driving strong growth in data traffic. The proliferation of smartphones due to their increasing affordability, together with the deliberate efforts of network operators to expand their 4G footprint have also helped to drive solid revenue growth for operators in the sector. Smartphone penetration for MTN Nigeria (MTNN) - the sector’s largest operator - which we use as a read-across grew to 42.6% from 27.2% between 2017 and Q1 2020 respectively. Likewise, the company ramped up its 4G population coverage to 48% in Q1 2020 from <15% in 2017.

Mobile financial services also driving mobile growth

Another feature that has helped to drive the strong growth in telecoms in recent years is the growing acceptance of mobile payment solutions and financial services. Data from the Nigerian Interbank Settlement System (NIBBS) show that c. 80% of all instant payment transactions carried out in the first half of 2019 originated from mobile

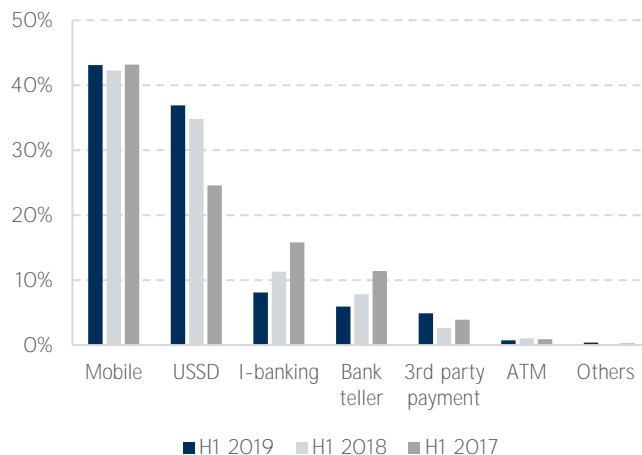
phones (or tablets). This was up from 77% in H1 2018 and represents growth of c.70% y/y.

Instant payments by value, (N bn)



Source: NIBBS, CBN, FBNQuest Capital Research

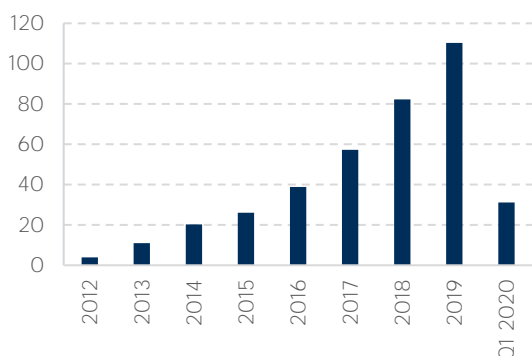
Instant payments by share (%)



Source: NIBBS, CBN, FBNQuest Capital Research

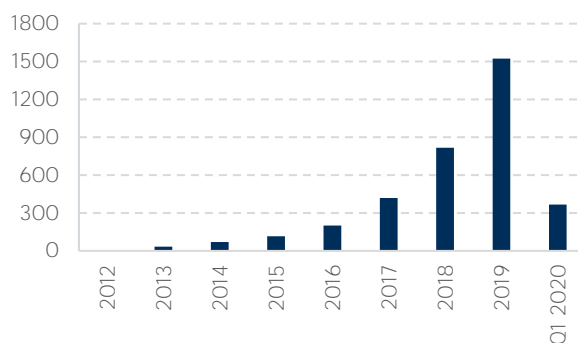
Within mobile channels, mobile apps remain the preferred mode of payment transmission with c.43% of total instant transactions. However, recently, the Unstructured Supplementary Service Data (USSD) code has made the most gains with regards to channel acceptance – growing to c.37% of total instant payment channel usage in 2019 from c.25% in 2017. The increasing prevalence of the USSD channel is due to its lower all-in transaction cost relative to mobile apps. Unlike mobile apps that require data for payment transmission, the sole requirement of the USSD is connection to a GSM network. As such, its utility and versatility – ability to be used on any mobile device, feature or smart – has been a major factor behind its growing popularity, particularly with rural dwellers.

Value of mobile related e-payment transactions, (N trn)



Source: NIBBS, CBN, FBNQuest Capital Research

Volume of mobile related e-payment transactions (million)



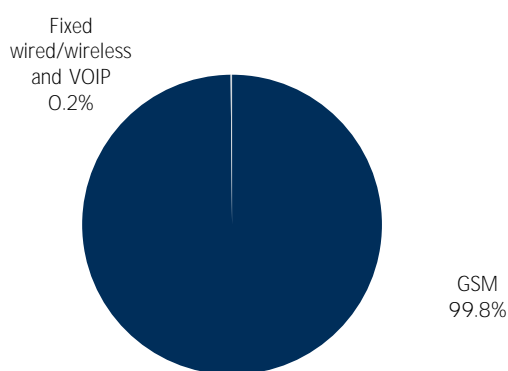
Source: NIBBS, CBN, FBNQuest Capital Research

NIBSS e-payment (instant and non-instant) data for 2019 is not properly broken down to show the channel breakdown by mobile segment compared with the others. However using Mobile pay, NIBBS instant payment (NIP) and Mcash as a proxy for mobile payments, we estimate that around c. N110trn (US\$290.3bn) of transactions were made through mobile channels in 2019. This amounts to c.64% of the total value of e-payment transactions and 76.5% of 2019 (nominal) GDP. Despite the lull in economic activity, we estimate that the value of transactions made through mobile channels grew by 25% y/y to c. N31.2trn

Historical and current industry growth trend

The Nigerian Telecommunication sector grew strongly over the three months to March 2020. According to data from the Nigerian Communications Commission (NCC), the number of active lines grew by 9% y/y to 189.3 million. Mobile subscriptions accounted for the overwhelming share of active lines (99.8%) and growth (9%). The balance of active connections of 0.2% was split between Voice-Over Internet-Protocol (VOIP) and fixed wireless lines

Mobile market share GSM vs CDMA (active subscribers, March 2019)



Source: NCC, FBNQuest Capital Research

Code Division Multiple Access (CDMA) operators also featured in the initial days (late 1990’s to early 2000’s) of Nigeria’s mobile telephony. However, they have now completely fizzled out because they lacked the scale and deep financial pockets required to drive network expansion. Also, the regional licences that they were initially awarded a few years prior to the universal licences awarded to the GSM operators restricted them from pursuing a national network expansion strategy.

MTN Nigeria and Airtel Nigeria (then Econet wireless), the first two GSM operators did not commence network rollout until 2001. However, their universal licences enabled them to roll out their networks on a national scale. More importantly, it granted them a five-year exclusive period before the NCC, the industry regulator, could award universal licences to other operators. Other factors that worked in their favour include the three-year pioneer status that they were granted - which exempted them from paying certain taxes and levies for importation of telecom equipment - and their capacity to attract foreign capital and vendor equipment financing due to their predominantly foreign ownership.

Subscriber acquisition for mobile network operators decelerated in an almost linear trend from the triple-digit y/y growth in the early years of the GSM rollout leading to 2008 to high-single-digit levels in 2015. However, subscriber growth was particularly weak between 2016 and 2017 (at 2.3% and -6.4% respectively) because of the economic recession of 2016. Also, the timing of the NCC’s directive to MTNN to disconnect 5.2 million improperly registered SIM cards coincided with the decline in economic activity, and contributed to a reduction in net subscriber additions over the

period. Thanks to base effects and a modest pick-up in economic activity, subscriber growth recovered strongly to 19% y/y in 2018 - translating to net subscriber additions of 27.9 million, compared with an average of c.12.5 million over the 5 year period prior to the recession (of 2016). Subscriber growth slowed to more normalised levels of 6.9% and 9.0% y/y in 2019 and Q1 2020 respectively. As subscriber accretion slowed, penetration levels increased from 42.8% in 2008 to 91.9% in 2019. In Q1 2020, mobile penetration increased by over 550bps to 94.2% from 88.7% in Q1 2019.

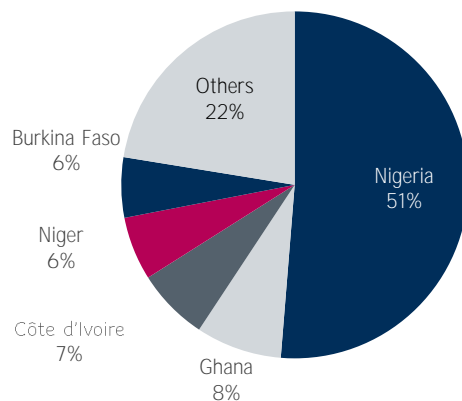
Evolution of subscriber numbers (millions), y/y growth and mobile penetration levels



Source: NCC, NBS, National Population Commission, FBNQuest Capital Research

In absolute terms, Nigeria’s mobile penetration has approached near saturation levels of 100%. However, the country still trails the likes of South Africa and Kenya with penetration rates of 191% and 103% respectively. As such, growth opportunities still exist. According to the GSMA, India, China, Pakistan and Nigeria are expected to be the largest contributors to the 600 million new addition to the global subscriber base over the 5-year period leading to 2025. Over the period, the body estimates that Nigeria will add around 32 million new mobile phone users or about half of the total new additions for the West African region

Share of mobile subscriber growth 2019-2025 (West Africa)

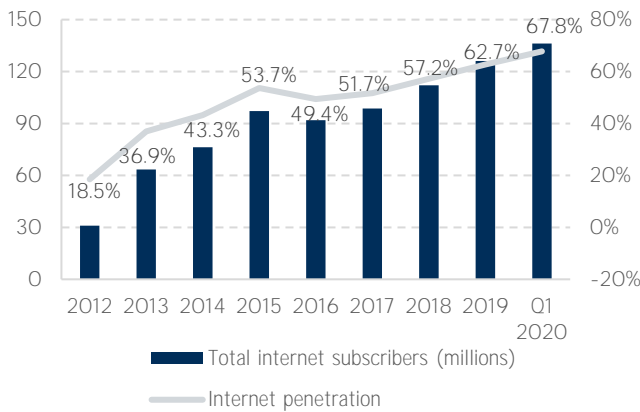


Source: GSMA, FBNQuest Capital Research

Significant progress in Internet and broadband penetration.

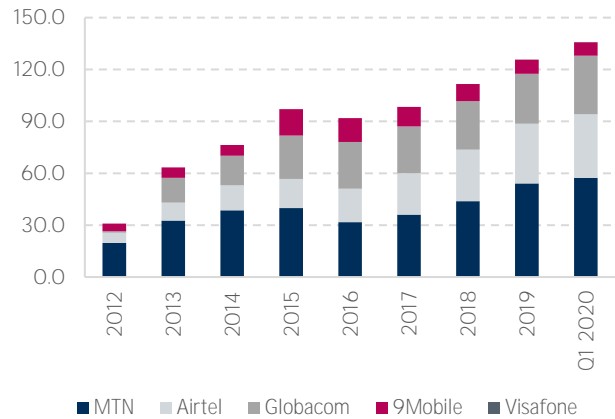
Nigeria’s internet penetration rate has seen steady growth over the last decade, on the back of rising mobile subscribers. According to the NCC, 99.7% of all internet enabled devices in the country are connected via a GSM network. Based on available data, internet subscriber growth slowed steadily from triple-digits y/y in 2013 to around 12% in 2019. With the growth in subscriber acquisition, internet penetration improved to 62.7% in 2019 from c. 18.5% in 2012. As at March 2020, there were 136.2 million internet users in Nigeria, implying strong double-digit growth of 17% y/y and a penetration rate of 67.8%.

Internet subscriber numbers (millions), and penetration (%)



Source: NCC, NBS, National Population Commission, FBNQuest Research

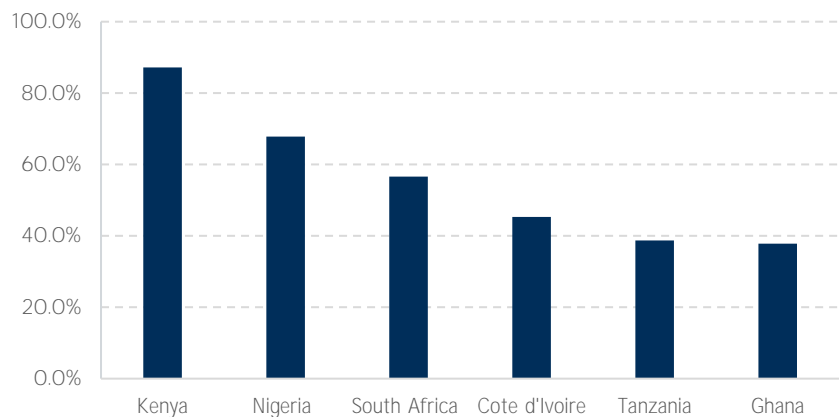
Market share of internet subscribers



Source: NCC, NBS, National Population Commission, FBNQuest Research

Excluding Kenya whose internet penetration rate is about the highest in Africa, Nigeria compares favourably with most countries in sub-Saharan Africa (SSA) such as Ghana and South Africa with penetration levels of 37.8% and 56.5% respectively.

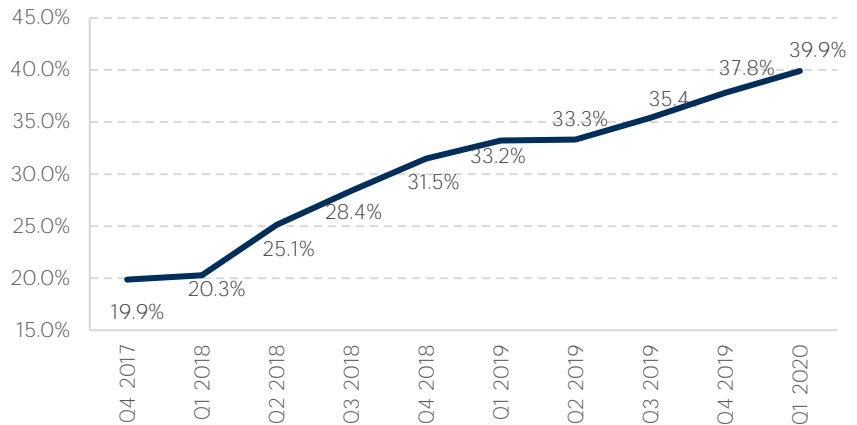
Internet penetration select SSA Countries



Source: Internet world stats, Statista, NCC, FBNQuest Capital Research

Also, some advances have been made with respect to broadband access: penetration had expanded by almost 700 bps y/y to c.40% as at Q1 2020. As recently as 2012, Nigerian’s broadband penetration rate was as low as 6%, according to the Nigerian National Broadband Plan (NNBP) 2013. Presently, mobile broadband connections account for an overwhelming share of 99.8% of the broadband base.

Nigeria’s broadband penetration

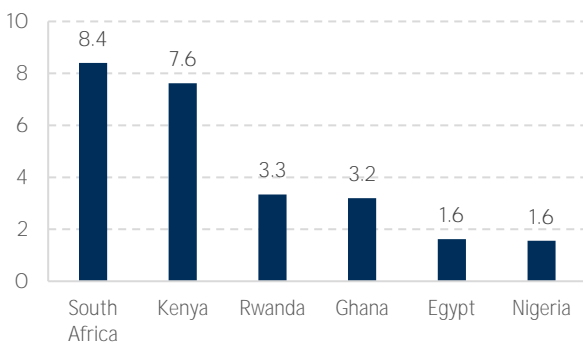


Source: NCC, NBS, National Population Commission, FBNQuest Research

...but at low speeds

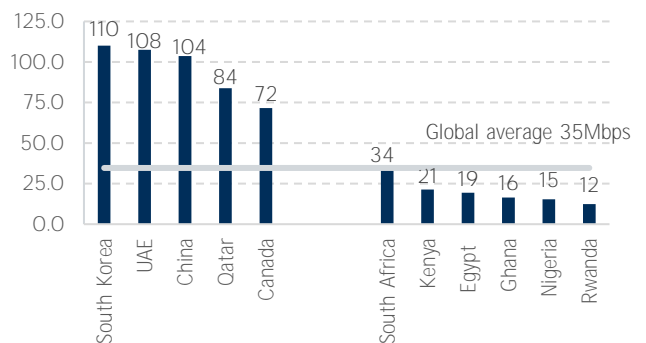
Despite the marked progress made with internet and broadband coverage, most internet connections are still at very slow speeds. Although there appears to be conflict in figures from various sources, the overall conclusion is the same. Nigeria’s mean internet download speed of 1.6Mbps as measured by Measurement-Lab (M-Lab) trails those of South Africa and Kenya at 8.4 Mbps and 7.6 Mbps respectively. As of June 2020, Speedtest Global index ranked Nigeria’s mobile broadband speed of 15.33Mbps at number 118 out of 137 countries surveyed.

Mean internet download speeds select African countries (Mbps)



Source: NNBP 2020, Measurement Lab, FBNQuest Capital Research

Mobile broadband speed by country (Mbps)



Source: Speedtest Global index, FBNQuest Capital Research

Given the positive impact of broadband penetration on economic growth, there is an urgent need to increase both coverage and speed. A 2019 report on the economic contribution of broadband by the International Telecommunication Union (ITU) highlights the transformative power of broadband and digital technologies. A key finding

of the report was that mobile broadband has a higher impact on the world economy than fixed broadband. In terms of economic contribution, an increase of 10% in mobile broadband penetration leads to increases of 2.0% and 1.8% in the GDPs of low-income and middle-income countries. As such, the importance of broadband access as a tool for economic diversification and development cannot be overstated.

Several supportive factors have played out to help drive the growth in internet and broadband penetration. Firstly, network operators seeking to extract higher revenue growth have embarked on aggressive rollout of their 4G networks, and the re-farming of some of their 2G frequencies to provide more capacity for 3G coverage. As at end-March 2020, MTNN had expanded its 4G population coverage to 48% from 24% just a year earlier. Also, Airtel Nigeria’s FY 2020 (end-Mar) ramped up its capital expenditure by 81% y/y to US\$325m on the back of an accelerated expansion of its 4G and LTE network.

Secondly, improving affordability of smartphones is driving its growing adoption. The proliferation of low-priced smartphones mostly from less known Chinese manufacturers like Gionee, Techno and Infinix is increasing smartphone uptake amongst low-income earners. In a bid to help drive smartphone penetration, MTN Nigeria in March 2019 launched its Smart feature phone initiative to bridge the gap between basic and expensive smartphones. Launched in 2017, this phone is currently priced at just under US\$35. The company is also engaged in ongoing efforts to provide affordable smartphones via strategic partnerships with OEMs, including Samsung, Apple and Transsion. MTNN’s smartphone penetration increased by to 46.2% in Q1 2020 from c.38% in Q1 2019.

Thirdly, the implementation of the NNBP 2013 with the sole objective of achieving a five-fold increase in broadband penetration from 6% in 2012 was positive for broadband and internet penetration. The plan was mainly hinged on the aggressive roll out of wireless broadband networks based on 3G and 4G access technologies. A secondary approach was that network operators were to be encouraged to expand fibre optic connections to exchanges, base stations and homes.

Strategy Matrix – NNBP 2013

	Unserved Areas	Underserved Areas	Served Areas
Extent of internet or broadband access	Extent of internet access: <10% of households & individuals	Extent of broadband access: <50% of households & individuals	Extent of broadband access: >50% of households & individuals
Strategy	Low cost wireless solutions, satellite, TVWS Mobile broadband & public access within 2km	Hybrid of wireless, satellite and FTTx Mobile broadband, fixed wireless & FTTB	Fibre to the base station, and FTTH Increased fibre penetration
Tactic	3G wireless coverage provided as a minimum to 80% of the population	4G/LTE wireless coverage and fibre to the BTS for increased capacity	Full migration to fibre in cities for high speed networks FTTx

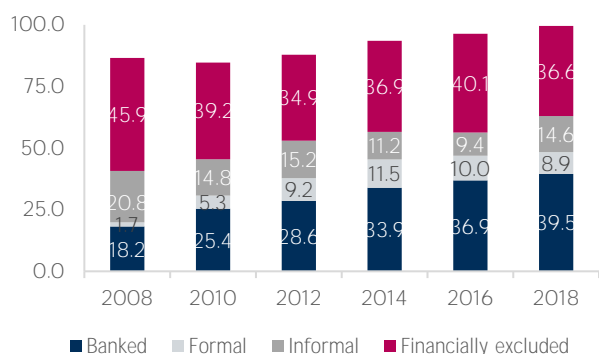
Source: NNBP 2013, FBNQuest Capital Research, FTTB-x, Fibre to the building, base station, home or exchange, TVWS: TV White spaces

The plan outlined three different strategic approaches to be adopted based on the extent of broadband penetration levels by geographic locations. Geographic locations were broadly classified into served, under-served and unserved areas. At the lower end of the strategy spectrum, the plan prescribed the expansion of 3G wireless coverage to 80% of the population for unserved areas - defined as locations where <10% of households and individual users have internet access. At the other end of the spectrum, or areas deemed as served where >50% of households and individual users have access to broadband speeds of at least 1.5Mbps, the plan suggested full migration to fibre for high speed broadband delivery. On the back of the implementation of the NNBP, Nigeria’s broadband penetration rate improved markedly to 31.5% in 2018.

Finally, the central bank’s adoption of mobile money as a means of driving financial inclusion has been positive for internet penetration growth. According to EFinA, up until 2010, almost 40% of Nigerians were completely excluded from the financial sector, while another c.15% only had access to the financial system through informal means. Although the CBN launched the first version of its Payment System Vision (PSV) 2020 in March 2007, Paga (by Pagatech) - Nigeria’s first mobile payment service - was not licensed for operation until 2010. Since then, the CBN has licensed about 19 other non-bank led mobile money operators. This number excludes the 16 other Payment System Service Providers (PSSP) such as Interswitch Nigeria, ETranzact International and Flutterwave Technology Solutions Service.

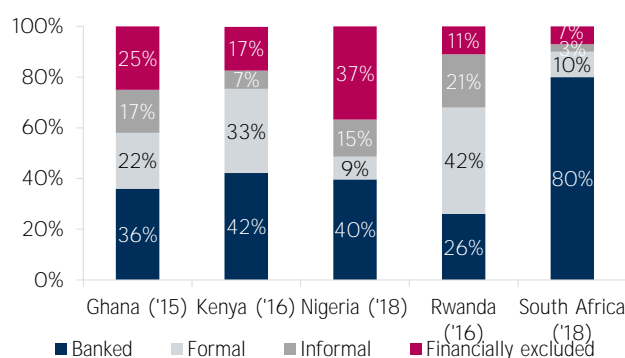
While some progress has been made with regards to financial inclusion since the PSV was launched, there is still significant ground to cover. According to the key findings of EFinA’s latest financial inclusion survey which was carried out in 2018, approximately 51% of Nigeria’s adult population are either financially excluded or are only able to access the financial system informally. This ranks as one of the highest in sub-Saharan Africa, comparing negatively to countries like South Africa (10%), Kenya (24%) and Ghana 42%. Unlike Kenya and other East African countries where mobile money adoption grew significantly on the back of the Telco-led model, Nigeria’s mobile money growth had for years been constrained by the CBN’s reluctance to allow telecoms operators to exclusively render mobile money services. The exclusion of mobile network operators from the provision of mobile money services without partnering with banks has hindered the achievement of government’s financial inclusion target of 80% by 2020.

Bank status of the adult population - Nigeria (million)



Source: EFinA, FBNQuest Capital Research

Bank status of the adult population - select countries (%)



Source: EFinA, FBNQuest Capital Research

Mobile money – finally, an easing of regulatory barriers for telecoms operators

The policy landscape is gradually changing with respect to Telco-led mobile money schemes. Having realised that its financial inclusion target will not be met by end 2020, the CBN changed tack. Following extensive consultations with industry stakeholders, including the NCC, deposit money banks and MMOs, the central bank in October 2018 issued a new regulatory framework for the licensing of Payment Service Banks (PSBs). The reform is the most significant policy pronouncement so far in addressing Nigeria's low level of financial inclusion because it also grants mobile network operators some participation rights to offer mobile financial services.

Relative to the banks and MMOs, mobile network operators have the infrastructure and scale to make a more significant impact in the drive towards greater financial inclusion. According to data from NIBBS, Nigeria has about 124.8 million bank accounts of which only about 79.3 million are active. This figure does not adjust for unique bank customers. The number represents a banking penetration rate of just 39.5%, significantly below the mobile and internet penetration rates of c.94% and 67.8% respectively. Although broadband penetration is also low at around 41%, it could be argued that:

(1) although smartphone type applications provide more intuitive user interface and experience and are capable of offering a large suite of services, basic digital financial services (particularly for rural dwellers) can be rendered by means of 2G networks and USSD;

(2) broadband coverage as supported by 3G and 4G networks is set to continue to grow strongly on the back of; a) sizable investments from mobile operators as they seek to capture a larger share of data revenue, and b) the push by regulators to achieve the government's new 5-year broadband target of 90% population coverage (at minimum data download speeds of 25Mbps in urban areas, and 10Mbps in rural areas at a price of not more than N390 per 1GB of data) by end 2025 as enunciated in the new NNBP 2020.

Recently, the NCC and a consortium of infrastructure companies disclosed that they would raise N265bn for the development of broadband infrastructure across the country over the next four years. According to the release, the Commission will raise about N65bn in counterpart funding for the project.

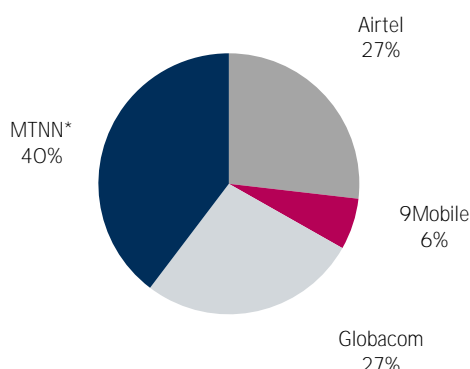
Despite releasing guidelines for the regulation of PSB's in October 2018, the CBN has granted only three firms approval in principle (AIP) to operate as PSBs. Two of the three firms, Money Master and 9PSB, are subsidiaries of GSM network operators, Globacom and 9Mobile respectively. Although MTNN and Airtel Nigeria are yet to receive the CBN's AIP, both operators are already gearing up ahead of the kick-off of operations, with the recruitment of mobile money (MOMO) agents. In July 2019, Yellow Digital Financial Services (YDFS), a subsidiary of MTNN, obtained a super-agent licence from the central bank. According to MTNN, the licence is an important step preceding the PSB licence because it allows them to roll out critical infrastructure and take control of their agent network. As at March 2020, YDFS had registered about 178,000 agents nationwide and processed about 5.6 million transactions. PSB's promoted by the mobile networks will be able to leverage the brand equity and subscriber base of their parents. MTNN and Airtel will also be able to draw from the experience curve of their parent companies' operation of mobile money schemes in other markets.

Market share dynamics

Market share- mobile and internet subscribers

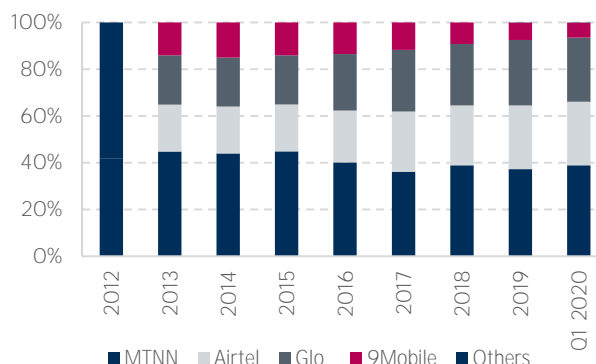
The market share dynamics of the GSM market have been relatively unchanged. MTNN maintained its leadership across several industry metrics. As at the end of Q1 2020, MTNN had over 73.7 million subscribers, translating to a market share of 39% and implied growth of 13% y/y, according to NCC data. Globacom and Airtel Nigeria were both tied at c.27% of the active subscriber base. After attaining a peak share of c.14% in 2014, 9Mobile’s share of the overall subscriber base has shrunk steadily each year to 6% as at Q1 2020. On a y/y basis, its subscriber base is down -28% y/y relative to Q1 2019. Its market share loss can be traced to the firm’s limited investment in network infrastructure, following the 2016 exit of Etisalat, its major investor, due to a US\$1.2bn debt owed to Nigerian banks. The NCC’s most recent available data (for May) showed that MTNN gained 100bps of market share to 40%. We note that the market share analysis is based on the NCC’s active subscriber data which includes incoming SMS and on-net calls. As such, it is less conservative than the active subscriber numbers reported by MTNN.

Market share of mobile subscribers (subscriber=c.192m)



Source: NCC, FBNQuest Capital Research

Market share of mobile subscribers – 2012 – Q1 2020

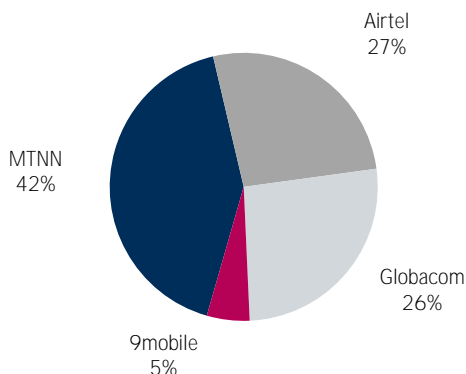


Source: NCC, MTNN, FBNQuest Capital Research; peer data unavailable for 2010-13

A detailed breakdown of industry market share data before 2013 is difficult to come by. However, what is clear is that MTNN has consistently dominated in terms of market share. Based on available data, MTNN’s market share rose to a peak of 45% in 2013. However, it dropped to a low of 36% in 2017 due to (1) the suspension of regulatory services to MTNN following a fine for not disconnecting improperly registered SIMs, and (2) the introduction of mobile number portability which allows customers to change their network providers.

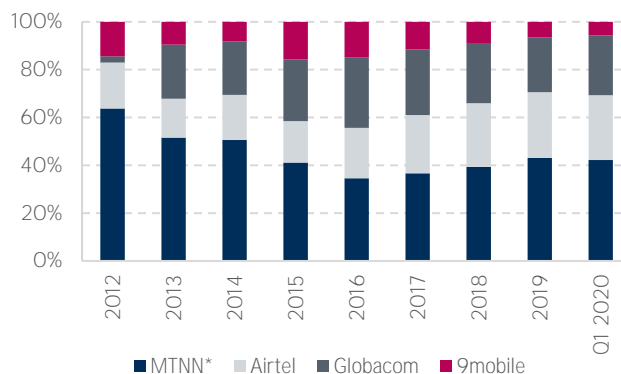
The market share breakdown for mobile internet subscriptions almost mirrors that of the mobile subscriber base. The most recent data for May 2020 show that MTNN had the largest share of internet subscribers at 42%. Airtel and Globacom followed with shares of 27% and c.26% respectively. Like its share of mobile subscriptions, 9Mobile’s share of internet subscribers has shrunk steadily from 16% in 2015 to just c.5% as at Q1 2020.

Market share of internet subscribers (subscribers=c.141m)



Source: NCC, FBNQuest Capital Research

Market share of internet subscribers - 2012- Q1 2020

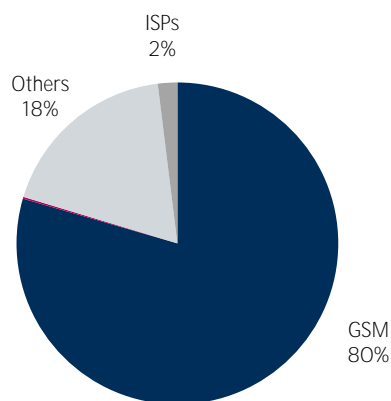


Source: NCC, MTNN, FBNQuest Capital Research

Market share dynamics – revenues

The latest (2018) reported data set from the NCC puts sector revenue (for all categories of operators GSM, Fixed, ISP and others) for 2018 at N2.2trn. GSM operators accounted for c.80% of sector revenues. MTNN had a dominant revenue share of 59%. Its revenue share was almost triple (2.6x) that of Airtel’s 23%. Globacom and 9Mobile both had revenue shares of c.9% respectively, or slightly less than 40% of Airtel’s revenue.

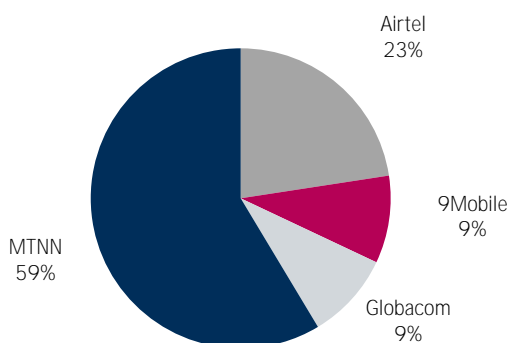
Market share of 2018 revenue by technology of network (Revenue =N2.25trn)



Source: NCC, FBNQuest Capital Research,

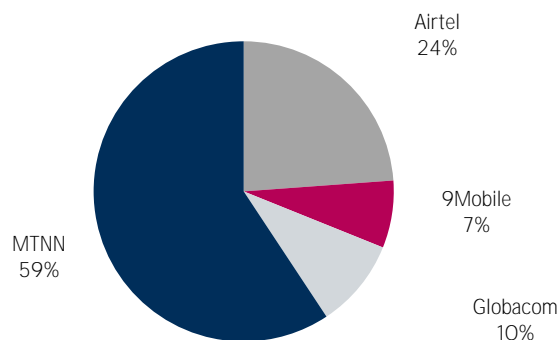
We note that the NCC’s revenue data conflicts with the disclosure in MTNN’s Q1 2019 presentation which put its market share at c.50%. However, we believe that the data from the NCC is likely to be more accurate because a) the 2018 data on call traffic which we discuss in the next section support the NCC’s revenue numbers, and b) since the NCC provides regulatory oversight for network operators, the periodic disclosure/ submission of financial information is likely to be one its key regulatory requirements.

GSM operators market share of revenues 2018 (revenue =N1.77trn)



Source: NCC, FBNQuest Capital Research

GSM operators market share of revenues 2019E (revenue =N1.97trn)



Source: NCC, MTNN, FBNQuest Capital Research

Excluding Airtel which was recently listed on the Nigerian Stock Exchange (NSE) in July 2019, revenue and market share numbers for the two other GSM operators – Globacom and 9Mobile – are not publicly available because they are privately held companies. As such, we estimate revenue share numbers for Globacom and 9Mobile based on the average revenue per user (ARPU) numbers derived from the NCC’s 2018 data. On the back of this, we estimate sector revenue of almost N2trn in 2019, or an implied growth of 11.5% y/y. On the back of our estimates, we believe that 9Mobile’s share of revenue shrunk by over 200bp y/y to c.7% in 2019 as a result of a net reduction of -2.3 million in its subscriber base. Airtel Nigeria appears to be the major beneficiary of 9Mobile’s loss with a c.126bp y/y expansion in revenue share to c.24%.

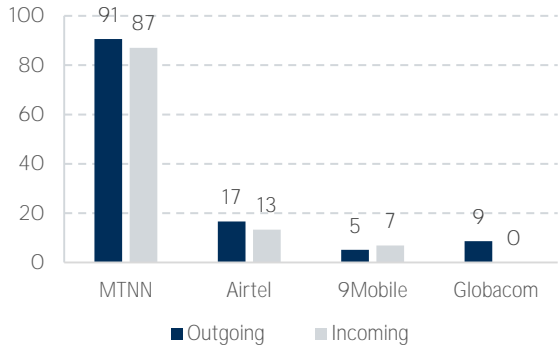
Market share dynamics – network traffic

MTNN’s dominance by value share of revenues is better understood when viewed in the context of its share of total traffic. Compared with other network operators, MTNN appears to have a higher traffic density (voice traffic per square kilometer). Data for 2019 is lagged. As such, we use the 2018 data provided by the NCC as a proxy. The data show that MTN had a disproportionate share of total outgoing and incoming voice traffic at 74% and 81% respectively. Airtel, the number two operator on this metric had a market share of 14% and 12% respectively.

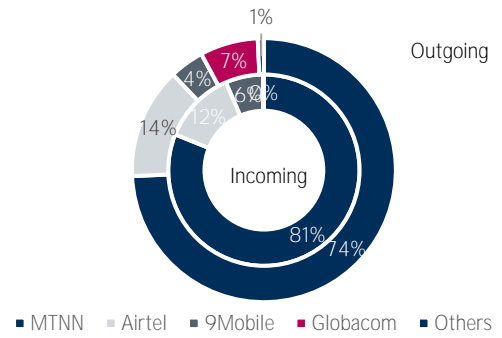
MTNN’s dominance was also evident in the most profitable segments of voice traffic – international voice calls and roaming – with shares of 60% and 71% for outgoing and incoming international voice traffic, and 74% and 96% of outgoing and incoming roaming traffic respectively.

National telephone traffic

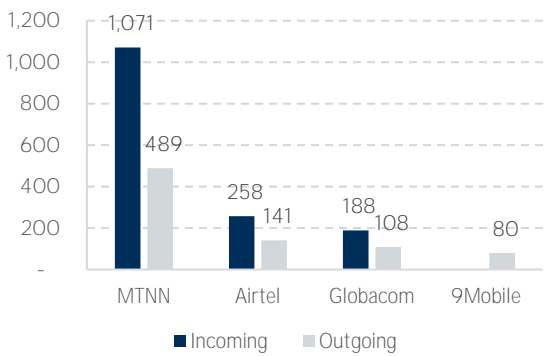
National telephone traffic 2018 (billion minutes)



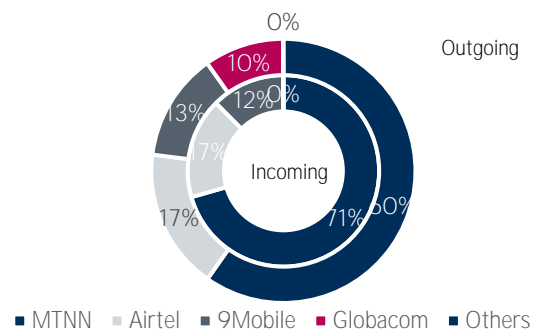
Share of national telephone traffic (%) - 2018 = 122 billion minutes



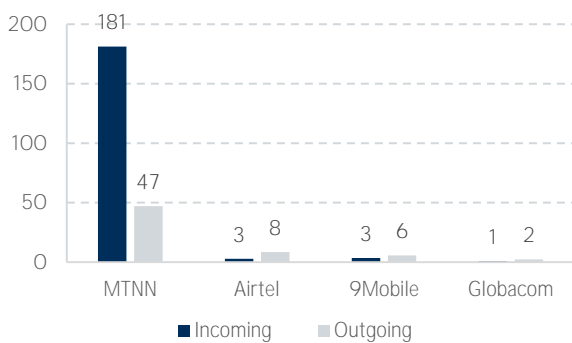
International voice traffic 2018 (million minutes)



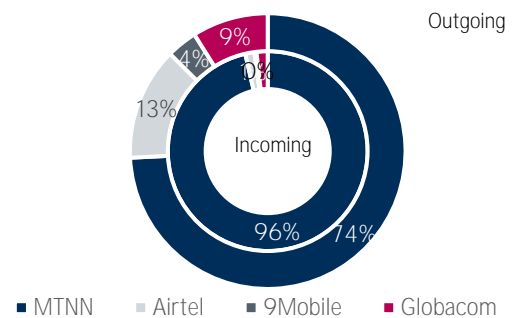
Share of international voice traffic 2018 (%)



Number of roaming minutes 2018 (million minutes)



Share of roaming minutes 2018 (%)

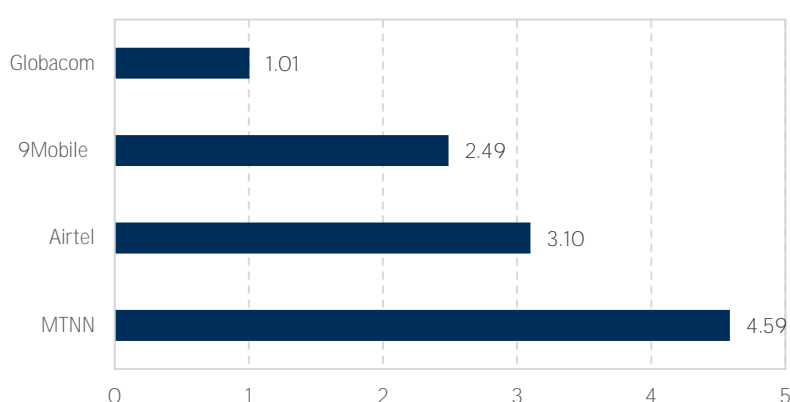


Source: NCC, FBNQuest Capital Research

Average Revenue Per User (ARPU)

MTNN is also the clear leader in terms of average revenue per user (ARPU) generated. Based on its Q1 2020 results, we estimate an ARPU of US\$4.59, implying an improvement of c.10% y/y, and almost 50% higher than the US\$3.10 ARPU for its closest competitor, Airtel Nigeria. ARPU data for 9Mobile and Globacom are not available. However, using their actual revenues for 2018, and our 2019 revenue estimates as a basis for ARPU computation, we estimate ARPUs of c.US\$2.49 and US\$1.01 for the former and latter respectively. 9Mobile’s ARPU was as high as US\$3.48 as recently as Q3 2017. However, its ARPU has taken a hit from the steady erosion of its subscriber base since 2014.

2019 ARPU of GSM operators (US\$)



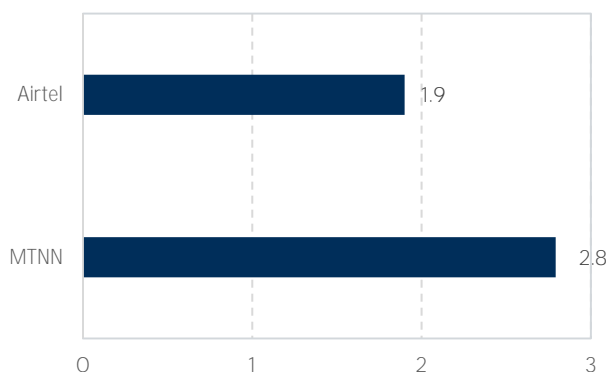
Source: MTNN, Airtel Africa, FBNQuest Capital Research estimates for Globacom and 9Mobile

MTNN also leads the pack in terms of voice ARPU. We attribute this to its overwhelming share of total voice traffic - which stood at c.74% (outgoing) and 81% (incoming) as at end-2018 (latest available disclosure). Our voice ARPU estimate of US\$2.8 (for Q1 2020) for MTNN compares favourably with an ARPU of US\$1.9 for Airtel.

However, narrowing down on data ARPUs, the difference between both firms is not as significant. Our US\$2.9 data ARPU estimate for MTNN compares with US\$2.5 for Airtel. MTNN can generate an almost equivalent voice ARPU relative to data. In comparison, Airtel’s average revenue for data is significantly stronger than its voice revenue.

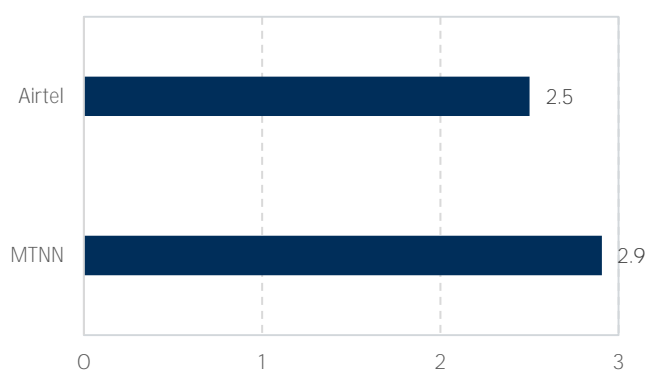
Both companies have been quite aggressive in expanding their 4G coverage to improve data penetration. As at Q1 2020, MTNN’s 4G network stood at 48%. While Airtel has been active in expanding its 4G LTE network and claims leadership in the data space, data on the extent of its coverage is unavailable. As such, there is no clear evidence to support its claims. Due to the lack of public disclosure, Voice and data ARPU for Globacom and 9Mobile are not available. However, an obvious conclusion from their absolute ARPU estimates is that their voice and data ARPUs are significantly inferior to those of MTNN and Airtel.

Voice ARPU MTNN & Airtel Nigeria (US\$) Q1 2020



Source: MTNN, Airtel Africa, FBNQuest Capital Research estimates

Data ARPU MTNN & Airtel Nigeria (US\$) Q1 2020

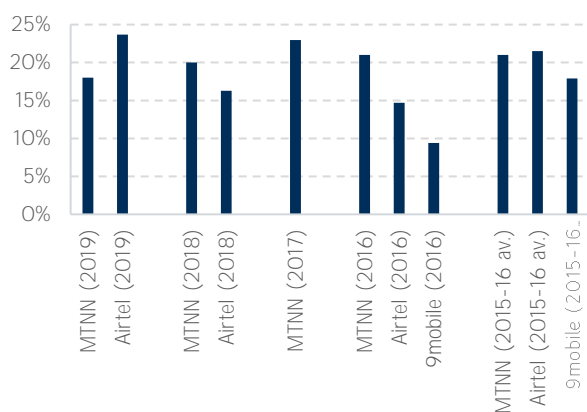


Source: MTNN, Airtel Africa, FBNQuest Capital Research estimates

Investments and capital expenditure

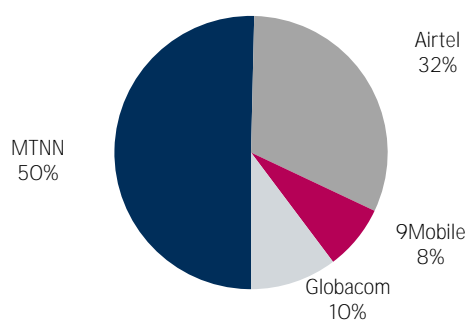
In terms of capex deployment, historically, MTNN’s investments in Nigeria’s network of infrastructure has been more significant than any other network operator. Over the last two years for which (almost) comparable data is available, MTNN’s average capex spend of US\$538m (c. N194bn) is more than twice Airtel’s average capex of US\$253m. Although MTNN’s capex-to-sales ratio fell to 18% in 2019, its absolute capex spend of US\$517m was c.59% higher than Airtel’s (US\$325m). Excluding 2017 for which comparable data for Airtel is unavailable, MTNN’s capex-to-sales ratio has been ahead of that of its closest rival since 2016. Our comparison may be slightly flawed in terms of accuracy because we do not adjust for Airtel’s different year-end (end-March). However, the yawning gap in absolute capex and the lack of data for Airtel would make such adjustments a purely academic exercise.

Capex-to-sales ratio



Source: MTNN, Airtel Africa, FBNQuest Capital Research estimates

2019-20 Estimated share of sector capex (US\$1.03bn)

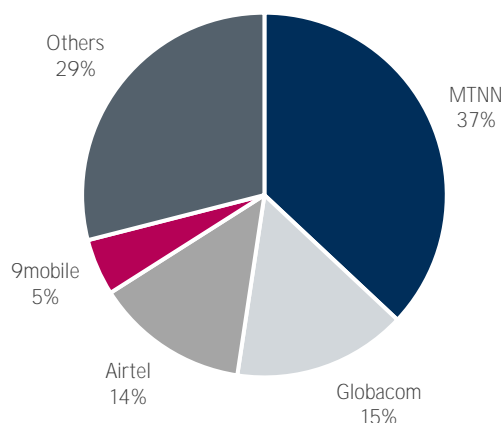


Source: MTNN, Airtel Africa, FBNQuest Capital Research estimates

We estimate capital expenditure of US\$105m and US\$79m for Globacom and 9Mobile respectively based on an assumed capex-to-sales ratio of c.20%. On this basis, we estimate total sector capex was around US\$1.0bn in 2019.

Given the demand that increasing mobile broadband penetration will place on their networks, operators have invested heavily in fibre networks over the years. MTNN’s sizable capex spend relative to peers is reflected in its leadership across such critical network infrastructure. Available data from the NCC show that the total backbone and middle-mile fibre distance deployed in the country is approximately 54,000 km. However, there appears to be some variance with regards to the attribution of fibre length to operators from the different reports sourced from the NCC. 2018 data from the NCC shows that MTNN accounted for around 31,847km or c.59% of the total terrestrial fibre network. However, the fibre network map contained in the NNBP 2020 which is also sourced from the NCC put MTNN’s share at c. 12,416km or c.22% of the total fibre length of 54,029km. Another version of the data - the NCC’s data for 2014 suggests that total fibre deployment was c.64,433km. We suspect that the NCC data on fibre length has not been fully updated. Our attempt at consolidating the pieces of data from the multiplicity of reports suggests that Nigeria’s on-land fibre network might actually be as long as 86.101km, with MTNN having a sizable share of 37% of total.

Fibre network market share (mobile operators, 2019) – 86,101km estimated



Source: NCC, FBNQuest Capital Research estimates

In terms of spectrum licences, MTNN’s portfolio is more diverse than any other operator. Relative to competition, most of its holdings are also in the high frequency bands. The table below shows the spectrum holding of mobile players across spectrum bands.

Spectrum holdings by operator

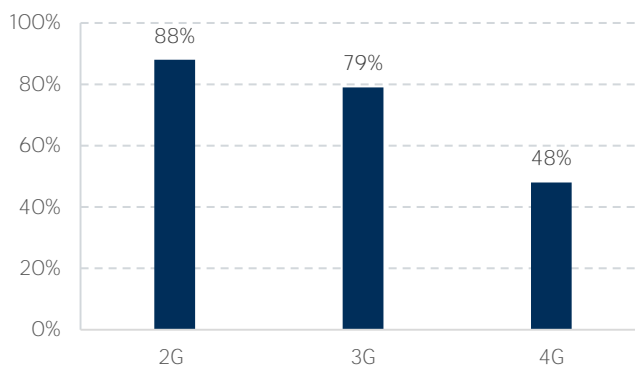
Frequency	MTNN	9mobile	Glo	Airtel	Ntel
3,500MHz (1 x 30)	✓				
2,600MHz (2 x 30)	✓			✓	
2,100MHz (2 x 10)	✓	✓	✓	✓	
1,800MHz (2 x 15)	✓	✓	✓	✓	✓
900MHz (2 x 5)	✓	✓	✓	✓	✓
800MHz (2 x 10)	✓				
700MHz (2 x 10)	✓		✓		

Source: Company data, NCC, MTNN, FBNQuest Capital Research

Technology coverage by population

Despite very stiff competition from Airtel with regards to 4G deployment and coverage, we believe that MTNN is also ahead on these. The reason is simple. As at Q4 2019, MTNN's cumulative 4G site count was 9,696. On its H1 2020 (end-Sep) conference call, Airtel's management disclosed that its 4G footprint for the Group consisted of around 12,800 sites or almost 60% of its 22,000 site portfolio. Even if we assume that Nigeria had a 50% share of Airtel's total 4G sites at the time, the implied site count of 6,400 is considerably below the over 8,000 4G sites that we estimate for MTNN as at Q3 2019 (end Sept). Our (end-Sep) estimate for MTNN is based on the pro-rata share of the difference between MTNN's Q4 2019 and H1 2019 (6,347) 4G site count.

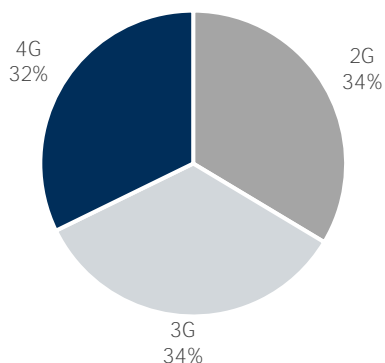
MTNN population coverage by network technology Q1 2020



Source: BCC, FBNQuest Capital Research

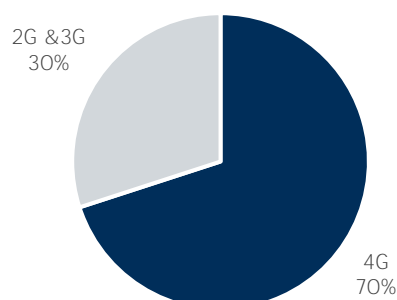
Following its aggressive 4G rollout, MTNN has been able to increase its 4G population coverage to 48% from c.24% as at Q1 2019. Also its 3G and 2G coverage are the most expansive of all the GSM networks at 79% and 88% respectively. Comparable data for other networks including Airtel are not available. However, Airtel's network is the most modern in the country with 4G sites accounting for c.70% of its total site count.

MTNN share of site by technology Q4 2019 (site count =37,193)



Source: MTNN, FBNQuest Capital Research estimates

Airtel - proportion of 4G site to total (site count = N/A)



Source: Airtel Africa, FBNQuest Capital Research estimates

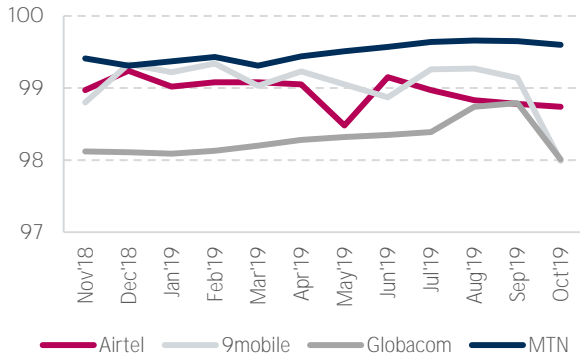
NCC- Perceptions of service quality of network operators

The NCC takes quality of service (QoS) very seriously. As such, on a monthly basis, it measures the operators on four key QoS performance indicators namely; (1) the call setup success rate (CSSR), (2) dropped call rate (DCR), (3) the standalone dedicated control channel congestion (SDCCH), (4) the traffic control channel congestion rate (TCCH). The minimum thresholds for the CSSR and DCR which are perhaps the two most important metrics are $\geq 98\%$ call success rate and $\leq 1\%$ failure (drop call) failure rates respectively. The SDCCH and TCCH which are both measure traffic volume/congestion, have minimum threshold levels of $\leq 0.2\%$ and $\leq 2\%$ respectively.

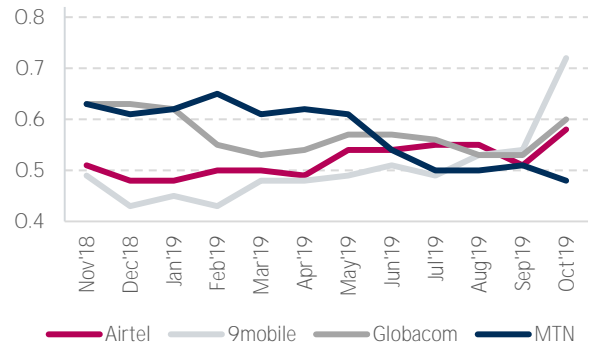
The most recent disclosure (October 2019) from the NCC shows that MTNN and Airtel were within the required threshold for all the KPIs. In addition, excluding the SDCCH metric where it was beaten to second place by 9mobile, MTNN led on the three other indicators. According to the NCC, 9Mobile and Globacom breached the threshold levels for two KPIs, the CSSR and SDCCH for the former and latter respectively. Underscoring the seriousness of the NCC’s monthly assessment is that the former’s breach was down to a rounding error of 0.01%. Also in May 2019, MTNN was in breach of the SDCCH KPI.

National telephone traffic

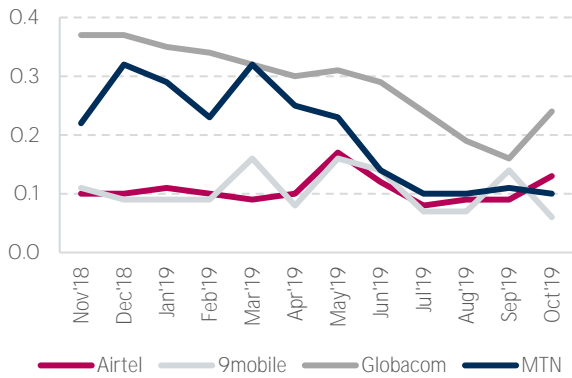
Call Setup Success Rate (CSSR) - Threshold $\geq 98.0\%$



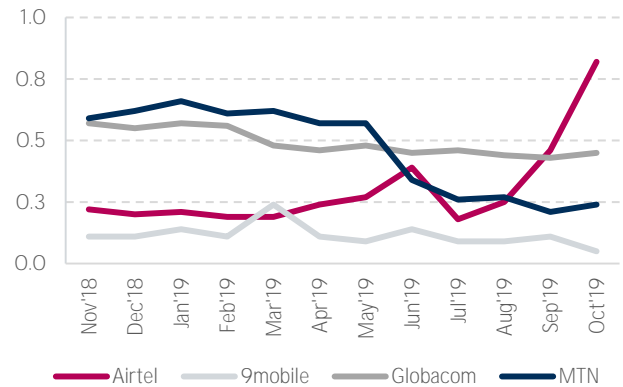
Dropped Call Rate (DCR) - Threshold $\leq 1.0\%$



Standalone Dedicated Control Channel Congestion (SDCCH) Threshold $\leq 0.2\%$



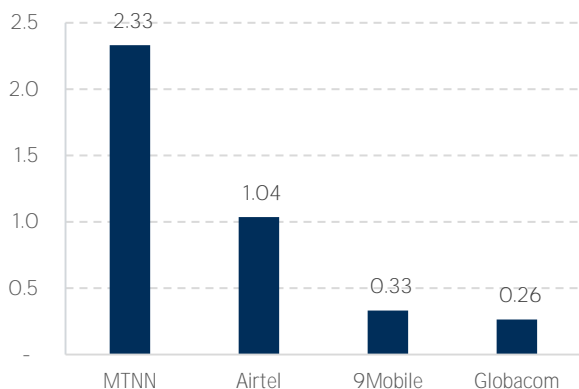
Traffic Control Channel Congestion Rate (TCCH) - Threshold $\leq 2.0\%$



Source: NCC, FBNQuest Capital Research

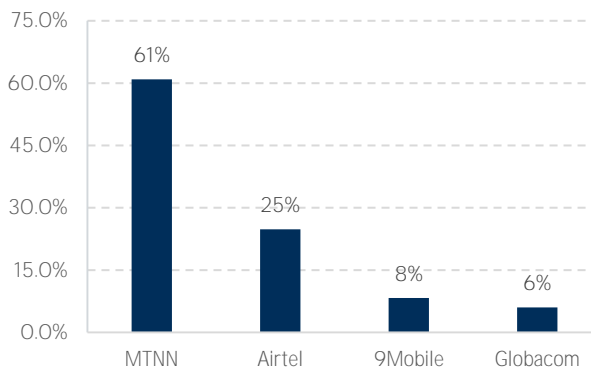
An independent survey on the service quality of GSM operators conducted by REACH Technologies, an indigenous fintech firm corroborates the results of NCC's monthly QoS assessment. The random survey draws conclusion from a sample size of 133 respondents residing in Nigeria's urban region based on their perceptions of the quality of service provided by their individual networks. Out of a maximum score of five points, MTNN scored the highest number of points - 2.3 points - on a weighted average basis. Airtel was the next best in terms of QOS with a score of 1. In terms of distribution, about 60% of the 133 respondents that were randomly polled subscribe to the MTNN network. Airtel also had a sizable share of 25% of the poll respondents. This result is important because it underscores MTNN's larger wallet share of urban subscribers.

Urban subscribers perception of network service quality



Source: REACH Technologies, FBNQuest Capital Research

Network operators share of respondents polled

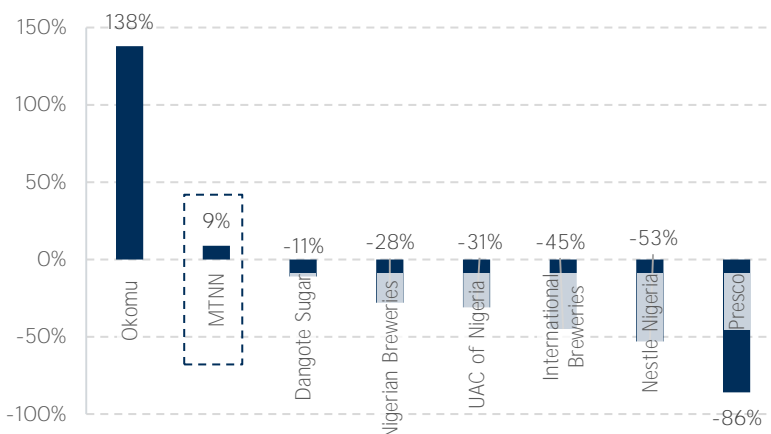


Source: REACH Technologies, FBNQuest Capital Research

Year-to-date performance review

In contrast to other sectors under our coverage, the telecoms sector performed relatively well in Q1 2020. Excluding Okomu Oil which delivered stellar PBT growth on the back of solid revenue growth from its palm oil business, MTNN was the only non-financial company within our coverage that delivered meaningful PBT growth. Although lockdown measures did not start until late into the quarter, MTNN and Airtel Nigeria, the Nigerian subsidiary of Airtel Africa (not covered), both reported healthy revenue growth.

Q1 2020 PBT growth y/y



Source: CBN, FBNQuest Capital Research

For MTNN, the only telecommunications company under our coverage, Q1 revenue grew by 17% y/y, driven by growth in both data and voice revenue which were up by 59% y/y and 7% y/y respectively. The solid growth in data was underscored by a 32% y/y

growth in active data subscribers to 26.8 million. Consequently, data traffic expanded by 130% y/y on the back of increased data demand for remote working, and entertainment applications - mainly video streaming. Voice revenue growth was achieved on the back of a 14% y/y growth in active subscribers to 68.5 million. Although opex was up by 18% y/y, largely because of an 18% y/y rise in direct network and transmission cost, the solid topline growth was more significant. As such, PBT advanced by 9% y/y.

Airtel Nigeria's Q4 2020 (end-March) revenue growth was even stronger at 27% y/y (in constant currency terms). The strong revenue growth was underpinned by voice and data revenue growth of 18% y/y and 53% y/y respectively. The company's underlying EBITDA also grew by 32% y/y on the back of an EBITDA margin expansion of c.206bps.

Sector outlook

The new NNBP (2020-2025) has set broadband targets in three key areas namely: a) coverage - 90% of the population, b) data download speeds of 25Mbps and 10Mbps in urban and rural areas respectively, and c) affordability - minimum price of N390 per 1GB of data. While we think the targets are both ambitious and audacious, we believe that they are achievable.

The plan's success will depend on the right mix of policy implementation, private sector led infrastructure investment and targeted government incentives for qualifying companies. However, we believe that the deployment of critical infrastructure, particularly with regards to the expansion of the national fibre backbone, together with middle-mile and last-mile fibre links are probably the most critical to guarantee the plan's success. As noted in earlier sections of this report, MTNN expanded its 4G population coverage ratio by c. 2,400bps to c.48% within the space of one year. As such, given the race to deploy 4G networks by the GSM operators, we believe that the target of achieving 90% 4G population coverage can be achieved. However, the commercial considerations of 4G deployment in low traffic areas may be a hindrance.

Other important issues that must be resolved include right-of-way access and uniformity with respect to costs. Early this year, local newswires reported that Lagos and 13 other states had hiked the fees on right-of-way access for fibre infrastructure from c.N300 to N500 per linear metre to between N3,000 and N6,000 per linear metre. This is considerably higher than the N145 per meter stipulated in the NNBP and could significantly push up data tariffs. It also undermines the federal government's resolve to enhance broadband access.

Over the 5-year period leading to 2016, Nigeria's net subscriber base grew by c.10% y/y on average, representing average net subscriber additions of c.11.7 million per annum. Following the y/y net subscriber loss of 2016 due to the lingering effects of the recession and the surge in net additions in 2018, net subscriber additions returned to normalised levels of 11.8 million (+7% y/y) in 2019. As such, in the near-to-medium term, we continue to see healthy growth (of c.10%) in the subscriber base of telecoms operators.

For operators in the sector, we expect revenues to continue to grow strongly on the back of double-digit growth in data revenue. Given that most of the lockdown occurred in Q2, we see double-digit growth in revenues underpinned by a surge in data traffic. However, moving down the income statement, the escalation of dollar-linked costs - mainly the cost of tower leases is a potential downside risk to earnings of the GSM operators. Recently, the management of MTNN disclosed that the NAFEX rate of c.N385/US\$ will now be applied as its reference rate for dollar-linked tower costs (vs. CBN's official rate of N360 previously). The rate was only recently reviewed to N360/US\$ in April (from N307 previously), in line with the official rate. However, we believe that the revenue growth from the surge in data (and voice) traffic will more than offset the escalation in costs. Regardless, our estimates are conservative. For MTNN, we forecast revenue growth of 16% y/y in Q2 2020. However, our PBT growth forecast of 6% y/y is about 300bps lower than the 9% y/y growth that the company delivered in Q1 2020.

Appendix

In this report, we refer to two sets of surveys:

1. The Quality of Service (QoS) KPIs of Nigeria's operating GSM networks namely; Airtel, 9Mobile (formerly Etisalat), Globacom and MTN Nigeria, conducted on a nationwide and state-by-state basis by the Nigerian Communications Commission (NCC). Details of the monthly QoS survey can be found on the NCC's website (<https://www.ncc.gov.ng>)
2. An independent survey conducted by REACH Technologies, a Nigeria-based fintech, conducted in May with a sample size of 133 adults aged over 20.

Map of Nigeria's Fibre optic network

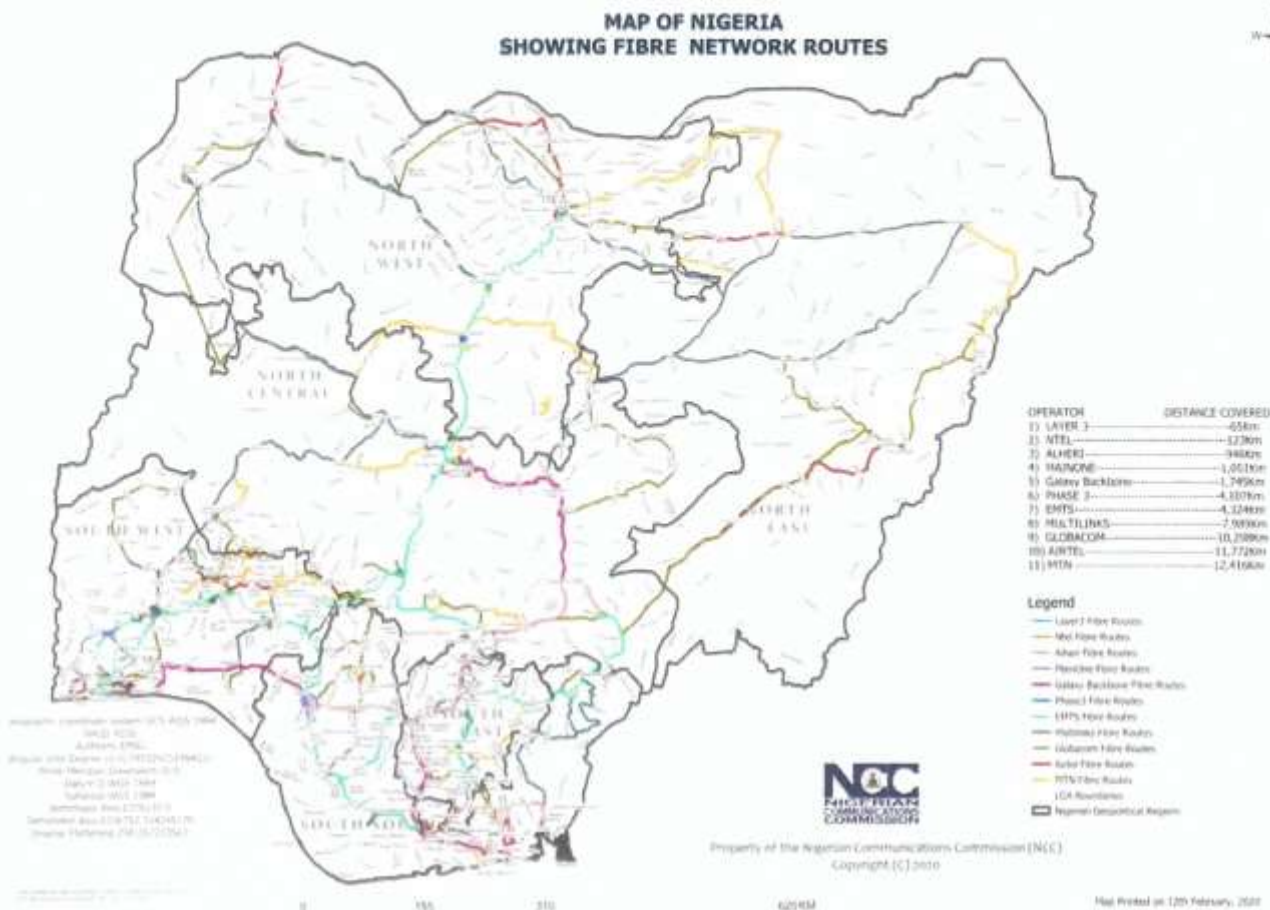


Fig 2.10: Map of Nigeria Fibre Network Routes Q4, 2019 Source: NCC
Map is based on data submitted by Network Operators as at Q4, 2019 with exception of Suburban, BCN and 21st Century

Source: NNBP 2020, FBNQuest Capital Research

Map of Nigeria's 2G network

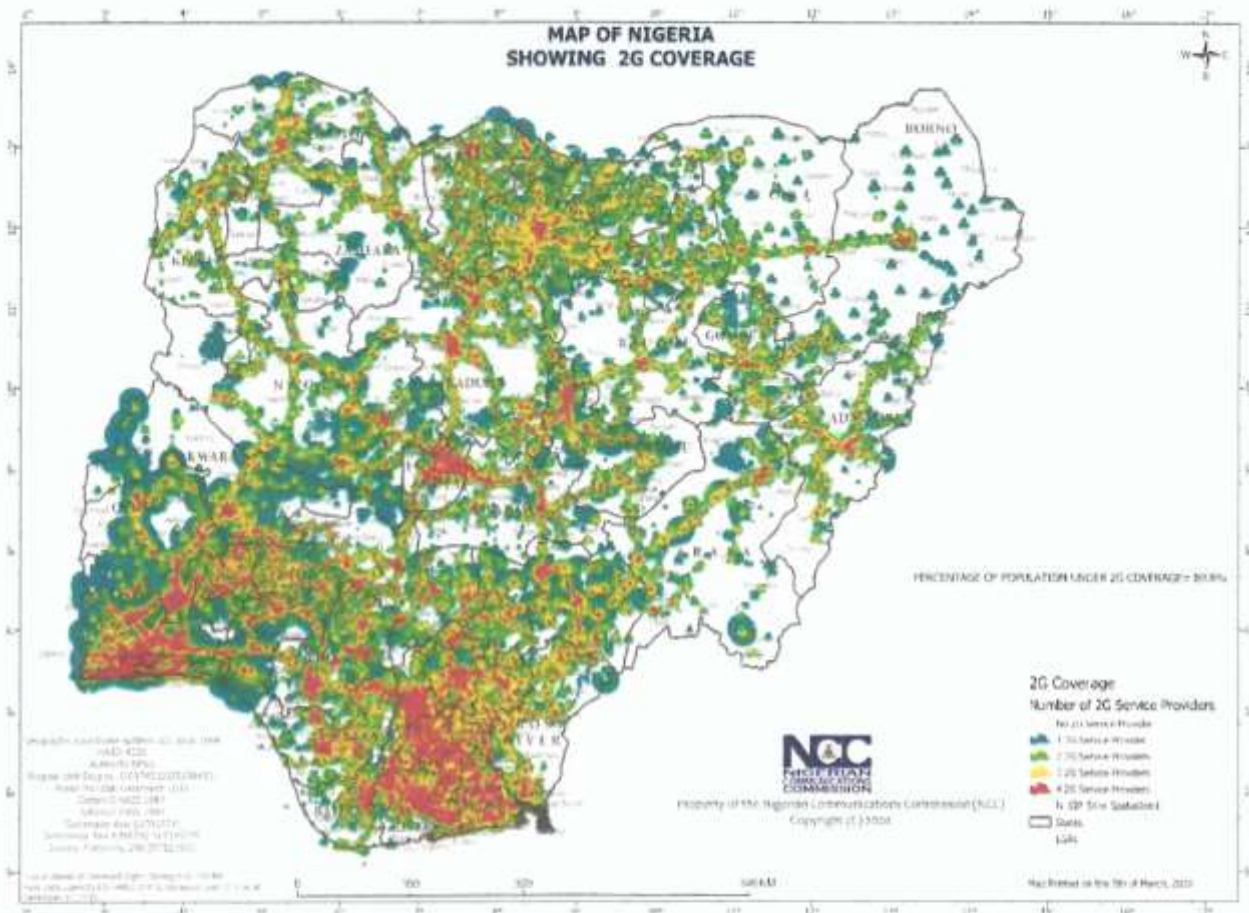


Fig 2.12: Nigeria's 2G coverage map as at Q4 2019 Source: NCC¹

Source: NNBP 2020, FBNQuest Capital Research

Map of Nigeria's 3G network

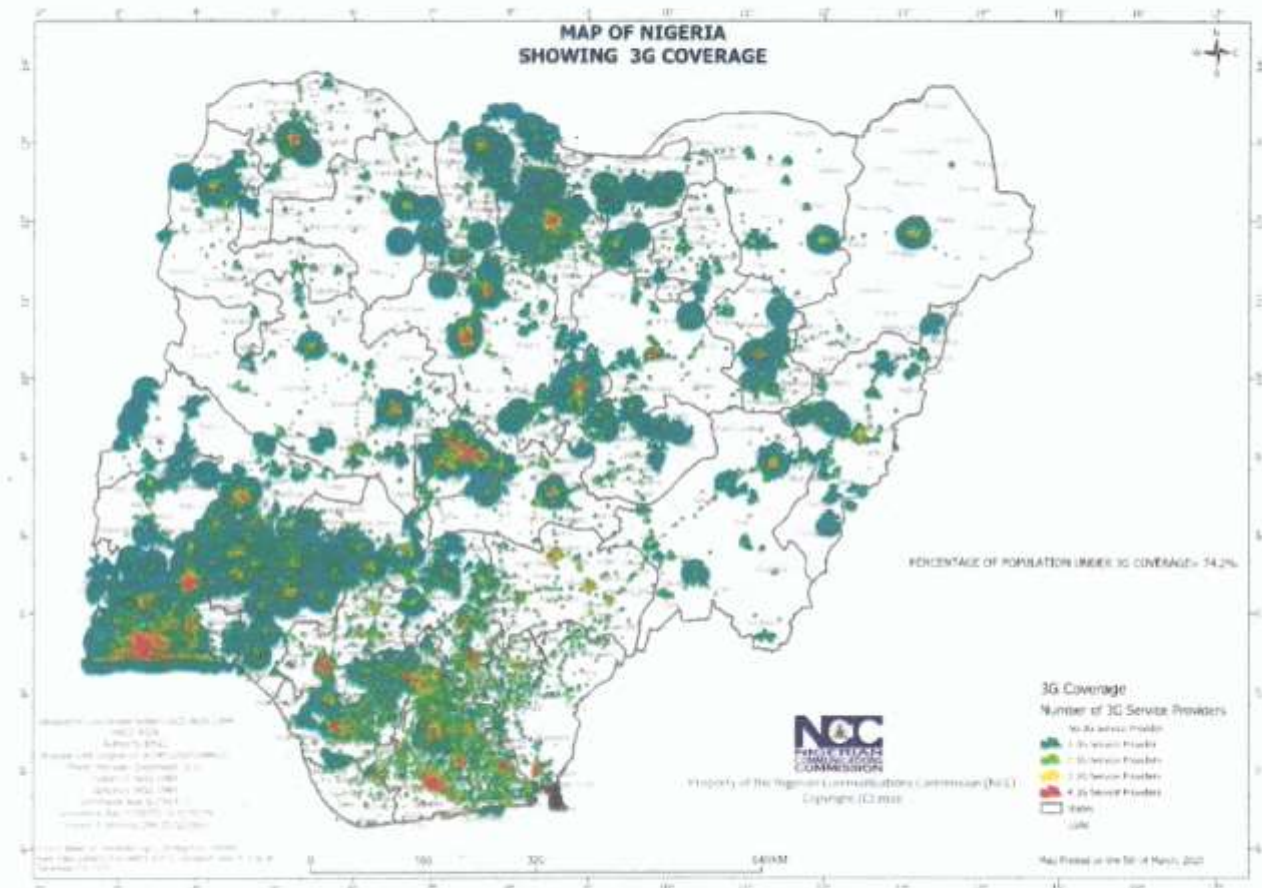


Fig 2.13: Nigeria's 3G coverage map as at Q4 2019 Source: NCC

Source: NNBP 2020, FBNQuest Capital Research

Map of Nigeria's 4G network

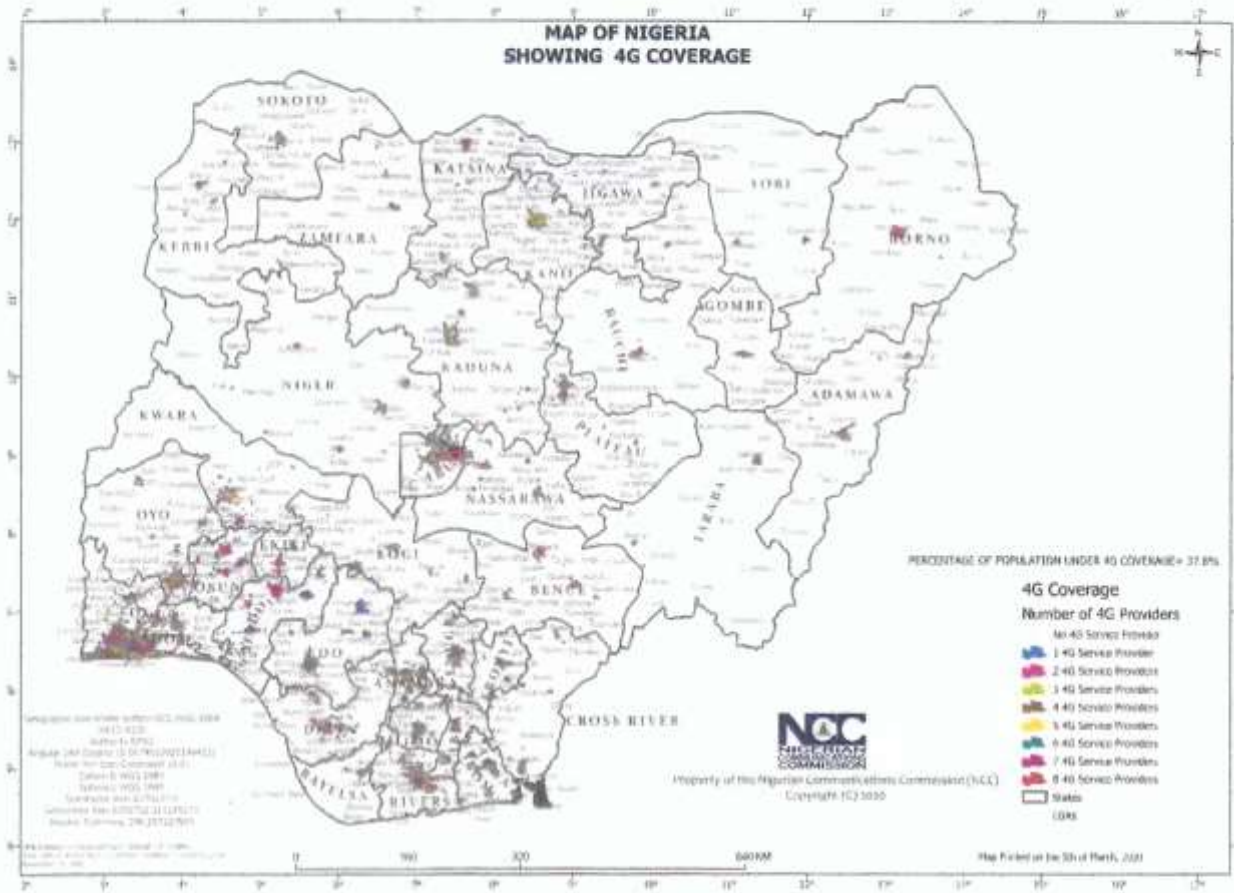


Fig 2.14: Nigeria's 4G coverage map as at Q4 2019 Source: NCC

Source: NNBP 2020, FBNQuest Capital Research

Research analyst certification

Each of the analysts identified in this report certifies, with respect to the companies or securities that the individual analyses, that (1) the views expressed in this report reflect his or her personal views about all of the subject companies and securities and (2) no part of his or her compensation was, is or will be directly or indirectly dependent on the specific recommendations or views expressed in this report.

Recommendations and movements in price target

MTN Nigeria

Date	Price (N)	Old Price Target (N)	New Price Target (N)	Old recommendation	New recommendation
30-May-19	132.6	n/a	148.7	n/a	Neutral
08-Aug-19	128.3	148.7	180.8	Neutral	Outperform
07-Nov-19	123.0	180.8	180.8	Outperform	Outperform
23-Jan-20	128.2	180.8	201.0	Outperform	Outperform
05-May-20	116.0	201.0	181.6	Outperform	Outperform

FBNQuest Capital Research's recommendation distribution

	Outperform	Neutral	Underperform	Total
Stocks covered	11	7	5	23
% of total stocks covered	47.8%	30.4%	21.7%	100.0%
Investment banking clients	1	1	2	4
% of investment banking clients	25.0%	25.0%	50.0%	100%

FBNQuest Capital Equity Research recommendation definitions

- Outperform**

The analyst expects the stock to outperform the Nigerian Stock Exchange (NSE) All Share Index over the next 12 months or the specified investment horizon.

- Neutral**

The analyst expects the stock to perform in line with the NSE All Share Index over the next 12 months or the specified investment horizon.

- Underperform**

The analyst expects the stock to underperform the NSE All Share Index over the next 12 months or the specified investment horizon.

- Not Rated**

The rating and price target are currently suspended to comply with regulations or firm policies such as when FBNQuest Capital is acting as an adviser in a merger or transaction which involves the company whose rating has been suspended or due to reasons that limit the ability of the analysts to provide forecasts for the company in question.

- Benchmark**

The Nigerian Stock Exchange All Share Index

- Price targets**

Price targets reflect in part the analyst's estimates for the company's earnings. The achievement of any price target may be impeded by general market and macroeconomic trends, and by other risks related to the company or the market, and may not occur if the company's earnings fall short of estimates.

- Asset allocation**

The recommended weighting for equities, cash and fixed income instrument is based on a number of metrics and does not relate to a particular size change in one variable.

Companies from which FBNQuest Capital has received compensation in the last 12 months

	Outperform	Neutral	Underperform	Total
	1	1	2	4
% distribution	25.0%	25.0%	50.0%	100.0%

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Subject Company	Price (N)	Rating	Applicable disclosures
MTN Nigeria	120.0	n/a	n/a
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