THE NATIONAL BROADBAND PLAN
AS A CATALYST FOR SOCIAL AND ECONOMIC TRANSFORMATION -

by

Haru Alhassan
Director, New Media and Information Security,
Nigerian Communications Commission (NCC)

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Outline

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- Implementation of the NBP
- The Challenge
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Introduction

- According to a document of the International Telecommunication Union (ITU): "In the 21st century, the social and economic development of every country on earth will depend on Broadband networks"

- It's about completely transforming the way essential **services** are delivered – from e-health to e-education to e-commerce to e-government and even e-agriculture. And it's about helping meet the **Sustainable Development Goals** in every sector.

- **National Broadband Networks** deliver benefits across the whole of **society**. That makes them incredibly **cost-effective**, especially when you look at the savings across multiple sectors.

- This is why one of **ITU**'s key priorities is the delivery of **equitable**, **affordable** broadband access to the **Internet**. For all people – wherever they live and whatever their circumstances.

Introduction (Cont.)

- In the 21st century, broadband networks are basic national infrastructure – just like transport, energy and water networks.

- Build broadband networks and everything else will follow:
  - The ability to control and use energy more efficiently.
  - The ability to manage healthcare in poor, or isolated populations.
  - The ability to deliver the best possible education to future generations.
  - The ability to take better care of our environment.
  - The ability to streamline transport networks.
  - And, crucially, the ability to help meet the Sustainable Development Goals

Transformation Broadband	**High speed internet will be as transformational as the advent of power networks**
A 4-Way Win	**Broadband benefits governments, citizens, manufacturers and operators.**

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The National Broadband Plan

- The Federal Government of Nigeria (FGN) has joined the league of ITU member states in recognizing broadband potential for contributions and improvements of socio-economic development of the nation and therefore articulated a policy document, - The Nigerian National Broadband Plan (NBP).

- The NBP provides roadmap and timelines to deliver a five-fold increase in broadband penetration over a span of five (5) years (2013 – 2018), aimed to:

  - Provide available, accessible and affordable broadband services to all citizens.
  - Transform the economy to a digital knowledge-based for national development.

It should be noted that for "every 10 % increase in broadband penetration in developing countries results in a commensurable increase of 1.3 % in GDP".

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Implementation of NBP

- The NBP is planned to be implemented over period of five (5) years (2013 – 2018), targeting a five-fold increase of broadband penetration (i.e. 6 % at 2013 now about 20.95% to 30 % at 2018). The target areas of the NBP are:
  - Policy and Regulation
  - Enabling Infrastructure
  - Costing and Pricing
  - Funding and Investment
  - Driving Demand
  - Building Fibre Infrastructure (up to the last mile)
  - Wireless Broadband infrastructure and Upgrade

Implementation of NBP (Cont.)

The target areas of the NBP are described in Fig. 1.

Policy & Regulation	▪ License new operators as required ▪ Define the open access framework and secure Right of Way (RoW) waiver with States
Enabling Infrastructure	▪ Incentivize rollout of fiber optics infrastructure ▪ Spectrum licensing for LTE in 2.5GHz and 2.6GHz bands. ▪ Release spectrum on the sub-40GHz bands for mobile backhaul
Costing & Pricing	▪ Agree Cost-based leased pricing model & implement agreed whole price caps ▪ Agree plan for review of the cost of acquiring spectrum licences
Funding & Investment	▪ Agree Financial Incentives for achieving rollout targets ▪ Agree Funding options for accelerating broadband Infrastructure rollout
Driving Demand	▪ Set up Public Access Points and ICT Training Centers ▪ Connect all Universities, Schools, Colleges and Hospitals
Building Fibre Infrastructure	▪ Build metro fibre networks in all the major cities and state capitals. ▪ Extend international cable landing points to other coastal states. ▪ Incentivize building of last mile wireline infrastructure to homes, etc.
Wireless Broadband Infrastructure Upgrade & Expansion	▪ Rollout as many LTE sites as possible. ▪ Speed up 3G coverage at least 80% of the population

Fig. 1: NBP activities mandated to NCC for implementation [Source: NBP (2013-2018)].

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The NBP Challenge

- There is presence of deployed broadband fiber infrastructure in the country, but it has not sufficiently covered the entire nation as shown in Fig. 2.

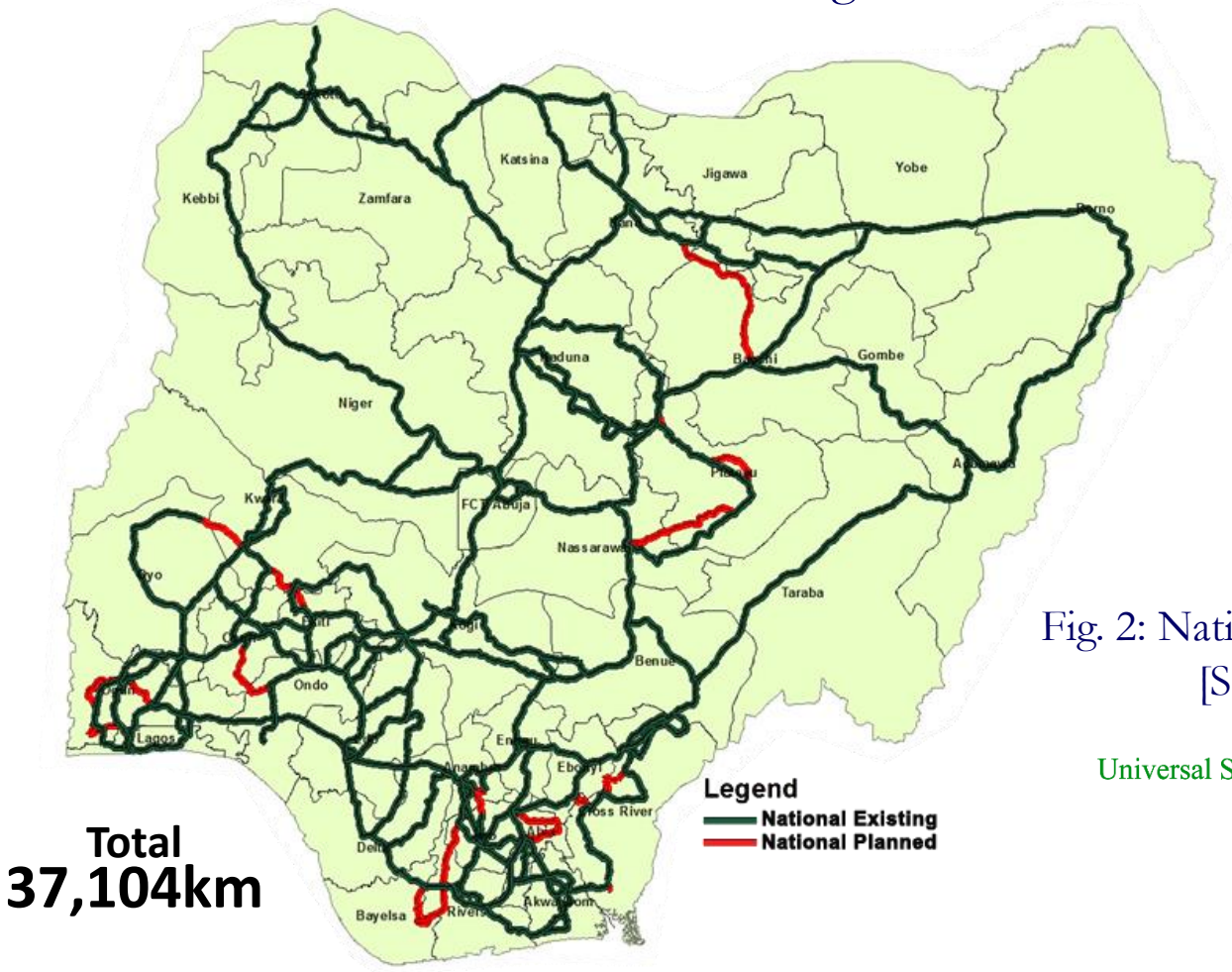

Fig. 2: National Fibre Optic Map
[Source: USPF]

Universal Service Provision Fund

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The NBP Challenge

- Figure 2 shows gaps between the **National Planned** and **National Existing** Broadband Fibre Infrastructure in Nigeria. This challenge has been identified by the NBP as critical to achieving broadband penetration target of **30% by 2018**.

- Currently in Nigeria, more than 10 terabytes of telecommunications capacity exists at the landing point (at the coastal city of Lagos), but the challenge is the deployment of fiber infrastructure across the country (to the hinterland) that will effectively distribute this capacity to the distribution nodes at the metropolitan areas of all regions so as to aggregate the regional Broadband traffic to the National fiber backbone (ie. Last mile Access Problem).

The Nigerian Communications Commission (NCC) Mandate

- NCC is the National Telecoms Regulatory Agency mandated to spearhead the NBP. The NCC developed a strategic vision centred on eight (8) pillars in order to address the NBP challenges and ensure the attainment of 30% broadband penetration by 2018, among others.

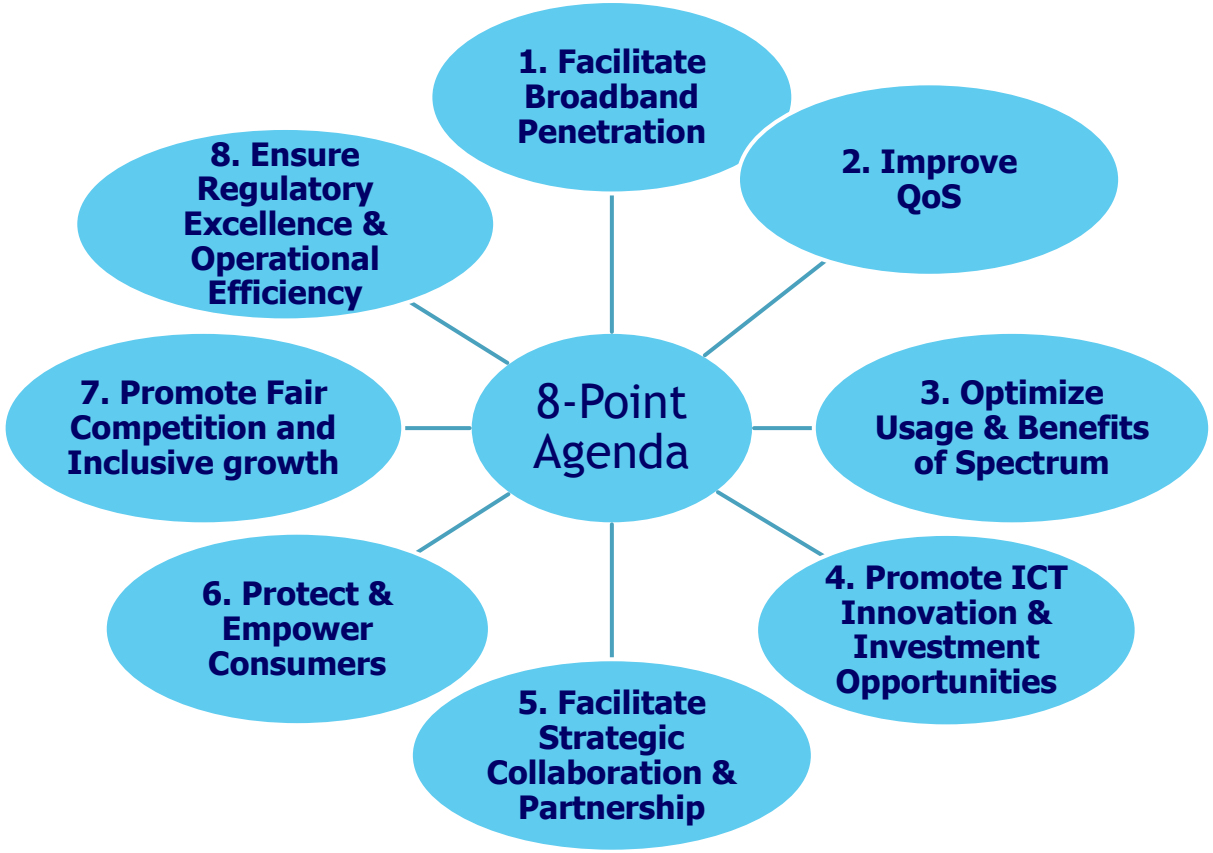

Fig. 3: The 8-point Agenda of NCC

- The strategic vision of the NCC covers all identified long term plan of NBP depicted in Fig. 2. Fig. 3 is the breakdown of the NCC's 8-point Agenda, centred on deployment of broadband infrastructure to facilitate rollout of broadband services in Nigeria.

The NCC Mandate (Cont.)

- The NCC's 8 point agenda is well aligned with the ITU's vision framework based on three (3) complimentary goals: Growth, Inclusiveness and Sustainability

Growth	Enable and foster access to and increased use of telecommunications/ICTs
Inclusiveness	Bridge the digital divide and provide broadband for all
Sustainability	Manage challenges resulting from telecommunication/ICT development, innovation and partnership

Fig. 4: ITU strategic vision goals and targets [Source: ITU Strategic Plan (2016 -2019)]

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The NBP Target Areas Addressed By The NCC Strategic Vision

1. Policy & Regulations

- **Define the open access framework and secure RoW with states.**
- **License new Service Providers as required.**
- **Release more spectrum for Broadband.**
- **The NCC has;**

  - Strengthened its collaborative mechanism and partnership with relevant government MDAs to improve the level of ICT adoption and use.
  - Conducted several consultations on; roaming, regulation of VAS; licensing of spectrum; Industry Working Group on QoS; among many others, as well as held roundtable meetings with the Operators.
  - Reviewed MoUs with, Nigerian Police and other security agencies etc. leading to better understanding in safeguarding the national tecomms infrastructure.

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1. Policy & Regulations (Cont.)

- Intensified efforts to facilitate the provision of law to protect telecom infrastructure as critical national infrastructure in Nigeria.

- Ensured effective and transparent regulations to promote fair competition and to attract investors.

- Reviewed the International Termination Rate (ITR) for inbound traffic from ₦3.90/min to ₦24.40/min on September 16, 2016.

2. Enabling Infrastructure

- **Incentive rollout of fibre infrastructure**
- **Spectrum licensing for LTE in 2.5 GHz and 2.6 GHz bands**

- The Commission is in the process of licensing price regulated infrastructure companies that will be saddled with the task of bridging the gaps between national and planned fibre networks in Nigeria.

- The BTRAIN (Backbone Transmission Infrastructure), a USPF project, is to connect the rural and semi-urban areas to the National Transmission Backbone infrastructure through Optic Fiber Cable (OFC), across the six (6) geopolitical regions of the country. So far, over 1000 kms of OFC has been deployed.

- Provisional approval has been given for the deployment of 4G LTE by a new service provider, NATCOM Development and Investment Limited, which made the first Voice Over LTE (VoLTE) call on February 2016.

- The Commission has licensed six (6) out of the fourteen (14) slots of 2.6 GHz band to Mobile Telecommunications Network (MTN) Nigeria. This spectrum band supports capacity for the deployment of broadband services, especially in cities and 4G/LTE services.

2. Enabling Infrastructure (Cont.)

- **Release of spectrum on the sub-40GHz bands for mobile backhaul**

  - The Commission plans to license the 38 GHz (range: 37 – 39.5 GHz) and 42 GHz (range: 40.5 – 43.5 GHz) bands. This will reduce pressure on the existing lower microwave frequency bands and increase broadband access across the country. Both bands are suitable for short hop (1 – 5 km) and point-to-point terrestrial links. The bands also support 3G/4G/LTE backhaul.

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3. Costing & Pricing

- **Cost-based Pricing Model**
- **Review Spectrum Licence Fees**
- **The Commission has;**
  - Conducted an assessment of the transmission cable market through the analysis of market features such as pricing, regulatory climate and competition.
  - Considered inputs provided by stakeholders during a consultative forum in 2015 and has taken a view on parameters and regulatory measures in the light of this and other information – such as international experience and publicly available information.
  - Established a process of arriving at a new regime for the regulation of wholesale transmission pricing in Nigeria. This has been conducted in a climate of openness and with a view to ensuring maximum transparency to all parties without compromising the confidentiality of commercially sensitive information.
  - Created a model which utilizes Operators' input in the transmission cable market and relevant inferences on the cost of providing transmission services in Nigeria and the transparency and competiveness of pricing in the transmission markets.
  - Implemented the comprehensive cost-model on September 1, 2016 in Nigeria.

4. Funding & Investment

- **Financial Incentives for achieving rollout targets**
- **Funding options for accelerating broadband Infrastructure rollout**

  - The NCC is finalizing subsidy agreements with two (2) infrastructure companies (Infracos), Infraco Nigeria Limited and I-Connect Infrastructure Services Limited for the Lagos and North Central Zones respectively to facilitate the roll-out of broadband services.
  - The remaining five (5) zones; North-East, North-West, South-East, South-South and South-West are in the pipeline.
  - The Subsidy agreement is a Public-Private Partnership (PPP) scheme in the provision of price regulated broadband services in Nigeria.
  - The Commission has reached an advanced stage in the implementation of a Code of Corporate Governance for the industry, that will serve to strengthen telecom legal entities and attract investment.
  - The Commission is engaging investors in different fora to attract Foreign Direct Investments (FDI).

5. Driving Demand

- **Set up Public Access Points and ICT Training Centre's**
- **Connect all Universities, Schools, Colleges and Hospitals**
  - **BTS Project –** Facilitate the Deployment of BTSs (Base Transceiver Stations) and certain passive infrastructure in the under-served and un-served communities where market viability is weak. Sites involved include: 58 sites in the Southwest, 36 sites in the South-South and 12 sites in the Federal Capital Territory (FCT).
  - **RuBI–Pilot -** Subsidies are provided to operators for the deployment of networks to support the establishment of core delivery mechanisms for broadband services in rural/semi urban areas. The deployment of infrastructure for broadband service provisioning is ongoing under the RUBI project initiative in 14 locations across the country.
  - Rehabilitation of Emergency Communication Centers (ECC) facilities in fourteen States for improved security of lives and property of Nigerians, and aid response agencies in receiving emergency calls for prompt assistance.
  - Data Sharing, e-Learning Platforms & ICT Infrastructure for four (4) Universities and Teaching Hospitals in the Northern and Southern Zones.

5. Driving Demand (Cont.)

Set up Public Access Points and ICT Training Centre's

- **Connect all Universities, Schools, Colleges and Hospitals**
  - Training facility with modern infrastructure to promote learning at Digital Bridge Institute (DBI) Learning Centers distributed in four different locations in the country (Yola, Enugu, Asaba and Oshodi-Lagos).
  - **UnICC Project -** This is a USPF support project to deliver broadband infrastructure using OFC links to Universities to facilitate research and learning. At the moment the deployment of OFC is ongoing in 9 (nine) Universities.
  - Digital Appreciation Programs (DAP) to High Schools and Tertiary Institutions Knowledge Centres across the country to equip students and their neighboring communities with ICT Learning tools.
  - **UnICC-Electronics** - The Project involves interconnecting end-user Electronics within the University Campus. Currently, provision of connectivity is ongoing in five (5) Universities across the country.
  - **Stakeholder Initiated Projects (SIP)** - Provision of ICT/CBT (Information and Communications Technology/Computer Based Test) Centers. Currently, twelve (12) ICT/CBT Centers have been completed in various institutions and locations across the country under the SIP initiative, and an additional four (4) Skills Acquisition Centers are scheduled for completion

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6. Building Fibre Infrastructure

- **Build metro fibre networks in all the major cities and state capitals.**
- **Incentivize building of last mile wireline infrastructure to homes, etc.**
- **Extend international cable landing points to other coastal states.**
- **The NCC has;**
  - Articulated a robust regulatory framework that will enable strategic and systematic licensing and deployment of broadband infrastructure across the country – The Open Access Model.
  - Established a Broadband Implementation & Monitoring Committee to give proper assessment on regular basis of broadband infrastructure deployment.
  - Fine tuned the Infrastructure provision licenses awarded for the Lagos and North Central zones.
  - Now in the process of bidding and selection process for interested service providers (Infrastructure Companies – Infracos) in the remaining five zones namely; North-East, North-West, South-East, South-South and South-West.
    - The mandate of the Infracos is to provide & operate infrastructure services and to facilitate broadband penetration, i.e. provide and optimize access to and use of affordable fixed and mobile broadband everywhere in Nigeria.

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7. Wireless Broadband Infrastructure Upgrade & Expansion

- **Service Providers to Rollout more LTE base stations.**
- **Spread 3G coverage to at least 80% of the population**

  - One slot of 30MHz frequency in 2.3GHz was licensed to Bitflux for the provision of Wholesale 3G Wireless Access Services.

  - The NCC has re-planned the 23 GHz microwave frequency band for backhauling, which is strategic to supporting the throughput of point-to-point digital fixed wireless systems and mobile infrastructure in Nigeria.

  - The NCC has approved for two Service Providers Etisalat and Airtel to re-farm part of their 1800 MHz band, so as to roll-out 4G LTE.

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Current Broadband Penetration

Broadband Penetration

- **MOBILE & INTERNET BROADBAND PENETRATION**
  - Mobile and Internet broadband penetration is relevant due to its rapid diffusion into the economic and social growth of developing countries.
  - The ITU and UNESCO Broadband Commission for Sustainable Development releases statistics on broadband penetration levels for ITU member states, so that respective countries can gauge performance based on their set National Broadband Plan goals.

Broadband Penetration (Cont.)

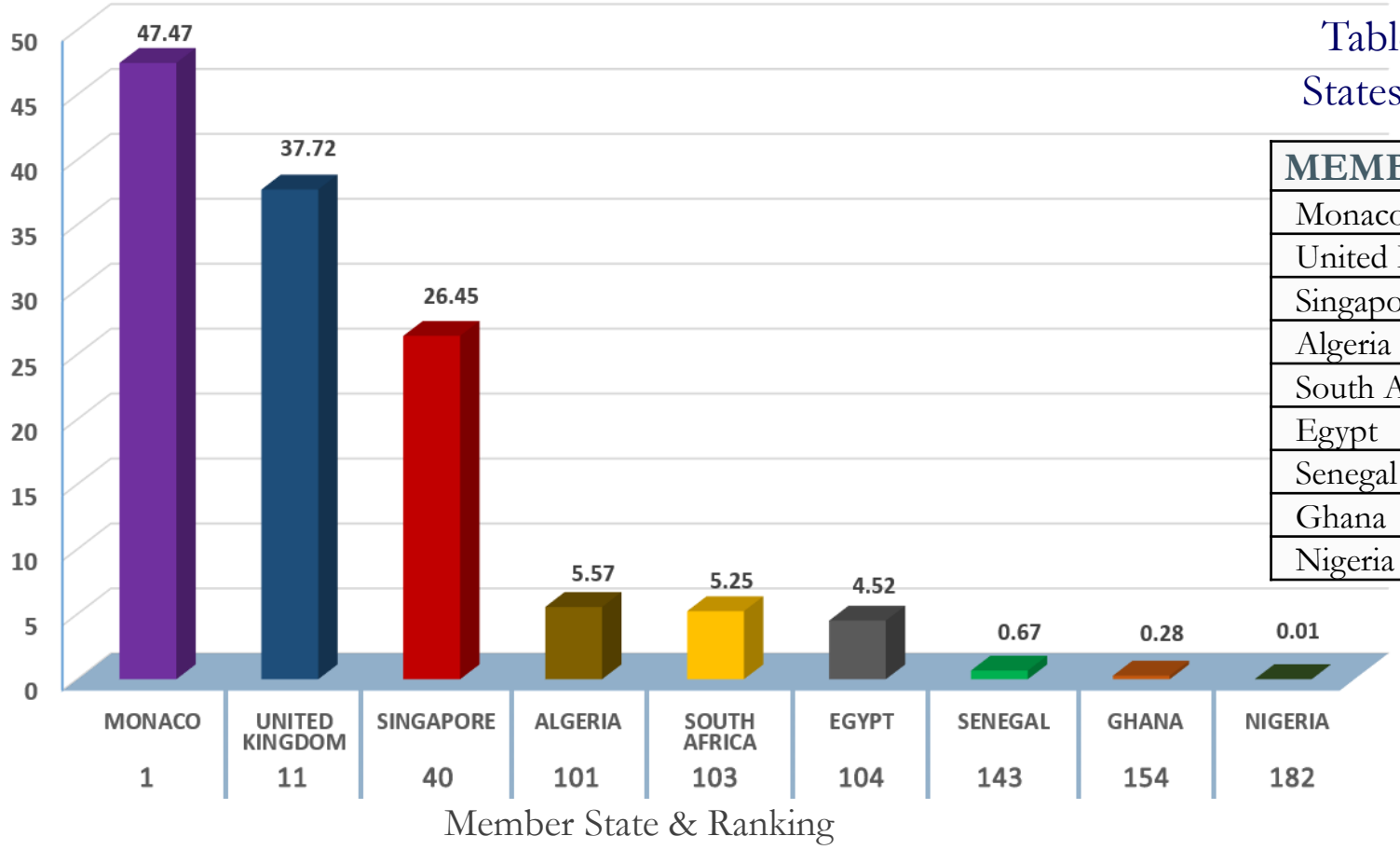
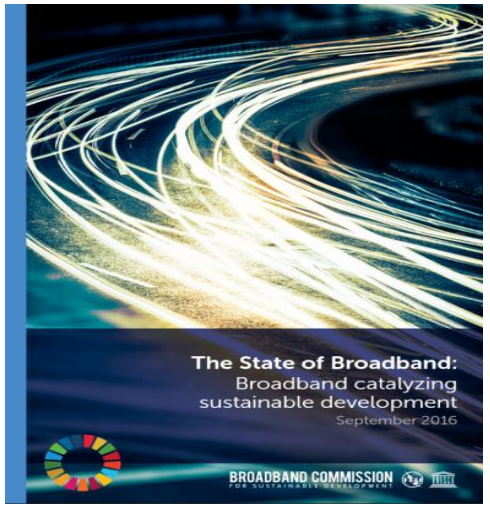


Table 1: FBS in selected ITU Member States [Source: The State of Broadband]

MEMBER STATE	FBS/100	RANK
Monaco	47.47	1
United Kingdom	37.72	11
Singapore	26.45	40
Algeria	5.57	101
South Africa	5.25	103
Egypt	4.52	104
Senegal	0.67	143
Ghana	0.28	154
Nigeria	0.01	182

Fig. 5: Bar chart for Active Fixed-Broadband Subscription (FBS) per 100 inhabitants in selected ITU Member States.



Broadband Penetration (Cont.)

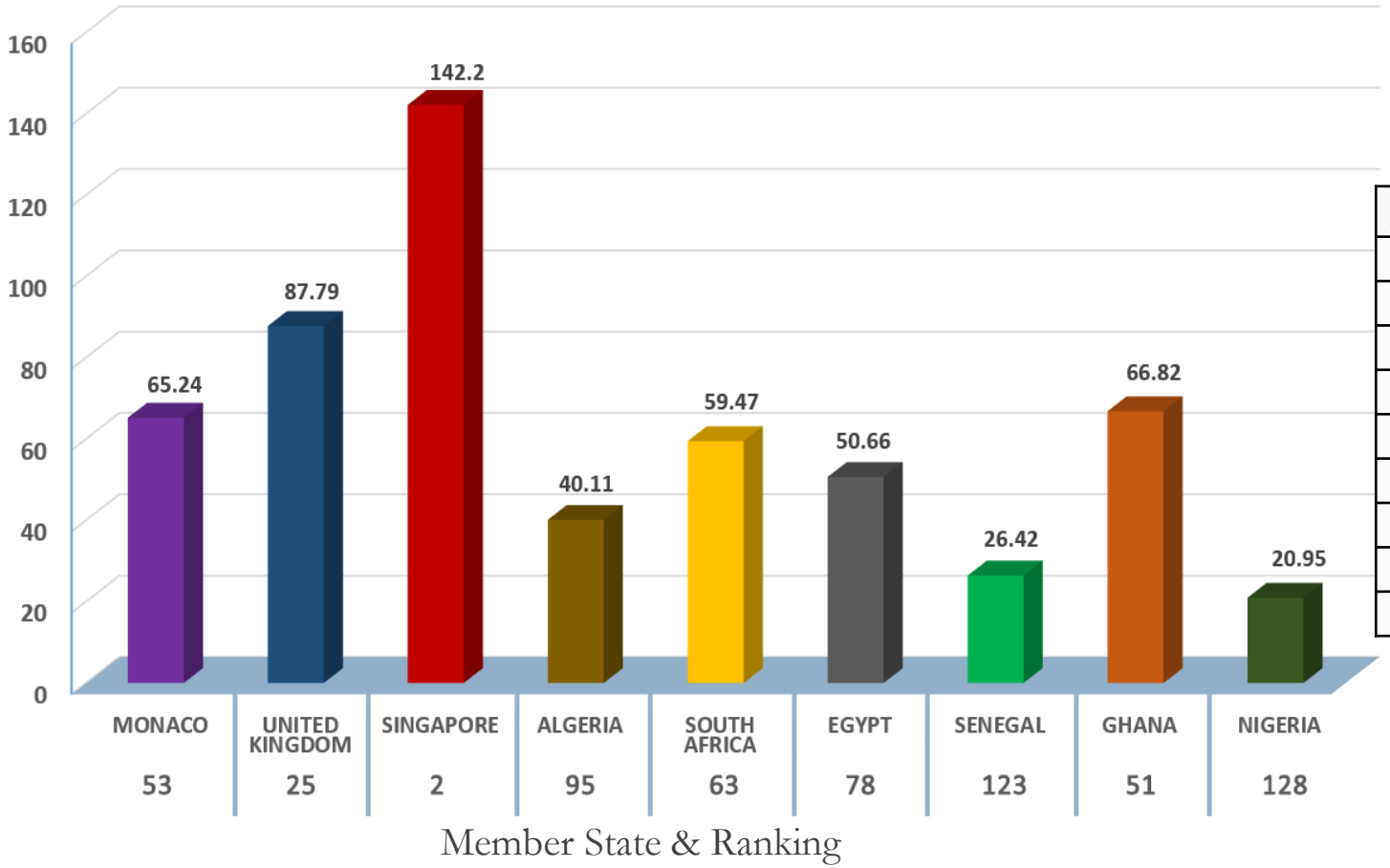
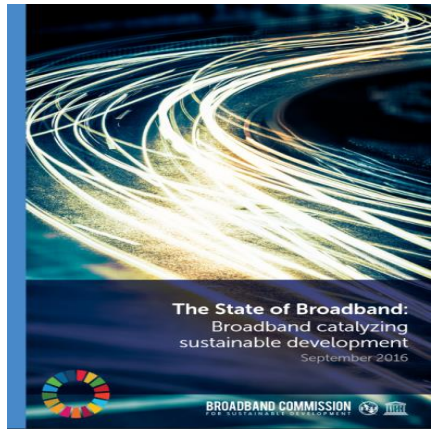


Fig. 6: Bar chart for Active Mobile Broadband Subscription (MBS) per 100 inhabitants in selected ITU Member States.

Table 2: MBS in selected ITU Member States [Source: The State of Broadband]

MEMBER STATE	MBS/100	RANK
Monaco	65.24	53
United Kingdom	87.79	25
Singapore	142.2	2
Algeria	40.11	95
South Africa	59.47	63
Egypt	50.66	78
Senegal	26.42	123
Ghana	66.82	51
Nigeria	20.95	128



Broadband Penetration (Cont.)

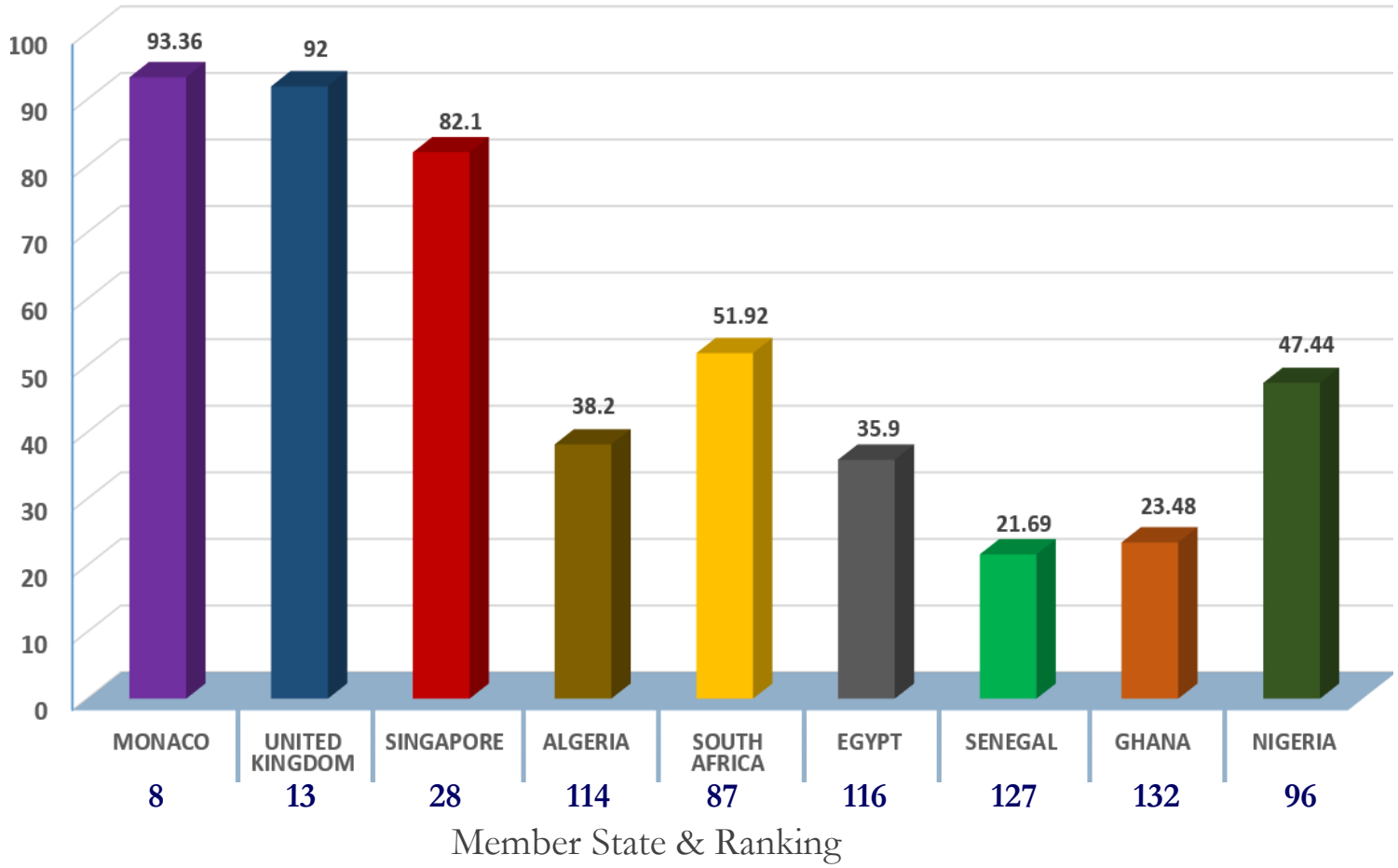
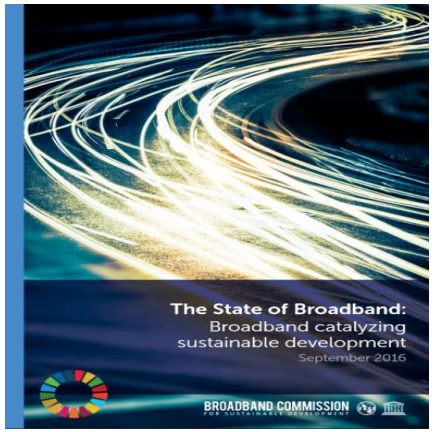


Fig. 7: Bar chart for Percentage of Individuals using the Internet (PII) in selected ITU Member States.

Table 3: PII in selected ITU Member States [Source: The State of Broadband]

MEMBER STATE	PII	RANK
Monaco	93.36	8
United Kingdom	92	13
Singapore	82.1	28
Algeria	38.2	114
South Africa	51.92	87
Egypt	35.9	116
Senegal	21.69	127
Ghana	23.48	132
Nigeria	47.44	96



Economic and Social Benefits

Economic Benefits

The National Bureau of Statistics (NBS) reports that:

- In the Second Quarter (Q_2) of 2016, the telecommunications sector contributed **₦1,580 billion** to GDP i.e. 9.8 %, which is the largest in the rebased period. This is an increase of 1% compared to the First Quarter, indicating robust growth.

- The share of telecommunications in total real GDP has grown in the last five quarters.

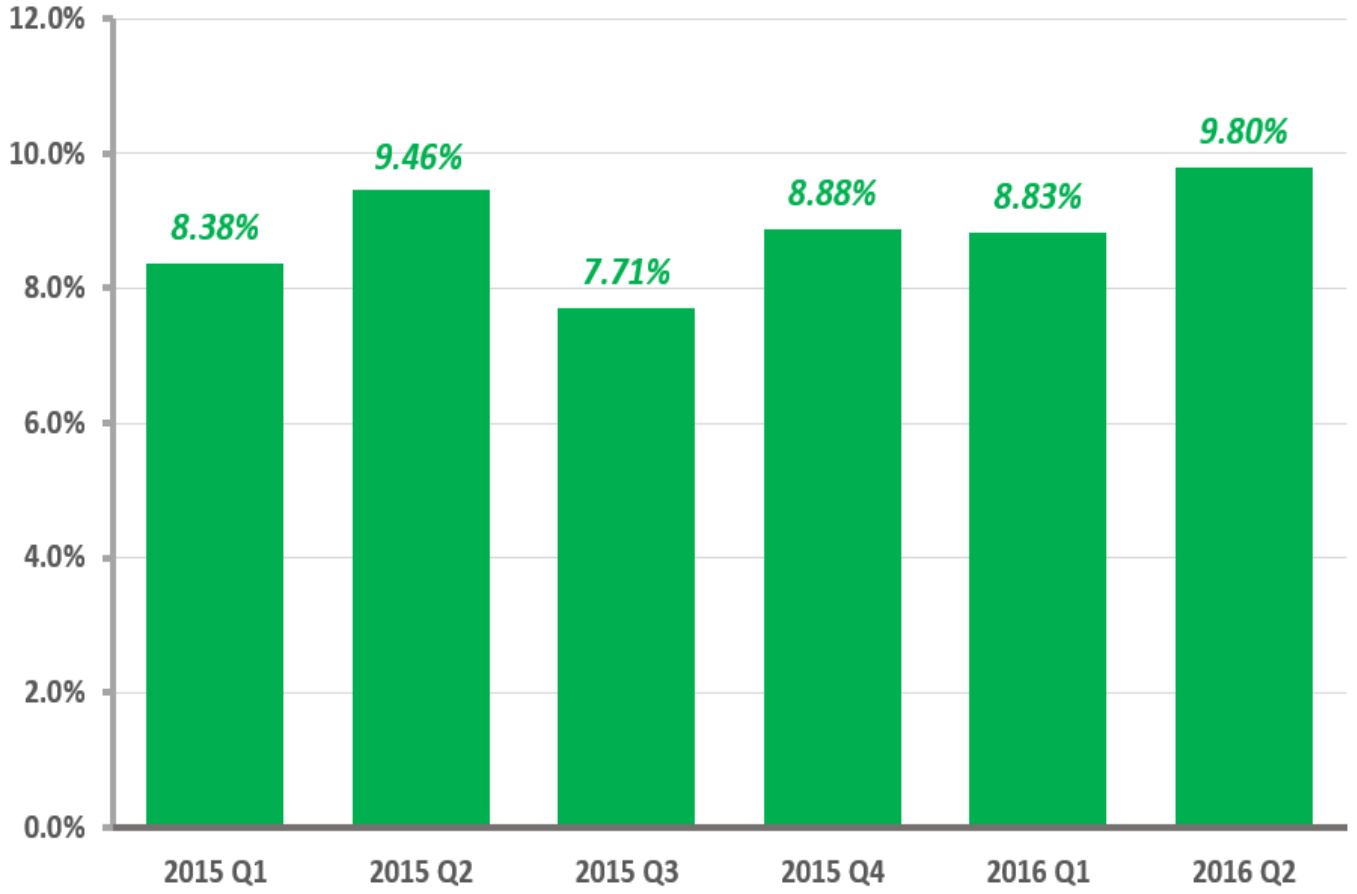


Fig. 8: Contributions of Telecoms Industry to GDP (2015 Q1 – 2016 Q2)

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Social Benefits

The report confirmed economic development and deployment of broadband Infrastructure are linked, specifically in growth, employment and productivity:

- Job creations – Indirect employment in the form of business center's; vendors, kiosks, operators call center's, umbrellas, shops and computer villages that requires less capital.
- Efficient business and government processes to improves productivity and service delivery.
- Participatory Governance – transparent and accessible e-governance (interactive suggestions) and participation.
- Blurring boundaries of social identities – improved access to mobility and information for disadvantaged people and communities.

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Social Benefits (Cont.)

- Social interactions – using OTT platforms (Facebook, WhatsApp, etc.) to share information.
- Reduce inequality of opportunities between rural and urban dwellers.
- Increase efficiency and reduce cost of data services.
- Consumer surplus – Efficient access to information through the Internet, saving and improvement in transport (e-tickets), education (teleconferencing, e-library, distance learning), health (telemedicine, e-diagnoses), commerce (e-banking, mobile money), etc.
- People can acquire various level of education, degrees, diplomas, skills from refutable institutions at long distances online.

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Conclusions

- The FGN has developed the NBP to foster a five-fold broadband penetration over a span of five (5) years (2013 – 2018).
- The NCC unveiled its strategic vision (2015 – 2020) and aligned it with the NBP to address the challenge of deployment of fiber infrastructure across the country.
- The results of the alignment shows that:
  - Active Mobile Broadband Penetration has risen within the space of one year from less than 10% to 20.95%.
  - Internet Penetration reached a milestone of 47.44%, only second to South Africa in Africa.
  - The contribution of telecommunications to GDP is 9.8% in the Second Quarter of 2016, which is the largest in the rebased period, with an increase of 1% compared to First Quarter, indicating robust growth.
  - The share of telecommunications in total real GDP has grown in the last five quarters.

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Conclusions (Cont.)

- The telecommunications sector is certainly moving in the right direction and the NCC is further repositioning itself to address the dynamics of the industry.

- We will continue to attract investors through our friendly and well articulated regulatory frameworks and code of corporate governance.

- In general our sector has contributed substantially to the socio-economic transformation of the country in areas of employment, productivity and economic growth as well as GDP.

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THANK YOU

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