

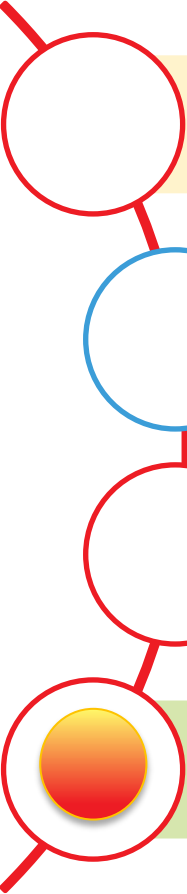


FUTURE PLANS OF BROADBAND SERVICE  
PROVIDERS

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# WHAT IS BROADBAND?



ITU and the OECD have defined broadband as a capacity of at least 256 kbps in the uplink or downlink speed

FCC has new broadband benchmark which sets downloads at a speed of 25 megabits a second and uploads of 3 megabits a second. The previous standard was a download speed of 4 megabits a second and an upload speed of 1 megabit a second

The evolution of technologies makes those who define broadband by capacity in megabits per second to keep redefining the thresholds at meet their broadband definition and therefore it depends on who is setting the definition – policy makers, regulators, customers

The Broadband Commission for Digital Development has defined broadband as high-speed Internet access which is always-on and capable of multiple service provision simultaneously

# ECONOMIC AND SOCIAL BENEFITS

## Broadband

Improves the lives of people and facilitates access to economic opportunities and social welfare that were previously inaccessible to the poor.

Drives financial inclusion through mobile banking and mobile money in Africa, and it supports new ways of delivering healthcare in many developing nations

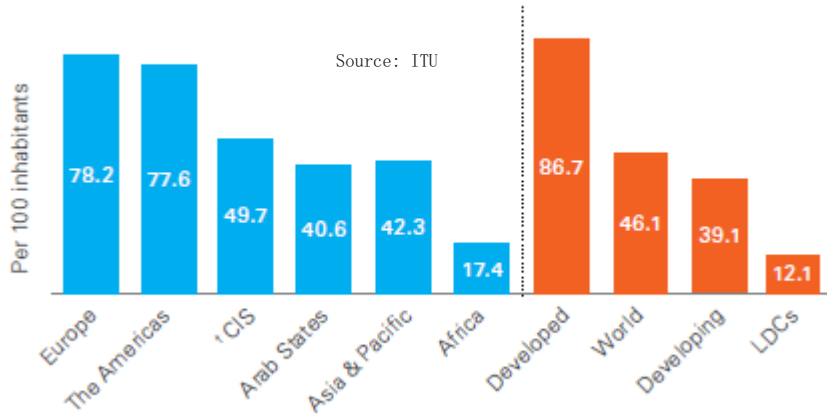
Directly creates jobs by deploying broadband infrastructure

Improves the productivity of businesses, supports the creation of new products and services, and accelerates innovation.

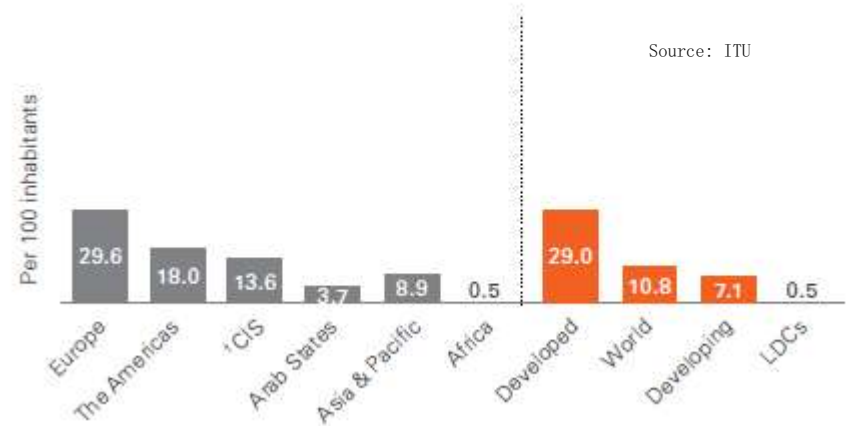
Indirectly as a result of “spill-over” externalities, increases productivity and new products and services.

# MOBILE BROADBAND VS FIXED BROADBAND

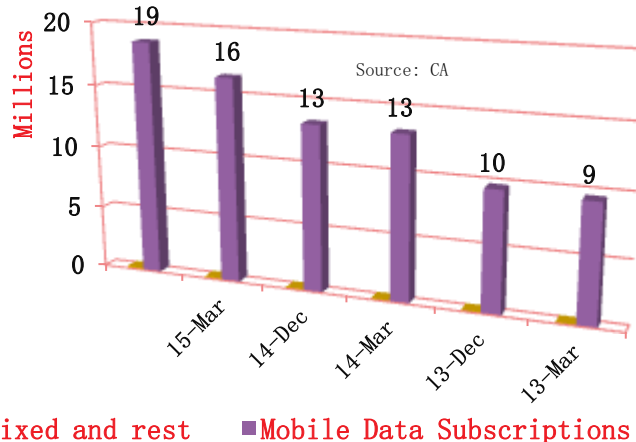
## Mobile broadband subscriptions



## Fixed-broadband subscriptions

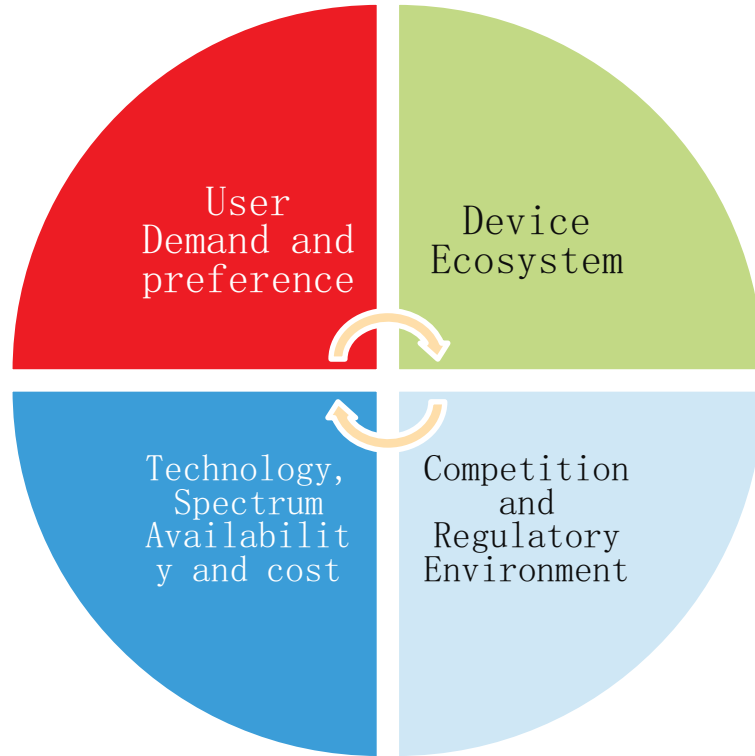


## Mobile vs Fixed Data Subscriptions in Kenya



- Mobile broadband is the most dynamic market segment; globally, mobile broadband Penetration reaches 47% in 2015, a value that increased 12 times since 2007
- Fixed-broadband uptake is growing at a slower pace, with a 7% annual increase over the past three years and reaching 11% penetration by end 2015
- **Mobile Broadband is the way to go for broadband service providers**

# KEY DRIVERS IMPACTING BROADBAND PROVIDER MODELS



# SPECTRUM IS KEY IN DELIVERING BROADBAND

## Spectrum a scarce resource



Mobile data traffic is growing so rapidly that new mobile broadband spectrum will be essential to prevent a network slowdown

GLOBAL MOBILE DATA EXPECTED TO INCREASE



# 1340-1960MHz

THE ITU ESTIMATES 1340-1960MHz NEEDED BY 2020 TO MEET DATA DEMAND



Coverage bands (like 700MHz and 800MHz) will ultimately reach capacity putting mobile broadband at risk in emerging markets, rural areas and inside buildings

LOW FREQUENCY MOBILE BANDS TRAVEL FURTHER BUT HIGH BANDS HELP FOR CAPACITY ISSUES IN URBAN AREAS



# WIRELESS BROADBAND ECOSYSTEM TODAY

## 3G/mobile broadband network deployments

- ❑ **582 commercially launched HSPA networks in 216 countries**
  - ❑ 88.3% of networks support peak downlink of at least 7.2 Mbps
  - ❑ 404 (i.e. over 69%) are HSPA+ networks in 168 countries
  - ❑ 182 (i.e. over 31% of HSPA operators) are 42 Mbps DC-HSPA+ networks in 92 countries plus one 63 Mbps 3C-HSPA+ network

## 4G/LTE is mainstream

- ❑ 677 operators investing in LTE in 181 countries, comprising
  - ❑ 638 network commitments + 39 pre-commit trials, studies
  - ❑ **422 commercially launched networks in 143 countries**
  - ❑ includes 187 LTE1800 and 59 LTE TDD (TD-LTE) launched systems

## Mobile broadband subscriptions – Q2 2015

- ❑ **1.994 billion WCDMA subs incl. HSPA and HSPA+**
- ❑ 755 million LTE subs (10.4% share of all mobile connections globally)

## Global MBB devices eco-system

- ❑ Thousands of HSPA and HSPA+ terminals announced
- ❑ LTE devices ecosystem is also mature/mainstream
  - ❑ **3,253 LTE user devices launched by 305 suppliers**
    - ❑ 1,364 new products announced since July 2014
    - ❑ LTE-Advanced has taken hold in the market: no. of Cat 4 devices grew 63% in 4 months, and Cat 6 quadrupled
    - ❑ 1800 MHz (band 3 / LTE1800) has the largest ecosystem
    - ❑ 1,783 LTE smartphones = 54.8% share of all device types
    - ❑ 3,253 total includes 1,210 products supporting TDD mode

## LTE FDD

1800 MHz band 3	1,543 devices
2600 MHz band 7	1,381 devices
2100 MHz band 1	1,185 devices
800 MHz band 20	812 devices
AWS band 4	727 devices
800/1800/2600 tri-band	739 devices
850 MHz band 5	684 devices
900 MHz band 8	668 devices
700 MHz bands 12 or 17	650 devices
1900 MHz band 2	535 devices
700 MHz band 13	457 devices
1900 MHz band 25	194 devices
APT700 band 28	139 devices
700 MHz band 12	106 devices

- Digital Dividend in the 800 MHz and 700 MHz band will be mandatory in delivering mobile broadband in next 3 years
- 800 MHz is expected to power broadband in next 3 years
- 700 MHz will support rural coverage thereafter

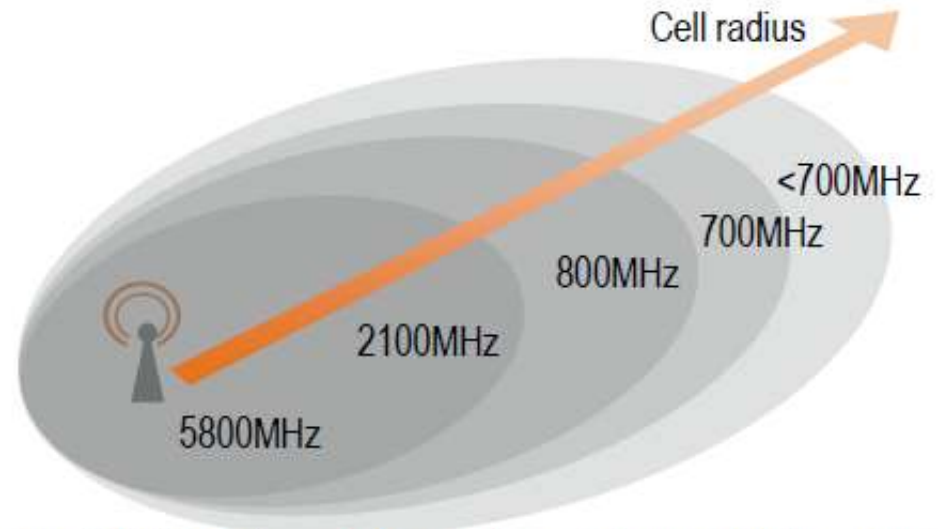


# THE DIGITAL DIVIDEND IS A HIGH PRIORITY

## THE FREED SPECTRUM IN THE UHF BAND CAN BE USED TO TRANSFORM MOBILE BROADBAND

**Connect more people in more places:** Extend good value, and faster, mobile services more widely - including covering remote areas at a reasonable cost

**Better service quality, fewer blackspots**  
Propagation benefits mean better quality coverage including deep inside buildings



The 2.1GHz band needs 4x more base stations and 3x the network CAPEX to deliver the same coverage as the 700MHz band



## THE DIGITAL DIVIDEND IS A HIGH PRIORITY (END.)

Find the right "mix" of spectrum management models to foster innovation and satisfy growing demand : Market based, unlicensed/shared, administrative-based

Optimize access conditions: technology / service neutrality, right degree of harmonization

Recommendations

Increase efficiency / decrease scarcity : less idle spectrum, more sharing, digital dividend

Continue to protect societal interests: support selectively public services (e.g. public broadcasting obligations), access-for-all, overcoming the digital divide, etc

# CONCLUSION

## Broadband service providers

- Wireless broadband is the best way to ensure broadband for all
- Fixed broadband is an alternative for well planned settlement and integrated Infrastructure sharing models
- Good strategy with a clear GTM plan identifying key consumer demands and preferences is critical
- Device availability and affordability
- Right technologies to support the GTM plan
- Incentivize consumers to upgrade devices to benefit from new broadband technologies



## Regulators and policy makers

- Encourage multi-stakeholder consultation on policy and regulatory matters;
- Continue to ensure regulatory predictability
- Reduce taxes and import duties on telecommunication ICT equipment and services;
- Ensure fair distribution and allocation of Digital Dividend spectrum and put caps where appropriate
- Encourage network and facility sharing
- Enforce spectrum sharing where only one operators has been allocated the 800 MHz digital dividend spectrum
- Ensure transparency and openness (e.g. by making market data and regulations available);
- Utilize Universal Service Funds (USFs) to Close the Digital Divide



THANK YOU