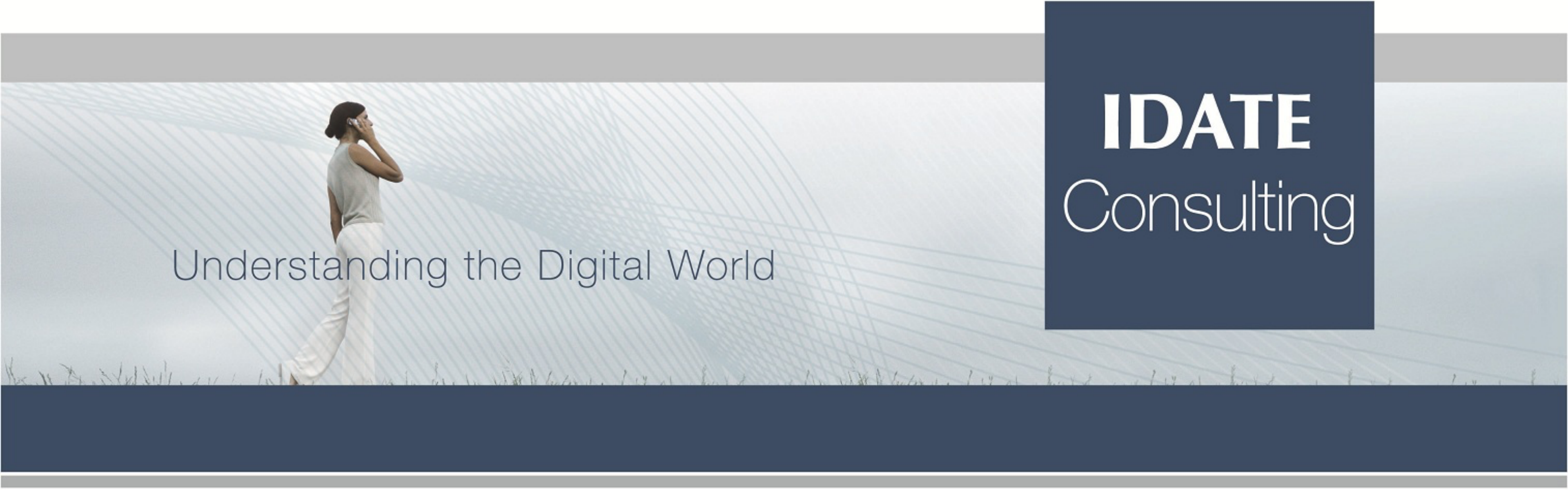

FTTH Panorama Africa

SSA markets at June 2017

FTTH Council Africa 2017 Conference – Cape Town, October 5th 2017

Contact
Roland MONTAGNE
Principle Analyst
Director DigiWorld Institute UK
r.montagne@idate.org

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Agenda

Study background

> **Mission on behalf of the FTTH Council Africa– 2nd edition FTTH Panorama Africa**

> 16 countries analyzed

- **Angola, Cameroun, Eq. Guinea, Gabon, Kenya, Lesotho, Madagascar, Mauritius, Nigeria, Mozambique, Namibia, Rwanda, South Africa, Tanzania, Zambia and Zimbabwe**. Plus **La Réunion** as a territory
- For each country, IDATE provides **data per player** for **FTTH/B** and other fiber-based **FTTX** architectures
- Each player is characterized via dedicated parameters: technical, financial, business model, figures
- Data at **June 2017**

> Methodology

- Desk research and direct contacts (mainly vendors, operators, Regulators)
- Information exchange with FTTH Council Africa members -> will progress in the Future

> Results

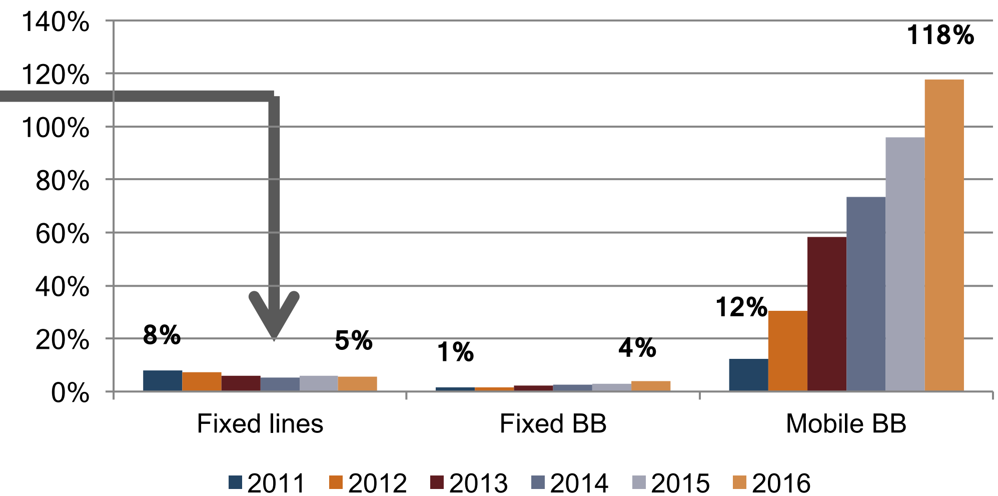
- Both quantitative and qualitative data, presenting the status in the country and the strategic approach of involved players
- **First bottom-up approach** to collect the data in Sub Saharan Africa (to be completed by more detailed data on coverage for next editions)

General overview and main trends

Context

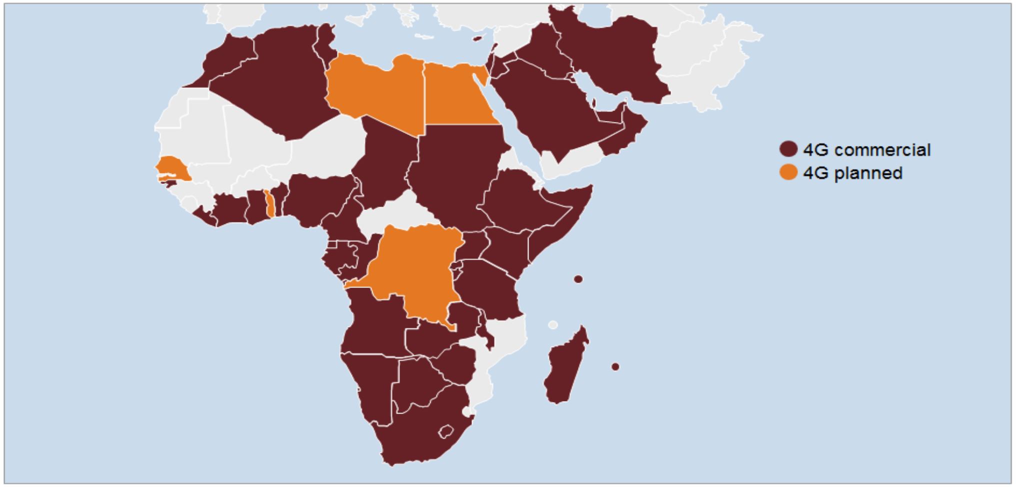
- A lack of investment in fixed copper networks, still mainly owned by governments; the penetration of fixed lines is **declining**.
- Therefore a rather low adoption of fixed BB: 4% of households in 2016 in SSA.
- Generally speaking, **a lack of regulation towards fair competition** and network openness (LLU), so leading private players to bypass incumbent's fixed network (FTTH).
- **Leapfrog** to **wireless** network: At the end of 2016, more than 100 active LTE networks in 43 countries deployed
- The deployment of **submarine cables** has lowered international bandwidth prices (formerly via satellite). But the access is limited to countries with a sea frontage. Landlocked countries need to be connected via transnational backbones.

Networks penetration in Sub Saharan Africa (SSA)



Source : IDATE
Numer of fixed lines, fixed BB subscribers, SIM cards, Mobile BB users

4G deployments in Africa in 2016

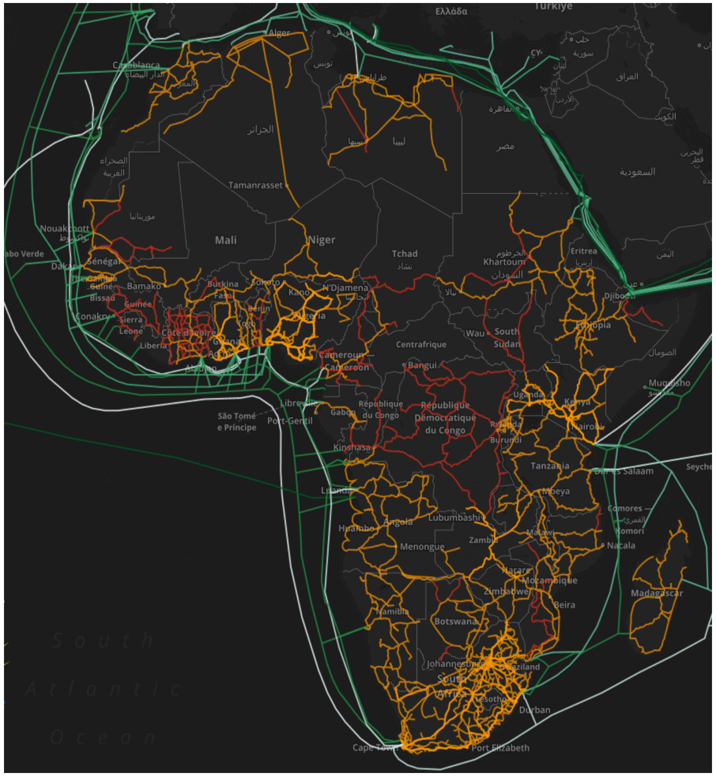


Source : IDATE

FTTH/B in Africa: Overview

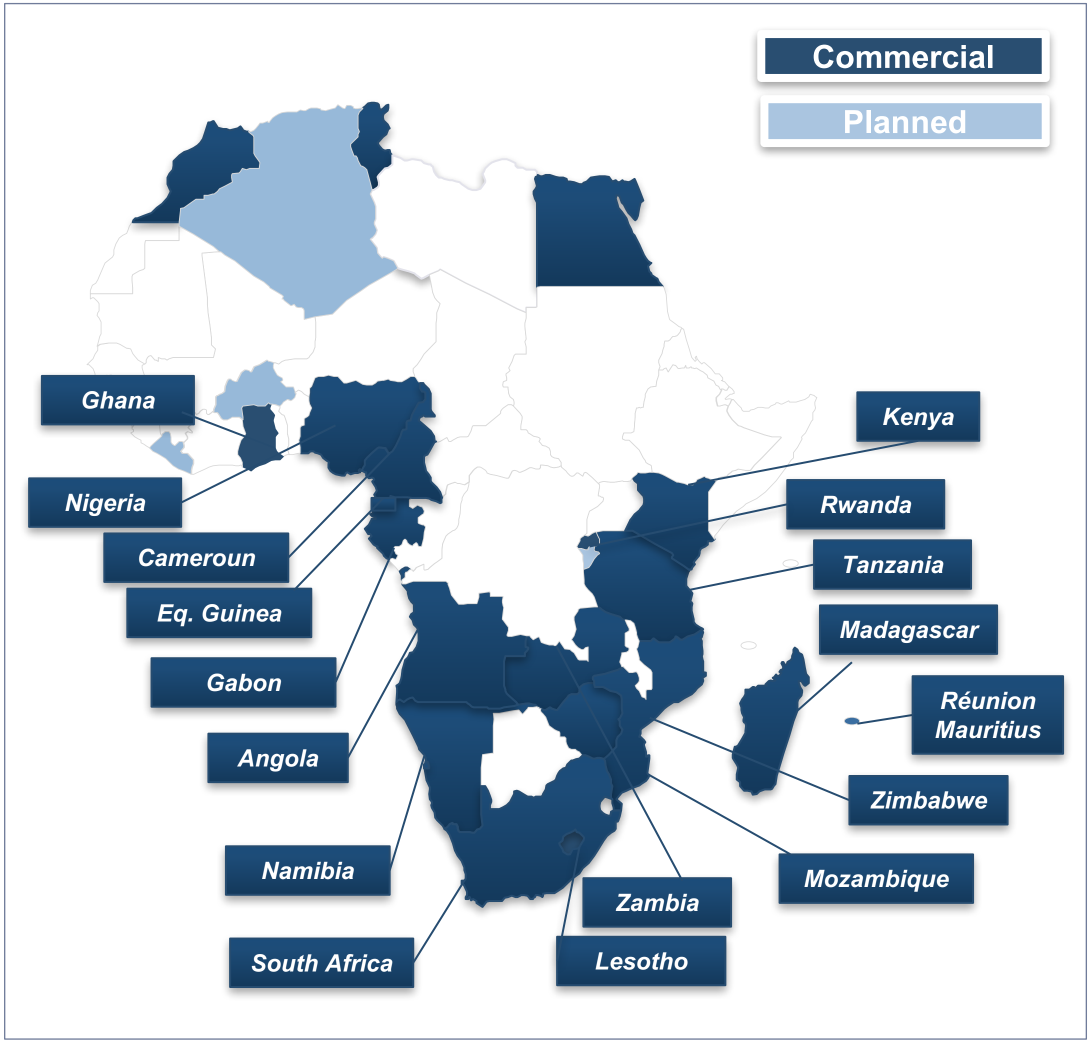
- A **native** FTTH/B market
- But a **good dynamic** with a steady growth in some countries, and commercial launch in about **17 countries in SSA**.

After Submarine cables …Terrestrial backbones



Source : AfTerFibre (African Terrestrial Fiber)

FTTH/B deployments in Africa (June 2017)

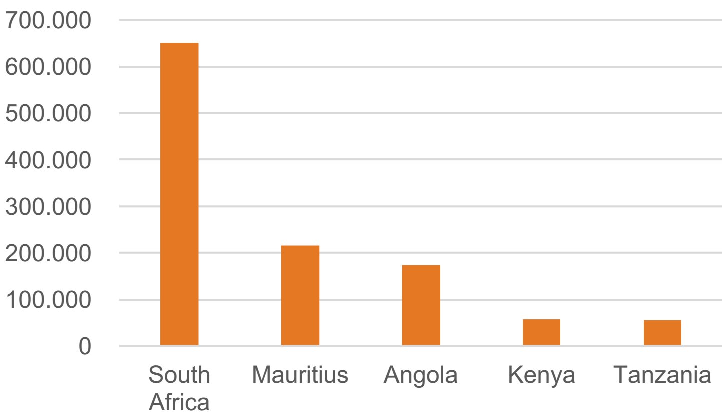


Source : IDATE

FTTH leading countries in Africa

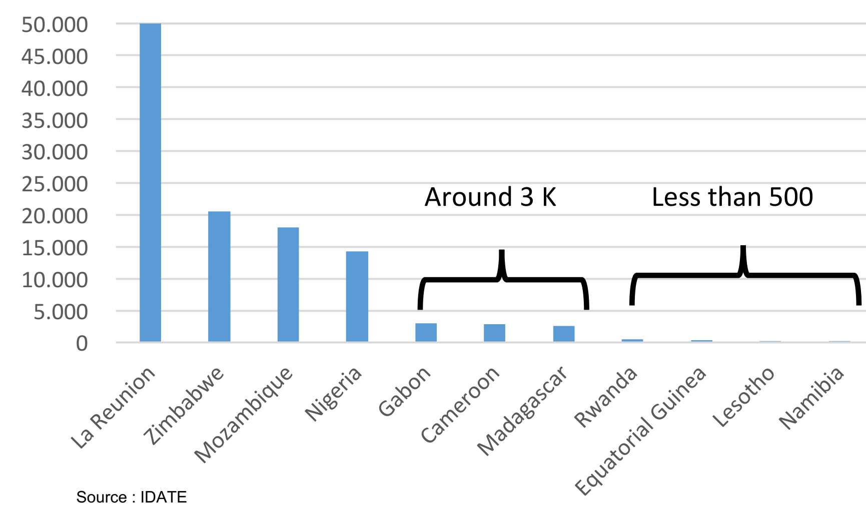
- **South Africa** is the leader, with 650 K FTTH subscribers.
- Other countries in the Top 5: **Mauritius, Angola, Kenya** and **Tanzania**
- Then 4 other territory and countries follow between 50 K and 15 K FTTH subscribers: **La Réunion**, **Zimbabwe**, **Mozambique**, and **Nigeria**.
- Others countries follow such as Gabon, Cameroon, Madagascar, Rwanda, Eq. Guinea, Lesotho and Namibia.

FTTH/B subscribers by country – Top 5 (June 2017)



Source : IDATE

FTTH/B subscribers by country – Second league (June 2017)



Source : IDATE

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Categories of players involved

> 54 analyzed FTTH projects in the 16 countries observed at June 2017:

- In nearly all 16 countries, **incumbent** is involved in FTTH
- Exceptions are Equatorial Guinea, Nigeria, Rwanda and Tanzania

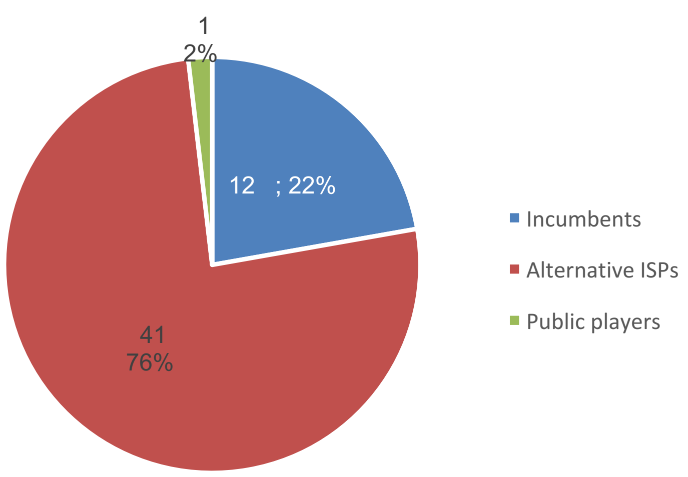
> 35 / 54 players involved in FTTH are pure Private companies.

- **Alternative ISPs** are in the driver seat for FTTH in Kenya (Wananchi / Zuku), La Reunion (ZEOP), Nigeria, South Africa and Tanzania.

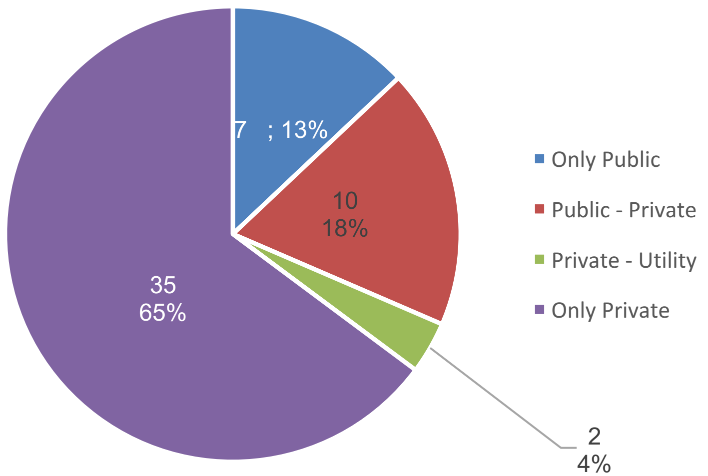
> Two examples of Utilities involved in FTTH

- **Kenya** with the partnerships between Safaricom and Kenya Power
- **Zambia** with the Joint Venture CEC and Liquid Telecom

FTTH initiatives per category of player



FTTH initiatives: Public vs Private



Source: IDATE

Main Countries analysis

South Africa: the FTTH leader in Africa

Background

The main SSA telecom market

- 20% of the SSA telecom market

A mature telecom market

- 170,3% mobile density
- 12,1% fixed BB density

Specificities

- **High CAPEX** needed to deploy nationally, due to population distribution and topology – **low population density**
- Specificity of communities and **HOA** (Home Owner Associations), launching FTTH tenders and educating the communities

A BB market dominated by Telkom

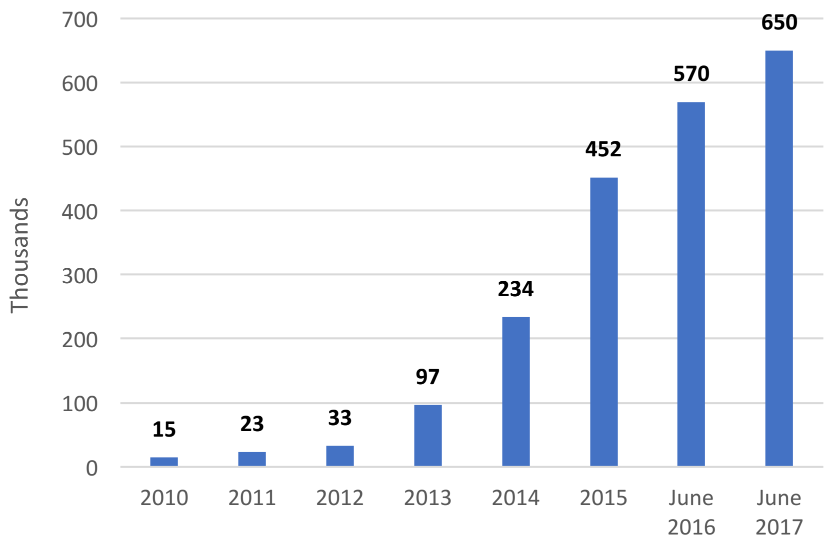
FTTH players

South Africa: the land of Open Access for Fibre

Main players

- **Dark Fibre & Wholesale**: **Vumatel**, **Open Serve** (Telkom), Dark Fibre Africa, Link Africa, Frogfoot Networks, Metrofibre network, MTN, Neotel, Tesuco, Vodacom,…
- **Retailers & Service Providers**: **Telkom**, **Vodacom**, **MTN**, Vox telecom, MWEB, WebAfrica, Cell-c, 1GB, Cape Connect, ISP Afrika, Nexus, easi telecom, snowball, cool ieas, iconnect, Greencom, Adept, Sonic Telecom, Comtel, Flynet …

FTTH subscribers in South Africa



Source : IDATE

At June 2017:

- **A YoY growth of 14% in terms of subscribers**
- **Probably more than 1 M Homes Passed**

Mauritius

Background

- **A small island of 1,3 million inhabitants, sometimes known as the « cyber island »**
- **With access to international bandwidth via submarine cables** SAFE (2002), LION (2009), LION2 (2012) … and other cables to come
- **A strong support of Mauritian government**
  National BB Policy 2012-2020, with a target of almost 100% of home having affordable access to download speed of 100 Mbps at 2020.
- **MT (Mauritius Telecom, with Orange as shareholder) in virtual monopoly on BB market**
  More than 90% market share.

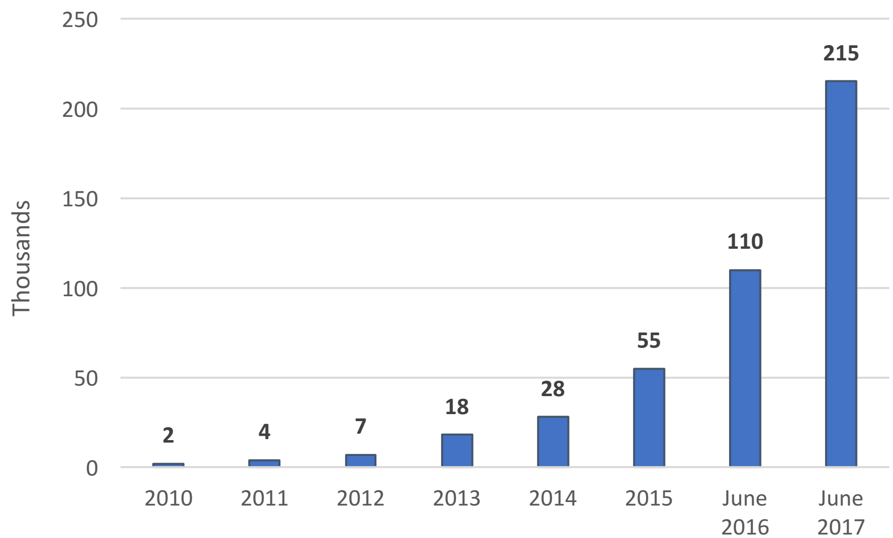
FTTH/B players

- **MT leader on FTTH/B …**
  - MT started to upgrade its network in 2012, and introduced commercial services in 2013.
  - MT provides 100 Mbps offering
  - MT plans **FTTH national coverage by end 2017** (nearly 400 K Households in Mauritius)
  - A tremendous acceleration of FTTH coverage plan!
  - A tremendous success in FTTH adoption also !
- **… "Virtual" Challengers** such as **Bharat Telecom**

(announcing national coverage by end 2017 but no news!)

or **CEB (Power Utility)** to come? When ?

FTTH/B subscribers in Mauritius



Source : IDATE

At June 2017:

- **A YoY growth of 96% in terms of subscribers !!**
- **348 000 Homes Passed**

Representing a high penetration rate of nearly 62% and a Household coverage of 87%

Angola

Background

A country quite dynamic regarding ICT markets

- Competition is there with 10 ISPs reported by June 2017
- A population with more than 27 millions inhabitants

A good access to international cables

An under development fixed network

- A 4,5% BB penetration / households in June 2017
- Competition with Fixed Wireless (LTE/WiMAX)

A national plan for fibre-optic network deployment

- Started in 2012 by Angola Telecom
- Support by the Government in 2013 with an investment of USD 314 Million
- In 2016, national optical backbone reached 12,000 KM

FTTH/B

Two main players

- **Angola Telecom (AT)**, is the incumbent and leader in wireless and Fixed.

After launched of ADSL services in the 2000s, AT is now involved in a FTTH program

- **TV Cabo Angola** is a Joint Venture between **AT** and the Portuguese conglomerate **Visabeira Group.** TV Cabo operates an HFC and FTTH network.

FTTH was first focussed to B2B market but since 2015 residential greenfield areas are deployed.

FTTH/B subscribers

At June 2017, a native dynamic market:

- **Nearly 96 000 FTTH subscribers**
- **And around 257 000 FTTH Homes Passed**

Good penetration rate: 39%

Kenya

Background

A leading country regarding ICT

- The mobile money inventor with m-pesa
- A strong support of national authorities

Access to international bandwidth

- **Four fibre-optic international submarine** cables landing in Kenya

Incumbent marginalized on BB market

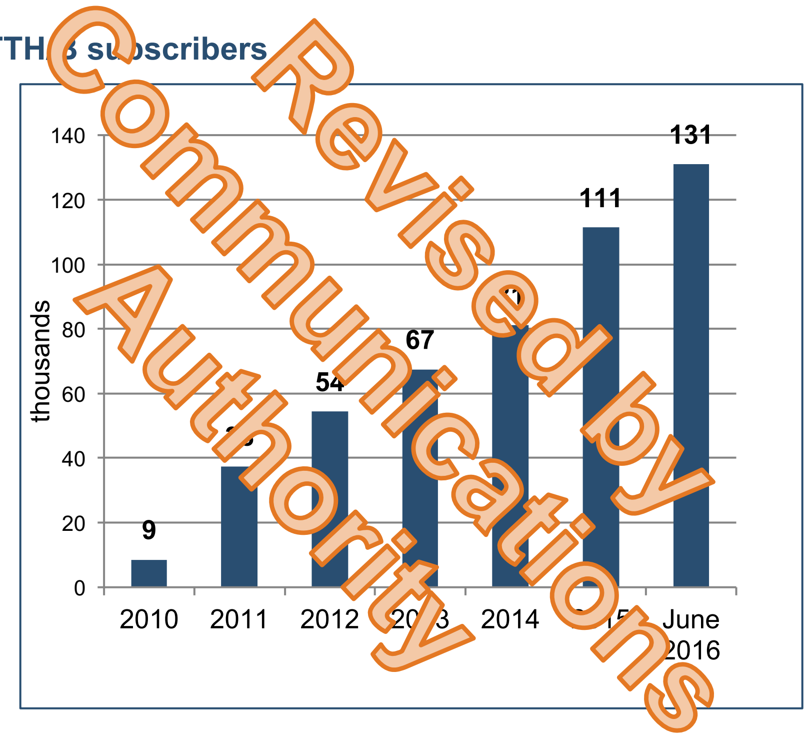
Wananchi Group (Zuku) is the leader on BB market with more than 50% market share.

FTTH/B players

Incumbent facing pan-african and local competitors

- Telkom started to launch **FTTH in 2011**, and announced a nationwide programme to replace copper by fiber. In 2015, Telkom decided to shut down its ADSL network and to focus on FTTH.
- Pan-african competitors
  - **Wananchi** has plan to roll out triple play services across nine countries in East Africa. In Kenya, under the brand (Zuku), mix of technologies (FTTx + Docsis 3.1, FTTH)
  - **Liquid Telecom**, with a pan-african fibre network from Uganda to South Africa.
  - **Safaricom** (Vodafone's subsidiary): partnership with Kenya Power's fibre infrastructure, targeting 12 000 homes passed in April 2017.
- Local competitors: AccessKenya (Open Access), Jamii Telecommunications

FTTH/B subscribers



Source : IDATE

At June 2017, revised FTTH market:
- **Only 58 000 FTTH subscribers**

Indeed, end 2016 when publishing 2Q2016 **Communications Authority of Kenya** revised FTTH Figures based on Wananchi Group new counting:

"a substantial drop of 70.5 % FTTH subscribers was reported which was mainly attributed to the revision of fibre optic and fixed cable modem subscriptions by Wananchi Group Limited."

Tanzania

Background

The government's **national fibre-optic backbone** project, known as NICTBB, was launched in 2008. It is managed and operated by fixed incumbent TTCL.

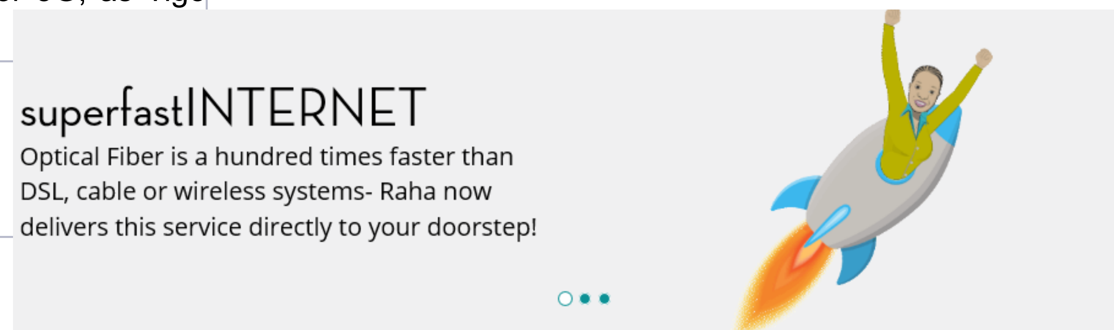
The infrastructure is constructed by the International Telecommunication Construction Corporation (CITCC) of China and financed by Chinese Exim Bank.

The Tanzanian broadband market is currently composed of **7 main ISPs**

Mobile carriers are quite active in investments. They are looking to expand their 4G footprint and even prepare for 5G, as Tigo Tanzania's CEO declared mid-2017

FTTH/B subscribers

At June 2017: 55 100 FTTH/B subscribers



FTTH/B player

4 ISPs offer fibre-based services

- **CTV Tanzania** (an MSO): 60 000 FTTH/B Homes Passed with 75% under FTTB architecture
- **Liquid Telecom (Raha):** Liquid Telecom acquired Startel (Raha) in 2017 and intends now to extend FTTH coverage
- **Maisha Broadband:** alternative ISP access mainly to the Business segment in Dar-es-Salaam
- **SimbaNET (Wananchi Group):** in 2017, SimbaNET's FTTH offers are available in Dar-es-Salaam.

Zimbabwe

Background

A country facing economical issues despite political stability

- Cost of the engagement in the war in DRC, hyper-inflation (use of USD legalized in 2009), dramatic unemployment rate (more than 80% officially), and current drought
- …Mugabé is the oldest President in Africa, firstly elected in 1987

A landlocked country

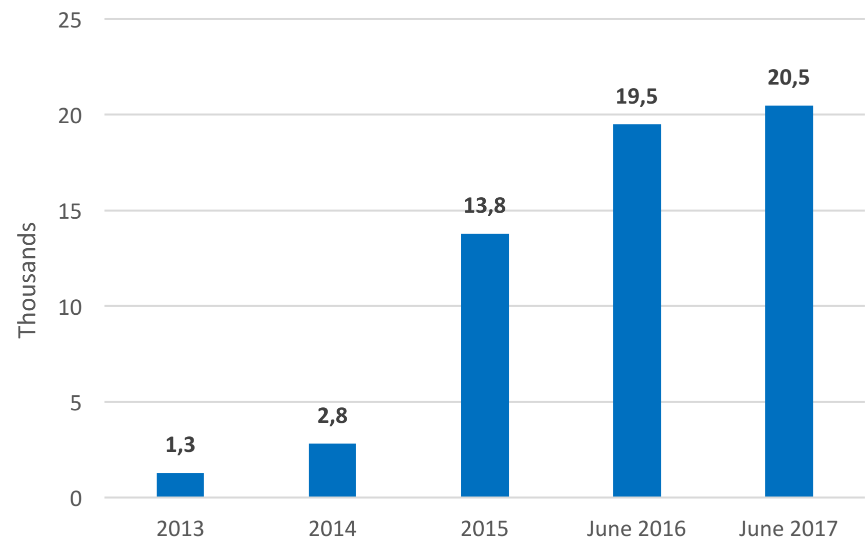
- Access to submarine cables via cross-border networks :
- via Mozambique to EASSY in 2011
- via South Africa to SEACOM and WASC in 2012

A rather low fixed BB penetration compared to Mobile BB

- DSL launched in 2011

A more Open ! Regulatory framework is needed

FTTH/B subscribers



Source : IDATE

FTTH/B players

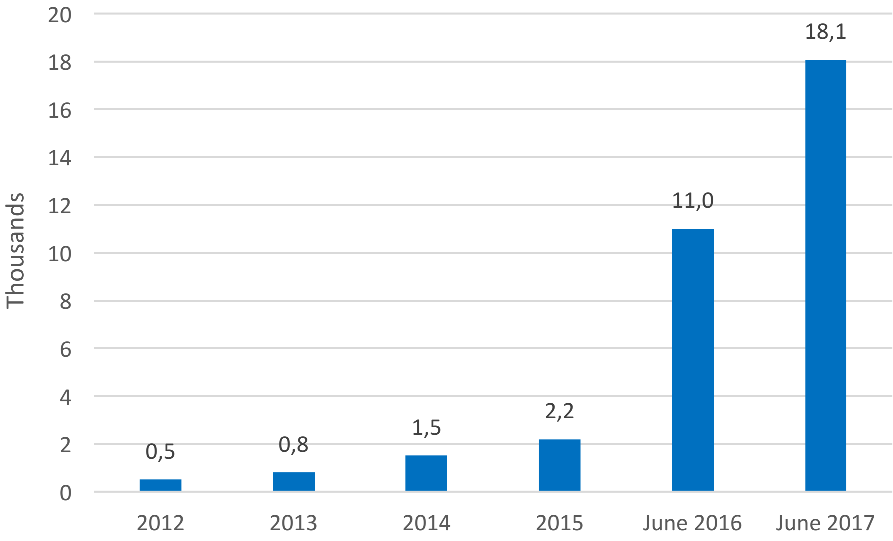
- **Econet** (Liquid Telecom) under the **ZOL** brand
- Incumbent **TelOne**: in 2017 expansion of the FTTH network has continued and TelOne expected to reach 100,000 households by 2018.
- Velocity
- Yo (dedicated to B2B market)
- And more recently Power Tel, part of the state electricity Zesa, deploying on electricity poles

Mozambique

Background

Formerly one of the poorest country of Africa,
A quite stable economical growth around 7% since 2011
And untapped raw material reserves (oil, gas, coal, aluminum)

FTTH/B subscribers



Source : IDATE

FTTH/B player

TV Cabo only player at the moment

- 50/50 joint venture TDM (Telecommunicacoes de Mozambique) and conglomerate Visabeira Group (also in Angola)
- Mainly for B2B at the moment
- Those two last years: a certain success in FTTH adoption.

Nigeria

Background

A country with a strong potential

- One of the richest country in Africa (despite oil price fall)
- And the **most populated country** in Africa with more than 180 millions inhabitants

A good access to international bandwidth

- Six submarine cables landing in Lagos

An under developed fixed network

- Less than 1% BB penetration / households
- The competition of wireless technologies : WiMax, FWA, TD-LTE and VSAT offering

A national plan for fibre-optic network deployment

- « Open Access BB Strategy » aiming to increase BB to 20% of the population
- In 2017 The National fibre BB network rollout continued. Government has granted licenses to new players to reach new areas not yet covered.

FTTH/B

Two main players

- **MTN**, leader in wireless market, is providing FTTH services via its MTN Business unit.
  In 2017, FTTH network has been **expanded** to Victoria Garden City, Ikeja Motorways Centre and 1004 Estate.

- **ipNX**, initially focusing on corporate, is providing BB for SMEs and residential.

FTTH/B subscribers

A native market:

- **9 000 subscribers at June 2016**
- **14 200 at June 2017**

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Conclusion

Africa in the global ranking

- Close to 1,3 million FTTH/B subscribers at June 2017
- A good growth of 33% in one year

FTTH/B subscribers in Africa (SSA)

1,27 M FTTH/B subscribers at June 2017

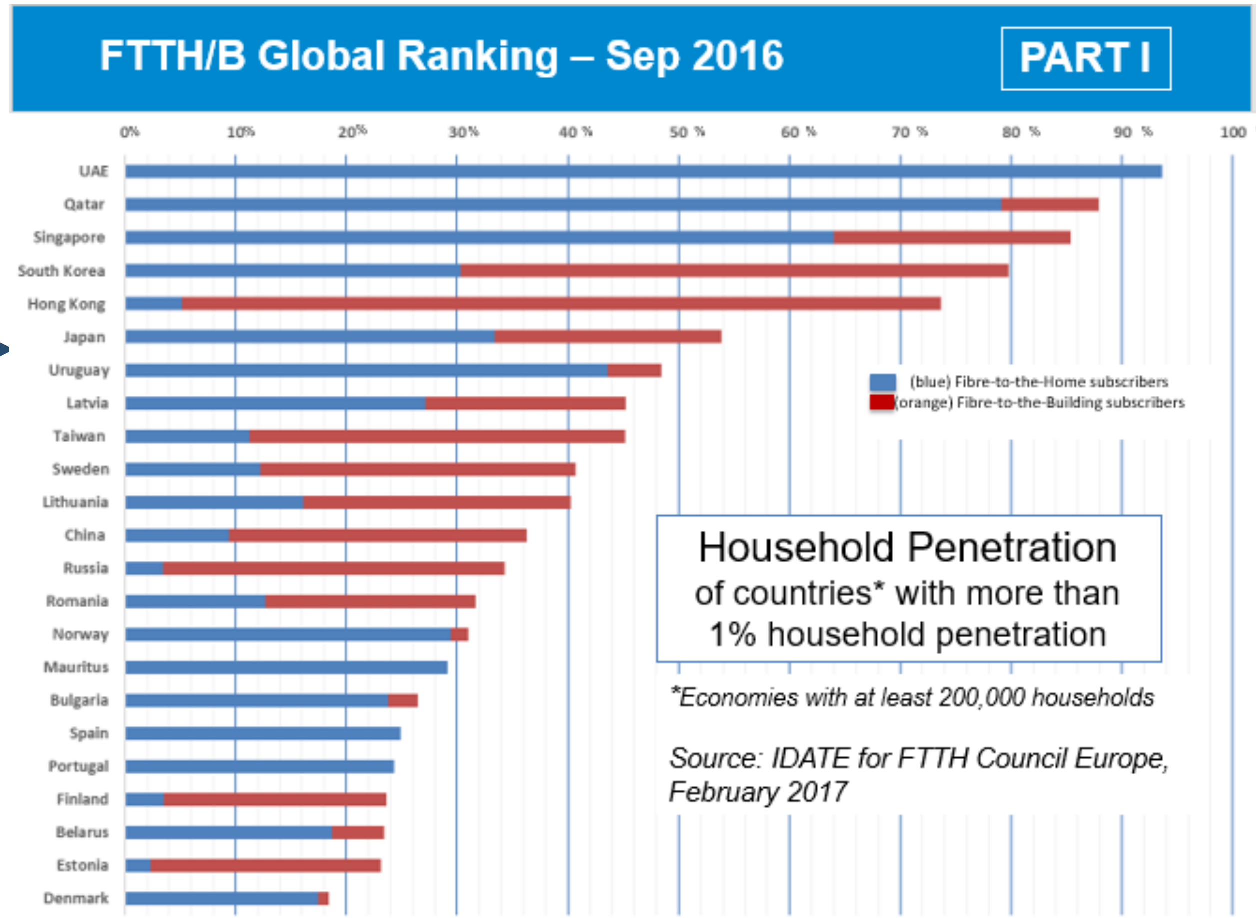
953 000 FTTH/B subscribers at June 2016

Source : IDATE

- Two countries are now well installed in global ranking (Number of residential subscribers / number of households) at June 2017:
  - Mauritius : 53,8% in the Top league close to Japan
  - South Africa : 4,2%

- New Entry: ANGOLA with 2,3% !!

- La Reunion as a territory: 16,7%



Conclusion

- Incumbents have not invested enough in the cooper network … **Driver for FTTH**
- Many governments have established **national BB plans** … but in several SSA countries **Regulation** not really favorable for FTTH competition
- **Open Access** as a clear driver for FTTH… but for the moment only in **South Africa**
- **World Bank** as a major investor in the region, but up to now mainly focus on backbones.
- Private **pan-regional players** such as **Liquid Telecom**, **MTN**, **Wananchi Group**, **Visabeira Group,** Vodafone, Orange stir up the market
- Importance of submarine cable / Terrestrial backbones as a prerequisite
- **Businesses** addressed first in some countries but **Residential FTTH** is not reserved to an Elite … upper middle class is developing and will be addressed with FTTH offering.
- The demand for BB connection is rising with new services and content available (particularly **Netflix now widely available in Africa** & 4K).
- **4G and 5G the mobile of tomorrow** will fuel FTTH business plan.

Next steps for FTTH and FTTX Panorama for Africa

- Challenge to obtain FTTH/B **home passed** figures: network players have to **collaborate** with IDATE teams to advertise on their Fiber deployments
- A **bottom up approach now for Africa** as it is done for other FTTH Councils Worldwide
- Other dynamic markets in the near future: Ethiopia, … and the potential of Cameroun, Gabon, Madagascar…
- The FTTH potential in West Africa (Senegal, Ivory Coast, Togo, Ghana) ?
- Should we work on FTTH/FTTX forecast for Africa ?

Thank You !

FTTx & Gigabit

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Format	Type deliverable	Title	Publication date	Pages	Unit price (EUR)	Product Code
		FTTx & Gigabit - 2017 and prior publications			14 000 (stream rate)	M 17500
xls	Dataset	World FTTx Market - data & forecasts up to 2021	2Q/4Q 2017	n.r.	6 000	M 17510DB
ppt	Report	State of World FTTx market	2Q/4Q 2017	40-80	3 000	M 17510SR
xls + ppt	Dataset + Report	World FTTx Market - data & forecasts up to 2020	26/12/2016	43	5 000	M 16505B
doc + ppt	Report	Gigabit Offerings	1Q 2017	20-40	2 000	M 17540MR
doc + ppt	Report	Fiber monetisation	2Q 2017	40-80	3 000	M 17530MR
doc + ppt	Report	SDN/NFV: virtualization & slicing	2Q 2017	40-80	3 000	M 17450MR
doc + ppt	Report	FTTH for emerging countries	2Q 2017	40-80	3 000	M 17550MR
doc + ppt	Report	G.Fast	3Q 2017	40-80	3 000	M 17520MR
doc + ppt	Report	Broadcast/Broadband	4Q 2017	40-80	3 000	M 17230MR
doc + ppt	Report	Connected Cities	02/12/2016	29	2 000	M 16505IN1
doc + ppt	Report	Ultrafast access technologies	01/12/2016	37	2 000	M 16505IN3
doc + ppt	Report	FTTx Vendors	02/10/2016	19	2 000	M 16505IN2
doc + ppt	Report	Digital Agenda Europe	20/07/2016	25	2 000	M 16507MR
doc + ppt	Report	Public Policies for ultra-fast broadband	03/06/2016	96	3 000	M 16408MR
doc + ppt	Report	LTE vs Fiber	18/12/2015	48	3 000	M 15506MR

Titles and scheduling of upcoming publications are indicative – details for available publications can be accessed online

Contact
Roland MONTAGNE
Principal Analyst
Director DigiWorld Institute UK
mob: +33 680 850 480
r.montagne@idate.org