FTTH MENA Panorama

MENA Broadband Status

Market at September 2017

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Study Background

Objectives, available results

Objectives

- Mission on behalf of the FTTH Council MENA
- Objective: to provide a complete summary of the status of FTTH/B in MENA at **Sept. 2017**
  - **17 countries analyzed** (1)
  - **Distinction between architecture: FTTH/B vs FTTN** (FTTN/C+VDSL, FTTx+Docsis 3.0)
  - **Information on the national Broadband market** (national program, regulation, overall figures)
  - **FTTH/B Definition by FTTH Councils Worldwide**(2)

Characterization of each project includes:
- Organization initiating the project
- Key parameters & Figures
- Technical parameters
- Financing & Business model

► Methodology used

- Desk research
- **Bottom up approach**
- **Direct contacts with FTTH players (questionnaires, phone interviews) & IDATE's partners in MENA**
- Information exchange with FTTH Council MENA members

(1): Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Tunisia and UAE
(2): FTTH/B definition available at : www.ftthcouncil.eu/documents/Publications/FCGA%20-%20Definition%20of%20Terms%20-%20Revisions2016.pdf

Available results for MENA

> About 50 projects listed in 17 MENA countries at September 2017

Quantitative

FTTx Evolution	September 2017	
	Subscribers	Homes Passed
FTTH/B Evolution (Total)	**6 250**	**63 815**
Tunisie Telecom	[redacted]	
Ooredoo		
Orange Tunisia		

Qualitative

Saudi Arabia	
Population (estimated 2016)	32 275 687
Households (estimated 2016)	5 250 000
National Regulation for FTTH/B & government initiatives	- The Telecom industry is ruled in the country by the Communications and IT Commission (CITC). - There is not a specific regulation on FTTx. **2006:** Mobily, Bayanat Al-Oula and ITC announced an agreement in order to deploy and maintain a national fibre-optic backbone network called the Saudi National Fibre Network (SNFN) **2016:** The Saudi Vision 2030 was published in order to promote the deployment of fibre optics (among other infrastructures) in the country. The objective was to cover 90% of homes in dense areas and 66% of homes in non-dense areas by 2020. - *October:* The CITC plans to award unified telecoms licences to the four ISPs in Saudi Arabia, in order for them to provide fixed, mobile and data services across the country. **2017:** - *March:* The CITC has awarded Zain to deploy Phase 1 of its National Broadband expansion Plan. The regulator planned to reach 70% of rural areas by 2020. - *August:* The regulator reported that high-speed internet access is available to 50% of the rural area (approx. 70.000 people).
Broadband Current situation	The broadband market is very dynamic in Saudi Arabia, promoting the economic development of the nation. First FTTH/B deployments began in 2008-2010, with several players involved in rollouts. By September 2017, ADSL is still the dominant fixed broadband access technology. However, FTTH technology is growing rapidly in the country. The competition between the two leading players in that field seems to be a good driver. It is also important to note that during 2016, the total number of Fixed Broadband subscribers has decreased due to fixed-wireless subscriptions reduction.
5G / 4G Summary	- In Saudi Arabia, TD-LTE services were launched by the two domestic players in 2011. FDD-LTE services were launched in 2013 by Mobily and STC. - Population coverage stood at above 85% as at October 2016. **2017:** - *January:* STC announced it achieved speeds of 70 Gbps in a 5G trial. - *March:* STC and Nokia signed a Memorandum of Understanding to work on 5G and IoT technologies. Trials are planned to demonstrate the capacity of 4.5G Pro and 4.9G, before preparing for 5G and dedicated applications. - *March:* Nokia and Zain signed a similar Memorandum to develop 5G and IoT applications. Main 5G use cases considered include industrial networking, smart factories and offices, remote healthcare, virtual reality and advanced video services. The t smart city initiative will focus Saudi city Jeddah. - *May:* STC and Huawei announced results of their 5G using the 3.5GHz band and Massive MIMO technology.

Source: IDATE for FTTH Council MENA

Status of Broadband in MENA

Leading access technologies – National programs

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Leading access technologies

> More than 29.5 million fixed BB subscribers and 269 million Mobile BB subscribers in MENA at September 2017

ADSL access technology is still leading the Fixed Broadband market but FTTH/B is growing more rapidly now in some countries (Bahrain, Kuwait, Lebanon, Tunisia and Oman) or is already leading in others (UAE, Qatar).

Ratio: FTTH Subscribers / Total Fixed BB Subs	
Bahrain	30,21%
Kuwait	14,64%
Lebanon	0,10%
Oman	11,05%
Qatar	97,15%
Tunisia	1,11%
UAE	99,81%

Source: IDATE for FTTH Council MENA

FTTH/B subscribers represent around 19% of total fixed BB subscribers in MENA by September 2017 compared to 9% one year ago

Mobile BB is the leading choice for many end users in 12 over 17 analyzed markets.

In terms of 4G and 5G development, the region has extended the deployment of 4G networks. **5G** deployment agreements & trials have been observed in countries such as Kuwait, Qatar, Saudi Arabia and UAE.

National programs

> **Some countries are deploying or will deploy fiber networks based on a national Broadband Plan.**

> **Performance indicators have been defined to achieve results in the coming years. Some of these are based on coverage and take up rate objectives or by implementing dedicated companies responsible for the roll out of new infrastructure.**

The most significant programs have been launched:

- In **Qatar**, where, thanks to the QNBN stimulation, FTTH/B is clearly leading the access market (representing 97% of fixed BB subscriptions by September 2017)
- In **Oman**, where OBC is deploying a large neutral network, opened to all telcos and the regulator allowed in 2016 player **Awasr** to enter into the Fibre market.
- In **Lebanon**, where the program aims to cover the whole country with fiber based infrastructure by end 2022. The Minister announced that the goal is to reach at least 85% of homes in the short term.
- In **Kuwait** the MoC extended Fiber coverage in more than 67K homes by 2018 (phase 2 of the Program) and more of 100K homes in Phase 3.

In other countries, Broadband programs have been launched or announced but with few progression to date.

FTTH/B in MENA

Overview, overall results, main trends in MENA

> About 50 FTTH/B projects in MENA at September 2017

- Incumbents and Alternative operators are the main actors involved in FTTH/B rollout
- National programs should boost FTTH/B market in MENA in the middle to long term

Total FTTH/B Homes passed in MENA at September 2017			
Incumbents	National companies / Public initiatives	Alternative operators / ISPs	Housing companies / RE owners
5 039 911	256 000	1 497 880	159 100
72%	4%	22%	2%

Source: IDATE for FTTH Council MENA

FTTH/B in MENA – Overall Figures

In September 2017

> 2.83 Million FTTH/B subscribers

> 6.14 Million FTTH/B Homes Passed

Average Penetration Rate : 46%
(from 45 % at September 2016)

YoY growth

- **Subscribers: +10% … slower**
- **Homes Passed: +9% … stable**

Source: IDATE for FTTH Council MENA

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Main trends in MENA's FTTH/B market

- **6** Significant and dynamic markets (UAE, KSA, Qatar, Oman, Kuwait, Bahrain)
- **2** High potential market (First of all: Iran ; but also Iraq)
- **2** Markets with significant announcements and/or progresses (Lebanon, Tunisia)
- **4** Steady markets with few evolution nor significant announcements (Jordan, Egypt, Palestine, Algeria)

Incumbents in Tunisia and Morocco got involved in starting FTTH/B coverage since mid-2014, but with some difficulties to enhance **switch** to FTTH from end ADSL users.
Players higher sensitiveness towards FTTH/B benefits in general but still to be transformed to concrete projects.

Main trends in MENA's FTTH/B market: subscribers

- UAE is the main FTTH/B market (1.6 million FTTH/B subs)
  - 2 players are involved in FTTH/B market
  - Etisalat is dominating the FTTH/B market:
    - with a stable market share of 87%
    - with a national coverage (Etisalat has a close 100% fiber network)
  - Tremendous take up rate (subs/HP): 93%, which confirms the great commercial success of FTTH

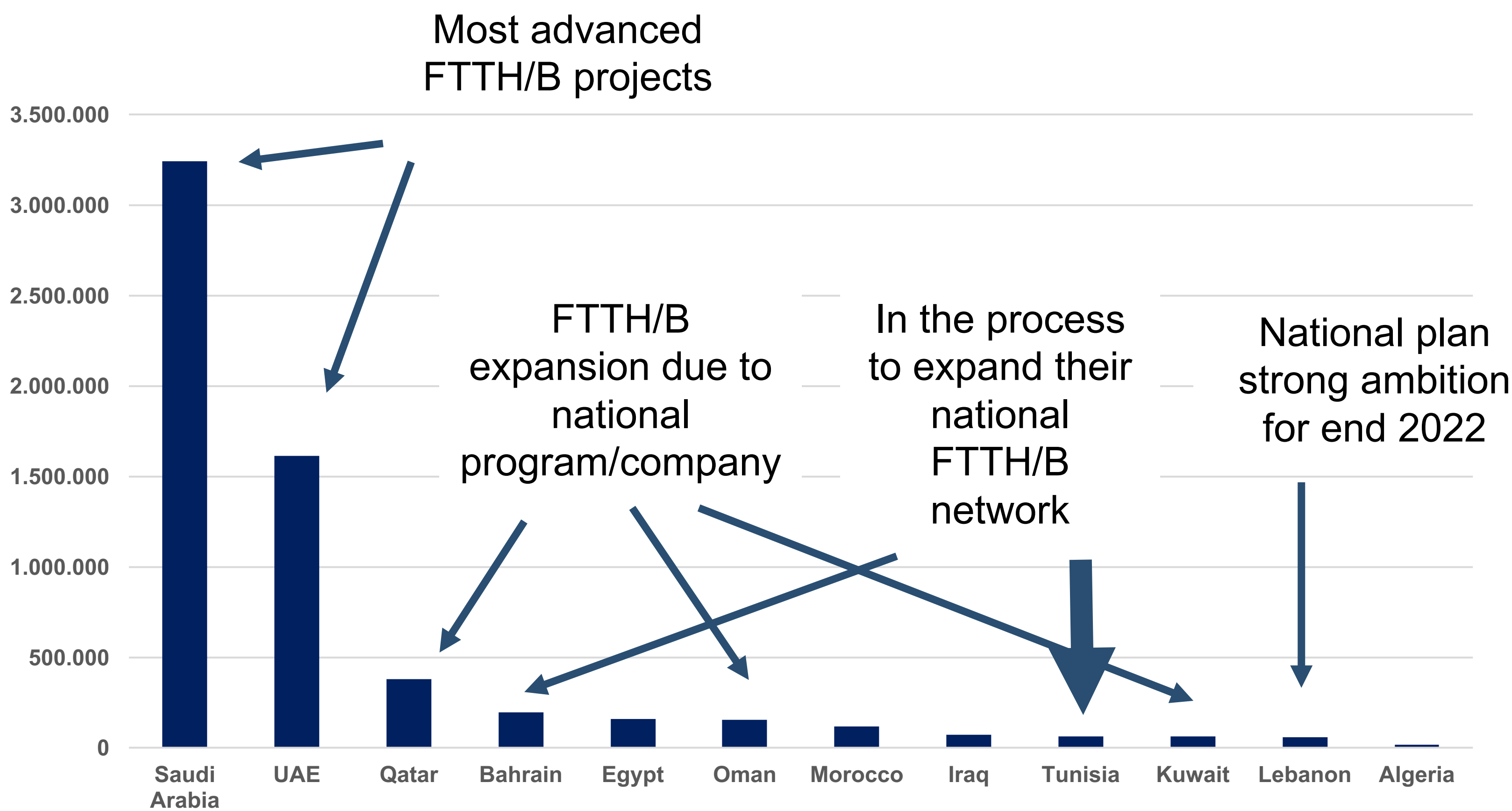
UAE is leading the Global Ranking!!

- … followed by Saudi Arabia (more than 729K FTTH/B subs)
  - Market dynamism confirmed from one year to another (+7% subscribers growth between Sept 16 and Sept 17) with 2 players involved in national rollouts
  - This dynamism has to be confirmed on the commercial side
  - STC is the leader among FTTH/B players:
    - with a stable market share of 68% => followed by Mobily that owns 25% of the market.
    - the largest coverage

- FTTH/B market is growing in Qatar (337K FTTH/B subs)
  - Ambitious objective from incumbent Ooredoo:
    - National FTTH coverage: reached in 2014!
  - A positive growth in the number of subscribers (+21% sep16-17)
  - Ooredoo is pushing its end users to switch to FTTH

Main trends in MENA's FTTH/B market: Homes Passed

> 2 countries with significant rollouts, more than 1.5 million Homes Passed and this year it reached 3.2 million in KSA



Source: IDATE for FTTH Council MENA

> High Take up Rates *(1)* in MENA

UAE: >93%
Qatar: 89%
Kuwait: 50%

Average Take up Rates in MENA: 46%

> In September 2017, the main architecture deployed is FTTH

Main Architectures deployed (Homes Passed segmentation)	September 2017
FTTH	93%
Ethernet	7%

> In terms of technology, MENA players have chosen GPON

Main Technology deployed (Homes Passed segmentation)	September 2017
PON	96%
Ethernet	4%

Source: IDATE for FTTH Council MENA

(1) Number of subscribers in total Homes Passed

FTTH/B services and tariffs in MENA

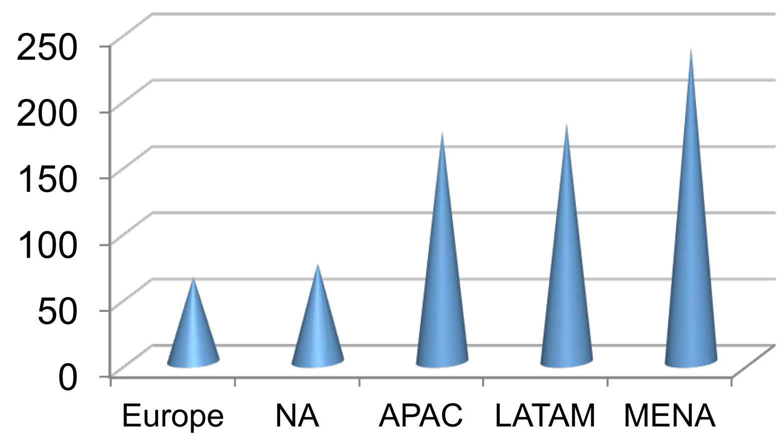
> The region is trying to enter into the Gigabit race…

- Highest speed rate available reaches 1Gbps in more countries this year: Oman, Qatar, UAE, Bahrain, Saudi Arabia.
- The most widespread speed rate is 100 Mbps, available in Oman, Qatar, Jordan, UAE, KSA, Tunisia…
- Most telcos in GCC provide new converged and **innovative TV and video services** available on their new networks

> FTTH tariffs are relatively expensive compared to other regions

- End users can to pay up to 600 USD per month for a 100 Mbps FTTH connection

Average monthly cost for a 100 Mbps FTTH connection (USD)



Source: IDATE for FTTH Council MENA

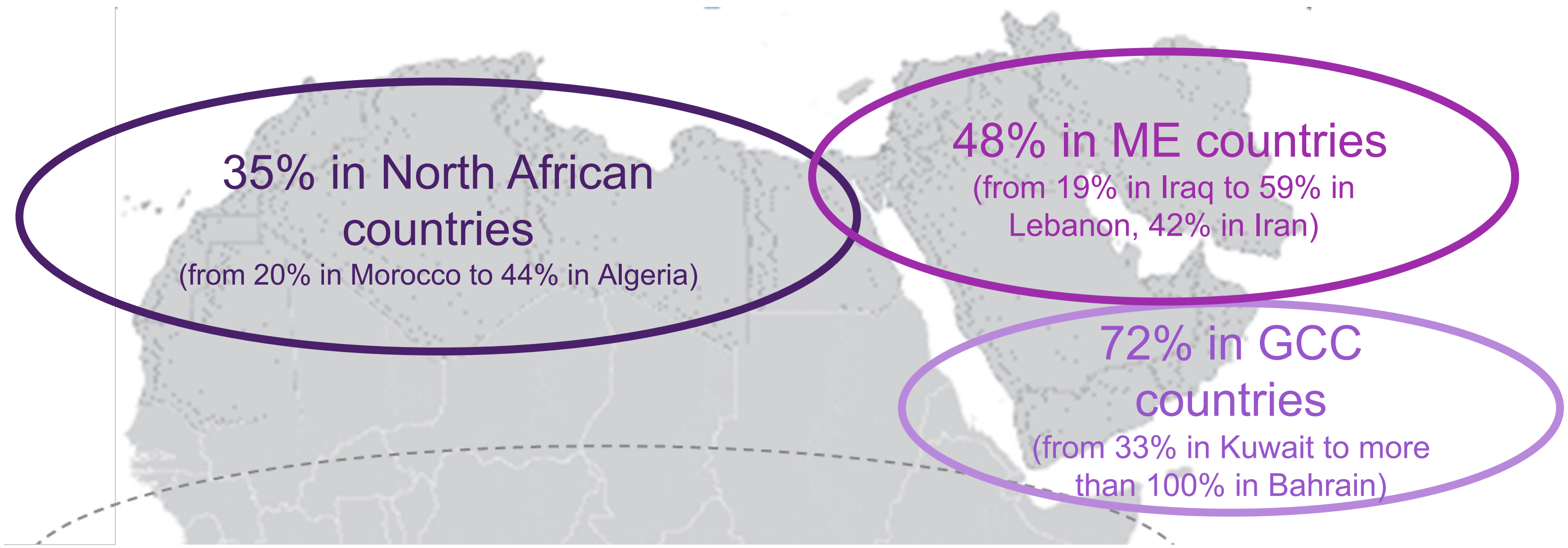
Conclusion – Main outputs

Main outputs

No take off for the global Fixed Broadband market

- The growth in FTTH/B coverage and take up rate is led by the dynamism of GCC countries, and notably UAE, KSA and Qatar.
- But the Broadband penetration is still low and current demand for Fixed BB does not always require rapid deployment of Fibre based networks.

Average % of Fixed BB subscribers in total Households



Source: IDATE for FTTH Council MENA

Main outputs

An increase of the adoption of FTTH/B technology

- MENA region has improved during last 12 months
- Fiber take up rate: At 3Q 2017, nearly **46%** of Homes passed by Fiber have subscribed to this technology vs 39% at 3Q2015 and **19.5%** of the Fixed BB subscribers are using fiber in comparison to 7% at 3Q2015.

FTTH/B evolution in MENA – 1Year Forecast

- Based on the deployment of the different FTTH/B projects in the region and the commercial evolution from operators and organisms, it can be inferred that for 2018:
  - The number of FTTH/B **subscribers** will increase **16%** in order to reach 3.3 M subscribers
  - While the FTTH/B homes passed will increase to 6.6 M, representing an increase of **7.5%.**
  - This evidences a focus that is centered in the commercial development of the fiber networks instead of its rollout.
  - Political or economic situation still a concern (Algeria, Egypt,…) … also **Iran** starting FTTH

Incumbents are leading the markets

- But the involvement of alternative players is growing (Tunisia, Morocco)
- As in other regions, few other players show a strong interest in FTTH/B rollouts (some ROEs in Egypt, small telcos in Jordan or Palestine)
- TCI in Iran starting FTTH rollouts…a potential of 10.4 M Broadband subscribers (Sept. 2017)

Main outputs

There are some significant and ambitious FTTH/B projects

- In **UAE** and **Qatar**: FTTH coverage over total households is now reached
- In Qatar: Ooredoo and QNBN program => QNBN is focusing now on Public Sites and is lightly used by Vodafone and Ooredoo.
- In **Lebanon**: It can be observed that there is a plan to increase the number of FTTH Homes Passed from 58 000 at September 2017 to 85% of households passed in a short term
- **Kuwait**: There is a national plan (MOC) that will increase the FTTH Homes Passed to 67.000 by 2017 and a third phase will be implemented in 2018 to increase to 100.000 homes passed.

FTTH/B is a priority: no noticeable FTTN projects announced to date

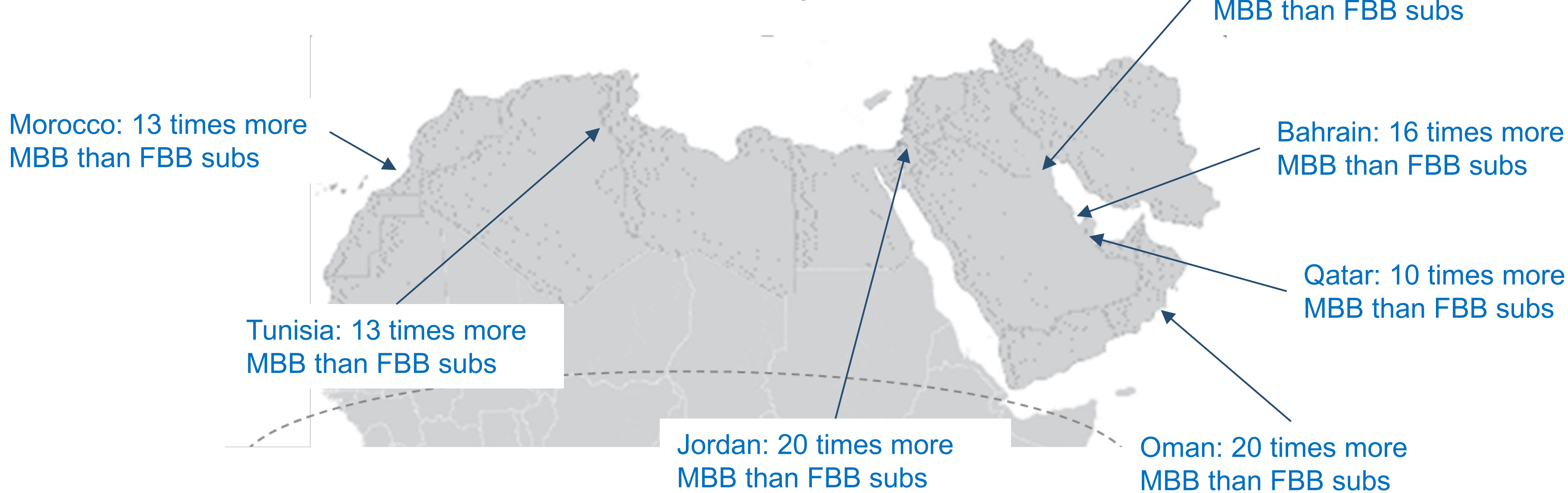
- Most projects, operational or announced, tend to be FTTH rollouts
- However, FTTN + VDSL is still a good solution for players in countries where the Broadband market is not mature yet and the economical context still has to get improved (Morocco, Jordan): the objective of telcos there is to be able to provide higher speed rates to end users, whatever the architecture.

Mobile BB as a competitor for FTTH in the region ?

A real leadership for mobile BB access technologies

- Mobile Broadband subscriptions overpass fixed Broadband subscriptions in several countries (Egypt, Morocco, Jordan,…), and this trend might not change even with the rollout of new networks (The deployment of 4G technologies could compete with Fixed BB services)

Ratio of Mobile BB subs compared to Fixed BB subs



Source: IDATE for FTTH Council MENA

- But this could be also an interesting opportunity for FTTH: not only because of the need for interconnecting base station with fiber will increase (**5G**), but also because there is a trend to demand higher bandwidth that fiber only can manage (**Netflix 4K** is coming in MENA !!)

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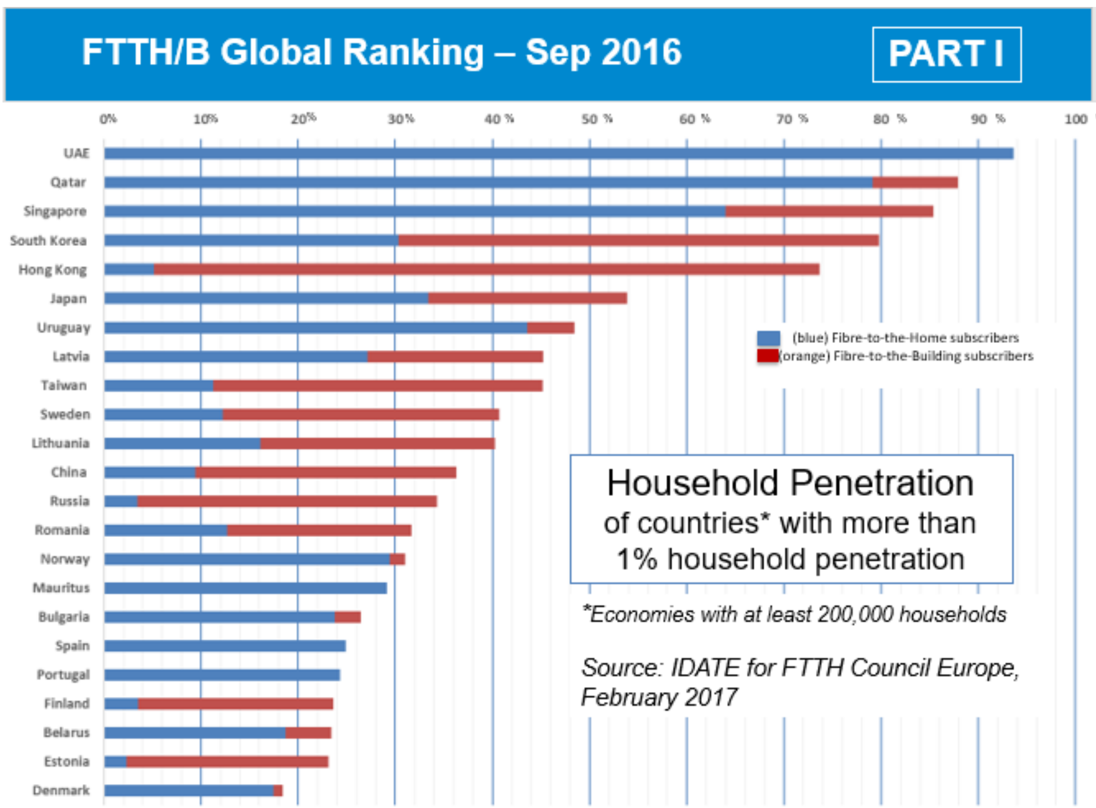
MENA is progressing in the global ranking !!

- **UAE and Qatar still among World Leaders**
- **Two countries with good progress**
  - **Bahrain : 25,7%**
  - **Oman : 6%**
- **6 MENA countries in total**

MENA Countries	Subs/Homes Passed
UAE	Stay Tuned !
Qatar	
Bahrain	25,7%
Saudi Arabia	13,9%
Oman	6%
Jordan	1,2%



MERCI !

FTTx & Gigabit

Prices are in EUR excl. taxes and for single-department licences (1-5 users)
Stream subscriptions include unmetered analyst support & 3-hour customized research

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

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