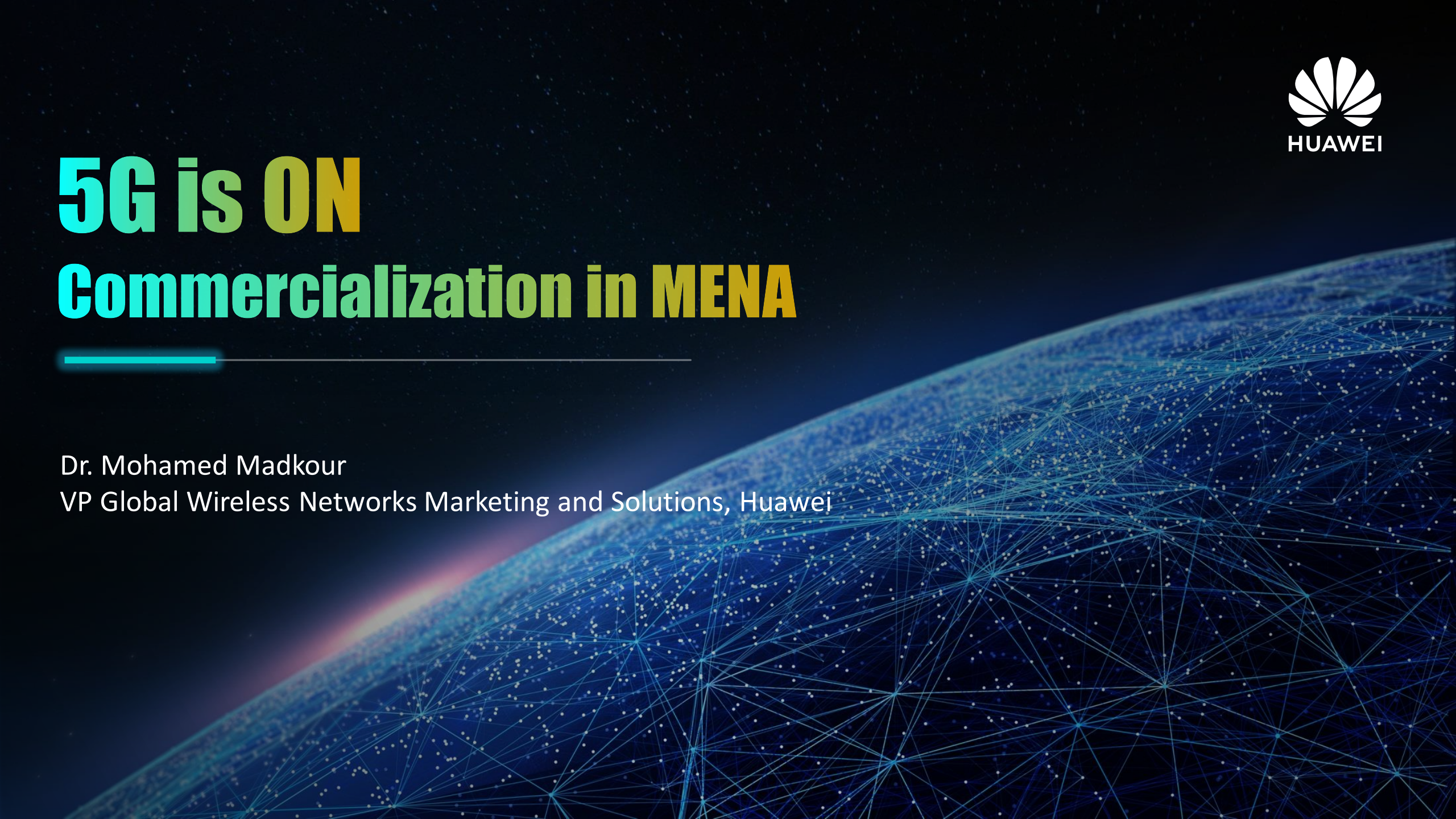
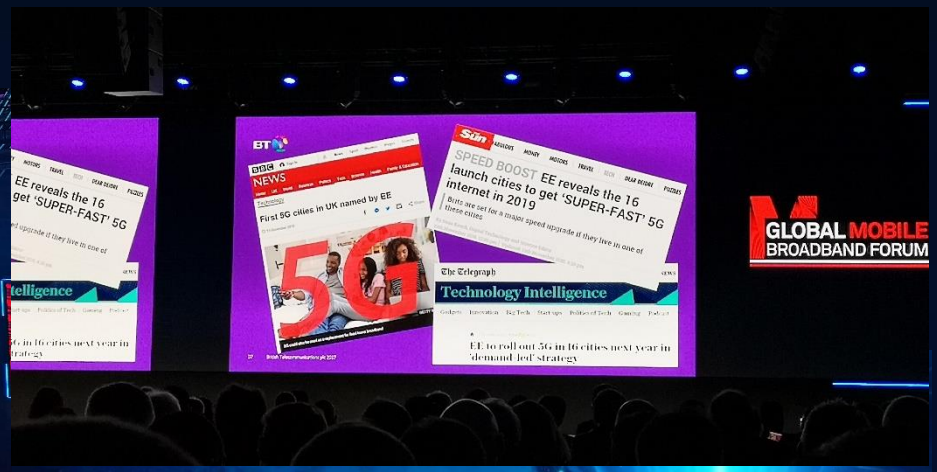
5G is ON
Commercialization in MENA

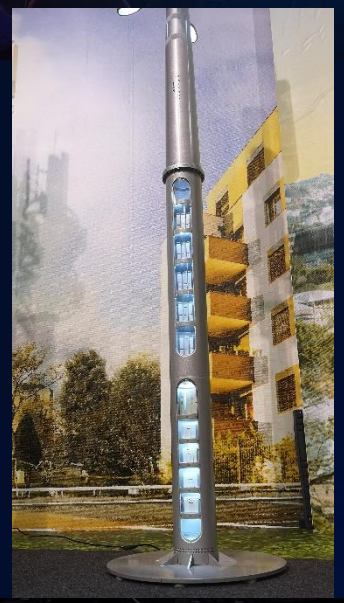
Dr. Mohamed Madkour
VP Global Wireless Networks Marketing and Solutions, Huawei



1.3bn
5G
40%
of the global population by 2025


BBC NEWS
First 5G cities in UK named by EE
5G
The Telegraph
Technology Intelligence
GLOBAL MOBILE BROADBAND FORUM

10+ Major Cities
30+
Pilot Trials
22
Commercial Contracts (4 in ME)
50+
MOUs
Over 10000 5G Sites Delivered YTD

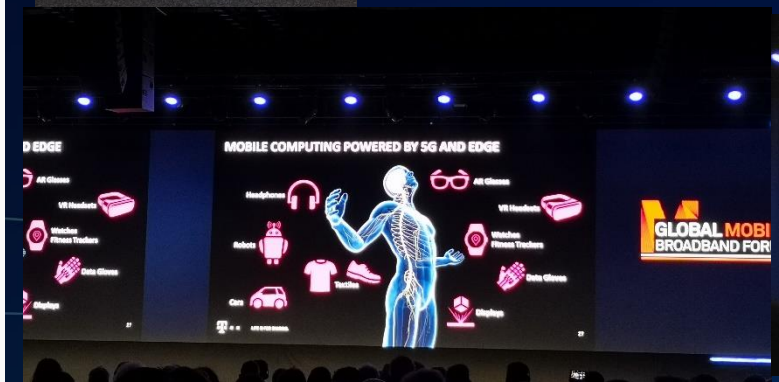


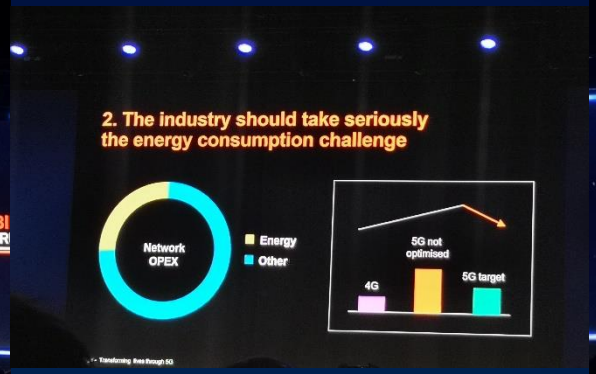
Global MBB Forum 2018
GLOBAL MOBILE BROADBAND FORUM
5G Inspiring the Future
Nov. 19-21 2018, London, UK
#HWMBBF

HUAWEI
5G Inspiring the Future
Global MBB Forum 2018

The first #5G live broadcast from Wembley stadium was done here at #HWMBBF in London by @btsport
@abistephens and @MattCASmith were the presenters. #5G means much less need for trucks, heavy equipment etc for broadcasters.

MOBILE WORLD LIVE
GSMA unveils operator-backed cloud AR and VR forum
21 NOV 2018
LIVE FROM HUAWEI GLOBAL MBB FORUM 2018, LONDON: The GSMA announced the formation of an industry-wide initiative to support the development of augmented reality (AR) and virtual reality (VR) applications delivered over the cloud.
The GSMA Cloud AR/VR Forum is backed at launch by some of the largest operators and vendors in the industry including: China Mobile; China Telecom; China Unicom; Deutsche Telekom; Huawei; HTC; KDDI; KT;


MOBILE COMPUTING POWERED BY 5G AND EDGE
GLOBAL MOBILE BROADBAND FORUM


2. The industry should take seriously the energy consumption challenge
Network OPEX
Energy
Other
5G not optimised
4G
5G target

Connecting the world with 5G
5G
154 carriers in 66 countries – 5G testing
110 markets will deploy 5G by 2025
Huawei shipped 10,000+ 5G base stations in 201

BT CTIO cautions on convergence complexity

3 UK cites capacity boost as primary 5G benefit

MBBF18 sets industry on path to 5G

Huawei's Ding hails 22 5G deals

Huawei chief touts 5G progress

Orange looks to 5G for ultra-low cost connectivity

China Telecom calls for 5G collaboration

Experts flag societal benefits of mobile connectivity

GSMA Launches New Industry-Wide Initiative to Support Development of Operator Edge Cloud AR/VR

Multiple Operators, Vendors and Content Providers to Collaborate to Accelerate

Operators call for fresh approaches in 5G City era

A panel of experts from leading operators argued the industry should approach 5G from the perspective of enhancing future societies rather than focus on long-standing methods of development.

MTN urges 5G-ready world to remember unconnected

Babak Fouladi, CTIO at MTN Group, stressed the need to keep sight of the world's population which can only access basic connectivity, as hype continues to build around advanced next-generation 5G networks.

GSMA head calls for digital era regulations

Operators are set to invest $500 billion worldwide in mobile capex between now and 2020, but GSMA director general Mats Granryd argued this will only be possible if regulations fit for the digital age are in place.

Edward Deng: SingleRAN Pro Inspires 5G Era New Business, New Capability, and New Direction

Aston Martin VP details auto industry ICT needs

LIVE FROM HUAWEI GLOBAL MBB FORUM 2018, LONDON: Simon Sproule, VP and CMO at Aston Martin (pictured), explained one of the most interesting periods of change in the global automotive industry is being enabled entirely by technology covering

Huawei urges operators to back network automation

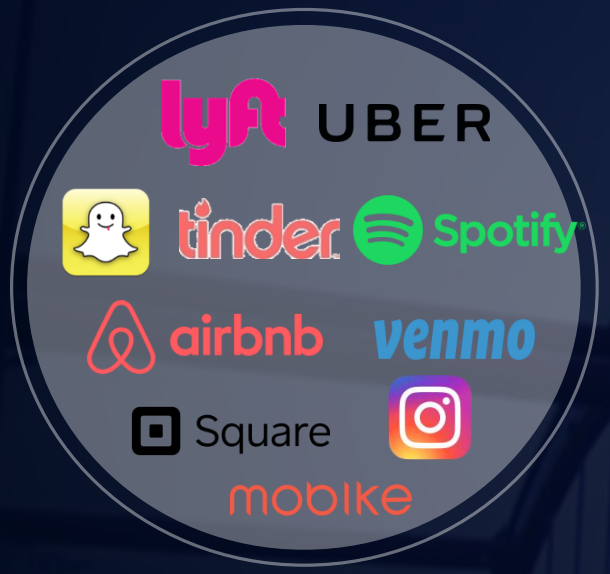
David Wang, executive director of the oard at Huawei, detailed his vision of a fully automated mobile network, which he explained will be needed to manage the increasingly complex architecture brought about by the addition of 5G.

LTE set for fundamental role in 5G era

For all the focus on 5G at Huawei's event, operators were also keen to stress the importance of the evolution of LTE networks, in order to support new services and business models and to provide a solid foundation for 5G when operators are ready for commercial

4G Has Changed Our Lives, Businesses and Societies, What will 5G Bring?

LTE Created New Business



Market Cap of $300Bn+

LTE Optimized Existing Business

Market Cap of $4Tn+ up from $400Bn in 2009

LTE Sparked Carriers' business

Market Cap of $1.3Tn+ up from $700Bn in 2009

** Estimated figures for only those in picture*

Enhanced MBB Services & Gbps HBB are Leaping Inspiring LTE Evolution & Initial 5G Demands

70GB
DOU
Kuwait, 2017

100+
Unlimited Package
Global, 2017

75%
HBB by 2025

20%
Home with FWA

2.5Bn
Gigabit Users
4K/8K (**~100Mbps**)

0.44Bn
AR/VR Users
VR (**Gbps Level**)

30%
Gbps HBB

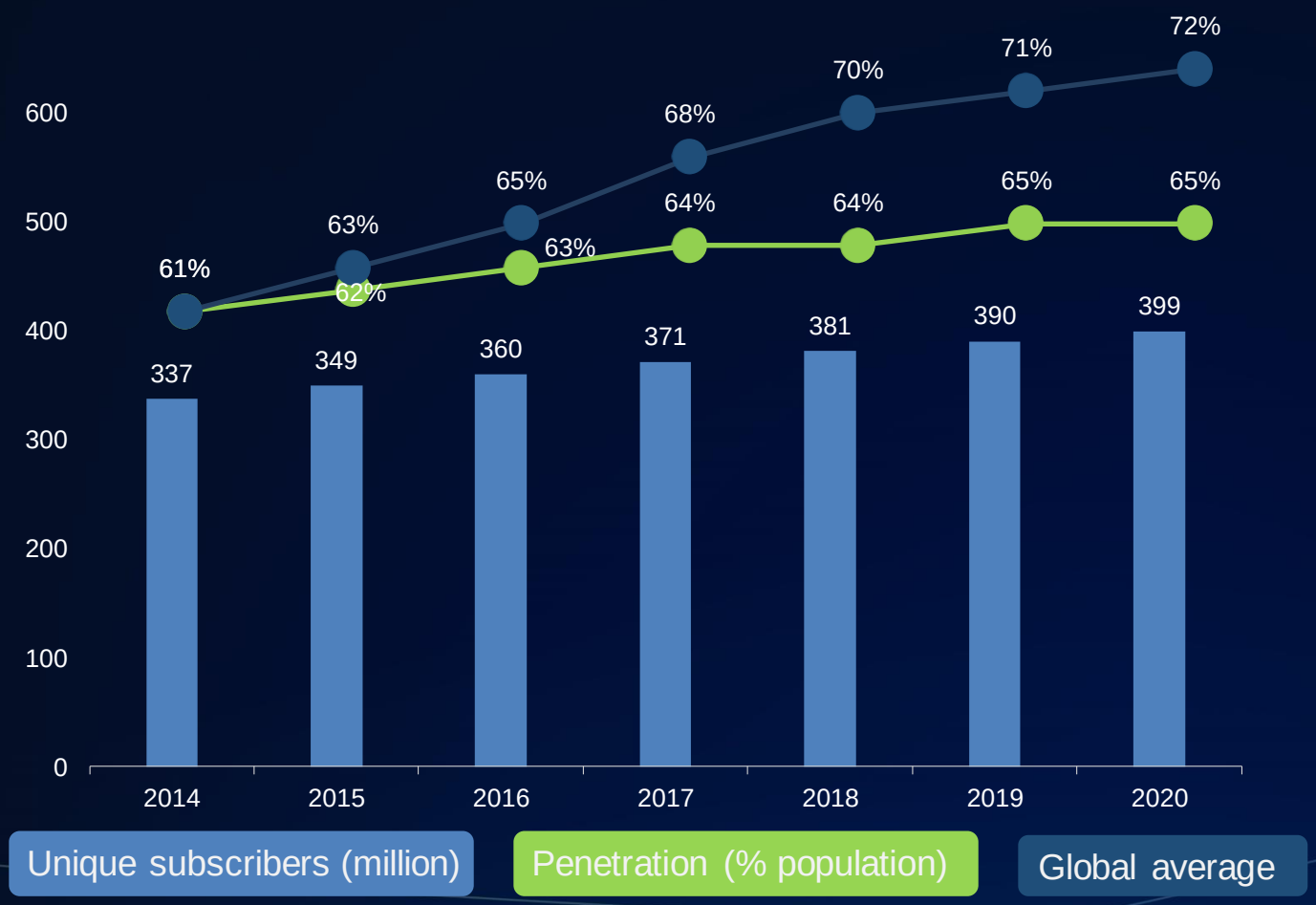
12%
Smart Robot Homes

FWA Fiber like BB enables **4K IPTV**

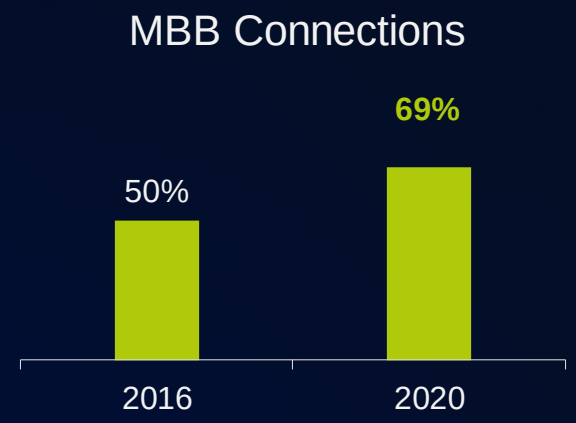
** By 2025 Source: Huawei GIV*

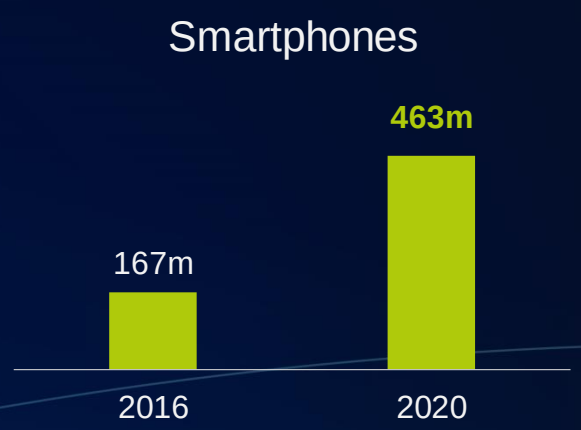
MBB is Big Potential Market in MENA

Unique Subscribers in MENA



MBB Acceleration in MENA



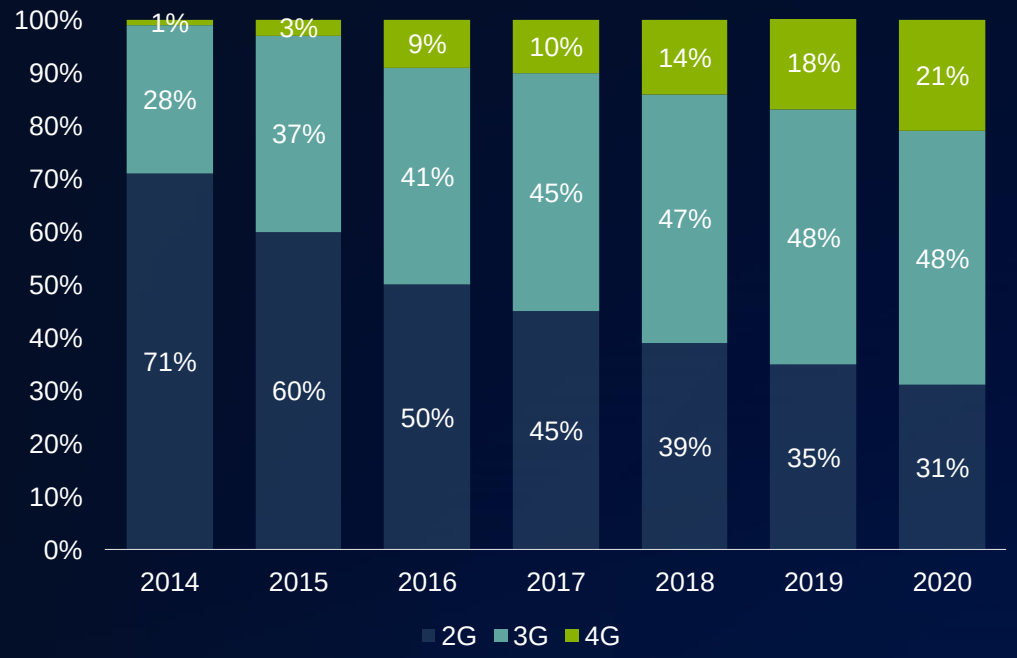


Data from GSMA, 2017

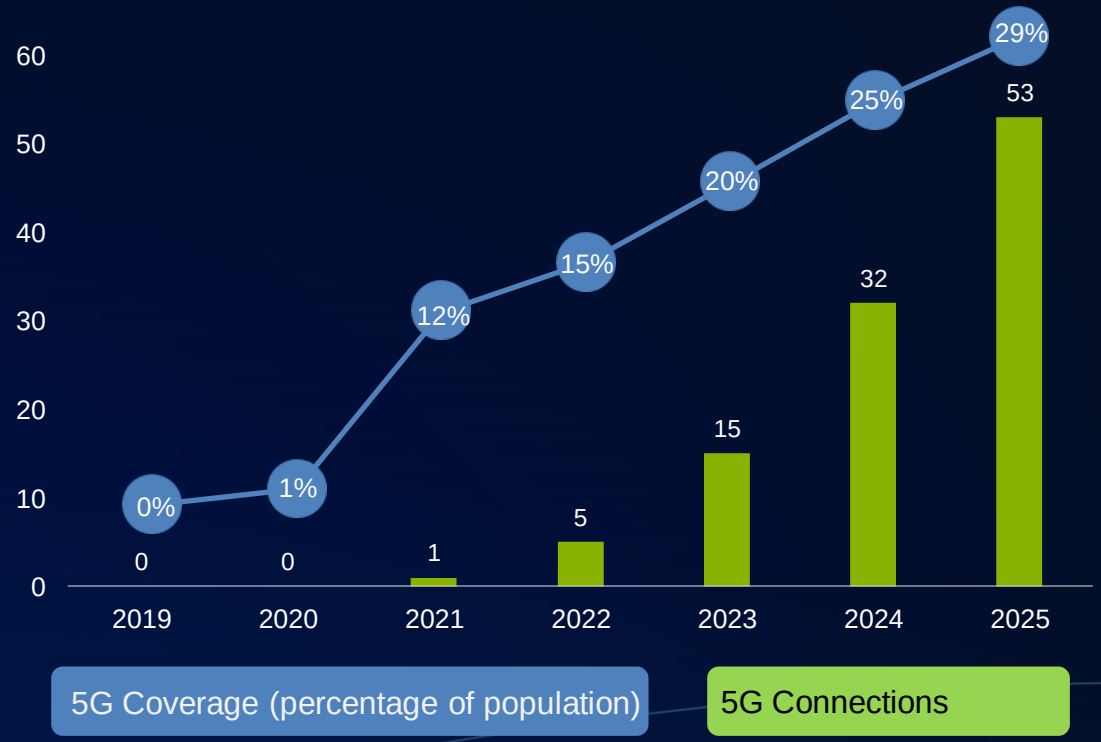
5G Is Predicted to Cover ~30% Pop. Of MENA by 2025

Technology migration in MENA

Percentage of connections

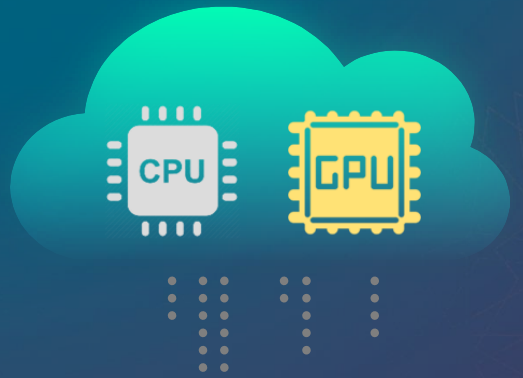


5G take-up in MENA



Data from GSMA, 2017

5G Brings Cloud PC/Gaming into Reality



- No console required
- Streaming on any screen
- Cross-platform compatible

Cloud PC/Gaming

Rendering (computing) on cloud

Windows 10

2 Core 4GB PC	4.5 USD/mon
4 Core 8GB PC	8.5 USD/mon
Cloud Disk	2.5 USD/100GB/mon

Enormous Storage & Computing Capability

Experience as native PC | **Everywhere** | **Low Latency** | **Ultra Broadband**

at Office

at Hotel

at Home

at School

5G - Based 8K VR Experience Joint Show

Huawei and China Mobile at 5th World Internet Conference

5th World Internet Conference 2018
Wu Zhen, China

Minimum of 100Mbps for an Enjoyable 8K VR Experience

5G era eMBB SERVICE CLOUD VR AND X

5G Race is Heating Up in the Developed World

2018 Pre-commercial
2019 Commercial
2020 Large-Scale

CMCC / CTC / CUC

2018 FWA
2019 eMBB

Verizon / AT&T / T-Mobile

2018 Pre-commercial
2019 Commercial

ET / STC / Ooredoo

2020 Commercial

DOCOMO / SBM / KDDI

2018 Pre-commercial
2019Q1 Commercial

KT / SKT / LGU+

Ministry of Economic Development

16th March, 2017 released tender

5 Cities 5G

Milan
Prato & L'Aquila
Bari & Matera

Free cost 3.7GHz for 4 years trial
Cooperate with university, institute and research
Focus on 5G **vertical industry** service development

One Country One 5G City

2020

Industry 4.0 & Gigabit Society

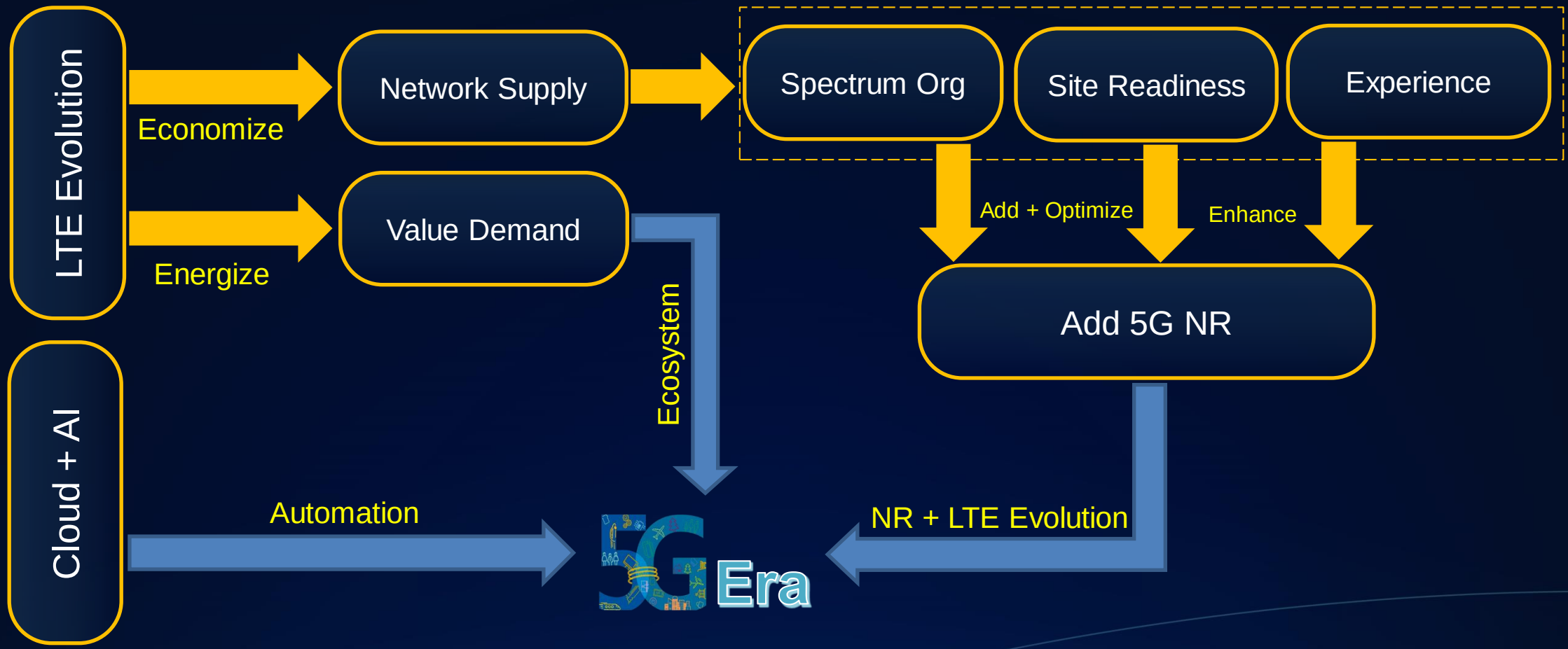
2025

MINISTRY OF ENERGY, TOURISM AND DIGITAL AGENDA

5G public consultation in 2017

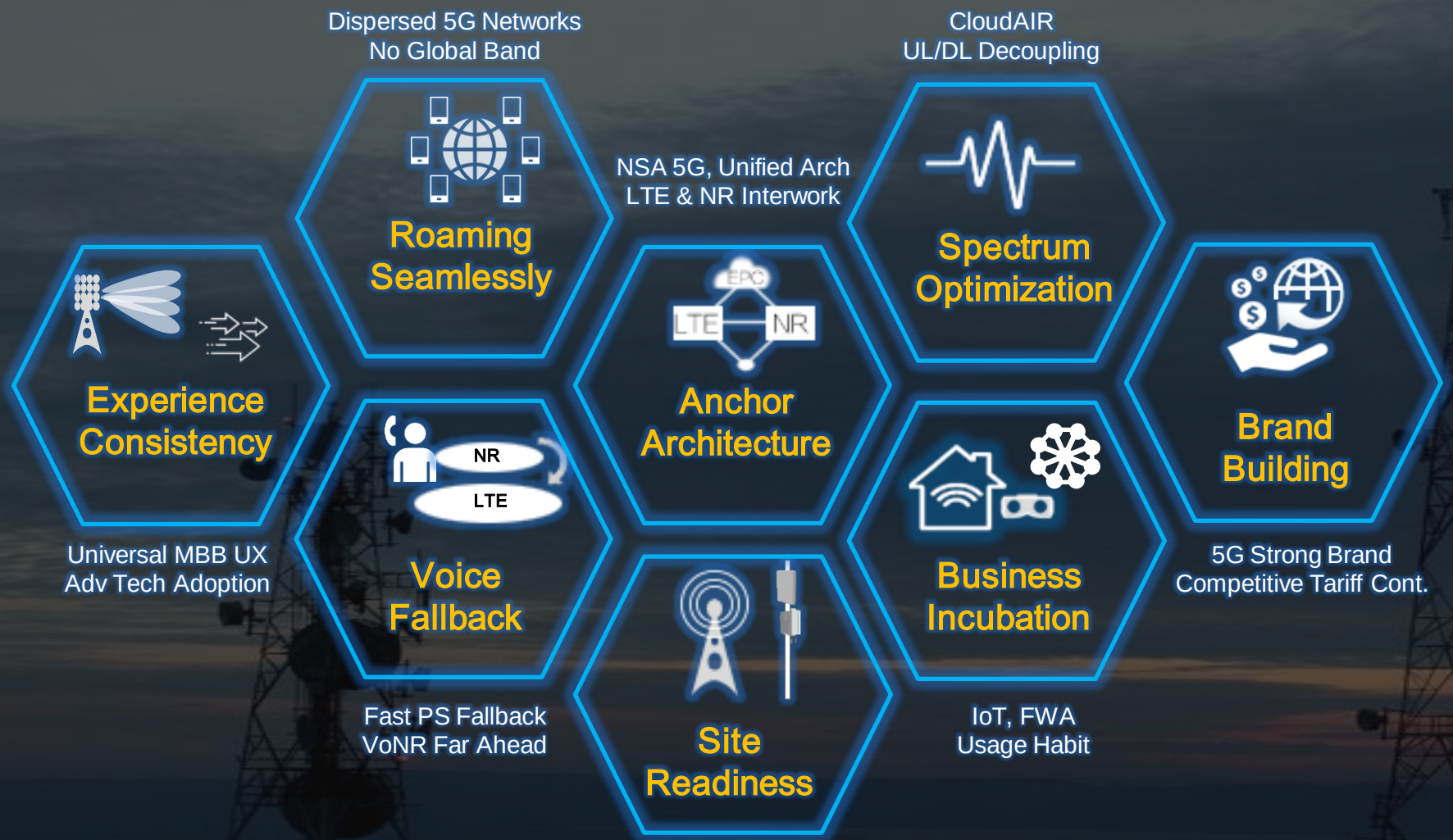
5G National Plan 2018-2020
Spectrum released in 2018
5G commercial launch in 2020

5G Commercialization Strategy



Inspiring MENA Future

Every LTE Investment is a 5G Investment — 8 Reasons



LTE Evolution Fuels 5G Growth

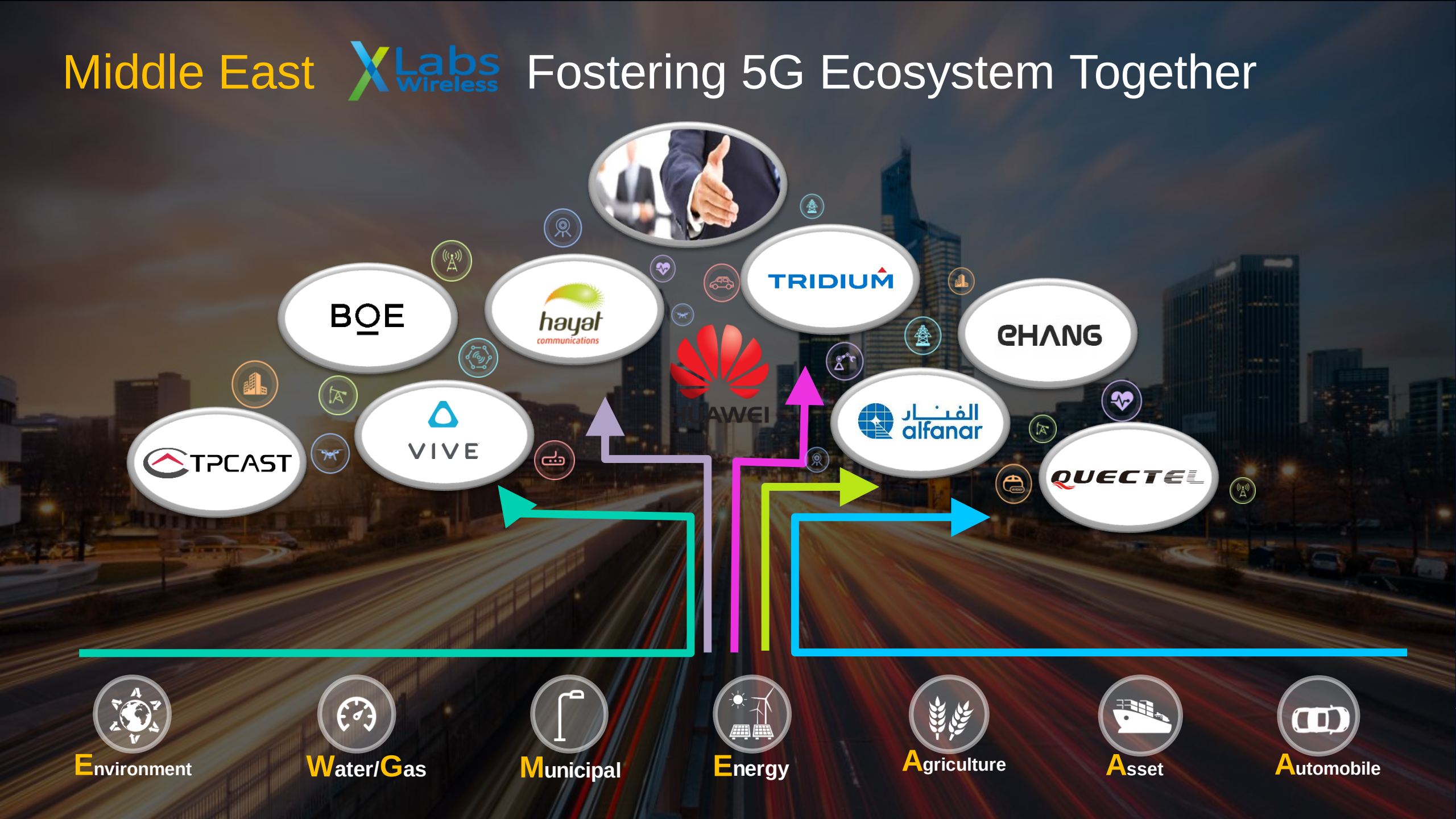
Realizing More Sites: Wider, Deeper & Smoother Evolution to 5G

Indoor Coverage | Site Densification | Rural Coverage

Smooth Evolution

- Maximize Site Capability
- Accelerate Site Acquisition
- Optimize TCO
- Shorten ROI

Middle East XLabs wireless Fostering 5G Ecosystem Together



Openness & Collaboration

Bridging Communities & Embracing a Fully Connected World

Together 5G Life will be a Reality

Digital Transportation

Digital Sky

Digital Crowded Area

Digital Community

Digital Manufacturing