The Telecommunications Regulatory Conference 2014

Next Generation Fixed Broadband Networks and Services: Challenges and Opportunities

Developments in Oman, Bahrain, KSA, Kuwait and UAE

Stewart White
Managing Director & CEO, Akhet Consulting
Doha, March 2014

Policy and Regulatory issues for consideration

No one-size-fits-all

Coverage (100%? 90%)

Speeds (Fast, Superfast)

Take-up (demand side stimuli)

NGN deployments may require Government intervention:

- key tool for productivity and growth
- revenues not necessarily comparable to high capital costs and deployment time

Government initiatives may include:

- tax incentives and loans, co-investment, subsidies, grants'
- enabling, stable and clear policy/regulatory frameworks

Market characteristics decide level of intervention:

- market structure
- level of economic prosperity
- population to land mass
- plus technology neutrality
- fixed vs mobile/MSS
- technology mix

No one-size-fits-all in terms of each of the markets and some of these markets are moving at different speeds

Broadband Networks in GCC

Economies	Fixed broadband market development stage	Mobile broadband market development stage	Competition in international submarine cable connectivity	SkypeOut rate (USc/ min)
Algeria	Emerging	n.a.	No	17.5
Iran, Islamic Rep.	Emerging	n.a.	No	13.4
Iraq	Emerging	n.a.	No	39
Djibouti	Emerging	Emerging	No	39
Libya	Emerging	Emerging	No	30.2
Yemen, Rep.	Emerging	Emerging	No	21
Syrian Arab Republic	Emerging	Emerging	No	39
Tunisia	Emerging	Emerging	No	39.5
Morocco	Emerging	Emerging	Yes	25.9
West Bank and Gaza	Developing	n.a.	No	25
Egypt, Arab Rep.	Emerging	Developing	No	15.2
Oman	Developing	Developing	Yes	18.9
Kuwait	Developing	Developing	No	13.2
Lebanon	Developing	Developing	No	12.6
Jordan	Developing	Developing	Yes	20.8
Saudi Arabia	Developing	Developing	Yes	18.8
Qatar	Developing	Developing	No	39
United Arab Emirates	Developing	Developing	No	27.5
Bahrain	Mature	Mature	Yes	25.5
MENA, Simple average	n.a.	n.a.	n.a.	25.3
Competitive countries	n.a.	n.a.	n.a.	21.9
Other countries	n.a.	n.a.	n.a.	26.5

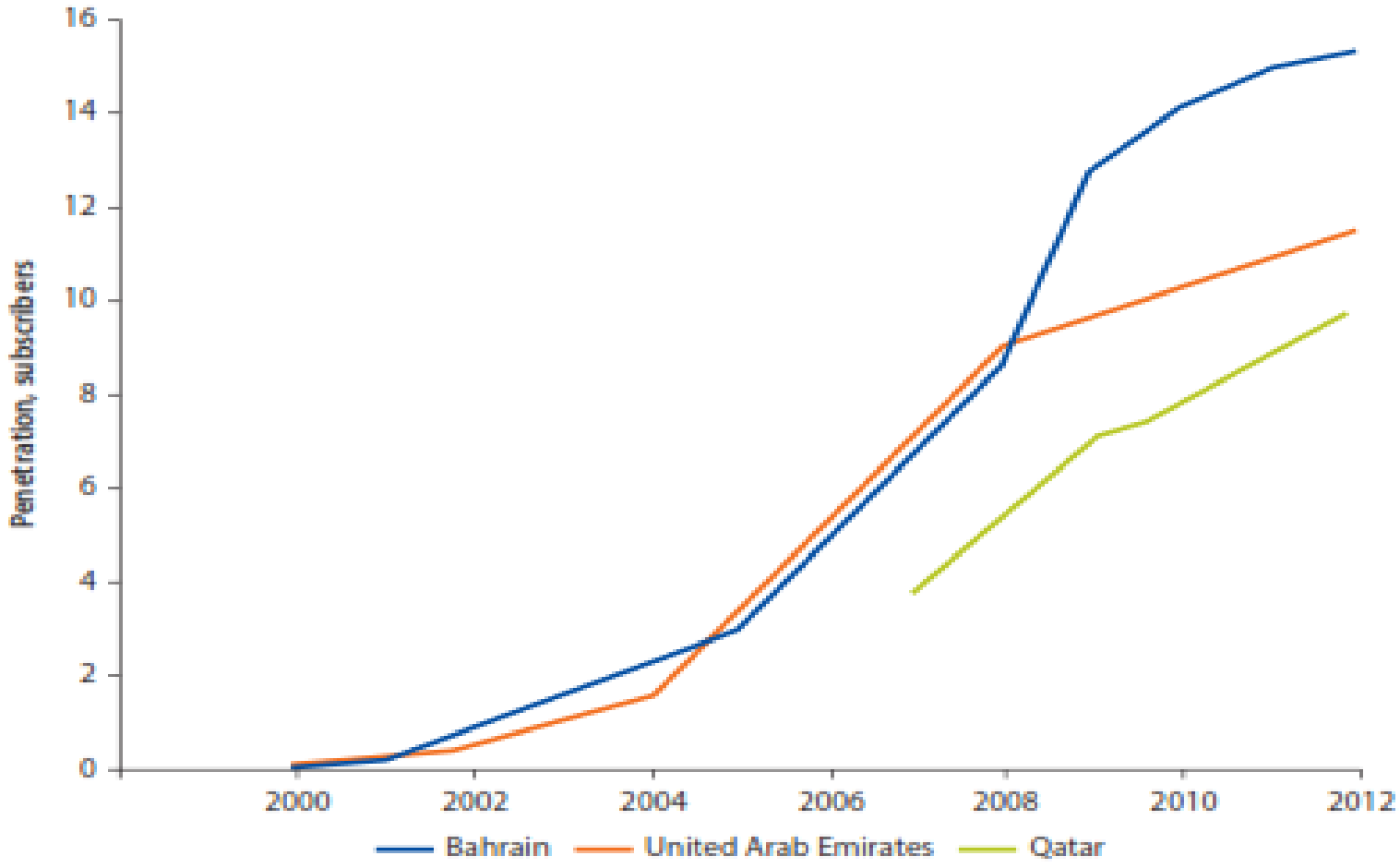
Source: Skype 2012. www.Skype.com/en/rates

Note: USc/min = US cents per minute; MENA = Middle East and North Africa; n.a. = not applicable.

Source: "Broadband Networks in MENA: Accelerating High-Speed Internet Access", The World Bank

Key: GCC

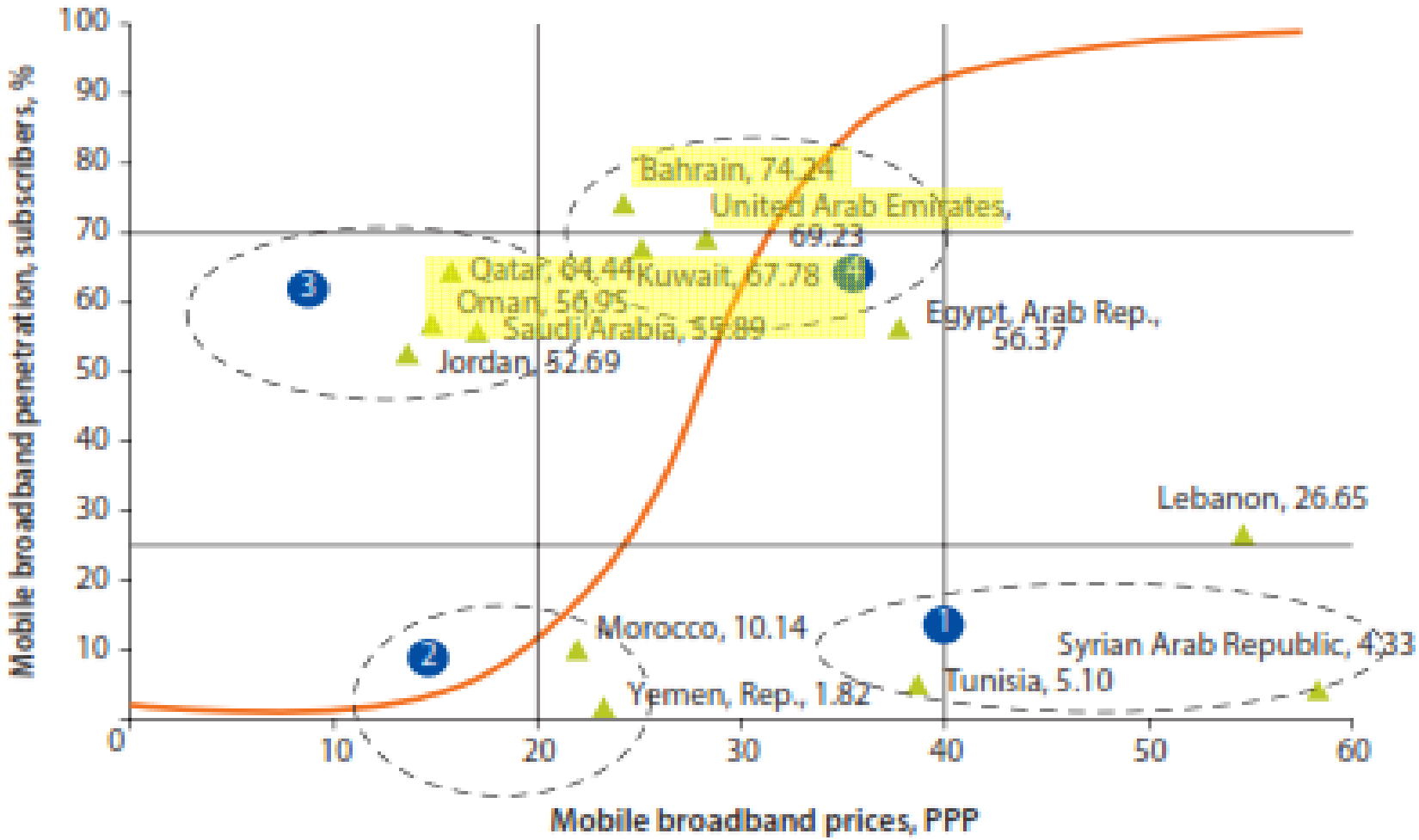
Fixed BB Market Development in GCC



Sources: ITU (2000–2006); TeleGeography's GlobalComms Database (http://www.telegeography.com, data retrieved August 2013) (2007–2012). Information for Qatar is available only from 2007.

Source: "Broadband Networks in MENA: Accelerating High-Speed Internet Access", The World Bank

Mobile BB Penetration and Access Prices



Source: Mobile broadband penetration subscribers: TeleGeography's GlobalComms Database (http://www.telegeography.com, data retrieved March–May 2013).

Source: "Broadband Networks in MENA: Accelerating High-Speed Internet Access", The World Bank

Key: GCC

Oman – New NBN Co

Minister of Transport and Communications announced in November 2013 that Oman's National Broadband Strategy includes 3 main axes:

- to improve supply of broadband in the short term
  - helps to increase competition
  - reduces cost
- stimulate use of broadband
  - review of National Strategy for Digital Oman Society and E-government
- develop Infrastructure of broadband
  - five main steps to account capabilities of existing networks, provision of broadband at high speeds

Government has established Oman Broadband Network company

OBC mandate came out of the National Broadband Strategy

National Strategy Objectives key objectives

1. Every resident in Oman has access to high-speed broadband at affordable prices
2. All businesses in Oman have access to world class broadband services which make them globally competitive
3. There is competitive supply of broadband wherever possible

THE APPROACH TO ACHIEVING THEM

Short term measures

Implement short-term measures to improve take-up of basic broadband (less than 10 Mb/s)

Government involvement

Consider government investment to ensure affordable broadband – especially in rural areas

Investment principles

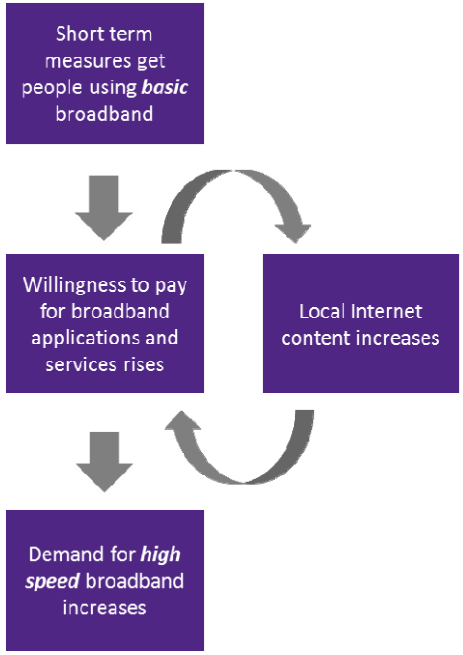
Be ambitious, provided prospects for social and economic benefits are greater than the costs

Ensure any government investment:

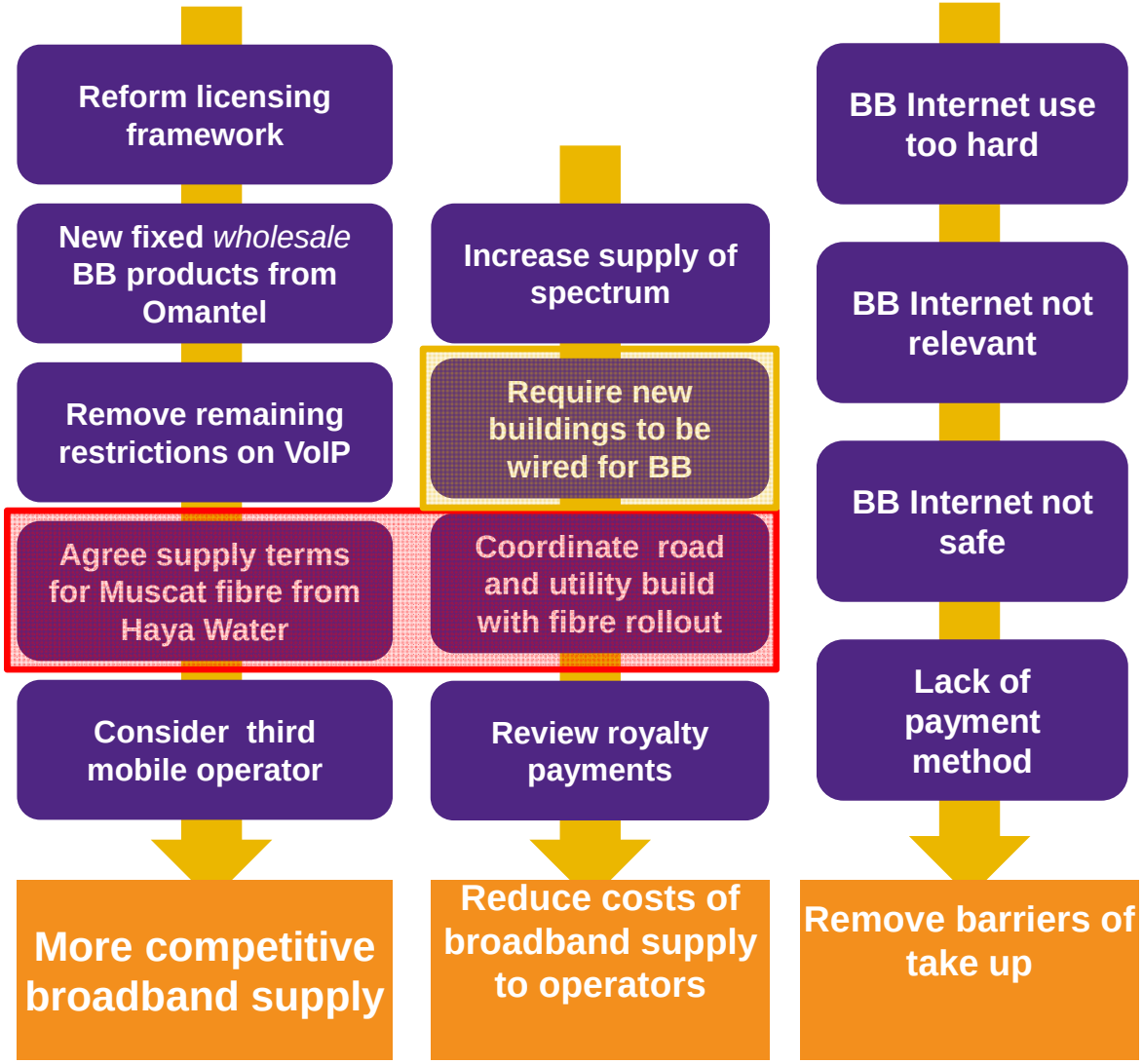
Supplements rather than duplicates investment by operators

Distorts competition to the minimum extent possible

Focuses on passive infrastructure rather than active services



National Strategy recommendations – short term measures



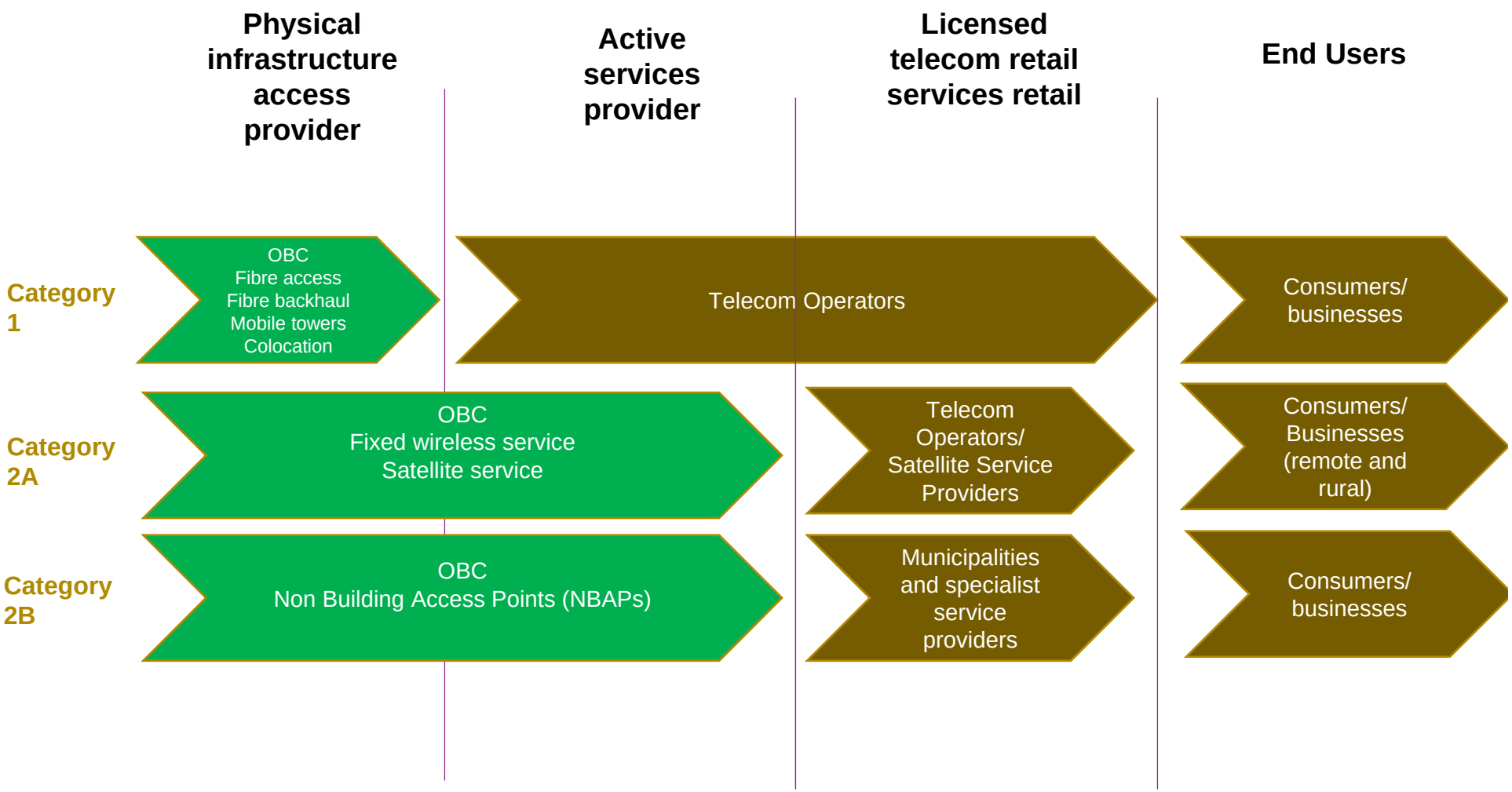
Notes:

OBC proposed role within the recommended short time measures has been mapped to three activities:

1. Agree supply terms for Muscat fibre deployed by Haya Water
2. Coordinate with road and utility build with OBC fibre rollout
3. Require new buildings to be wired for BB (this should be done in collaboration with ministry of civil works and coordinated with Omantel/Nawras. OBC could also implement the IBC wiring in new greenfield projects on behalf of the developer as extension to its access network role)

The other measures are outside the proposed scope of OBC but have impact on the OBC business and especially on the commercial success. Therefore we recommend that OBC is considered as a stakeholder for the other activities and being informed on the progress in execution so we could track the progress and the impact to OBC's business.

OBC: Proposed positioning in the value chain



3+1 infrastructure deployment segments

Muscat Broadband

Segment definition:
Muscat municipality area

Technology used
- Fibre: GPON and P2P

Key services
- Dark fibre (GPON&P2P)
- Colocation facilities
- Non Building Access Points (NBAP)

Deployment approach
- Haya water assets, continue deployment with wastewater
- Engage with other utilities
- Homes connect/ CO alignment with Omantel & Nawras
- Co-build with property developers in new areas

Other Urban Broadband

Segment definition:
Cities with population > 2000

Technology used
- Fibre: GPON and P2P
- LTE Fixed wireless

Key services
- Dark fibre (GPON&P2P)
- Mobile backhaul passive
- Colocation facilities
- Mobile backhaul

Deployment approach
- Engage with utilities
- Areas targeted aligned with demand
- Co-build with property developers in new areas
- Mainly opportunistic approach

Rural Broadband

Segment definition:
Population size < 2000

Technology used
- Limited Fibre – mainly P2P
- LTE Fixed Wireless
- Satellite

Key services
- Dark fibre (GPON&P2P)
- Active Ethernet ports
- Satellite broadband
- Fixed wireless BB
- Mobile backhaul passive
- Colocation facilities
- Towers for sharing

Deployment approach
- Subsidised satellite
- Fixed wireless colocation with operators – opportunistic approach
- Fibre to Enterprises on demand

Infrastructure enablement

Segment definition:
All infrastructure space and colocation support services

Key services
- Towers space
- Data Centres rack space
- Central office space
- Backhaul ducts

Bahrain (1)

Policy	Implementation
▪ 2010 Policy for NBN – action?	▪ Open market
▪ 2012 Third National Telecommunications Plan	▪ 1 national fixed line network
▪ Bahrain 2030 Vision	▪ 2 national fixed wireless "Wi-max" licensees
▪ Although not binding, there is also a draft position paper on new developments 27 May 2009, which extends Batelco's dominance even into these areas in terms of remedies and advocates an open access model at all levels.	▪ 3 mobile operators
	▪ A number of ISPs without network
▪ Regulator also understood to be contemplating defining a retail mass market for broadband services which includes some mobile.	▪ WDSL (resale product over both copper and fibre where available).
	▪ Bitstream is not available over fibre.
▪ Copper based access is shrinking fast in this market	▪ Duct rental also available as well wholesale leased lines - both regulated at FRND terms.

Bahrain (2)

Policy	Implementation
"Government has concluded that Bahrain will be severely disadvantaged if it too is not provided with a secure ultra fast broadband fibre optic infrastructure." "Normal market dynamics and mechanisms may not yield the desired infrastructure and services in a minority of cases. Government recognises that it may be ultimately appropriate, when the extent of organic provision has been assessed, to establish formal enabling mechanisms, that include obligations and/or incentives applied to Licensees." http://www.tra.bh/EN/pdf/ThirdNationalTelecommunicationsPlanEnglish.pdf	▪ Rely upon existing licensees ▪ 2010 NBN Policy refers to using the Electricity and Water Authority's ("EWA") fiber network ▪ Batelco self funded NGN backbone and was the first in the region if not the world to have a full NBN core. Since then fibre roll out in the access layer has been achieved for businesses, but it is only incremental for residential customers (in fill, new compounds and new developments). ▪ Focus on traditional wholesale models, bitstream and LLU on copper access networks ▪ Developments have deployed fibre using different models: fibre networks independent of Batelco and operated separately (eg Amwaj and Durrat developments), fibre networks funded by developer and deployed by Batelco (Reef Island), ducts owned by developer and operators allowed to occupy and/or rent this and roll out fibre at their cost (Riffa Views and Bahrain Bay). ▪ Batelco press release last month about talks commencing between Batelco and Government representatives (Minister of State for Communications Affairs) about future NBN provisioning.

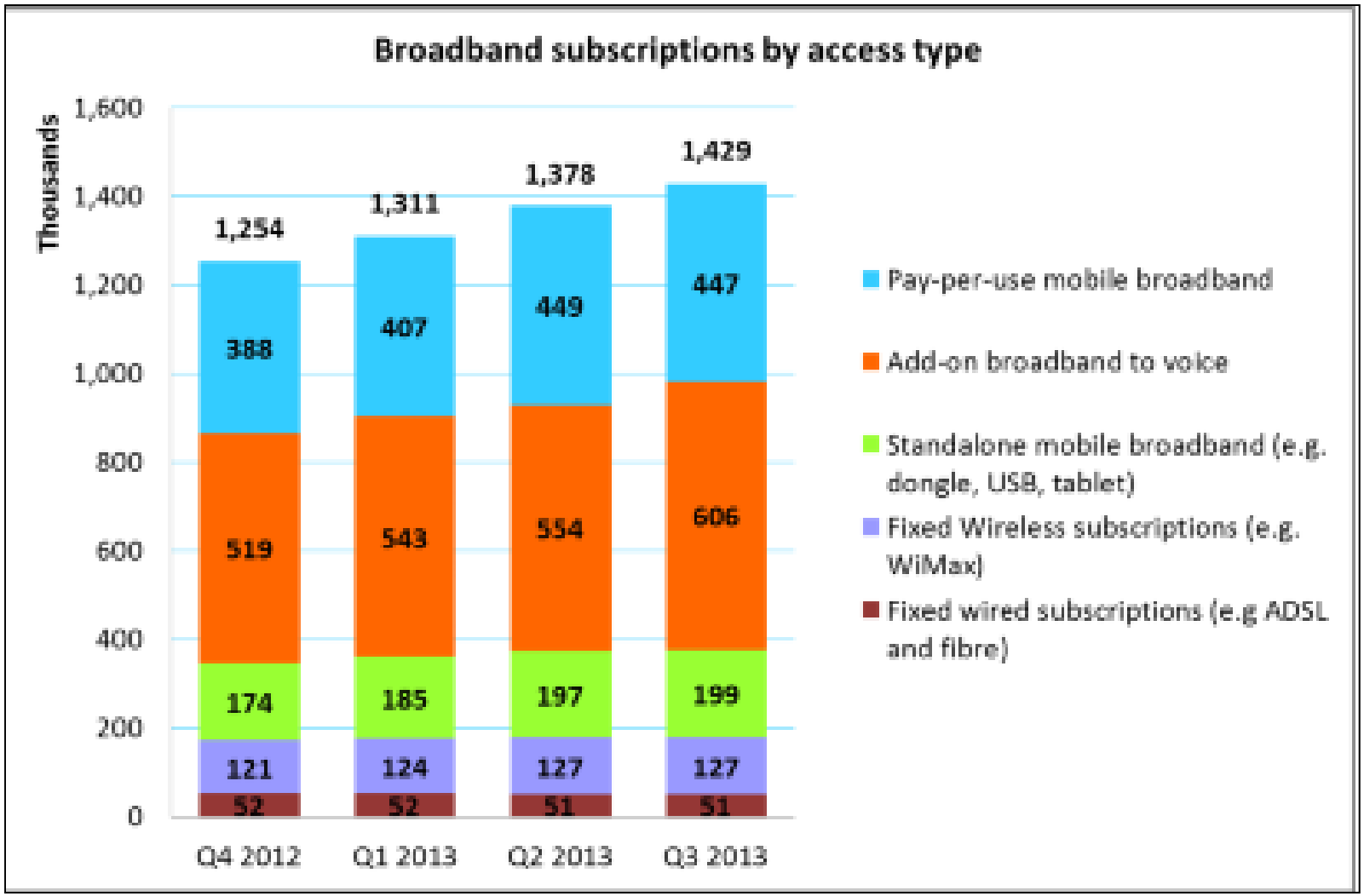
Broadband in Bahrain

Broadband subscriptions		Q4 2012	Q1 2013	Q2 2013	Q3 2013	Growth Q2- Q3 2013
Fixed broadband	Fixed wired subscribers (e.g. ADSL and fiber)	52,356	51,948	51,485	51,350	-0.3%
	Fixed Wireless subscribers (e.g. WiMax)	120,820	123,783	127,269	127,066	-0.2%
Mobile broadband	(Pay-per-use) mobile-broadband	388,447	407,297	448,883	446,642	-0.5%
	Standalone mobile-broadband (e.g. dongle, USB, tablet)	173,712	184,749	196,903	198,739	0.9%
	Add-on mobile-broadband to voice	518,908	542,788	553,605	605,511	9.4%
	Total	**1,254,243**	**1,310,565**	**1,378,145**	**1,429,308**	**3.7%**

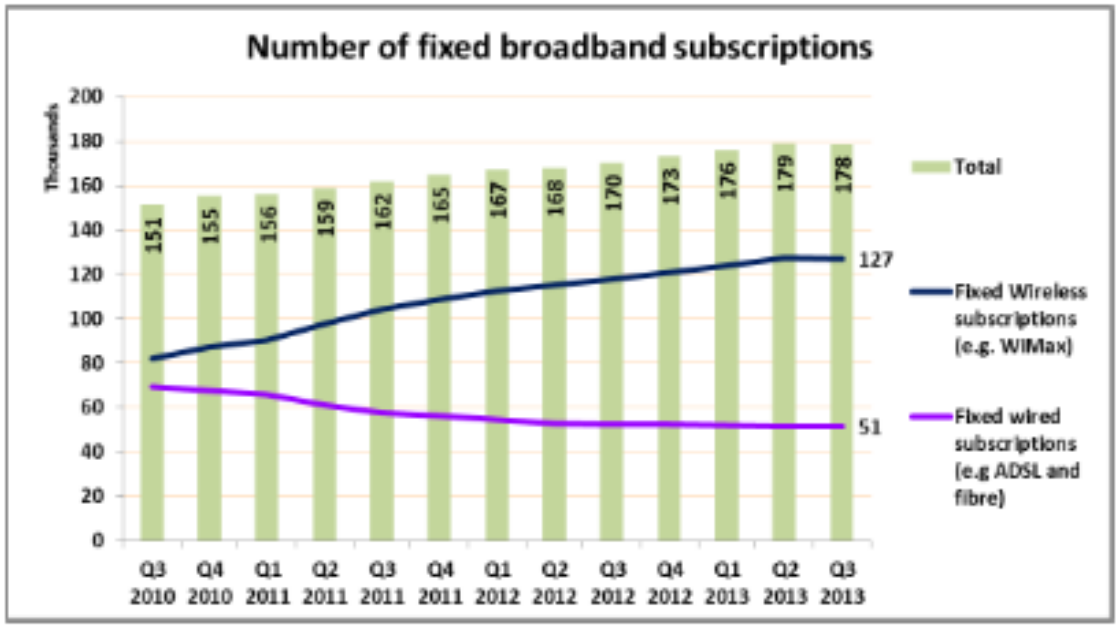
Source: TRA analysis based on operators data.

- At the end of Q3 2013, 1.43 million broadband subscribers
- Broadband subscription growth has been driven by growth in the number of mobile broadband subscriptions.
- Mobile broadband subscribers represented 87% of total broadband subscribers at end of Q3 2013

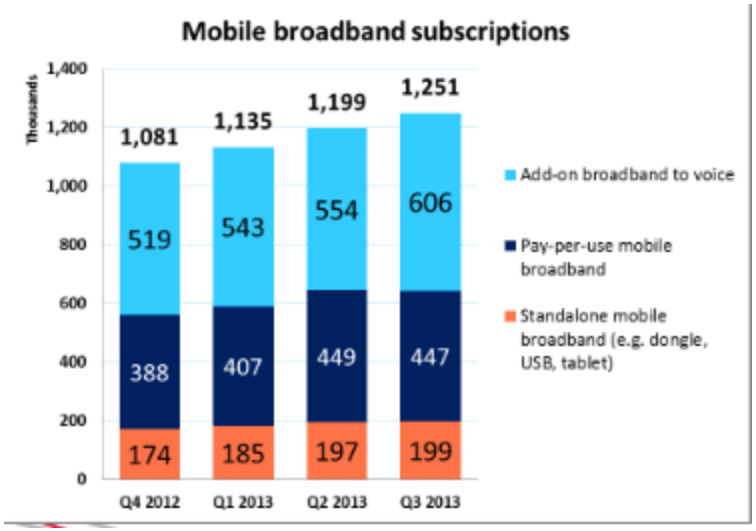
Broadband in Bahrain



Broadband in Bahrain



Source: TRA analysis based on operators data.



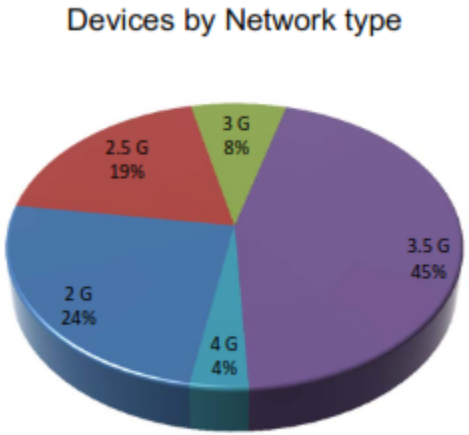
- At the end of Q3 2013, 178,000 fixed broadband subscriptions.
- At the end of Q3 2013, fixed wireless broadband subscribers represented 71% of fixed broadband subscribers
- Add-on broadband to voice and pay-per-use mobile broadband represent 84% of mobile broadband subscriptions at the end of Q3 2013.

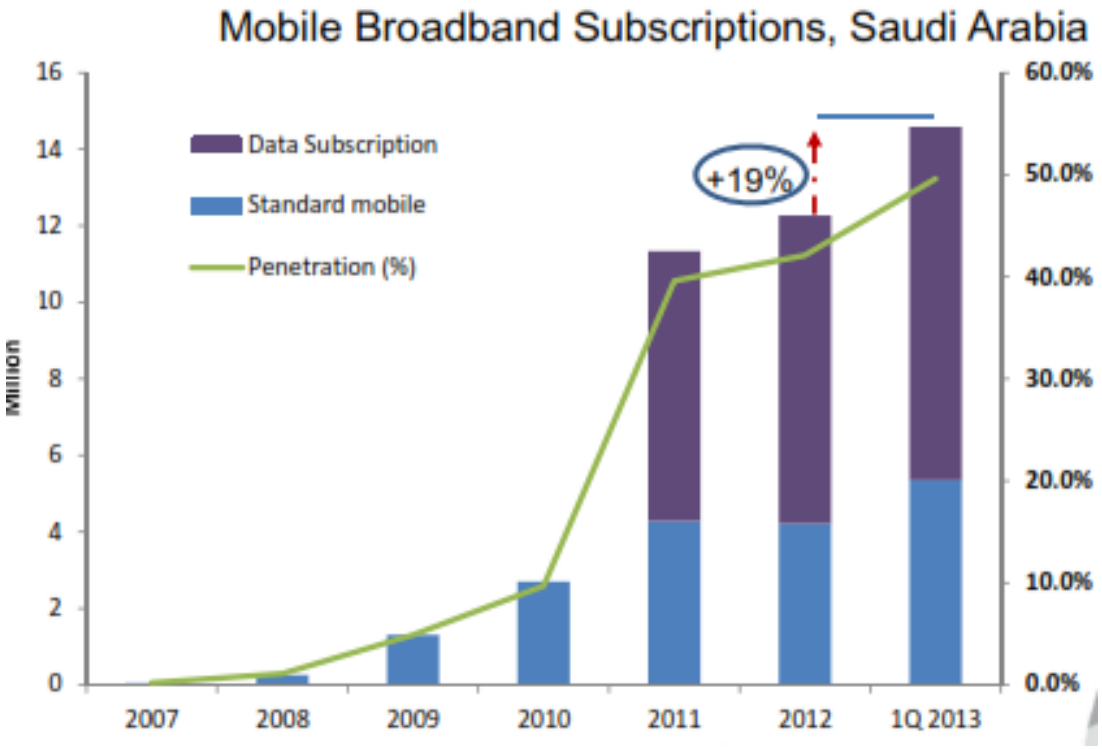
Kingdom of Saudi Arabia

Policy	Implementation
▪ Universal Access and Universal Service Policy 2006 ▪ UAUS Fund 2007 ▪ Strategy plan finalised in 2010 ▪ Saudi Arabia Economic Vision Saudi Arabia 2025	▪ 3 mobile operators ▪ STC, Mobily, Zain ▪ 2 fixed operators ▪ STC, Atheeb ("Go") ▪ A number of ISPs without network
Objectives. To Achieve: ▪ Universal access to voice services within a period of no more than 3 years ▪ Universal service for voice services within a period of no more than 5 years ▪ Universal access to internet services within a period of no more than 5 years ▪ Universal service for internet services within a period of no more than 7 years http://www.citc.gov.sa/English/RulesandSystems/UniversalServicePolicy/Documents/TheUniversalAccessandUniversalServicePolicy.pdf	▪ Existing Licensees awarded USF concessions in specific regions based upon a bidding process ▪ Saudi the largest country of four, with most dispersed population ▪ Mix of fixed line and mobile broadband services

Kingdom of Saudi Arabia
Mobile Broadband Subscriptions

Q1, 2013 – strong growth reaching 19% over 2012. Changing device mix will continue to drive growth.

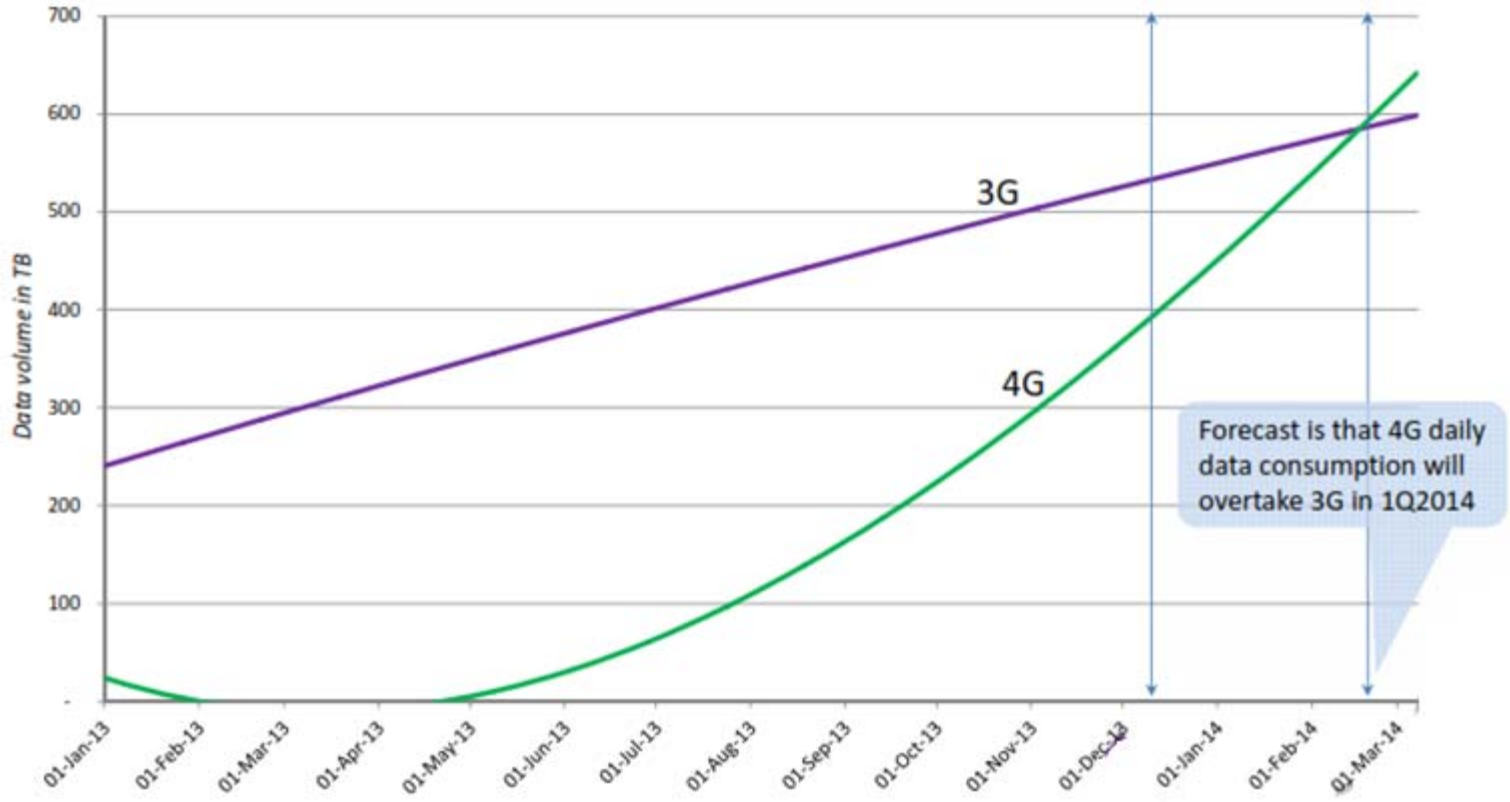




Source: CITC Quarterly ICT Indicators, September 2013 (Adapted from Sacha Dudler' presentation on 'Spectrum – mastering the digital roadmap at Telecommunications Law & Regulations in the Middle East Conference, Dec 2013)

Kingdom of Saudi Arabia
LTE Uptake Chart

Total daily LTE data volume is 40% of total mobile data volume, with LTE only 6% of total sessions

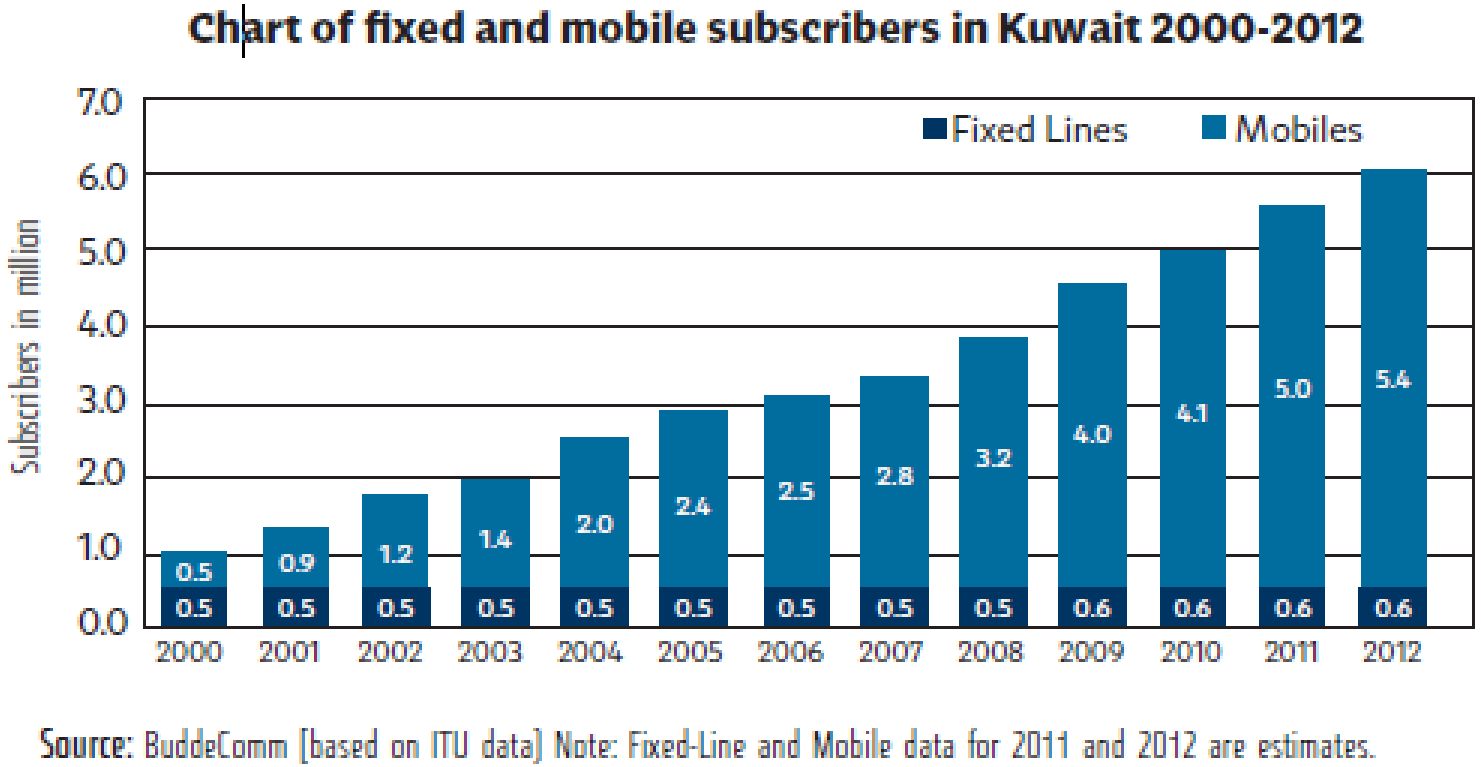


Source: STC Network Data, December 2013 (Adapted from Sacha Dudler' presentation on 'Spectrum – mastering the digital roadmap at Telecommunications Law & Regulations in the Middle East Conference, Dec 2013)

Kuwait

Policy	Implementation
No broadband policy per se	Fixed line services still operated by Ministry of Communications – PPP shelved – some GPON rollout. Competition in mobile broadband from three mobile operators and one WiMax Operator
No independent regulator (as yet)	Telecom Law adopted; needs to be approved over 2 phases of voting • Law approved in first phase • Draft Law is not public
	2005/2006 a number of statements regarding MOC contracting with Siemens and with Alcatel for fiber to the home roll out. No studies or statistics on deployment. However, mobile broadband has been relatively successful.

Kuwait fixed and mobile penetration



Source: BuddeComm [based on ITU data] Note: Fixed-Line and Mobile data for 2011 and 2012 are estimates.

CommsMEA, April 2012, p.41

United Arab Emirates

Policy	Implementation
No public broadband policy per se although policy anticipated	For broadband rollout - existing licensees, market drivers and *ex ante* regulation
Vision 2021 e-government vision 2011- 2013	Duopoly of fixed line and mobile service providers operators • Etisalat (incumbent) • du
"Outstanding information and communication infrastructure will network our businesses together and give them a leading edge as they transact and interact with the world. Individual citizens will also reap the benefits of efficient connectedness in their digital lives as they search online for knowledge and the fulfilment of intellectual curiosity." http://vision2021.ae/united-in-knowledge.php	Etisalat, national fixed footprint (apart from du areas), mix of fibre and copper du, geographically smaller but solely fibre fixed network
More recent examples: • Dubai Smart City • Mohammed Bin Rashid's Smart Learning Program	

Dubai Smart City

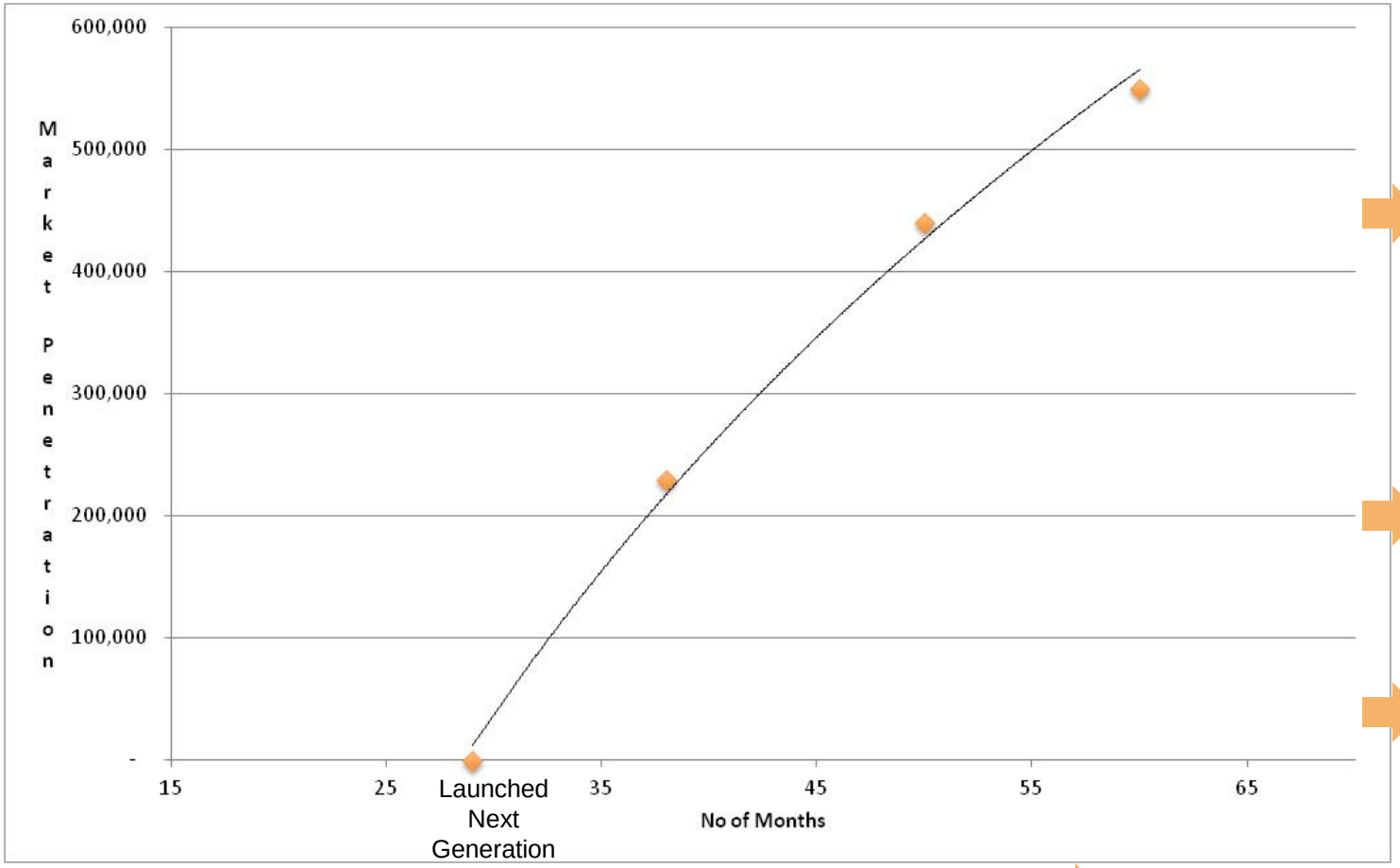
- October 2013 – Government announces concept, establishes Higher Committee for the implementation of the Dubai Smart City
- November 2013 - MOU with the Higher Committee, GSMA, du and Etisalat
- Vision includes:
  - Increase wifi penetration across the city
  - High speed internet in public places
  - Live services information across the city
  - Remote sensor devices across Dubai
  - Interaction with public departments including education, healthcare and security
  - mGovernment – utility bills, road tolls and traffic fines can be paid via smartphone

UAE - Etisalat's eLife Uptake

- Etisalat began FTTH rollout in January 2008
- Achieved 45% penetration by October 2009 (22 months)
- Launched its Next generation pay TV service, eLife, in May 2010 (29 months) when penetration exceeded 60%
- Within 2 years, 80% of Etisalat's broadband customers were taking its pay TV service, making it the dominant pay TV provider in UAE

UAE - Etisalat's eLife Uptake

UAE eLife Chart



Highest FTTH uptake in the world (70%+)

"Communicate the advantage not the technology"

Upgrade to Fibre and Next generation TV"

80% of Etisalat's broadband customers take a triple play bundle

UAE – du Telecoms

- du is FTTH from their launch in 2006
- active Ethernet and GPON with coverage of 98% of it's footprint (some few copper based projects)
- du offers triple play services with advanced IPTV and VoD with HD Channels and High Speed Internet up to 100MB
- Approx. 100,000 customers for triple play services

Legal Framework Readiness (WEF)

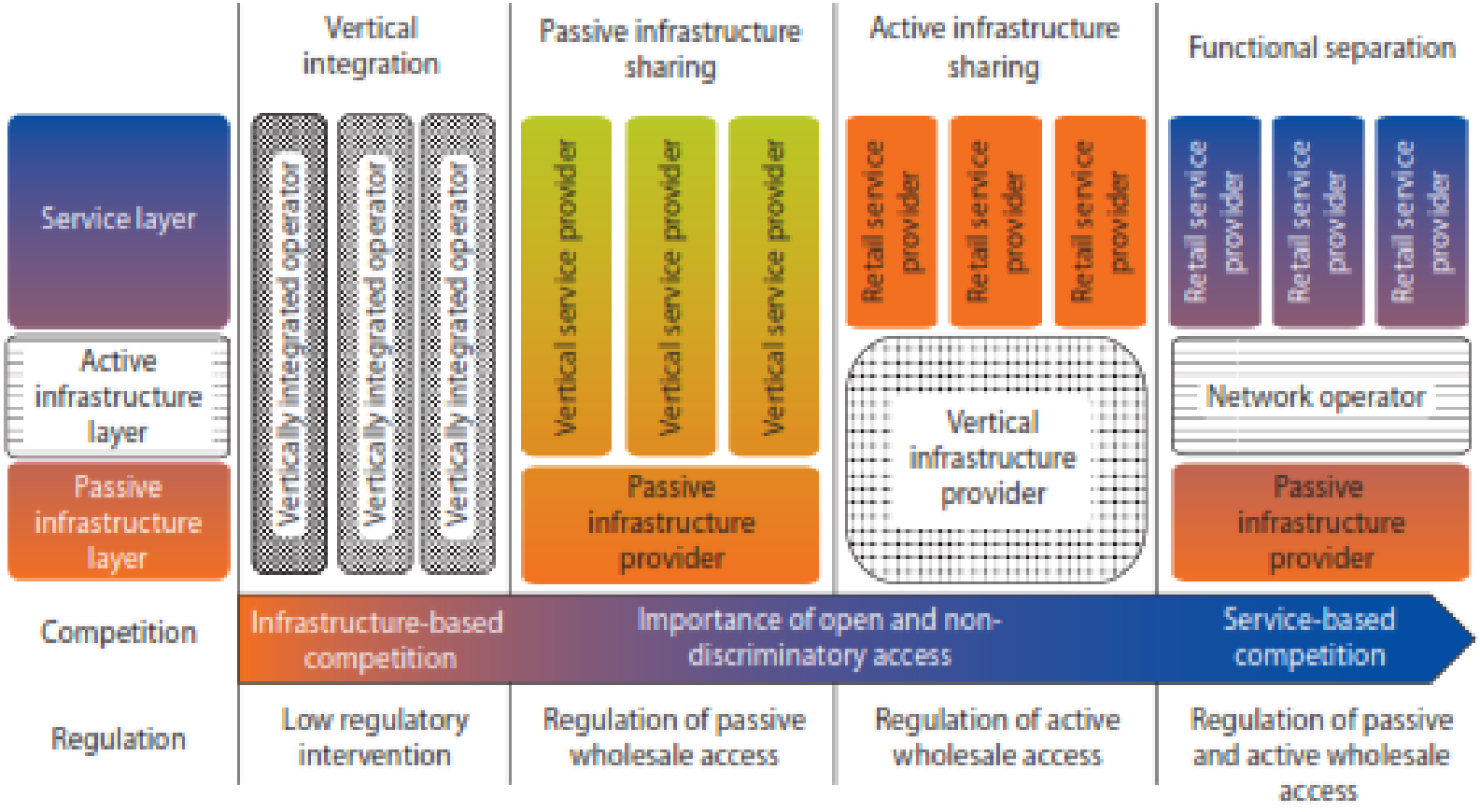
	Kuwait	Oman	KSA	Bahrain	UAE
Telecoms or ICT Law	Draft Law – to be approved in second phase of voting	Yes	Yes	Yes	Yes
Electronic Transactions Law	No	Yes	Yes	Yes	Yes
Cyber Crimes Law	No	No	No	In Draft	Yes
Data Protection Law	No	No	No	No	No, apart from DIFC
WEF GITR 2013 Ranks out of 144					
IP Protection	46	25	27	28	23
Laws relating to ICTs	128	36	25	32	9

Critical preconditions for NGN development, market competition and investment:

- Always need clear government policy and objectives
- A stable and predictable regulatory regime
- Investors able to achieve an appropriate return on investment
- Competition is fostered and enhanced
- Services universally available at affordable prices
- Traditional regulatory model is reformed to promote and encourage roll-out, open access and sustainable competition bringing consumer benefits

Back-up:

Overview of Possible New Models of Infrastructure Supply



Note: Issues pertaining to converged Next Generation Networks arise mostly at the service layer.

Source: Fixed broadband household penetration—TeleGeography's GlobalComms Database (http://www.telegeography.com, data retrieved August 2013).