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Fulfilling Broadband Potential

Global Trends and Regional Challenges

Emerging trends are accelerating the deployment of broadband networks

- 1 Policymakers positioning Broadband networks as essential national assets
- 2 Fixed and mobile telecom operators betting on Broadband as a key growth enabler
- 3 Increasing dialogue between stakeholders to address the industry tensions inhibiting broadband networks deployment
- 4 Governments investing to accelerate broadband deployment and contribute to economic recovery
- 5 New business models emerging to improve investment efficiency and accelerate service uptake

Policymakers are increasingly regarding Broadband networks as essential national assets

1

Policymakers on Broadband - Recent Announcements

"I believe that America should lead the world in broadband penetration"

Barack Obama, USA President

"Just announced biggest ever investment in Australian broadband – really exciting, infrastructure for the future"

Kevin Rudd, Australian PM

"Universal Broadband Access is crucial for Britain's economy "

Gordon Brown, UK PM

"Next generation broadband will be a critical enabler to build new capabilities and transform our industries"

Lee Hsien Loong, PM Singapore

"Universal Broadband should be a basic right"

Dr. Hessa Al-Jaber, SG ictQatar

"... key to the future is next generation broadband"

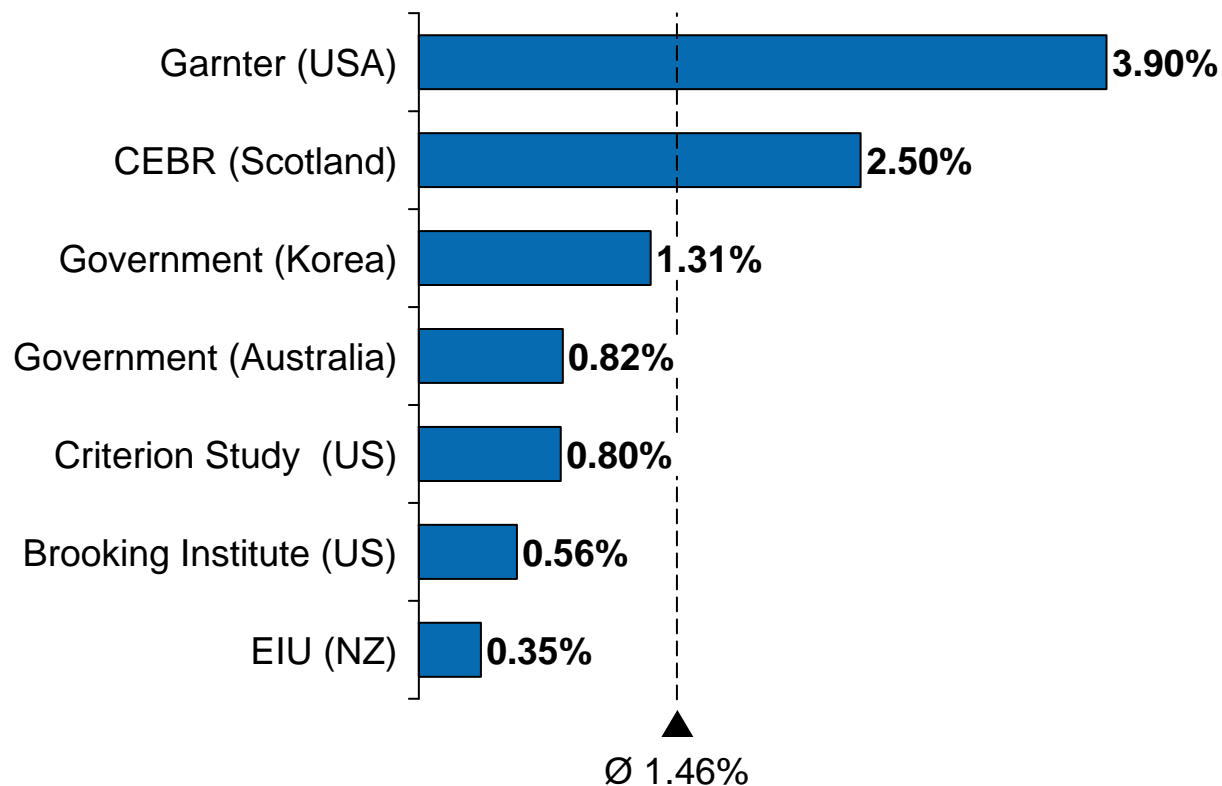
Mohamed Al-Ghanim, DG UAE TRA

Broadband is expected to yield significant socio-economic benefits

1

National Broadband Networks Deployment Impact on GDP

(% increases within five years)



Socio-Economic Benefits

- Innovation
- Labor productivity
- National competitiveness
- Resources utilization
- Social inclusion
- Lifestyle

Source: Company websites, Press clippings, Government sites, Booz & company analysis

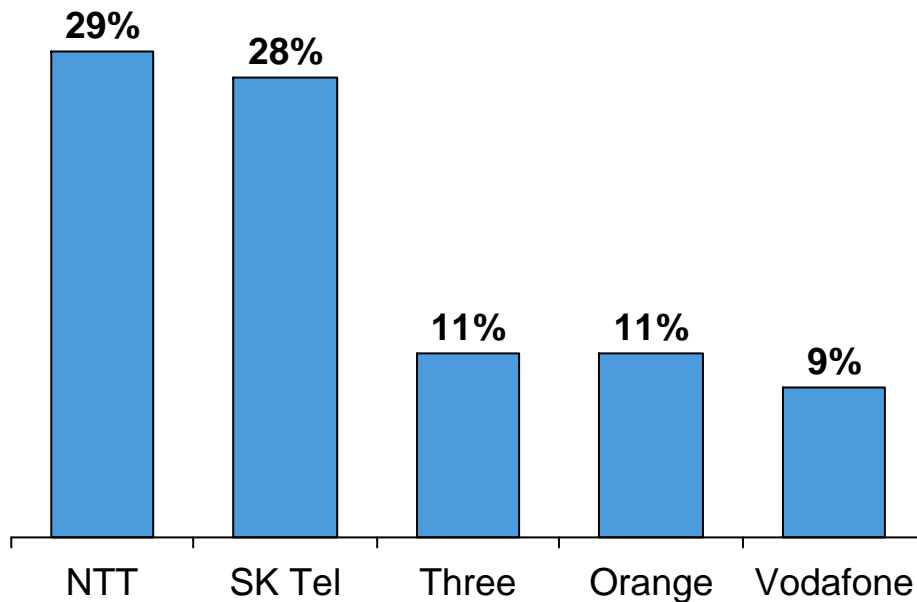
Operators are betting on Broadband as a key growth enabler

2

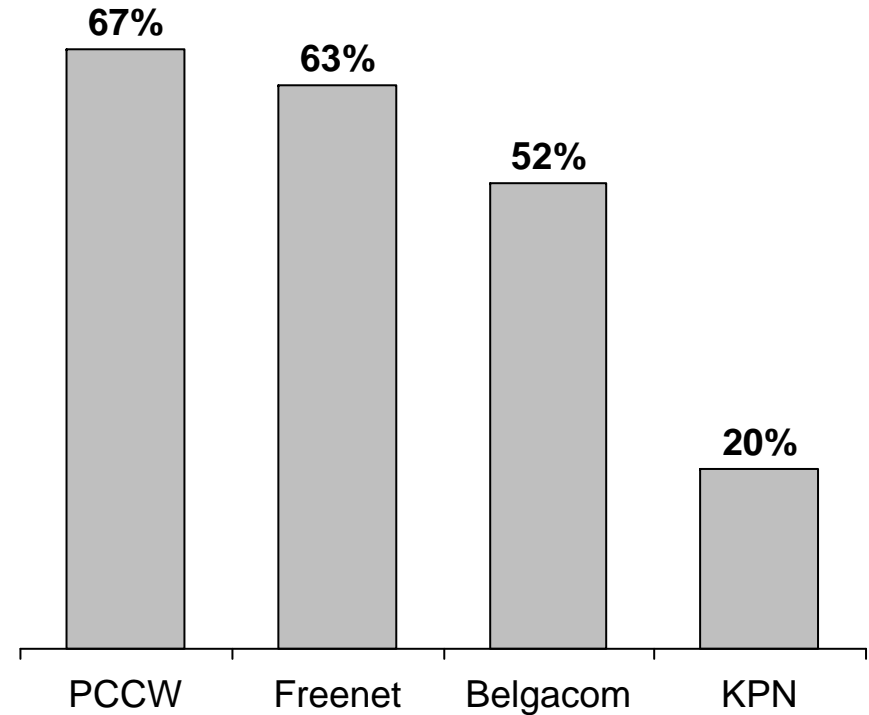
DIRECTIONAL

Impact of Broadband Uptake on Telcos (2008)

Revenue from Non-SMS Data



IPTV Revenue as % of Broadband

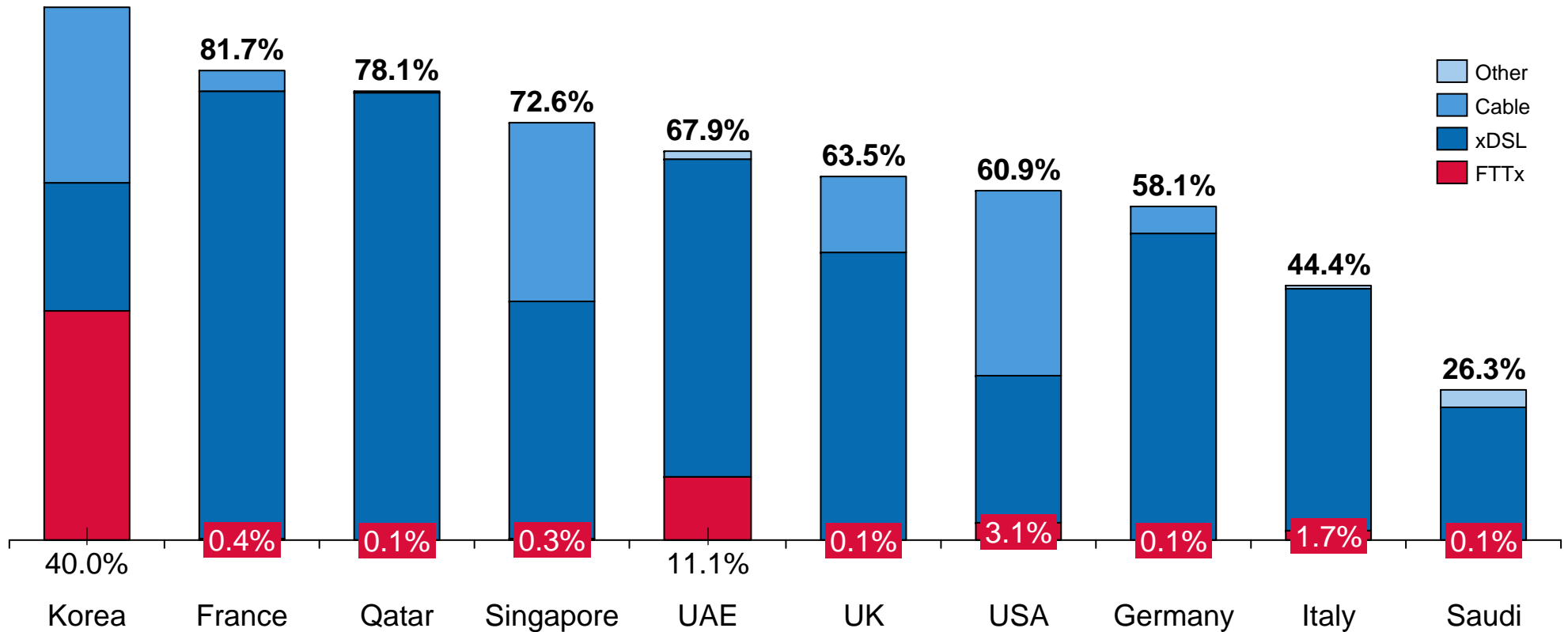


Source: Booz & Company analysis

Yet deployment of next generation broadband networks is stalling

3

Broadband Household Penetration (in Q4 2008)

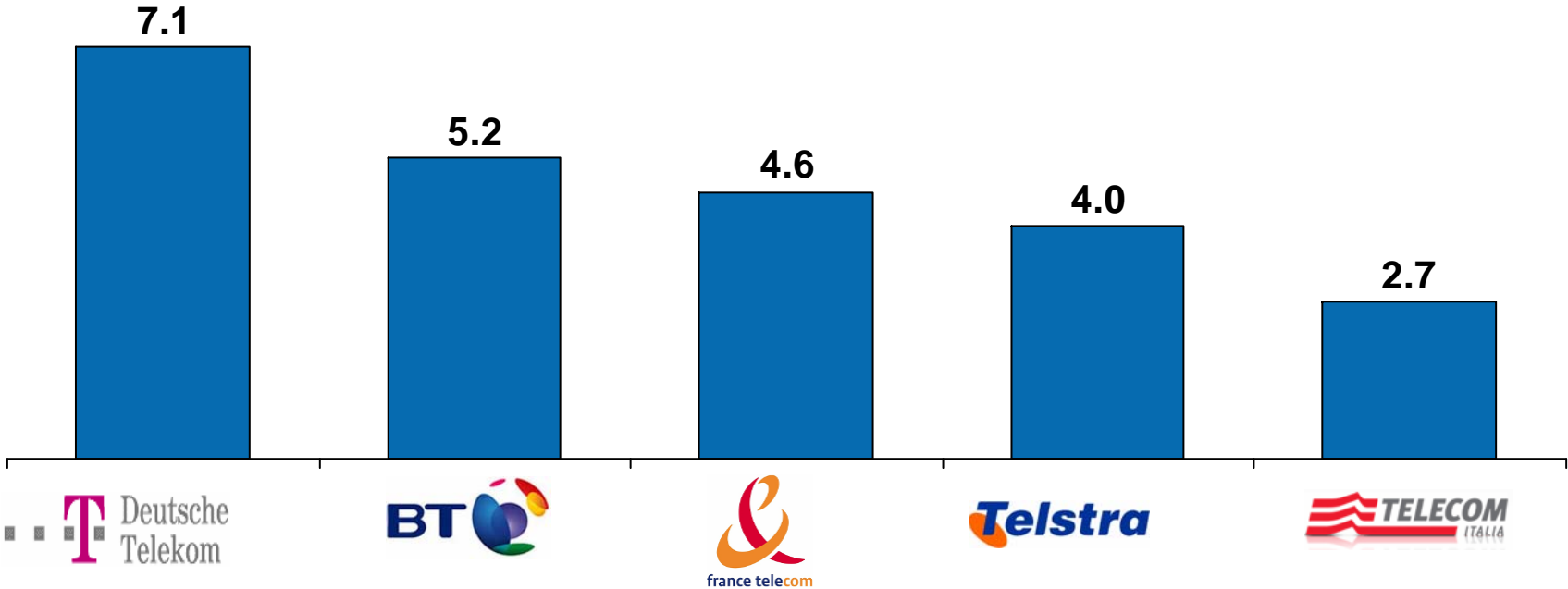


Source: WBIS, Booz & Company analysis

Investing in next generation national broadband networks is expected to significantly pressure operators financials

3

Next Generation Broadband Network CapEx / Fixed EBITDA



Note: Estimated EBITDA from fixed operations for 2008
Source: Informa, Operators' financial statements

Stakeholders are increasingly cooperating to address next generation broadband deployment inhibitors

3

Next Generation Broadband Deployment Inhibitors

Regulators

- Lack of clarity on next generation broadband regulation model
- Existing regulatory tools not viable for next generation broadband
- Announcements around infrastructure separation
- Open access and net neutrality considerations

Incumbents

- Mass deployment hindered by challenging financials
- High risk investments due to regulatory uncertainty
- Rapid technology evolution and competition between technologies








OLOs

- Differentiation based on services and applications rather than infrastructure
- Challenging business case for next generation broadband deployment in the absence of effective infrastructure sharing
- Rapid technology evolution

The economic downturn is accelerating governments investments in broadband networks

4

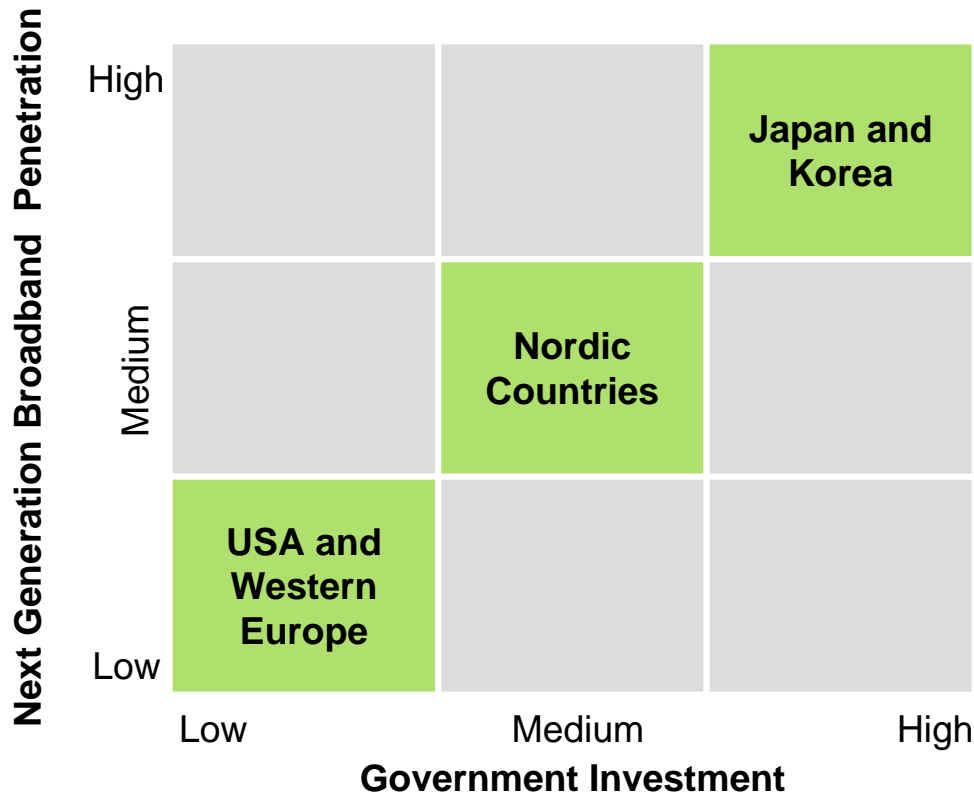
Government Investments in National Broadband Networks

Country	Date Announced	Target Speed	Target Penetration	Target Year	Total Investment USD Bn	Investment Per Capita USD
Korea 	2009	1 Gbps	100%	2012	24,600	502
New Zealand 	2009	100 Mbps	75%	na	1,500	219
Australia 	2009	100 Mbps	98%	2017	30,000	1,448
Singapore 	2008	100 Mbps	90%	2012	600	148
Malaysia 	2008	100 Mbps	100%	2018	714	28
Greece 	2008	100 Mbps	50%	2017	2,820	264
Japan 	2007	100 Mbps	100%	2010	13,600	106

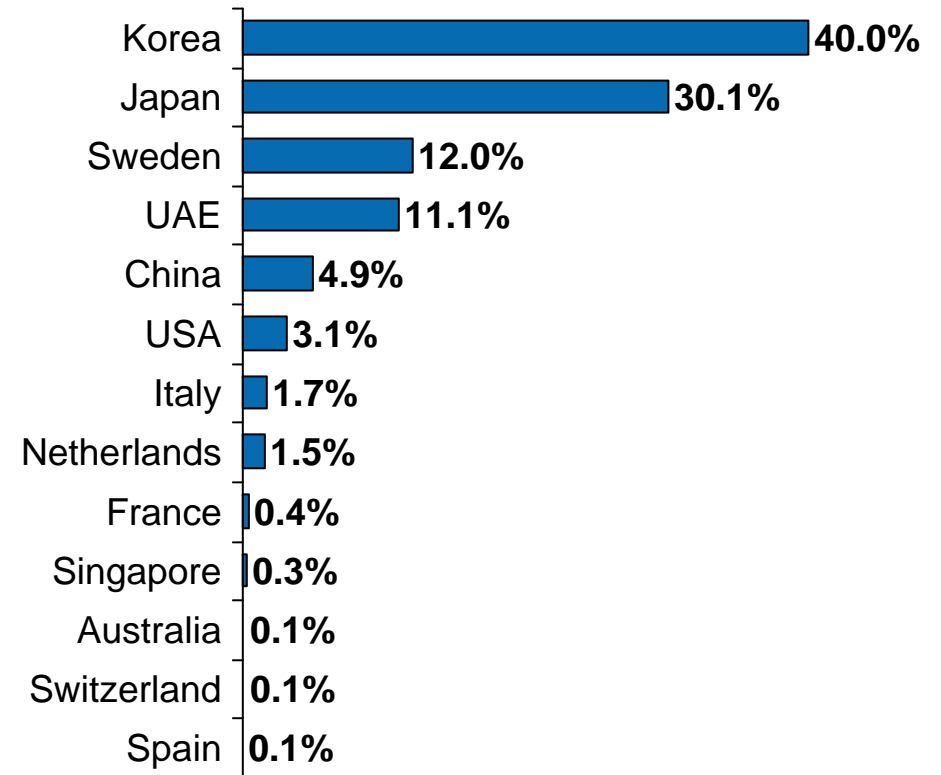
Government investments has been effective in accelerating next generation broadband uptake in leading markets

4

Next Generation Broadband Penetration vs. Government Investment









Next Generation Broadband Household Penetration - 2008



Source: Booz & Company analysis

To overcome regulatory and business pressures, new business models are emerging

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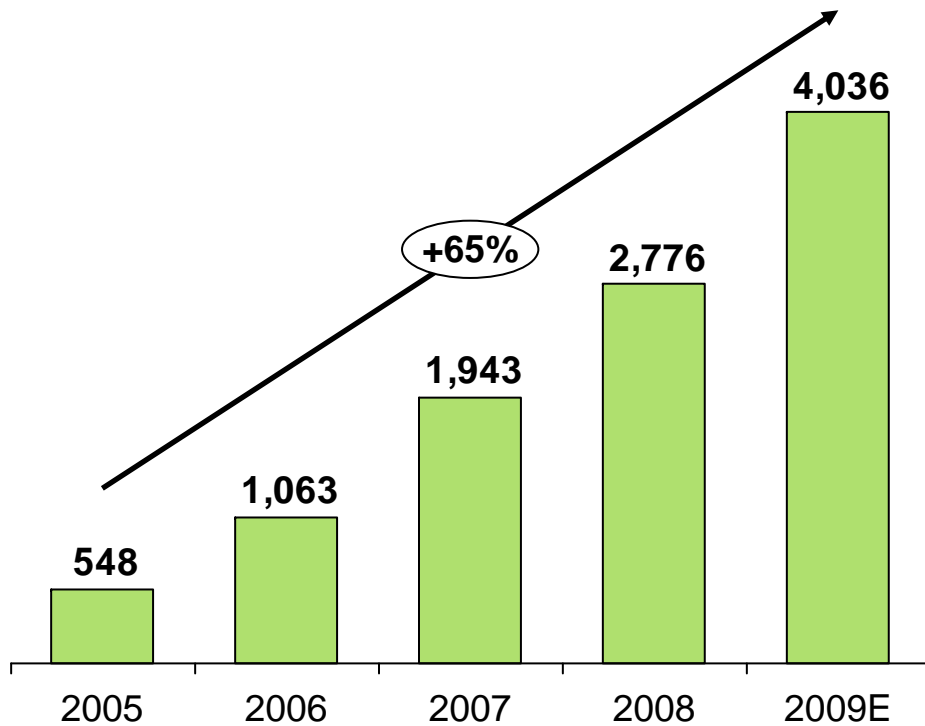
	Passive Network Provider	Active Network Provider	Service Providers	
Australia 	New Network Entity		Existing Players	<ul style="list-style-type: none"> Australia is investing USD 30 Bn. In a new network company offering active services
Sweden 	Municipal Networks	Service Providers		<ul style="list-style-type: none"> Sweden has several municipal passive networks which lease to service providers
Singapore 	Opennet	Nucleus	RSPs	<ul style="list-style-type: none"> Singapore implemented three tiered separation model to facilitate its NBN deployment
New Zealand 	Chorus (TNZ's network unit)		Service Providers	<ul style="list-style-type: none"> Telecom New Zealand spun off its network business into a new unit in 2008,
UK 	Openreach		Service Providers	<ul style="list-style-type: none"> BT's Openreach provides active services to all retail service providers in UK
Italy 	Telecom Italia Business Unit	Service Providers		<ul style="list-style-type: none"> Telecom Italia has setup a separate business unit which will lease passive services

Voluntary Separation

Source: Booz & Company analysis

In the Arab world, broadband is growing at unprecedented rates

Total ADSL Lines for Arab Countries ⁽¹⁾
(in 000's)(2005-2009)

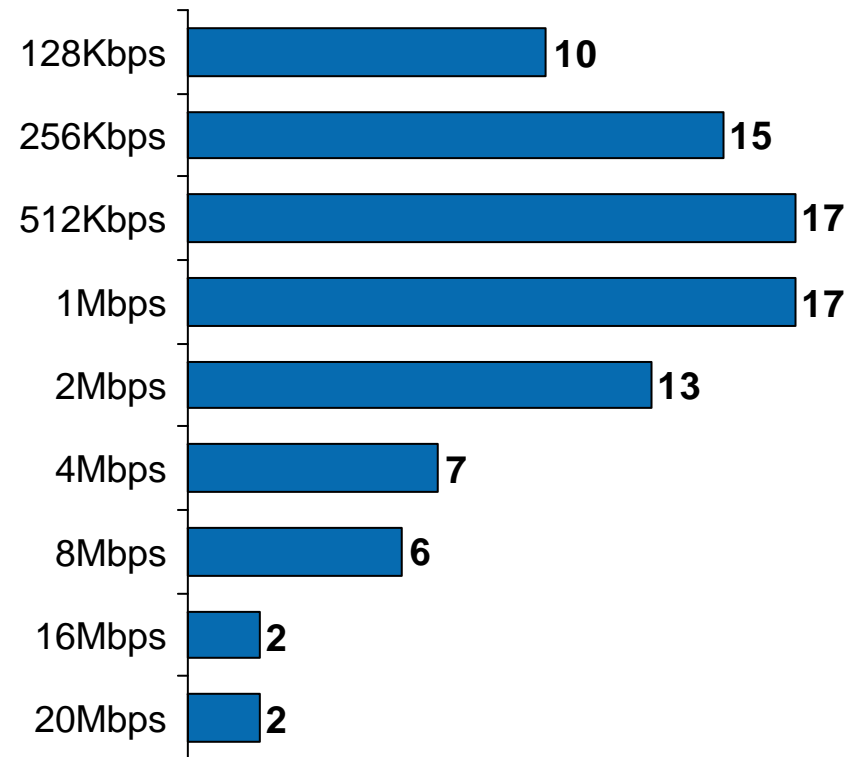


1) Sum of ADSL lines in Egypt, Jordan, KSA, Kuwait and Oman

2) Sum of ADSL lines in Denmark, Netherlands, Norway, Sweden and Belgium

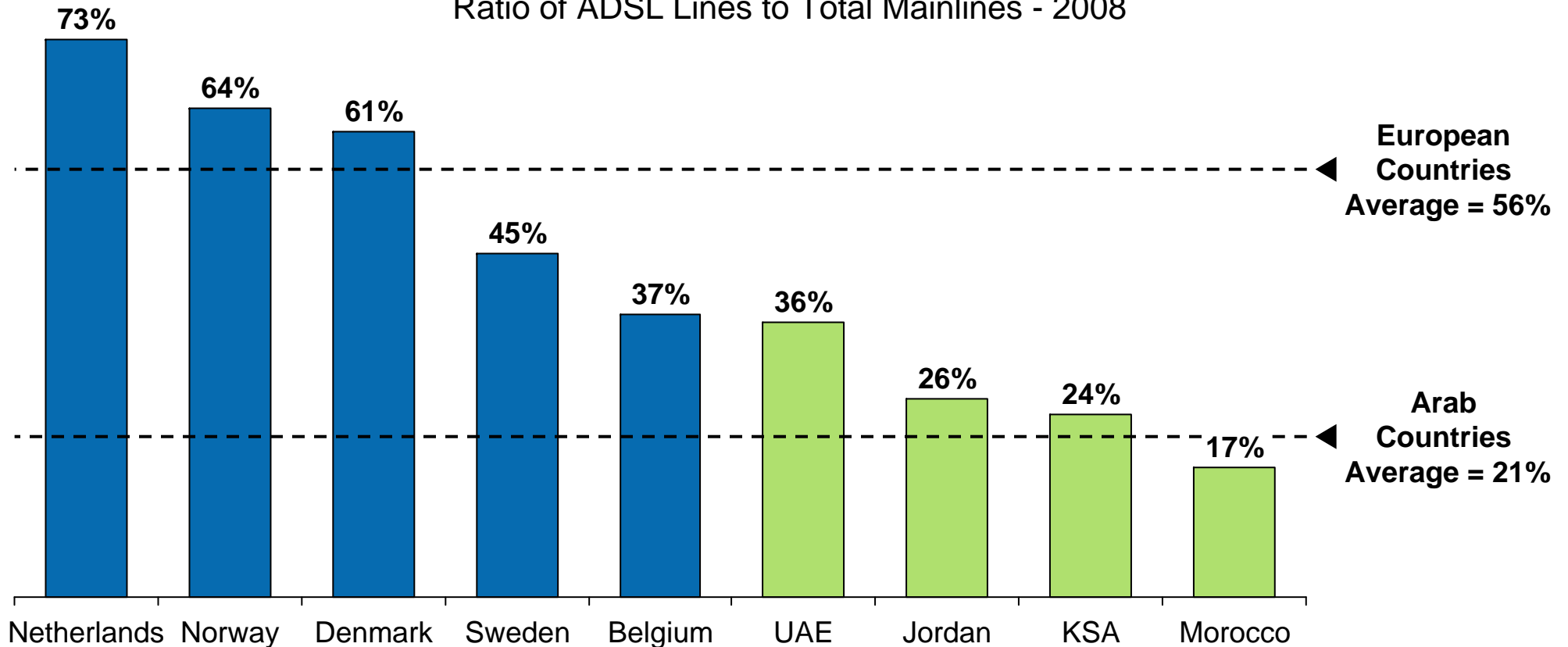
Source: AAG, Merrill Lynch, Booz & Company analysis

Number of Arab Countries Offering Different ADSL Speeds



A clear gap remains to be bridged in terms of penetration

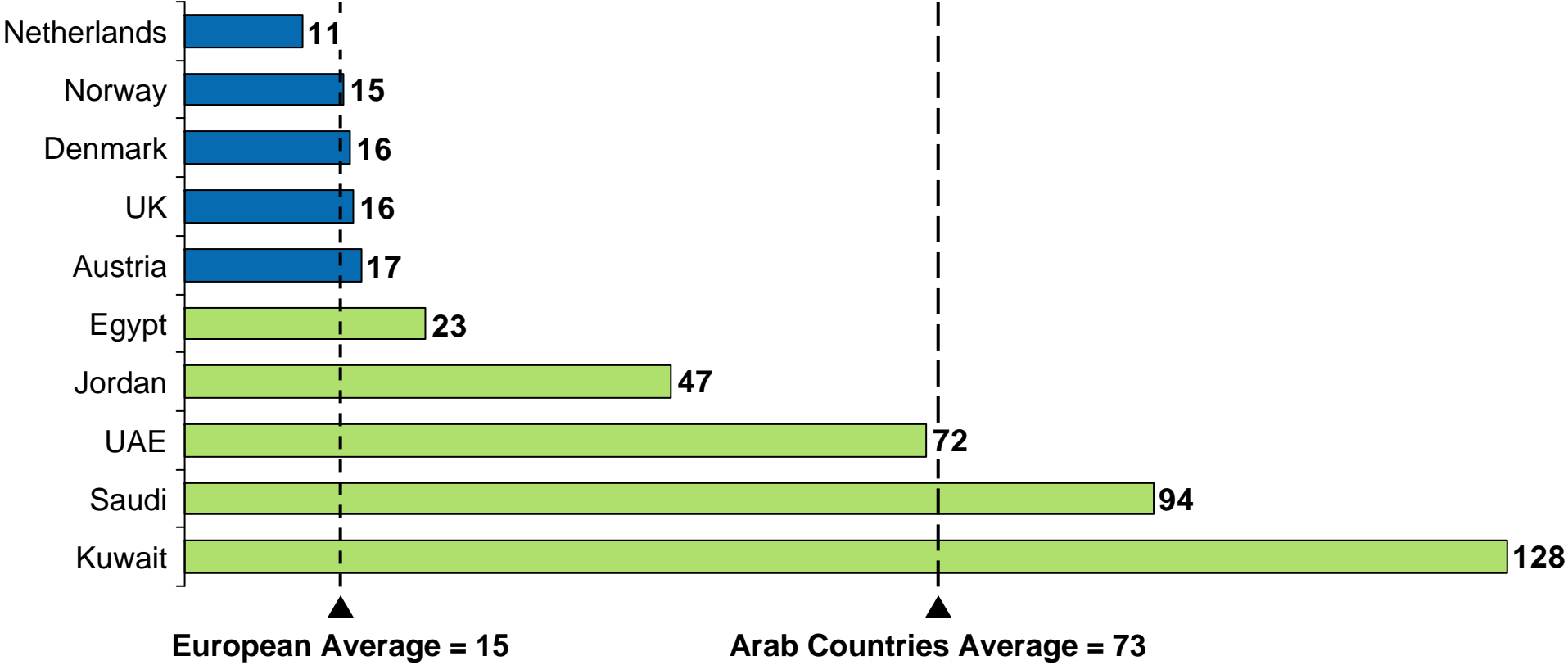
Broadband Penetration in Selected European Countries vs. Arab Countries
Ratio of ADSL Lines to Total Mainlines - 2008



Source: Merrill Lynch, AAG, Booz & Company Analysis

Similarly, broadband prices remain significantly high in the region

Monthly Broadband Price ⁽¹⁾ for 1 Mbps Connection
(2008) (in USD)



1) Monthly price for renting a 1 Mbps connection in the country
Source: Informa, OECD, Booz & Company analysis

Fulfilling Broadband potential in the region requires policy makers, regulators, and operators to answer a set of questions

- What type of broadband do we need in the region?
- How fast should next generation broadband networks be built?
- What policies are needed to accelerate broadband deployment and incentivize investments?
- Should governments consider investing in national broadband networks?
- How could regulators preserve effective competition in broadband markets?
- What business models would facilitate next generation broadband networks build-up?
- To what extent are competing operators ready for substantial infrastructure sharing deals?
- What can be done to develop the demand size: human capital, applications and content?