

Internet Connectivity as a Key Enabling Environment for e-Commerce

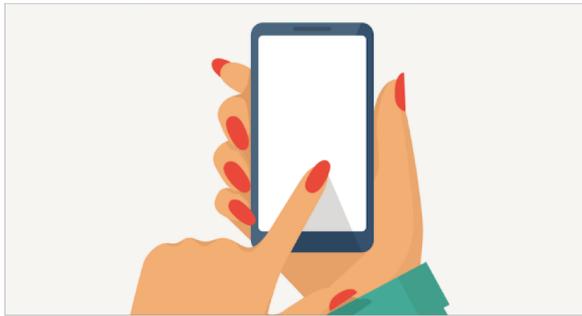
6-7 Dec 2018

Seok Yong Yoon

PART I.

Internet Connectivity for e-Commerce

... e-Commerce cannot be done without these



mobile phones



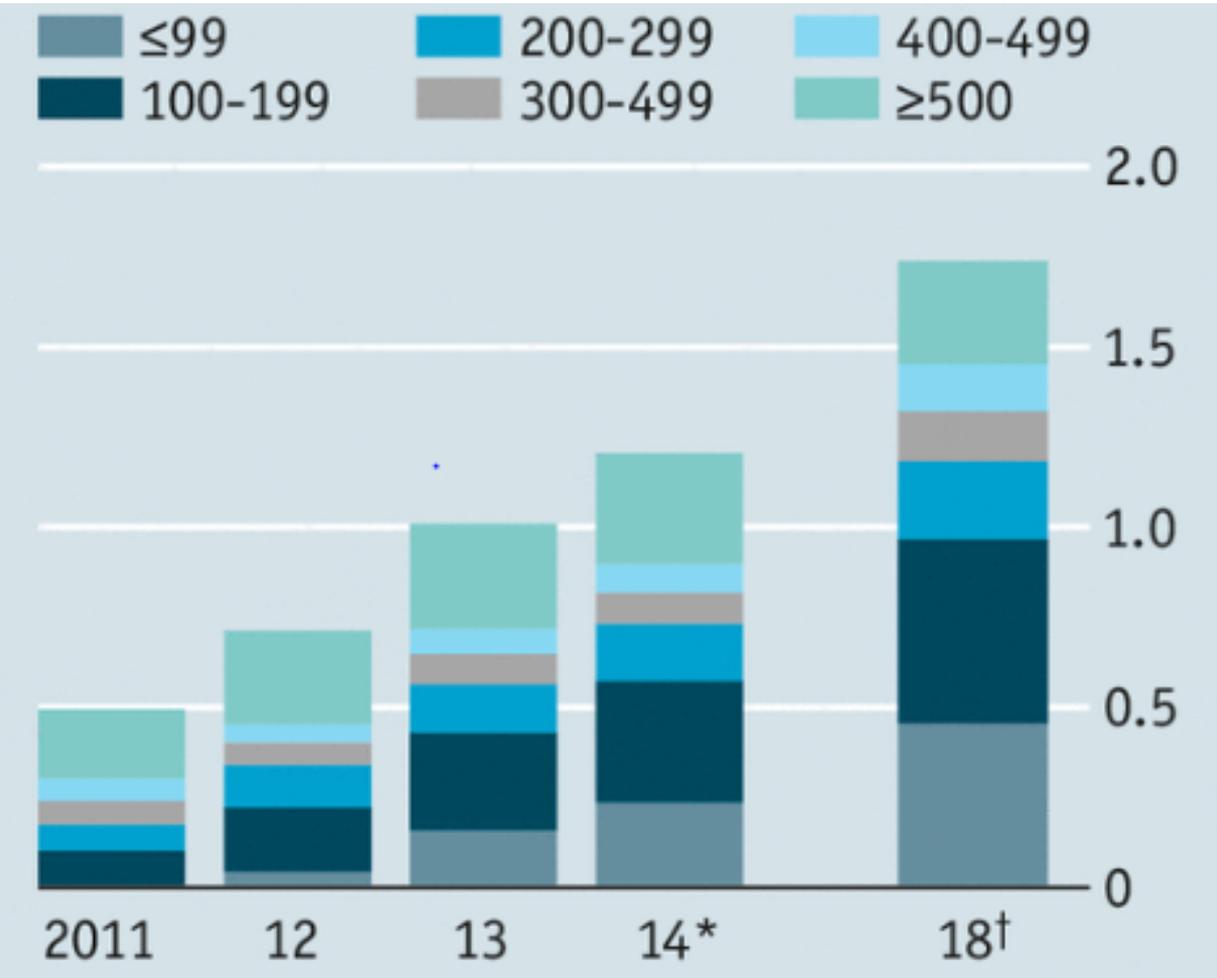
**Internet
connectivity**



Localized content

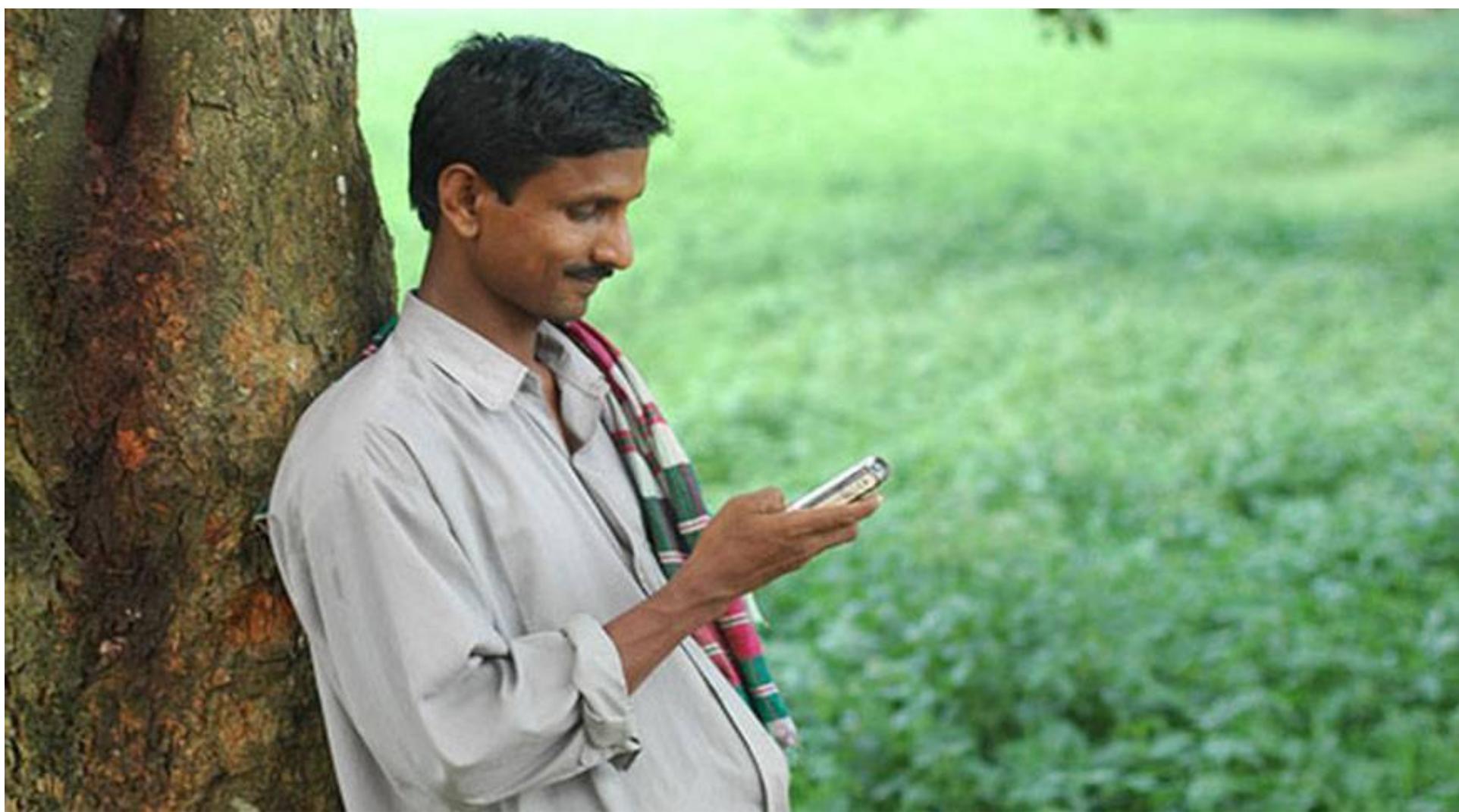
Smart phones are getting affordable..

Worldwide Smartphone Shipments (bn), Phone price (US\$)

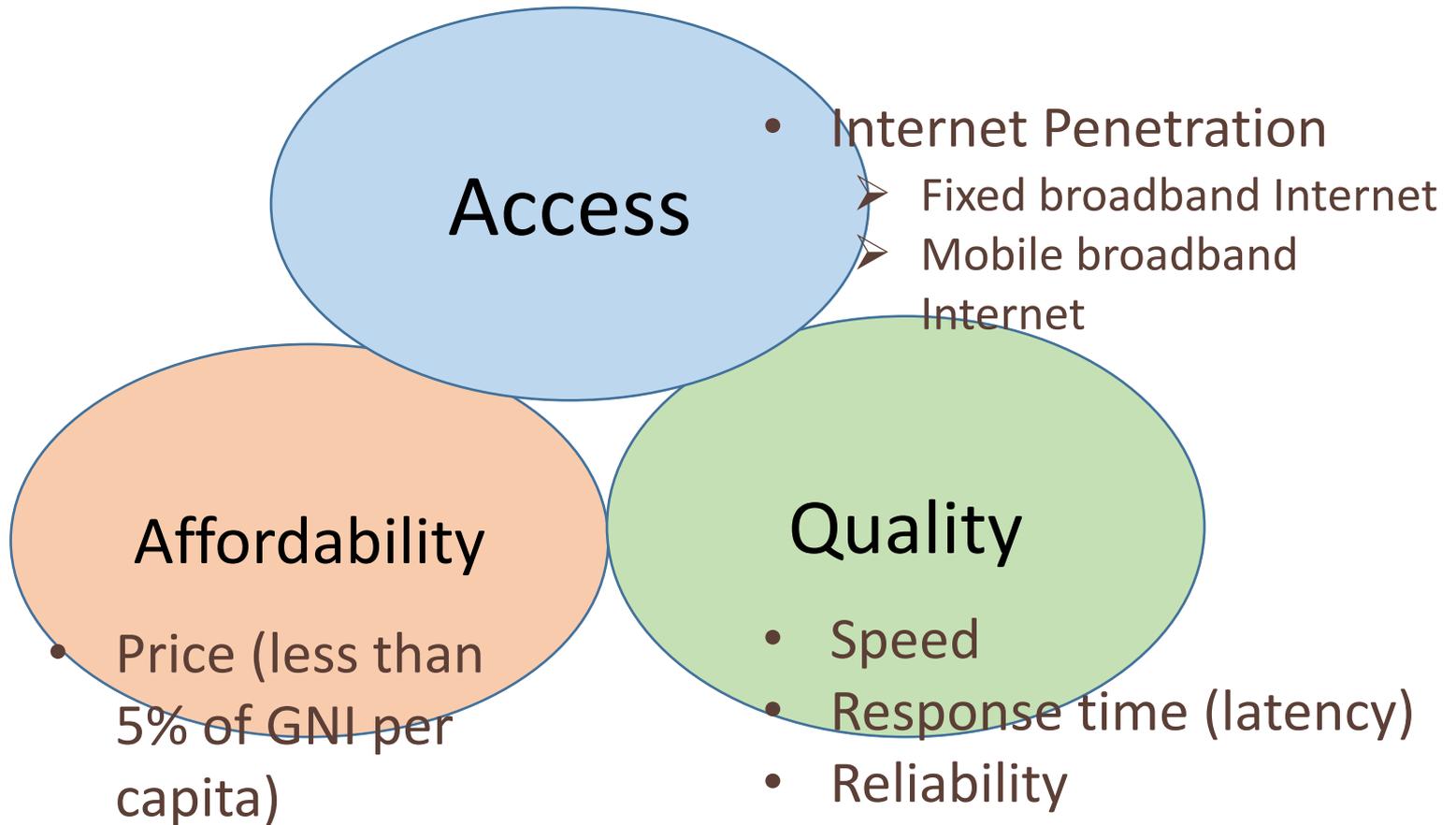


SOURCE: IDC, The Economist

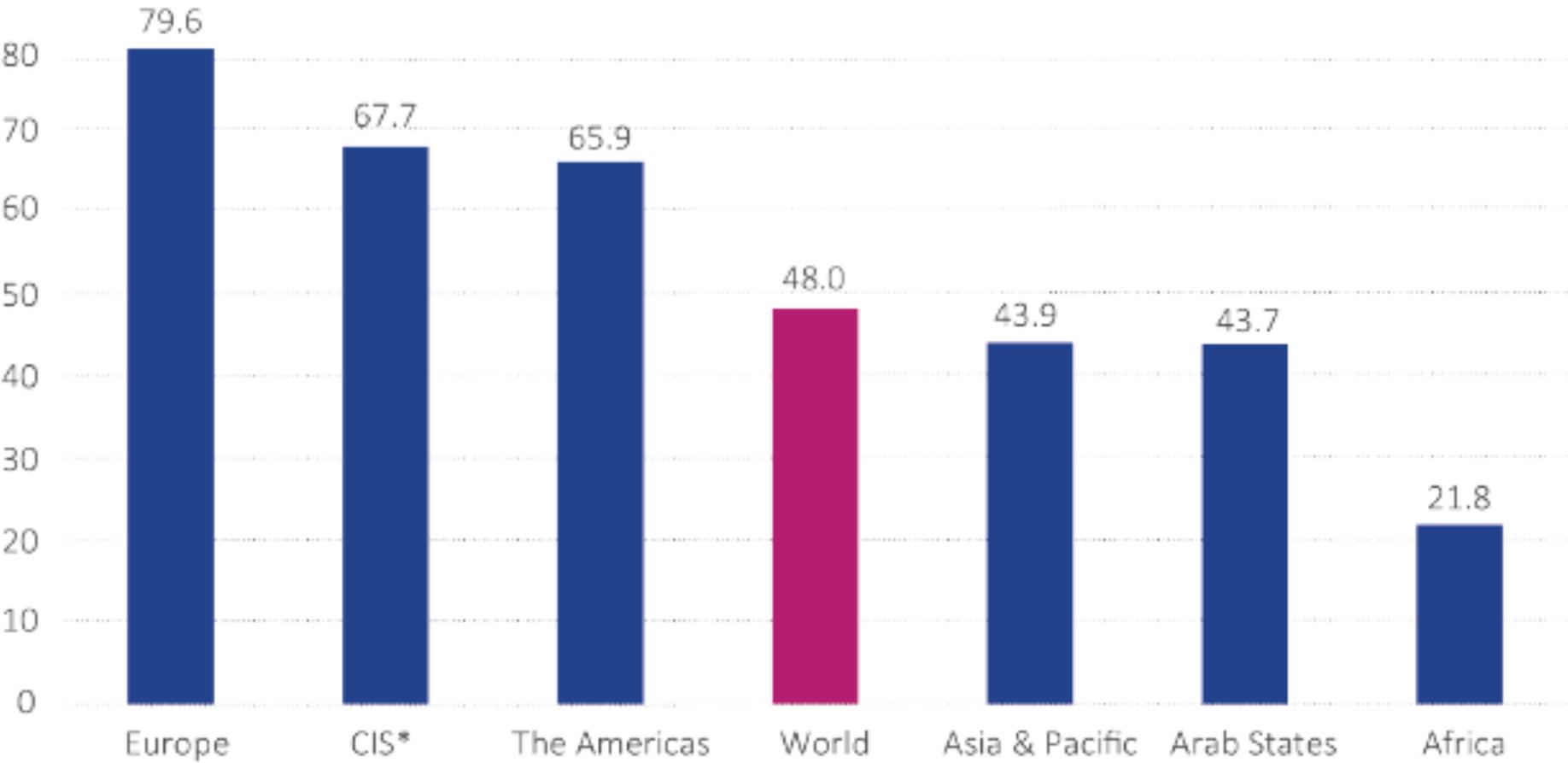
Now, mobile is the norm for Internet service...



Internet Connectivity



Access - Internet Penetration Worldwide (2017)



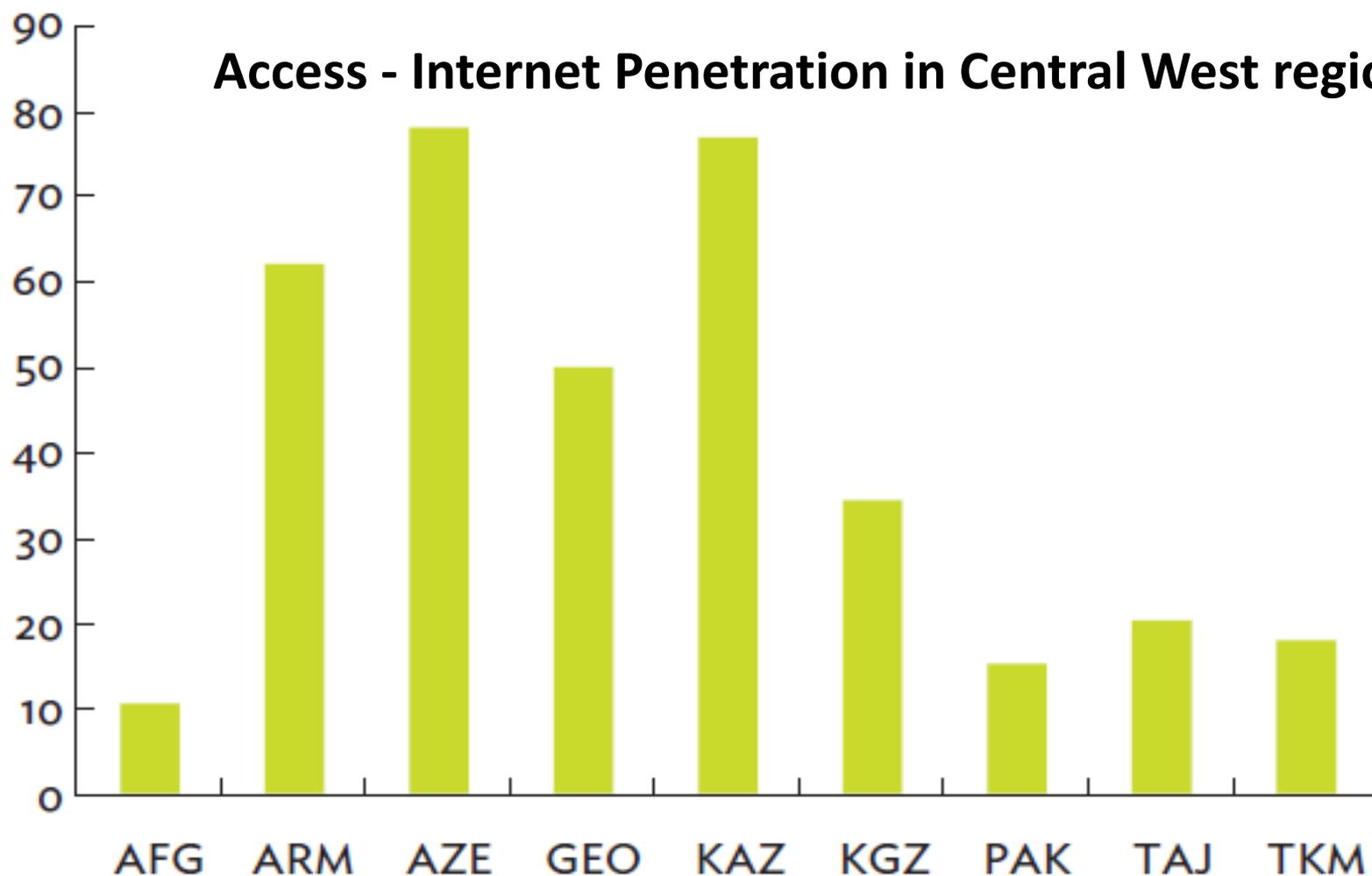
Note: * denotes an estimate. Source: ITU World Telecommunication Indicators Database.

Mobile-cellular Penetration

(telephone subscriptions per 100 inhabitants)

CAREC countries	2010	2011	2012	2013	2014	2015	2016
Afghanistan	35	46	50	53	56	58	62
Azerbaijan	101	111	109	108	111	111	105
PRC	63	72	81	89	93	92	97
Georgia	94	106	114	123	135	140	141
Kazakhstan	118	152	179	176	164	148	142
Kyrgyzstan	97	114	122	119	131	129	128
Mongolia	93	107	120	100	104	103	111
Pakistan	58	63	68	70	73	66	71
Tajikistan	78	81	82	92	96	99	108
Turkmenistan	63	102	112	114	132	141	151
Uzbekistan	73	88	69	72	71	70	74
CAREC	79	95	100	102	106	105	108

Access - Internet Penetration in Central West region



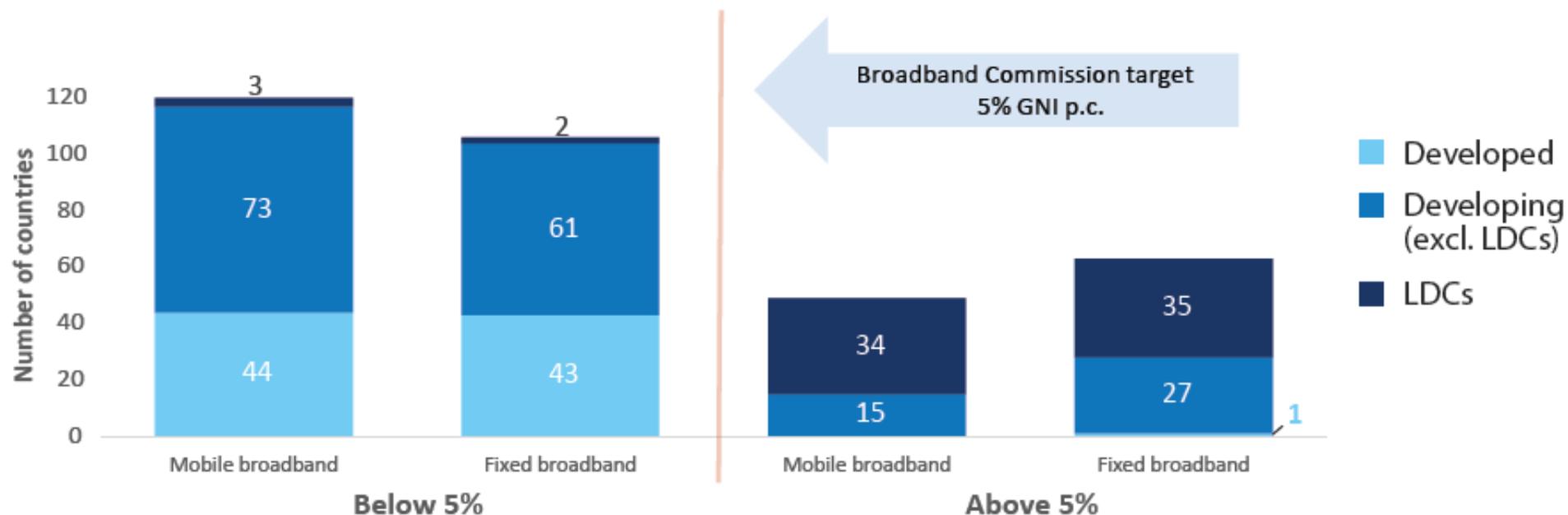
AFG = Afghanistan, ARM = Armenia, AZE = Azerbaijan, GEO = Georgia, KAZ = Kazakhstan, KGZ = Kyrgyz Republic, PAK = Pakistan, TAJ = Tajikistan, TKM = Turkmenistan.

Note: Internet penetration is defined as the number of internet users per 100 population.

Source: International Telecommunication Union. Statistics. <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx> (accessed 15 December 2017).

Affordability – Broadband sub-basket price (2016)

Broadband price as a % of Gross National Income (GNI), for both fixed and mobile broadband

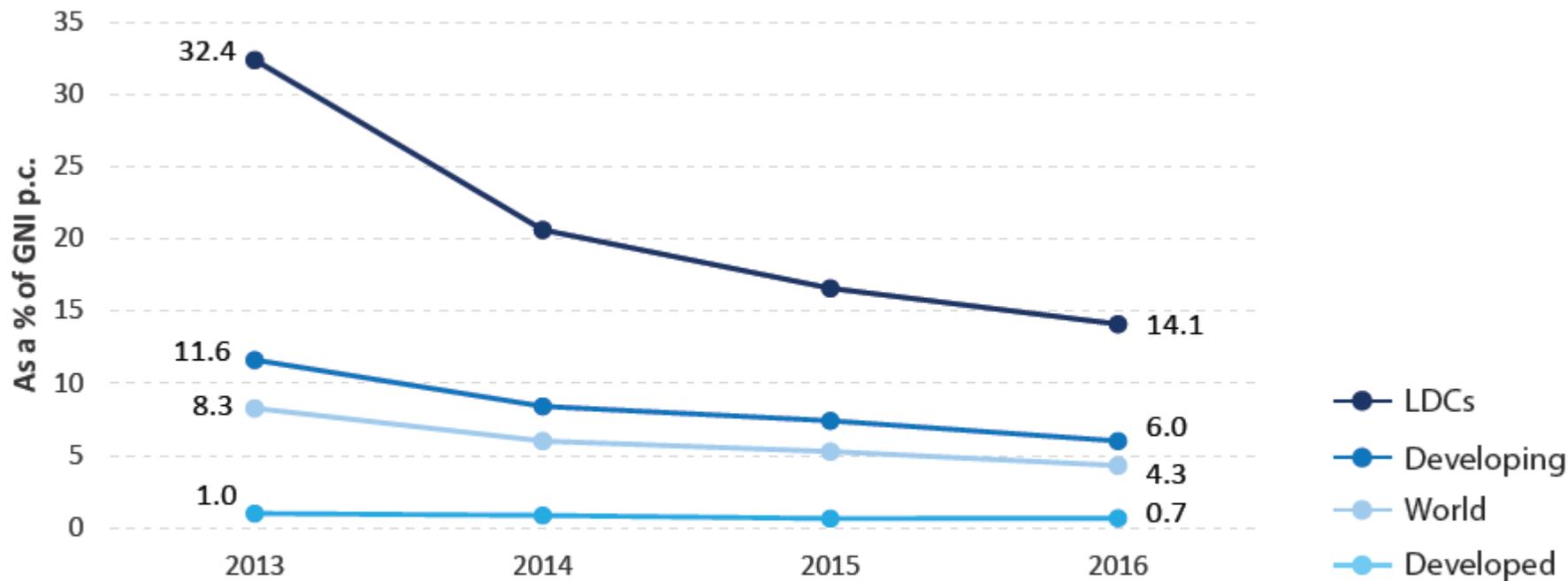


Source: ITU.

Note: Based on data available for 169 countries. Prices are based on entry-level plans with a minimum data allowance of 1 GB per month.

Affordability – Broadband sub-basket price (income group)

Broadband price as a % of Gross National Income (GNI)



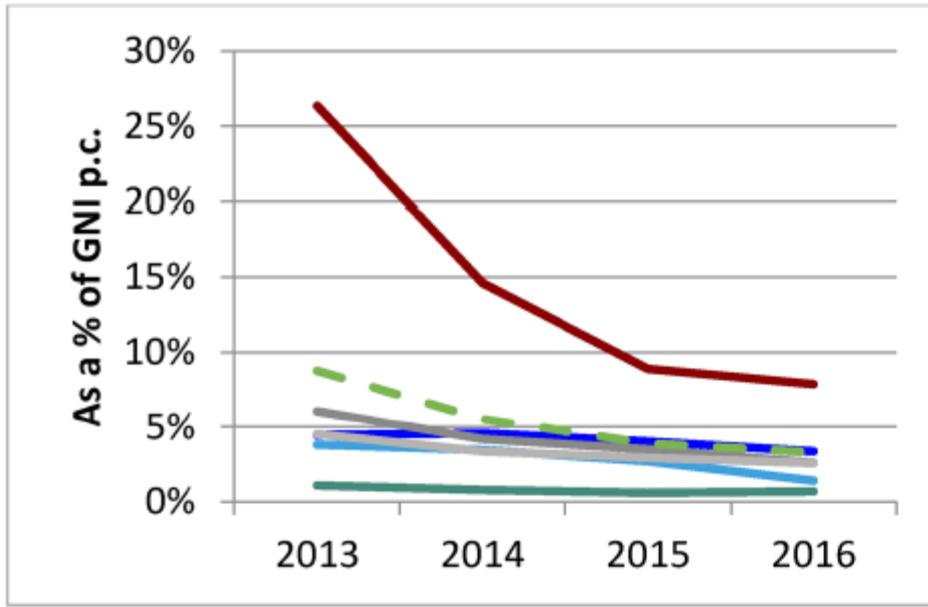
Source: ITU.

Note: Based on simple averages including data for 136 countries. Prices are based on entry-level computer-based mobile-broadband plans with a minimum data allowance of 1 GB per month.

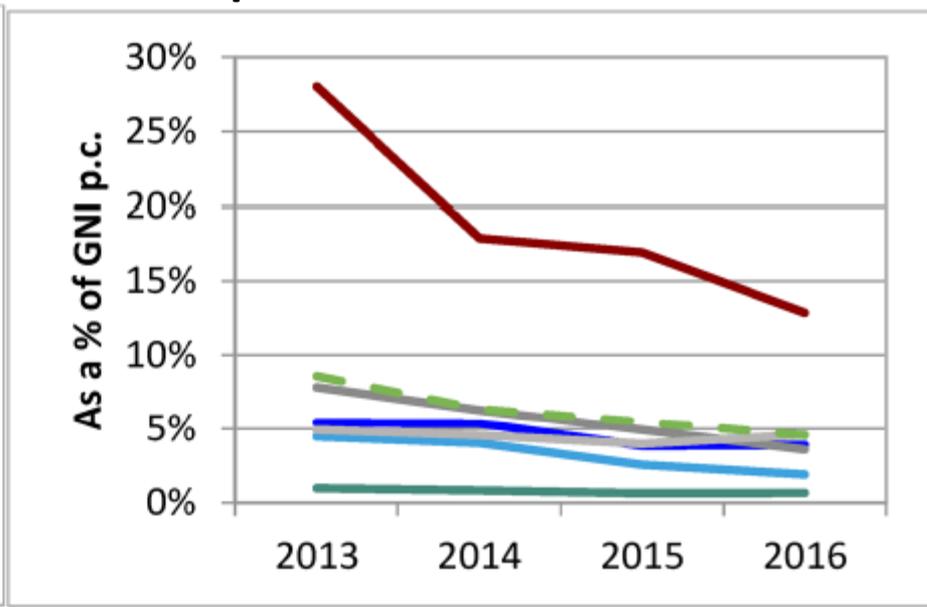
Affordability – Broadband sub-basket price (region)

Broadband price as a % of Gross National Income (GNI)

500 MB handset-based sub-basket



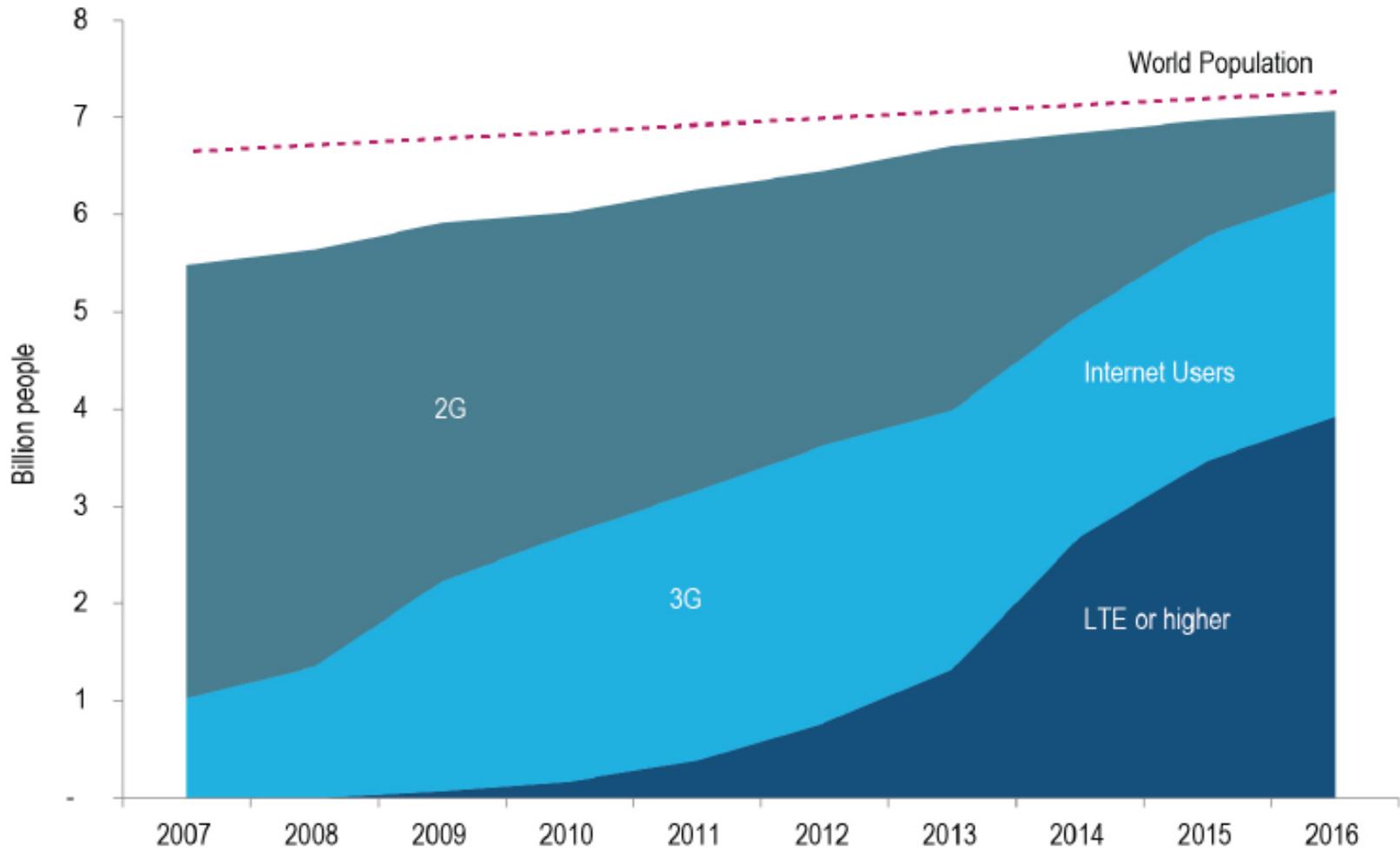
1 GB computer-based sub-basket



- Africa
- Arab States
- Asia and Pacific
- CIS
- Europe
- The Americas
- - World

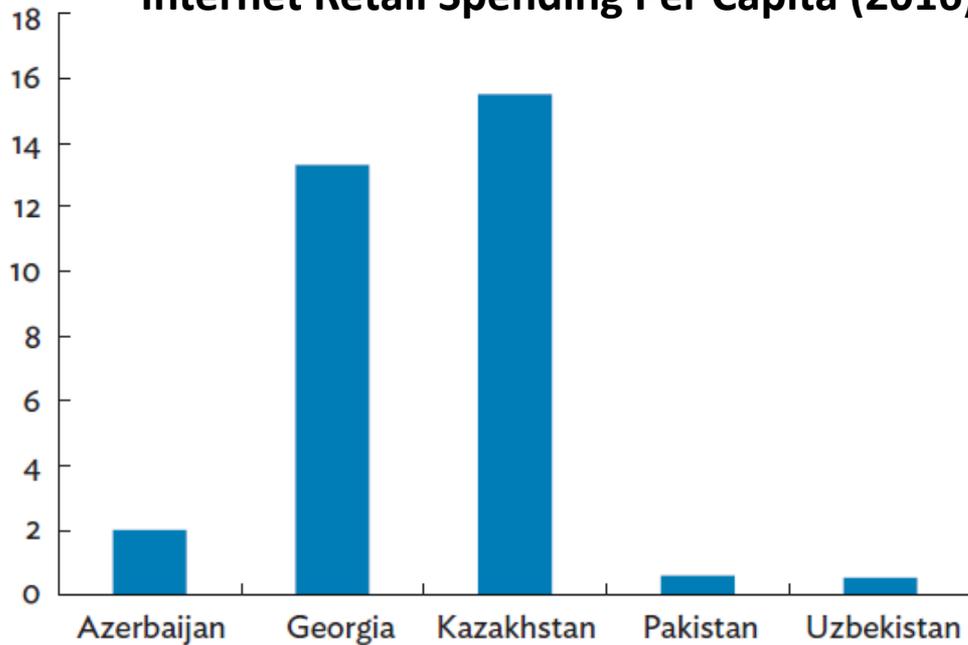
- Africa
- Arab States
- Asia and Pacific
- CIS
- Europe
- The Americas
- - World

Quality (Speed) – Mobile by Type of Network



Internet is important for e-Commerce development but it is just one of key enabling environments for e-Commerce

Internet Retail Spending Per Capita (2016)



Source: Kshetri (2018) using data from Euromonitor International. Passport database.

Internet Penetration (2016)



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PART II.

Recommendations to improve the Internet

Two Directions

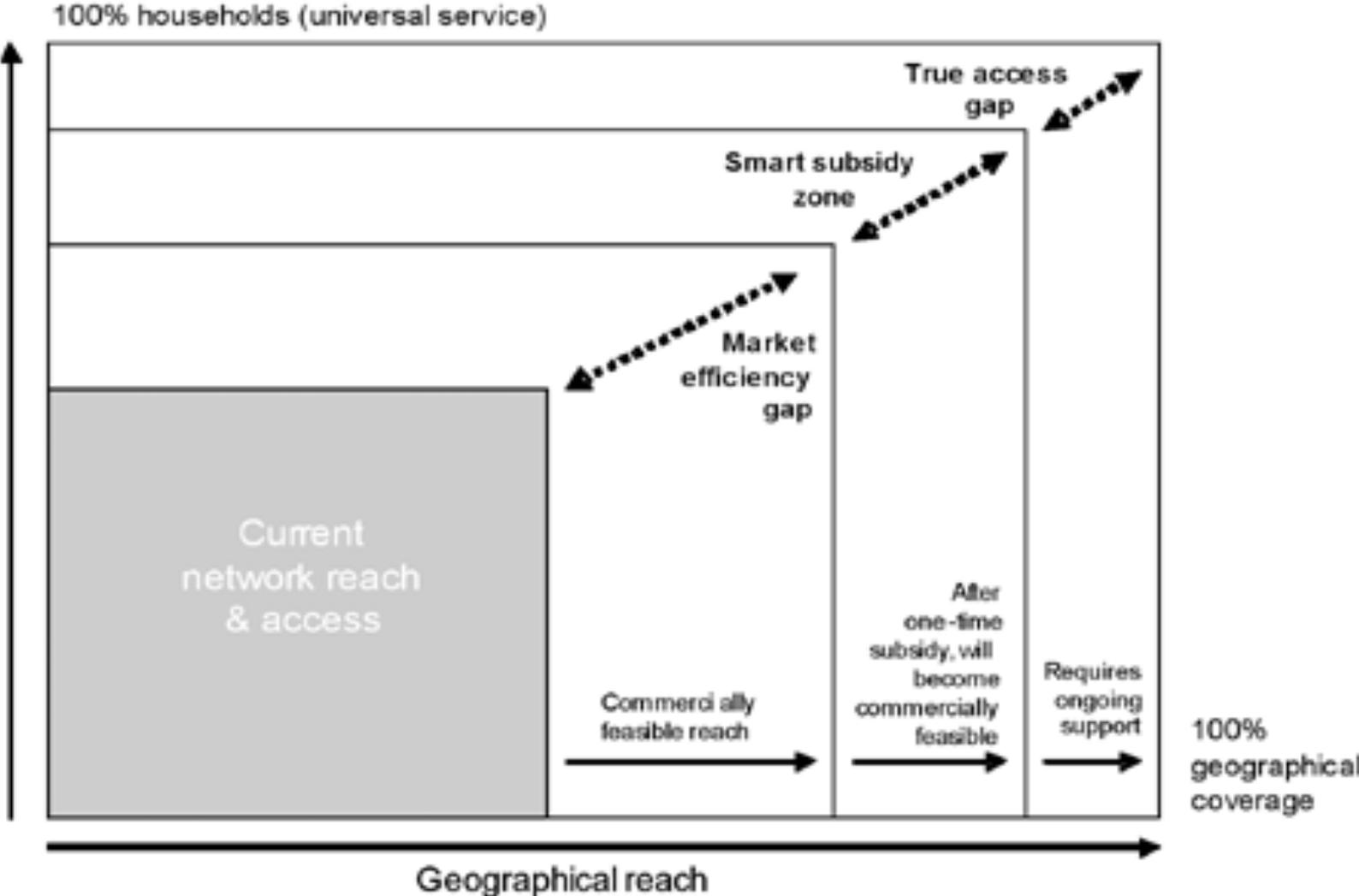
1. Through market regulation

- Foster market competition
- Innovative spectrum policy
- Promote Infrastructure sharing

2. Direct Support for unserved and underserved

- Employ Public Access Solutions
- Effective Use of Universal Service and Access Funds

Justification for Direct Support



SOURCE: ITU

Public Access Center

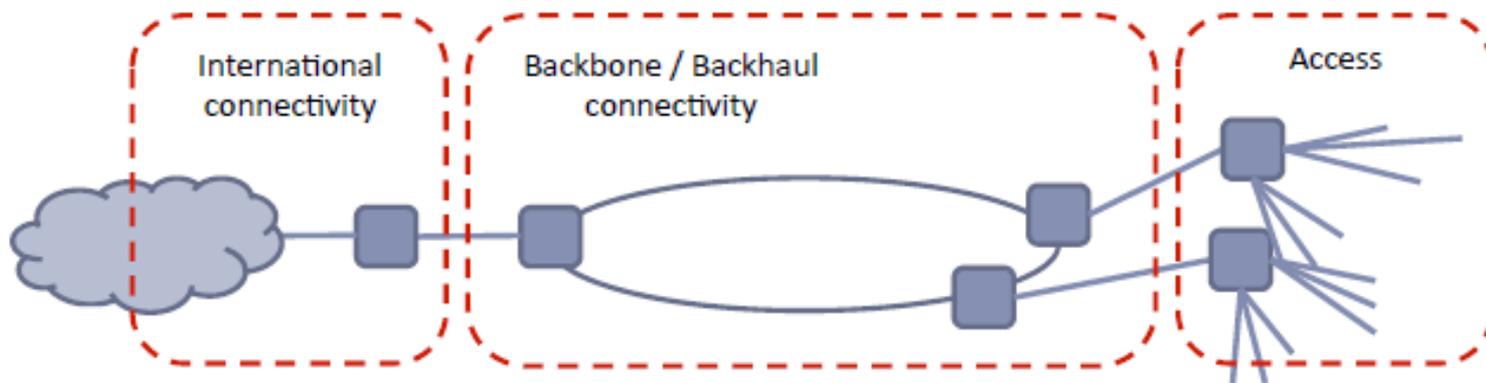


Public Access Centers

Type	Services	Management
Commercial	Computer, print, internet cyber café	Private business
NGO	Varying depending on NGOs, target groups	NGO, development projects
University, school	Digital literacy, academic courses	University, school
Municipal/State	Public (e-government) & private services	Municipal government (in partnership with other entities)

Universal Service Fund

- Industry levy, as a percentage of annual revenue (3-5%), on certain classes of licensed operators;
- USF can be used to support broadband connectivity across 3 segment below



- In reality, USF is not working well across the globe.
- USF should support and complement efforts of the private sector

Infrastructure Sharing

- The high cost of optical network expansion present a significant obstacle to expand Internet access in remote and rural areas
- Sharing mobile infrastructure is an alternative that lowers the cost of network deployment, especially in rural areas



Two types

- Passive: sites, towers, poles, ducts
- Active: spectrum, switches, and antenna

Key benefits

- Cost reduction
- Faster geographic rollout
- Lower prices
- Increased tax revenues for governments

Cross-sector Infrastructure Sharing

- Fiber optic cable is laid along electricity transmission lines and railway lines because this is necessary for operation & maintenance;
- Electricity sector and railways use could be less than 0.01 percent of total capacity.
- Many electricity transmission companies and railways are leasing out their surplus capacities (dark fiber) in telecom market



Thank You
Q / A