WTO Workshop on E-Commerce, Development and Small and Medium-sized Enterprises (SMEs)

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Enabling e-commerce: recent trends in broadband deployment and uptake

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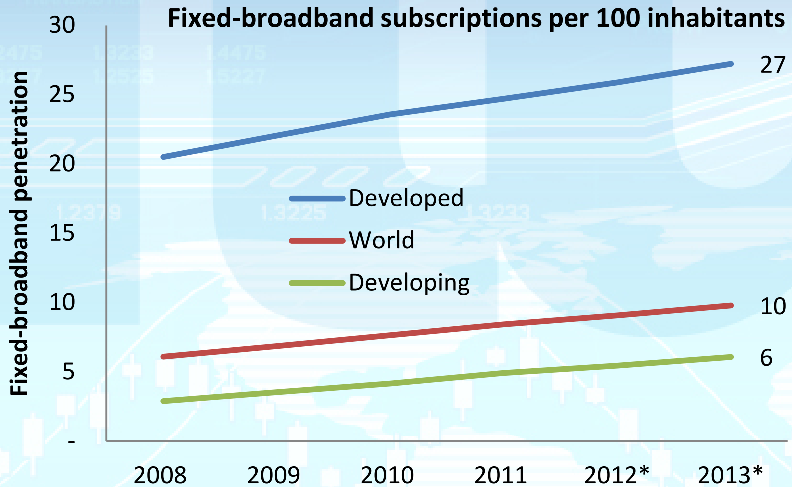
Agenda

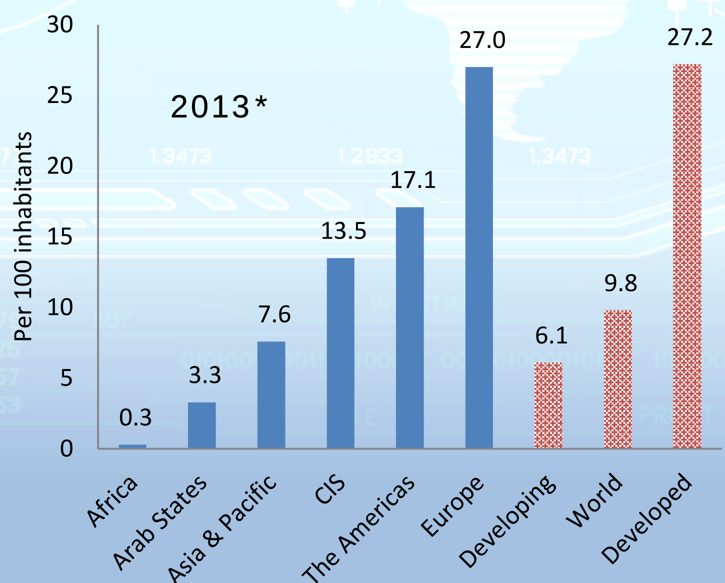
- ICT infrastructure - key enabler for e-commerce
- Fixed broadband, mobile broadband and Internet uptake
- Broadband affordability
- Broadband speed and quality, bandwidth
- Regulatory environment and national broadband policies
- Dynamic and least connected countries
- Challenges and the way forward

ICT infrastructure and e-commerce

- E-commerce requires fast, reliable and affordable telecommunication/ICT infrastructure and services - broadband networks are key
- In developing countries, fixed broadband infrastructure is often limited and wireless broadband infrastructure becomes critical
- B2C works if a critical mass of people are online
- National ICT/broadband policies can stimulate the market, increase services and lower prices

Limited fixed infrastructure and uptake





- Fixed-telephone network very limited in many developing countries, especially Africa
- Impacts deployment of fixed broadband
- Fixed BB continues to grow but large divides between developed and developing regions in terms of uptake

Source: ITU World Telecommunication /ICT Indicators database
Note: * Estimate

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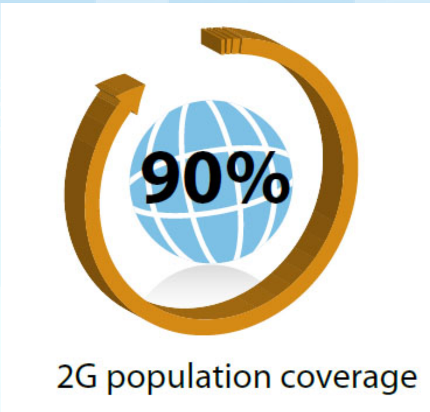
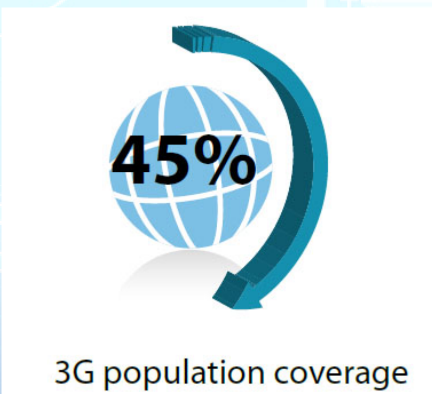
Ubiquitous mobile – the shift from voice to data



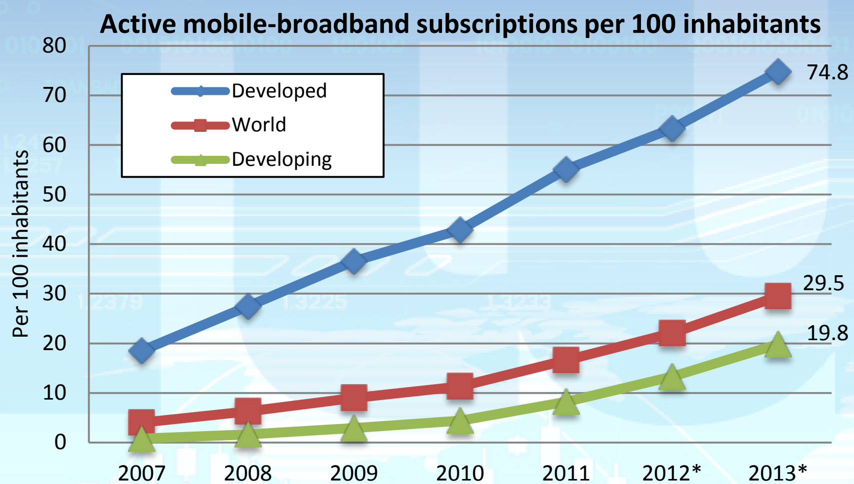
2011



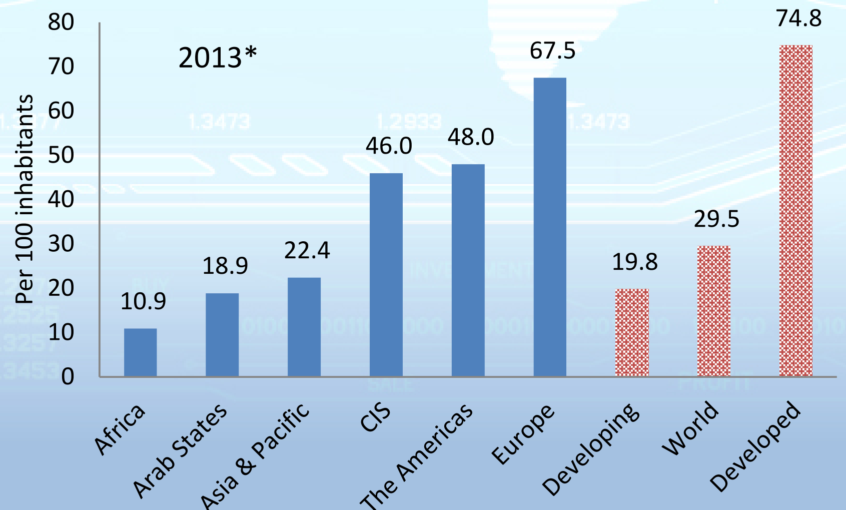
Source: ITU

- Almost complete world population coverage by mobile networks
- By end 2013: 6.8 billion mobile-cellular subscriptions (96% penetration)
- Does not mean everyone has a mobile phone – multiple SIMs
- E-commerce needs high-speed network coverage and access
- In developing countries, mobile Internet access becomes a realistic alternative to fixed access
- Smartphones, tablets and mobile video applications drive shift from voice to data traffic

The rise of mobile broadband



Source: ITU World Telecommunication /ICT Indicators database
Note: * Estimate



- Mobile-broadband is the fastest growing market segment with 40% CAGR 2007-2013
- In developing countries, subscriptions more than doubled from 2011 to 2013 (from 472 million to 1.16 billion)
- In Africa, penetration increased from 2% in 2010 to 11% in 2013
- Still huge divide as mobile BB uptake has been growing everywhere
- In developed countries, mobile BB is a complement rather than a substitute for fixed BB access

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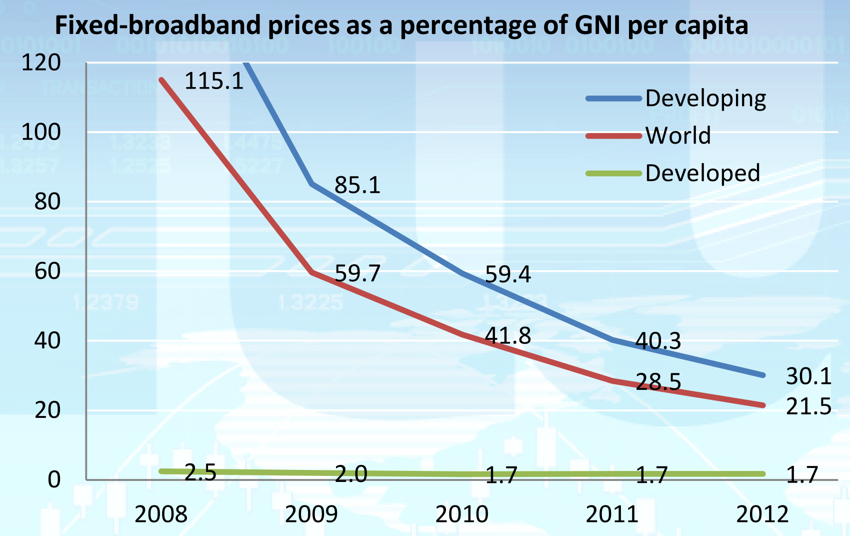
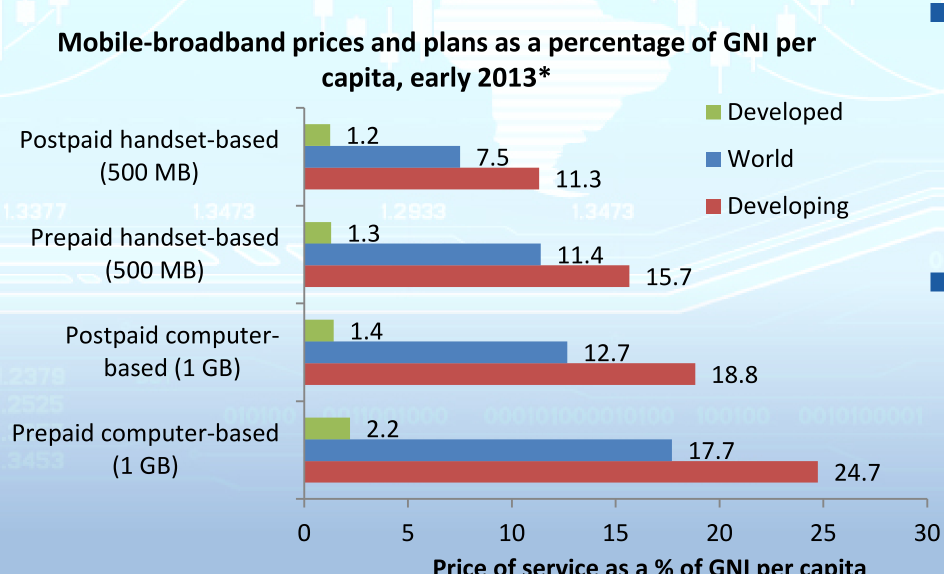
Broadband affordability





Source: ITU World Telecommunication /ICT Indicators database
Note: * Preliminary data

- From 2008-2012, fixed-broadband prices as a share of GNI per capita dropped by 82%
- On average, broadband is still unaffordable for most people in developing countries
- In developing countries, mobile BB is cheaper than fixed BB (but often with data caps while fixed is unlimited)
- Postpaid handset-based plans are the cheapest and prepaid computer-based plans are the most expensive, across all regions

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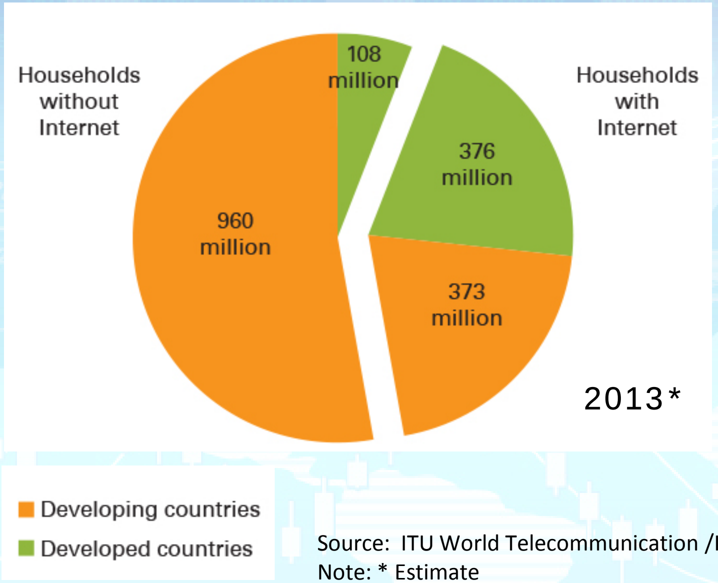
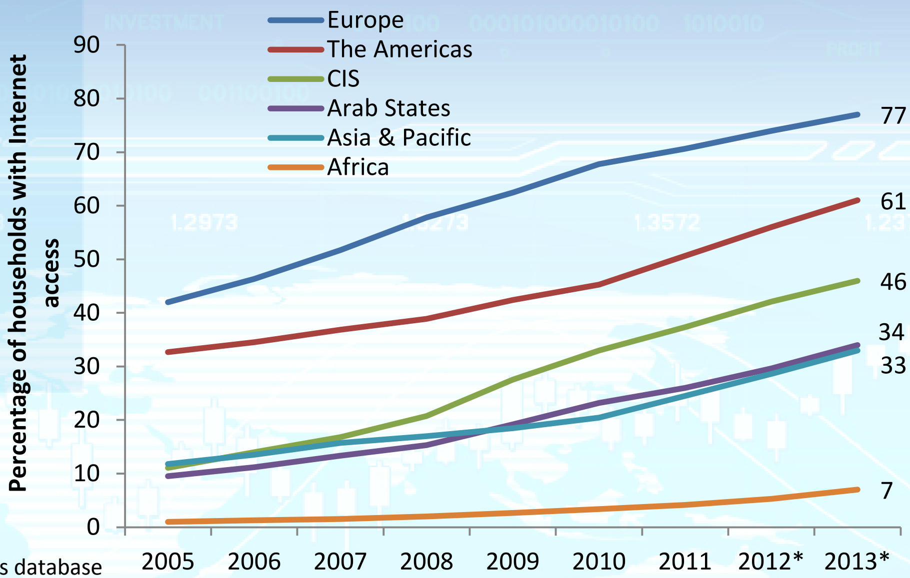
Consumer level uptake

Household Internet access



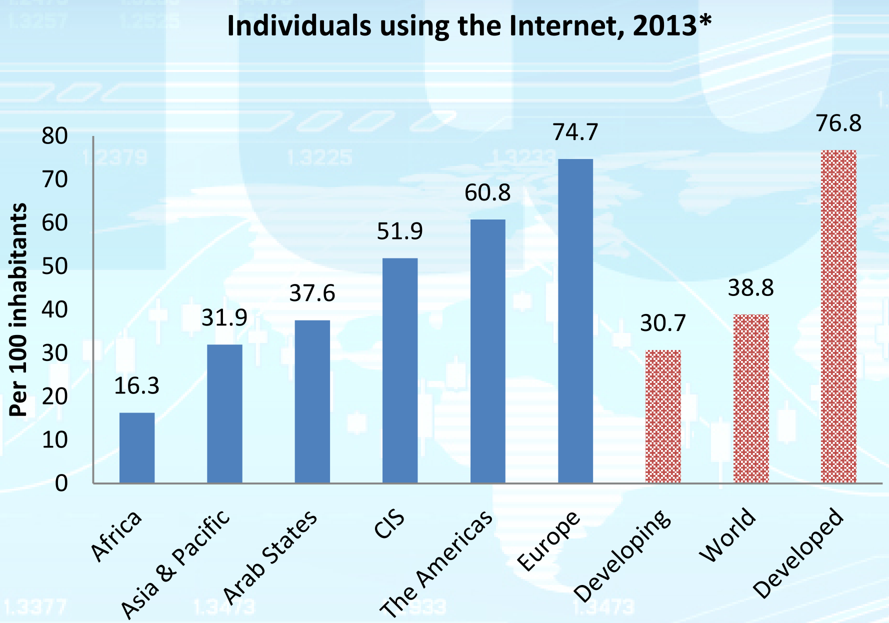


Source: ITU World Telecommunication /ICT Indicators database
Note: * Estimate

- B2C requires a critical mass of online consumers
- In developing countries, HH with Internet access have increased from 12% in 2008 to 28% in 2013
- However, 90% of the 1.1 billion households not yet connected to the Internet are in the developing world

Internet uptake

4.4 billion people yet to be connected



Source: ITU World Telecommunication /ICT Indicators database
Note: * Estimate

- By end 2013, around 39% of the world population will be online (2.7 billion)
- Internet use can be via fixed or wireless network, from any location
- B2C customer base is growing in all regions
- In Africa, Internet user penetration doubled between 2009 and 2013

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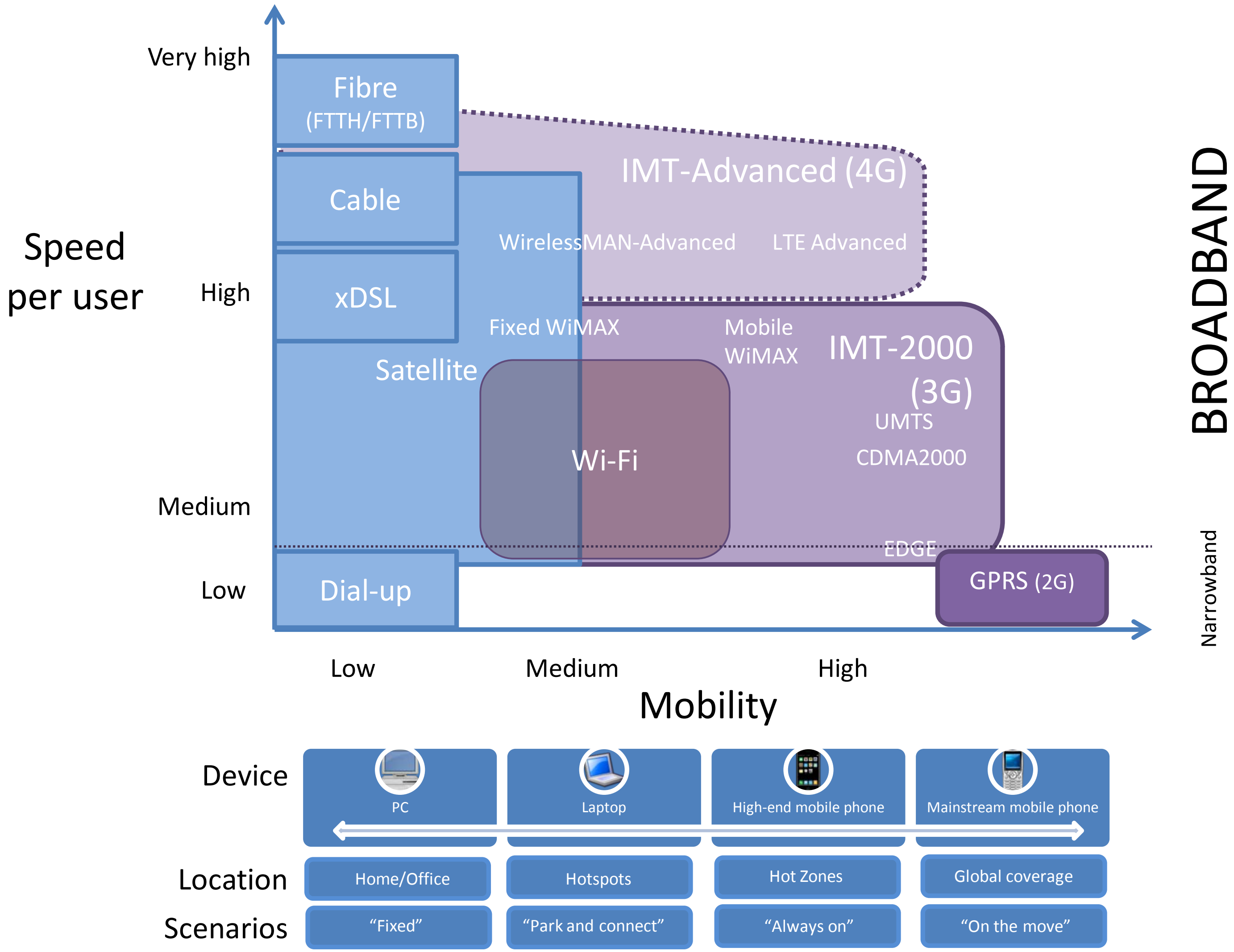
The importance of speed, quality, mobility

- E-commerce needs reliable and fast connections
- Businesses (even SMEs) are high-end users
- Huge differences in fixed-broadband speeds among countries: majority of developed countries' subscriptions are at speeds >10 Mbit/s, while many developing countries are limited to speeds <2 Mbit/s (also a reflection of retail prices)
- Advertised vs real speeds increasingly important
- Mobile vs fixed technologies - differences in speed and quality; mobile technologies do not replace fixed for intensive users (e.g. data-intensive applications)
- Mobility requirements of users vary

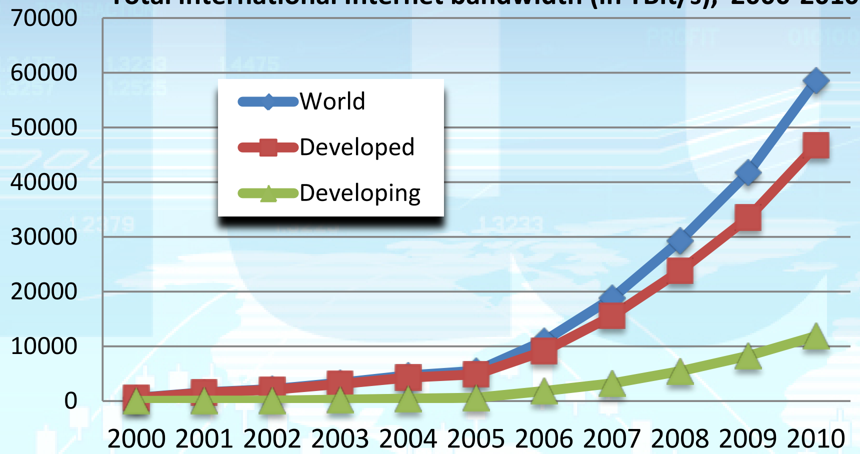
Speed versus mobility



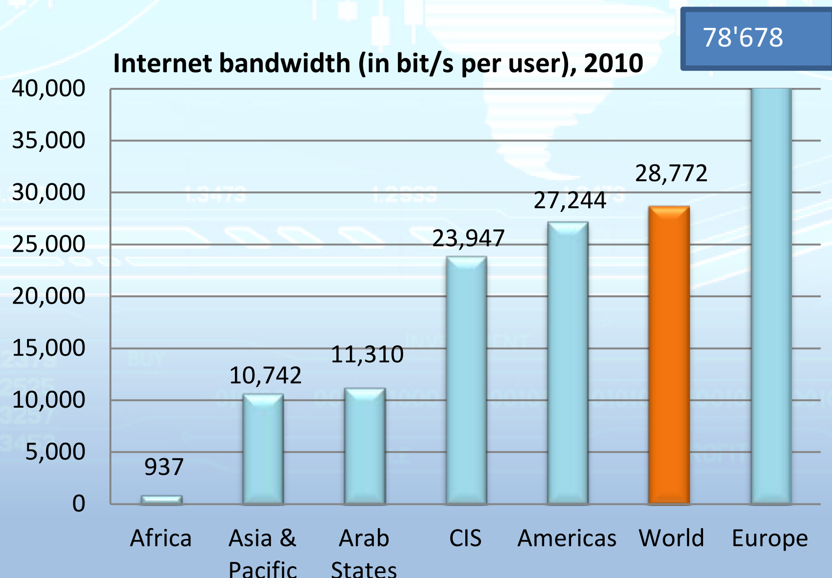
Source: ITU Measuring the Information Society Report 2011

Backbone infrastructure is indispensable

Total international Internet bandwidth (in TBit/s), 2000-2010



Internet bandwidth (in bit/s per user), 2010



Source: ITU World Telecommunication /ICT Indicators database

- International Internet bandwidth is key requirement to cater to increased data traffic
- Liberalization of international Internet gateways important
- Total bandwidth doubled between 2008-10 alone
- National backbone needs upgrading/expansion (fibre optic)

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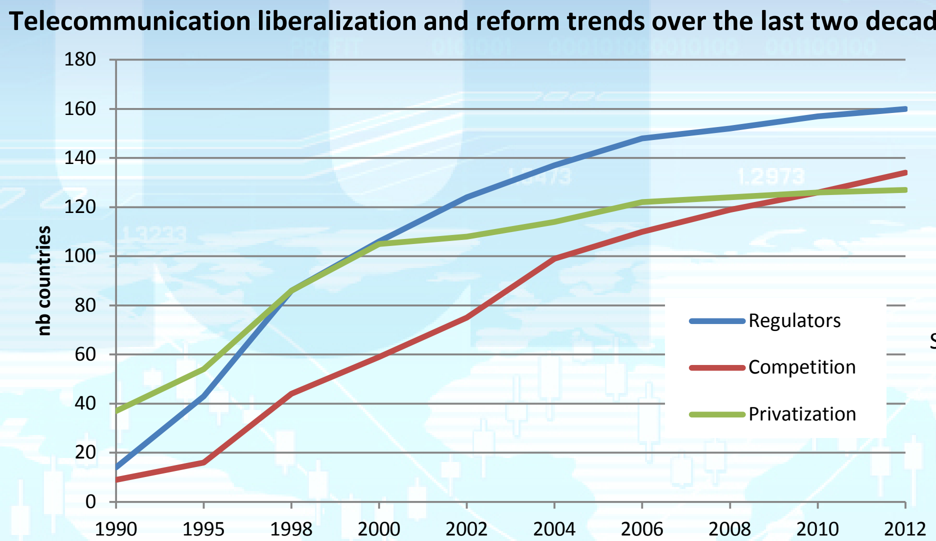
Telecommunication markets are largely liberalized

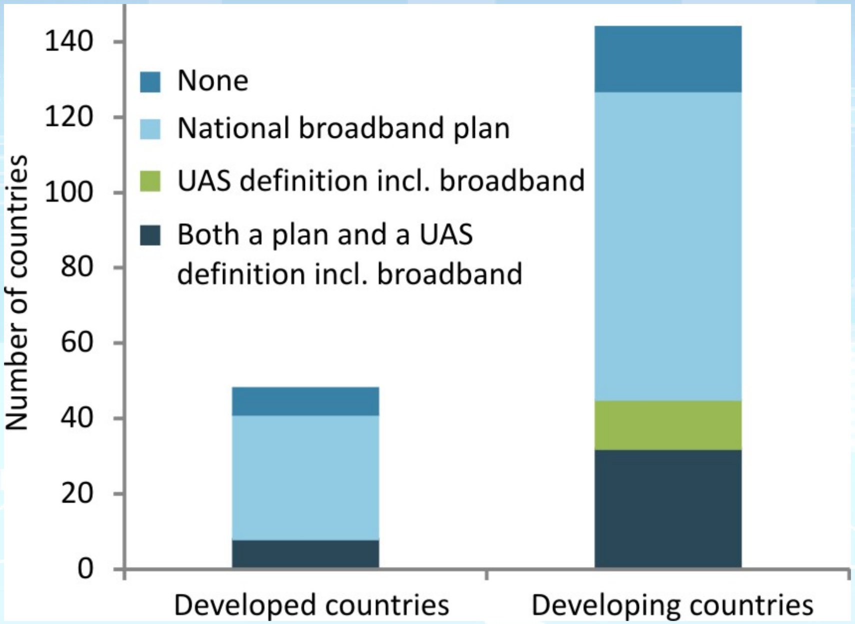


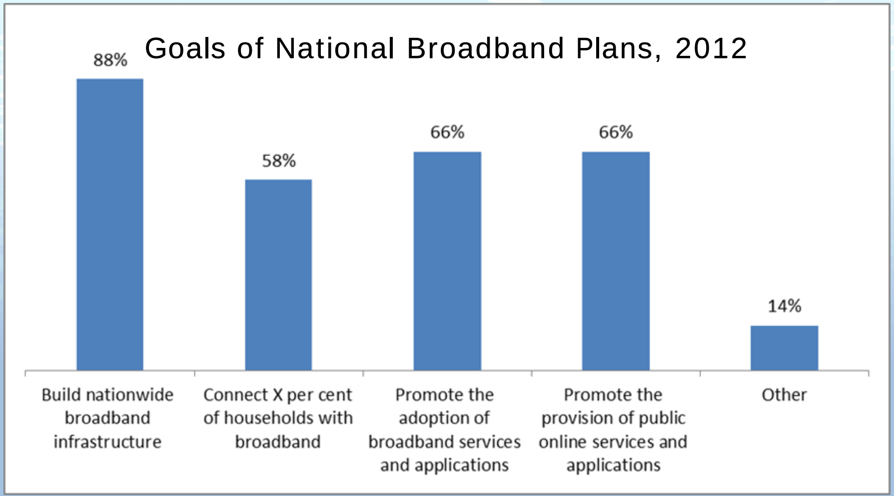
Source: ITU Telecommunications/ICT Regulatory Database

- Most countries have established independent regulators, with a competitive framework and privatized incumbent
- Broadband markets are competitive in most countries
- Converged services lead to multiple market players and offers – makes choices for consumers difficult

Broadband policies can promote lower prices, increase access & use

National policy instruments in place to promote broadband





- 146 governments have a national broadband policy (70% are from developing countries)
- 35% of countries have included BB in their UAS definitions - increasing
- Goals of national BB plans include the promotion of online services, incl. e-business

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Source: ITU Telecommunications/ICT Regulatory Database

Dynamic ICT countries mostly from developing world

- Based on improvements in ITU ICT Development Index (IDI) – *Measuring the Information Society Report 2012*

Top ten most dynamic countries - changes between IDI 2010 and 2011

Change in IDI ranking			Change in IDI value (absolute)			Change in IDI value (%)		
IDI rank 2011	Country	IDI rank change	IDI rank 2011	Country	IDI value change	IDI rank 2011	Country	IDI % change
49	Kazakhstan	7	40	Bahrain	0.66	117	Ghana	23
60	Brazil	7	47	Saudi Arabia	0.62	115	Zimbabwe	19
133	Rwanda	7	49	Kazakhstan	0.61	68	Azerbaijan	15
47	Saudi Arabia	6	68	Azerbaijan	0.57	88	Fiji	14
40	Bahrain	5	60	Brazil	0.54	49	Kazakhstan	13
68	Azerbaijan	5	46	Belarus	0.54	60	Brazil	13
88	Fiji	5	24	Estonia	0.49	47	Saudi Arabia	13
9	United Kingdom	5	73	Georgia	0.45	40	Bahrain	13
81	Viet Nam	5	71	Costa Rica	0.45	114	Kenya	12
117	Ghana	4	117	Ghana	0.43	73	Georgia	12

Source: ITU Measuring the Information Society Report 2012

The Least Connected Countries (LCCs) 2011

- Lowest quartile of 155 countries included in the ITU ICT Development Index (IDI) 2011 – *Measuring the Information Society Report 2012*

Country	IDI 2011	Country	IDI 2011	Country	IDI 2011	Country	IDI 2011
Ghana	2.23	Pakistan	1.75	Nepal	1.63	Mozambique	1.28
Bhutan	2.13	Djibouti	1.74	Cameroon	1.60	Guinea	1.28
India	2.10	Côte d'Ivoire	1.69	Tanzania	1.60	Liberia	1.26
Lao P.D.R.	1.99	Comoros	1.68	Congo	1.60	Ethiopia	1.15
Cambodia	1.96	Myanmar	1.67	Benin	1.55	Burkina Faso	1.14
Nigeria	1.93	Uganda	1.67	Papua New Guinea	1.44	Eritrea	1.09
Solomon Islands	1.85	Rwanda	1.66	Madagascar	1.44	Central African Rep.	0.97
Senegal	1.85	Togo	1.65	Malawi	1.42	Chad	0.94
Gambia	1.84	Zambia	1.65	Mali	1.38	Niger	0.88
Yemen	1.76	Mauritania	1.64	Congo (Dem. Rep.)	1.30		

Source: ITU Measuring the Information Society Report 2012

Conclusions
ICT infrastructure challenges

- Limited available bandwidth to expand broadband services
- Investment in network infrastructure (last mile, backbone)
- Limited spectrum (mobile networks) to cater to increased data traffic
- Consumer prices and affordability of broadband services
- Especially in Least Connected Countries (LCCs)

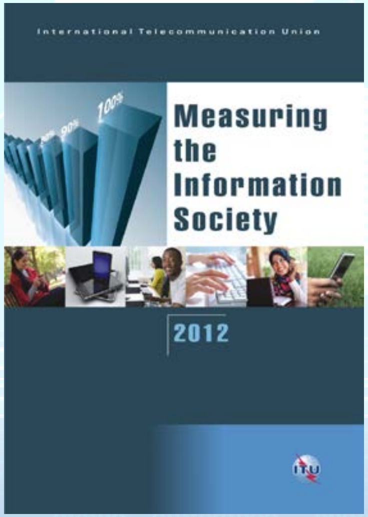
Way forward
Infrastructure needs for e-commerce

- Governments: Allocate and regulate spectrum
- Operators: upgrade networks
- Deployment of fibre-optic networks (backbone, urban areas)
- Policies to stimulate competition and private investment, in particular in advanced ICT networks, since these are long-term investments that foster economic growth
- Rural and remote areas: public investment, public-private partnerships, Universal Acces/Service Funds

THANK YOU

For further information:

www.itu.int/ict



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