Overview of ICT trends – emerging insights

Caribbean Region Seminar: Issues in Telecommunication economics and financing

10-13 September 2007, Antigua and Barbuda

Regulatory & Market Environment Division
Telecommunication Development Bureau
International Telecommunication Union

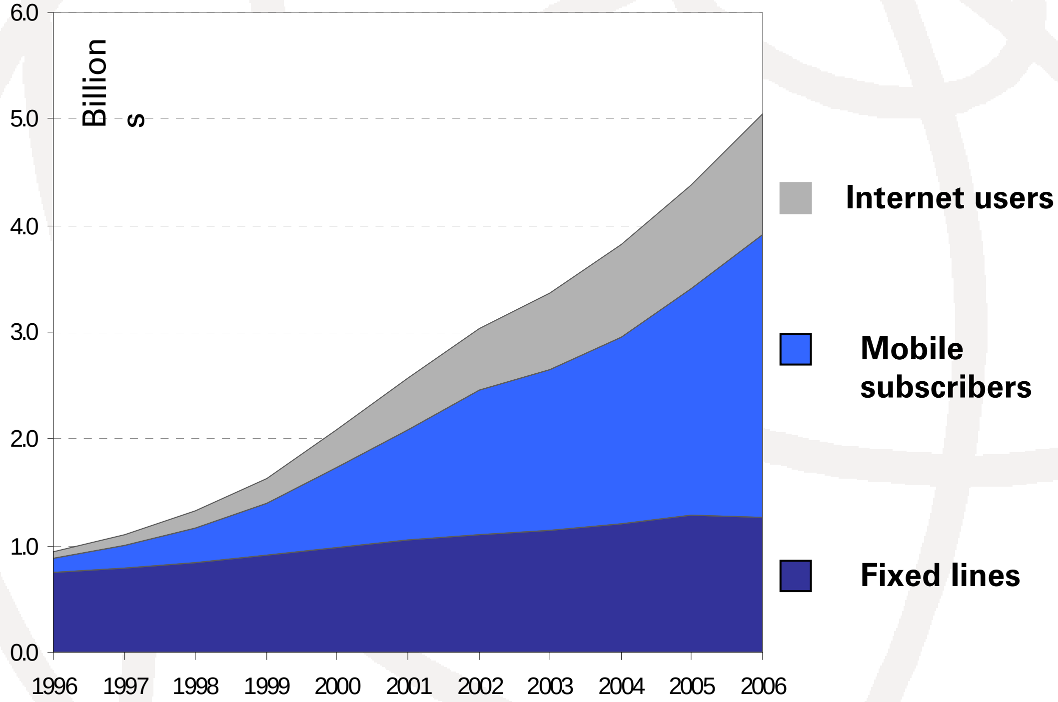
Outline of the presentation

- Overview of general ICT trends: Caribbean region in the context of world ICT
- Correlation between ICT trends and
  - Investments
  - Tariffs
- Emerging trends

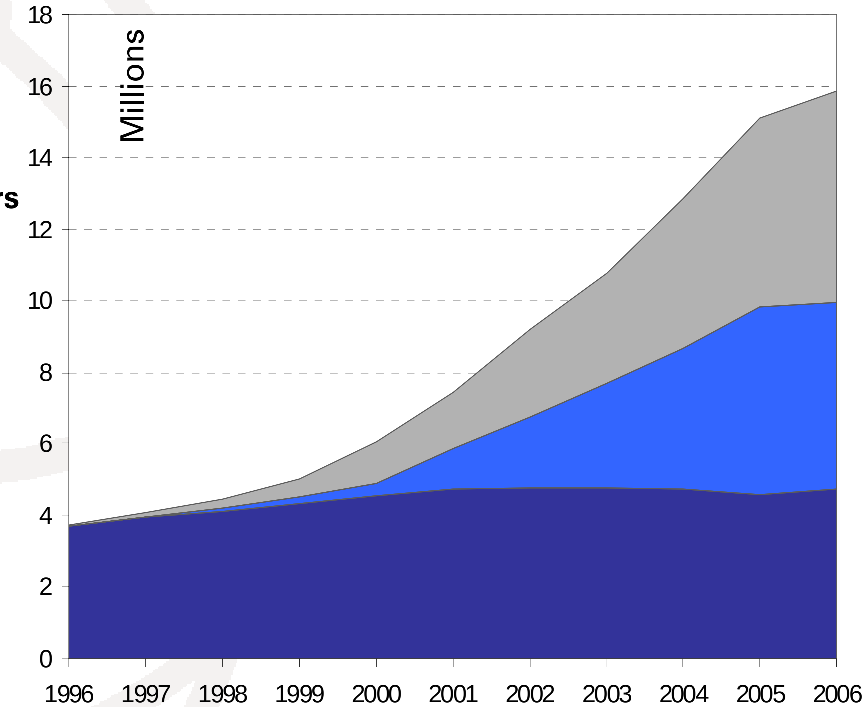
General ICT trends

Growth in fixed lines, mobile subscribers and Internet users

Worldwide



Caribbean Region

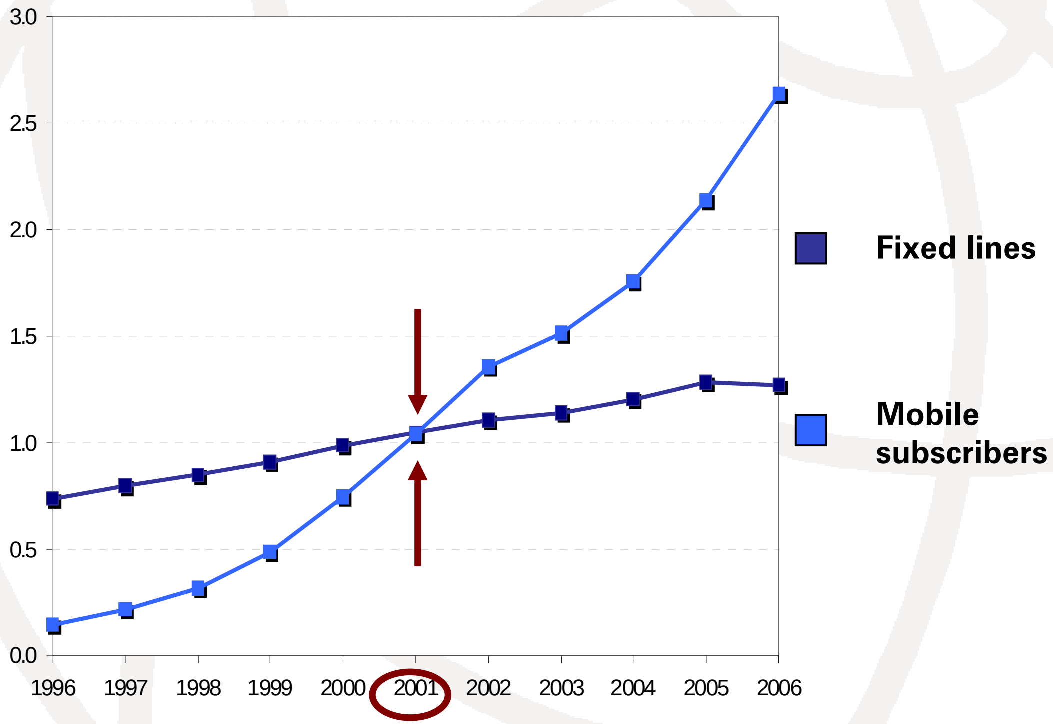


Source: ITU Trends in Telecommunication Reform 2007: The Road to NGNs and ITU World Telecommunication Indicators Database.

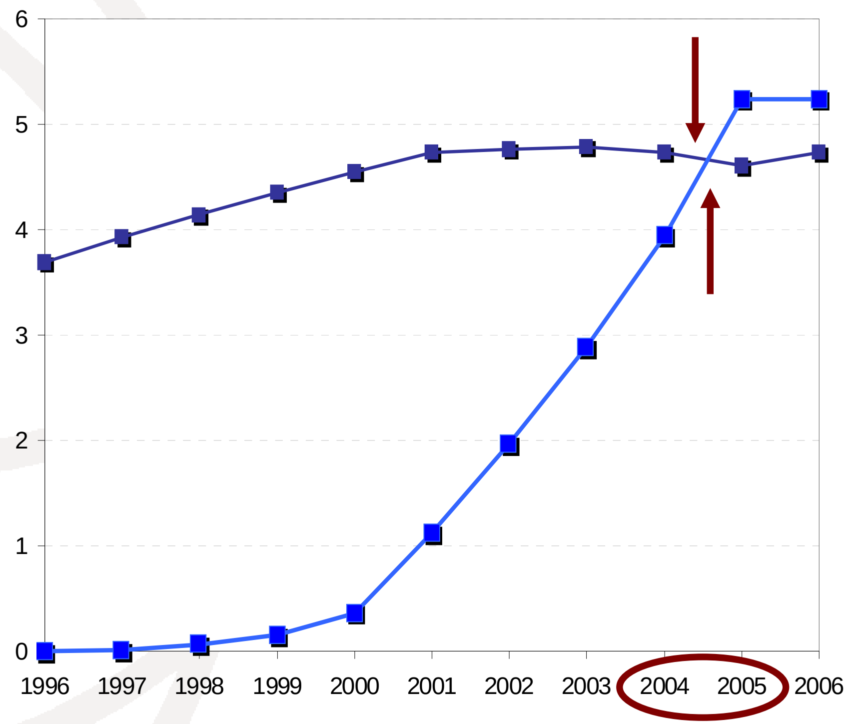
General ICT trends

Fixed-mobile substitution

Worldwide



Caribbean Region

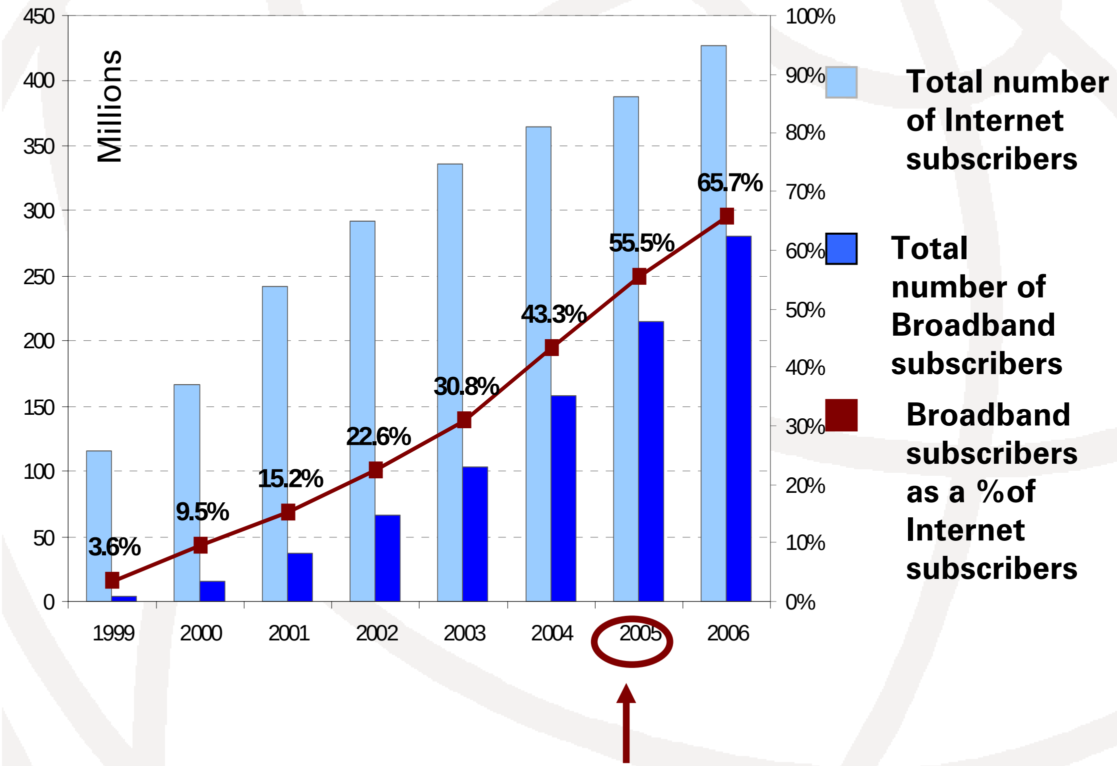


Source: ITU World Telecommunication/ICT Regulatory Database.

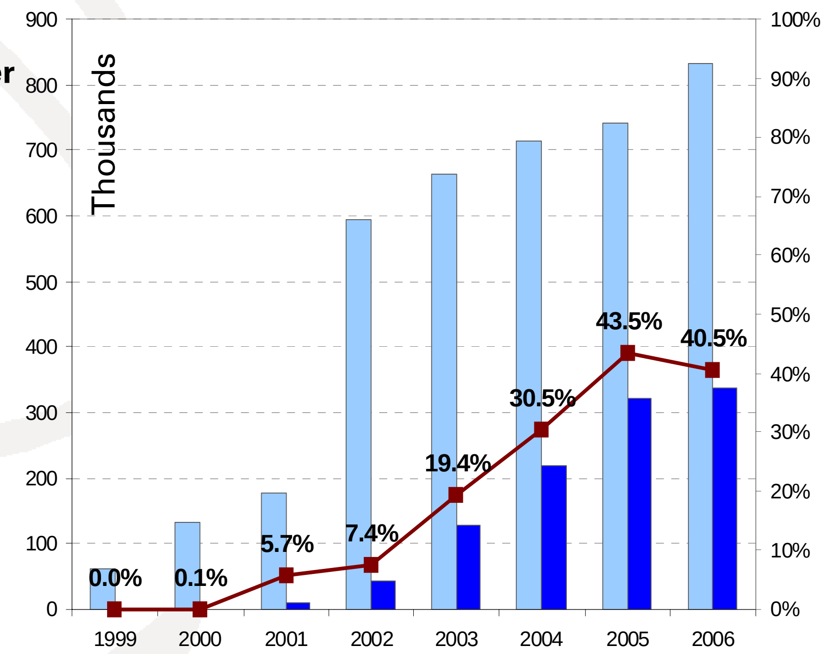
General ICT trends

Growth in Internet and broadband subscribers

Worldwide



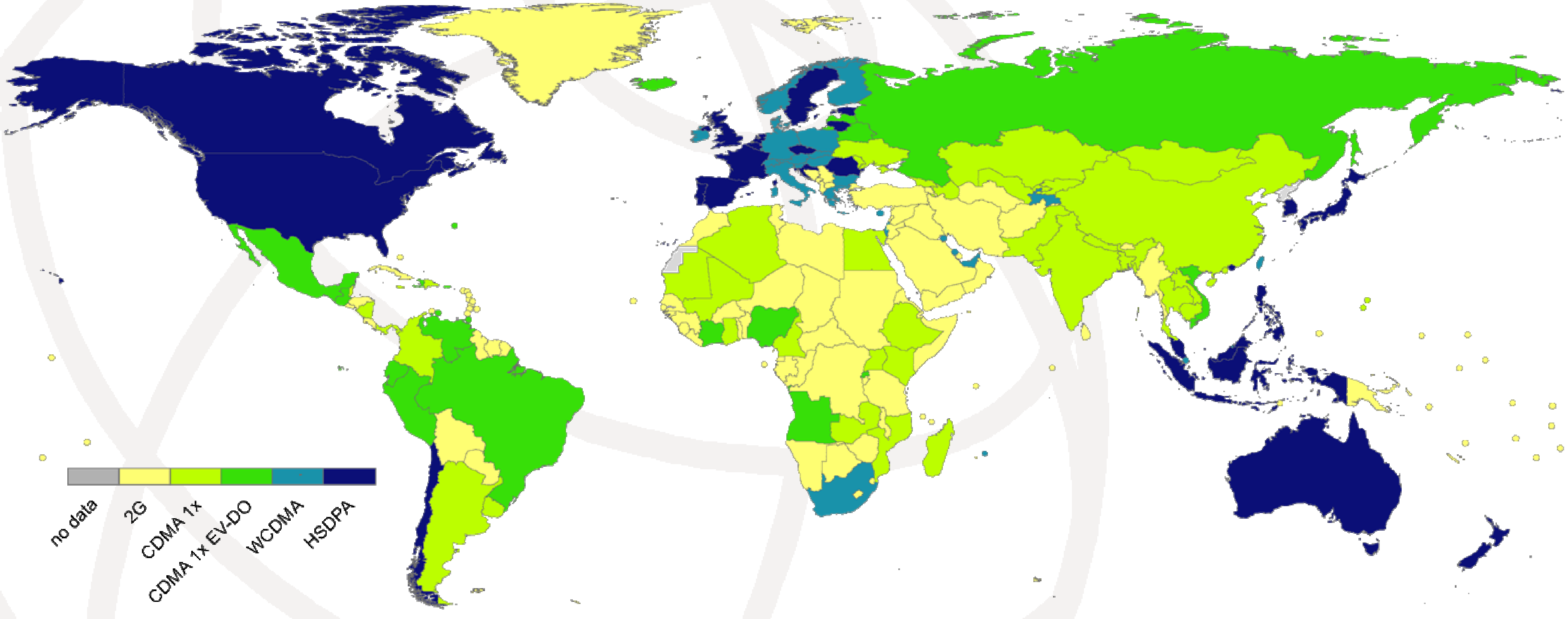
Caribbean Region



Source: ITU World Telecommunication/ICT Regulatory Database.

General ICT trends

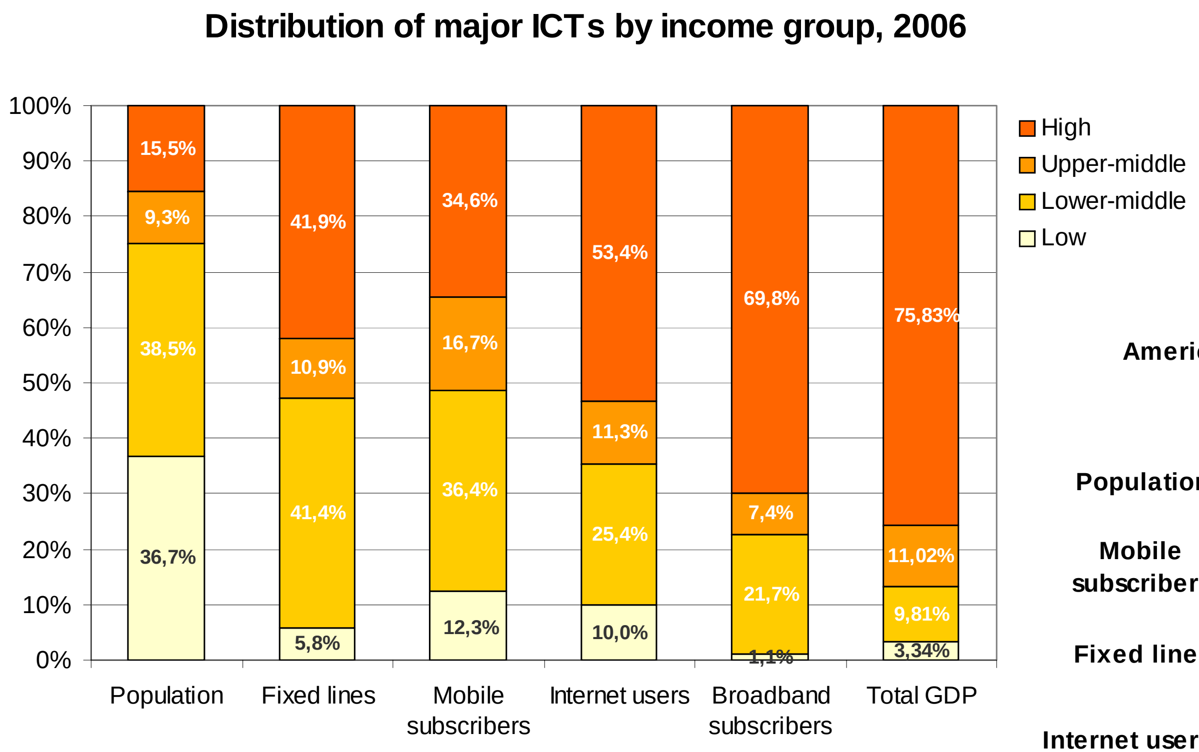
Internet and broadband goes mobile worldwide

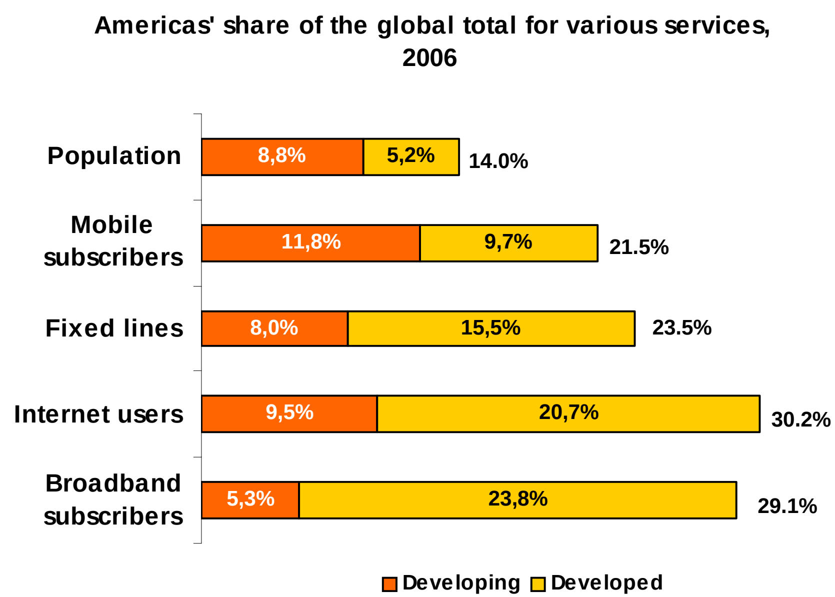


The designations employed and the presentation of material in this map do not imply any opinion whatsoever on the part of the ITU concerning the legal or other status of any country, territory or area or any endorsement or acceptance of any boundary.

Source: ITU Trends in Telecommunication Reform 2007: The Road to NGNs

General ICT trends: disparities



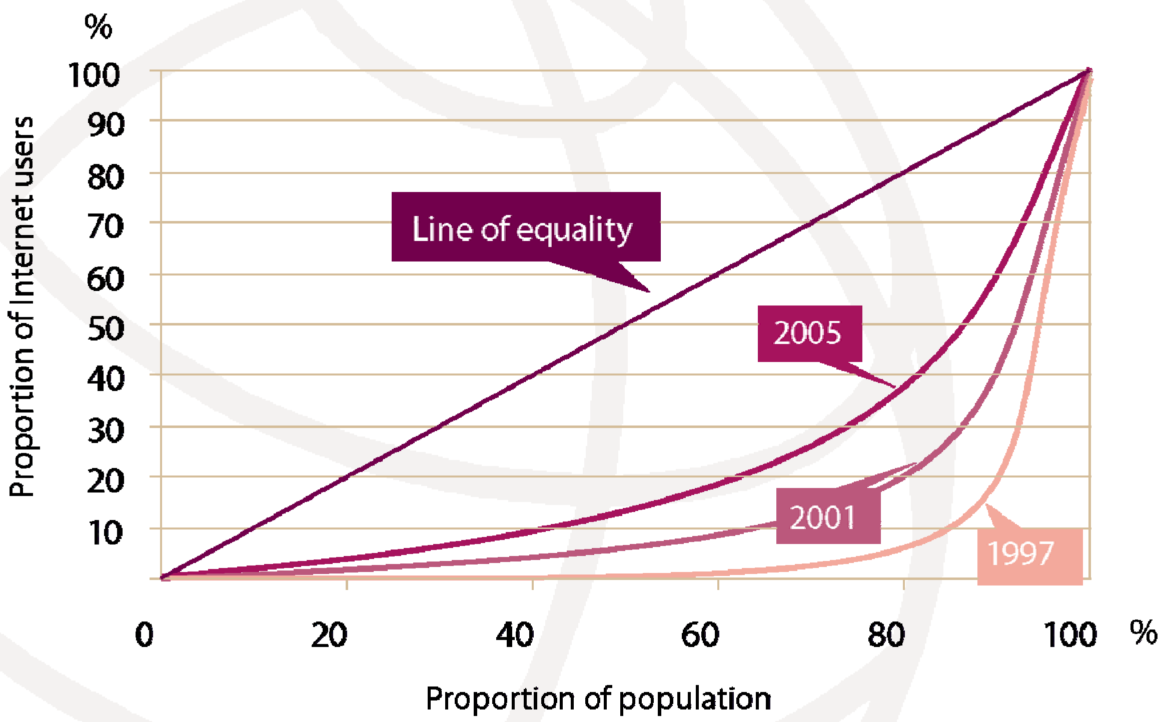


Source: ITU Trends in Telecommunication Reform 2007: The Road to NGNs and ITU World Telecommunication/ICT Indicators Database.

General ICT trends

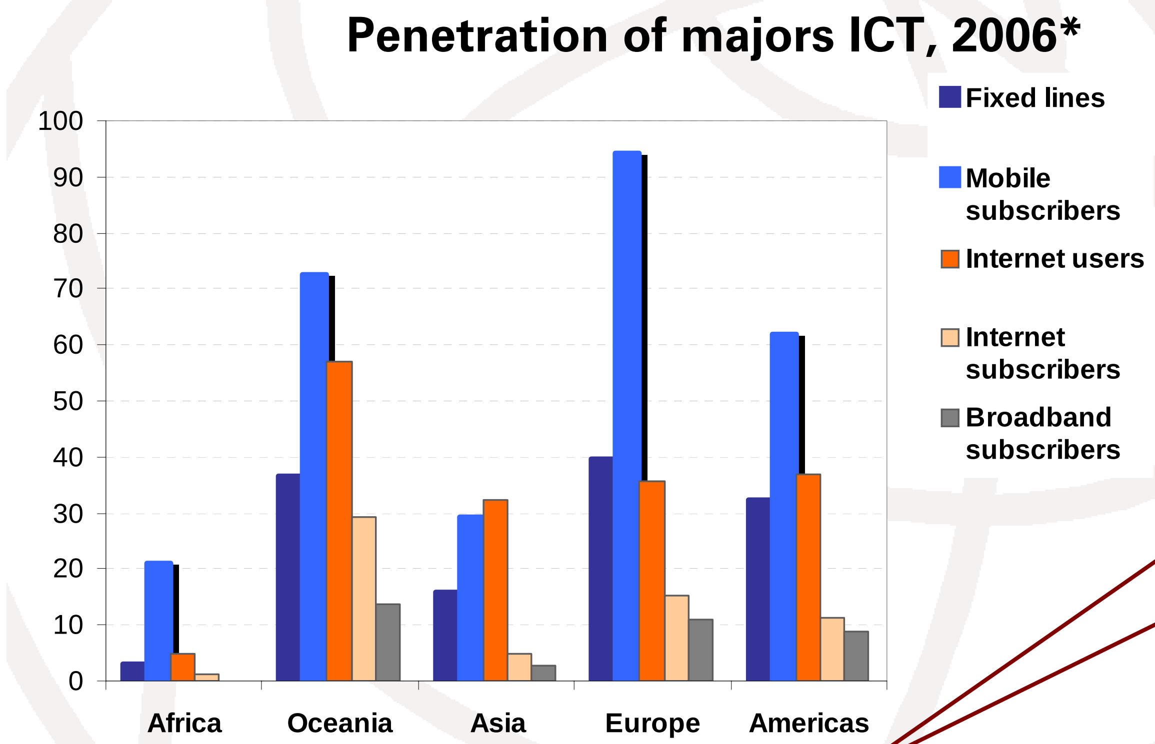
ICTs become more equally distributed over time

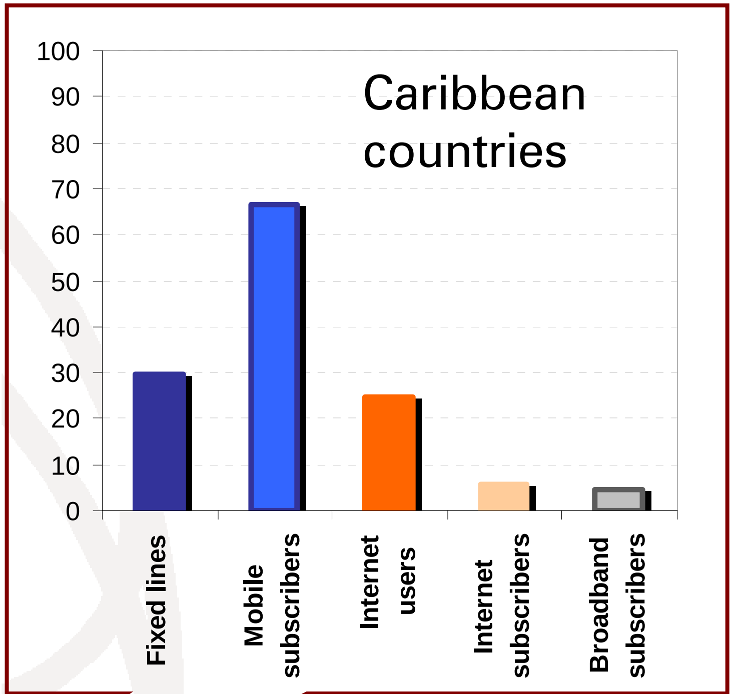
Growing equality in the worldwide cumulative share of Internet users in 1997, 2001 and 2005.



Source: World Information Society Report 2007: Beyond WSIS, using data from the ITU World Telecommunication/ICT Indicators Database

But disparities between regions persist





Are these disparities caused by differences in investments and/ or services tariffs?

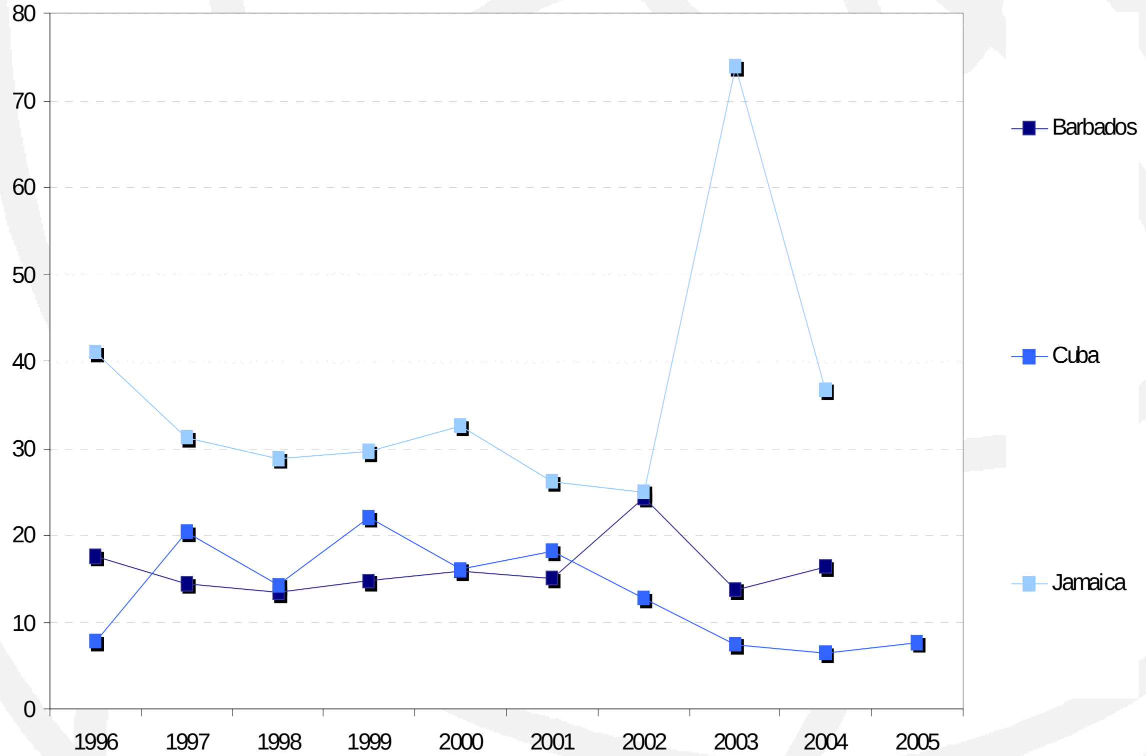
* Users per 100 inhabitants

Source: ITU World Telecommunication/ICT Indicators Database

Investments

Telecommunication investments as % of revenue

Caribbean countries



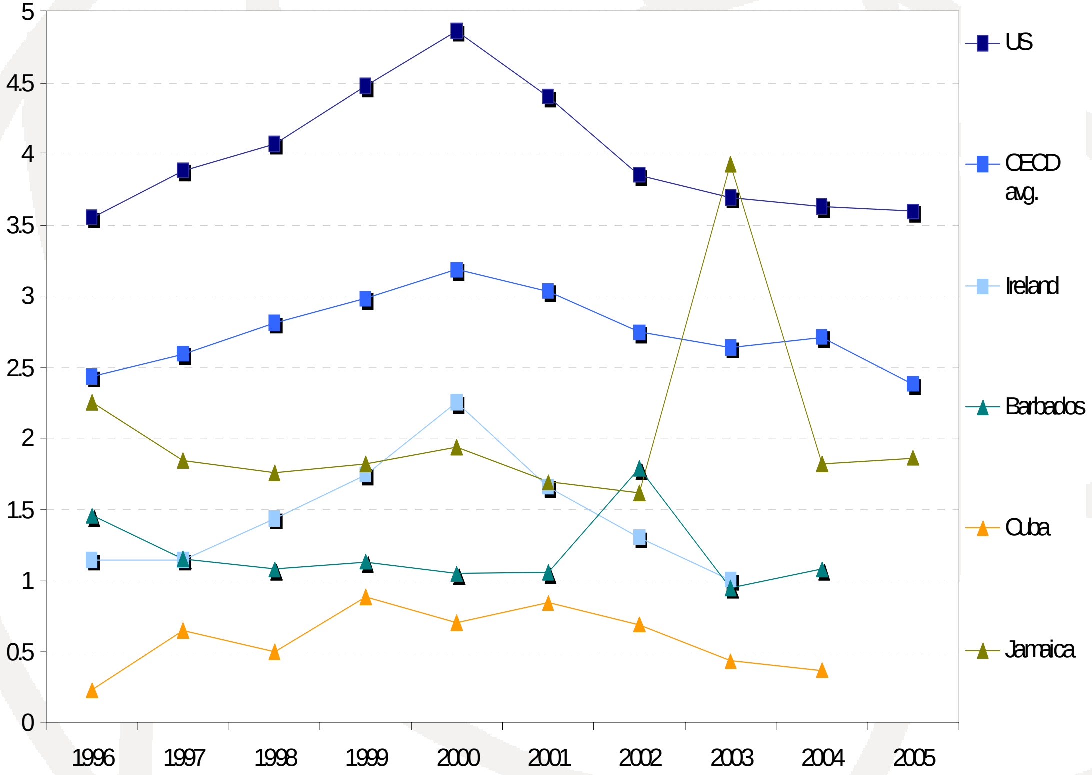
EU countries

- Investments of the fixed incumbent operator in the EU in average reached 13.3 per cent of the received revenues;
- Investments of the main mobile operator – approximately 12.7 per cent of their received revenues in year 2006.

Source: ITU World Telecommunication/ICT Indicators Database and EC 12th Report on the Implementation of Telecommunications Regulatory Package - 2006

Investments

Telecommunication investments as % of GDP

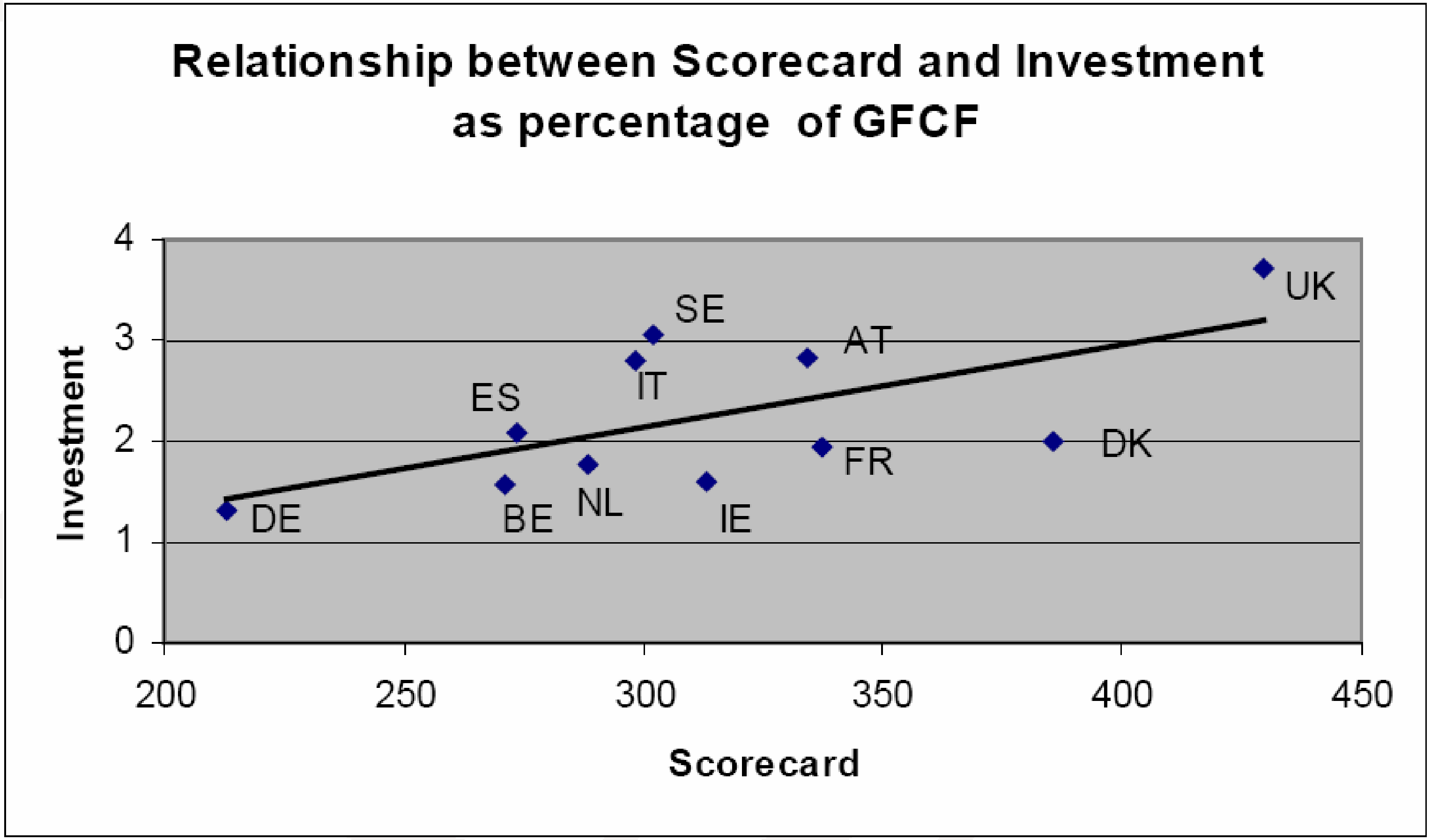


Investments into ICT sector are cyclical. The duration, periodicity and ect. of these cycles are determined by many factors:

- Current infrastructure;
- Current and potential competition;
- Technological development;
- Existing and potential demand;
- Timing of regulatory decision.

Source: ITU World Telecommunication/ ICT Indicators Database and OECD databases

Effective Regulation Linked to Investment



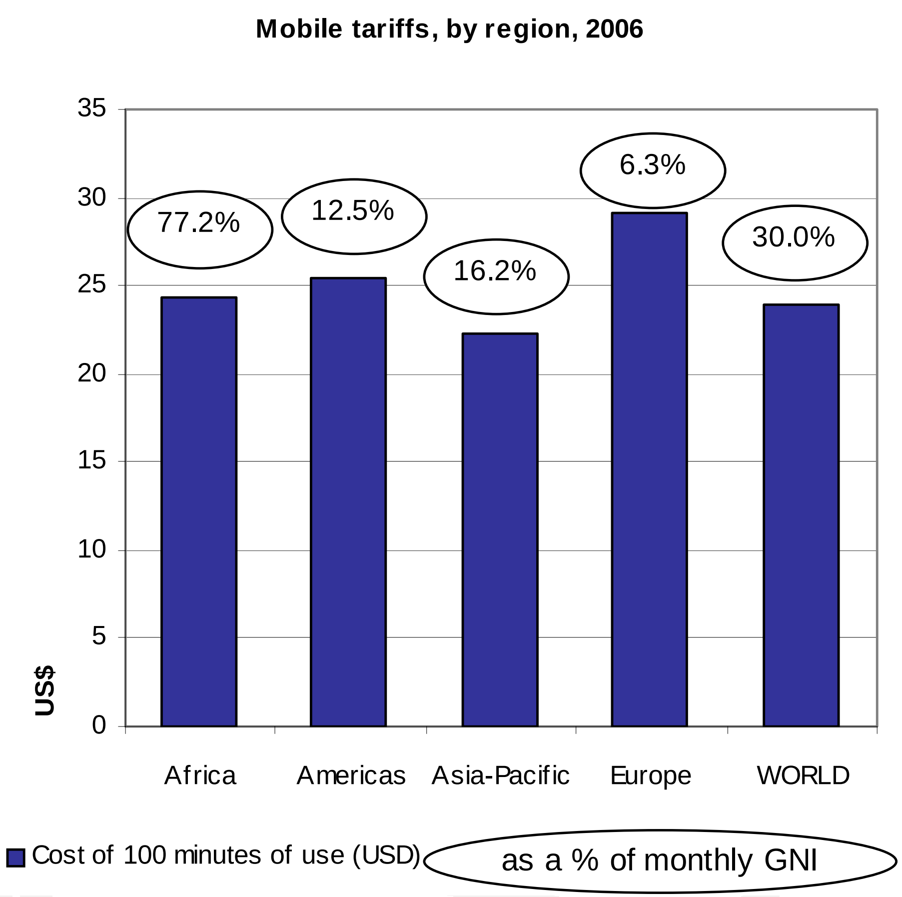
Source: ECTA Regulatory Scorecard 2005

Investments: key drivers

Primary Drivers	Level of expected returns Risk and uncertainty associated with expected returns		
Secondary Drivers	**Economy-wide**	**Industry-specific**	**Company-specific**
	GDP per capita Demographic/geographic characteristics Economic cycle (financial bubble) General regulation (not sector-specific)	Regulation by NRA Competition Technological progress Demand for E-communications services	Cost of capital Credit rating & debt levels Take-overs and mergers Company performance

Source: London Economics

Tariffs: mobile services



Mobile penetration*:

Africa 21%

Americas 62%

Asia 29%

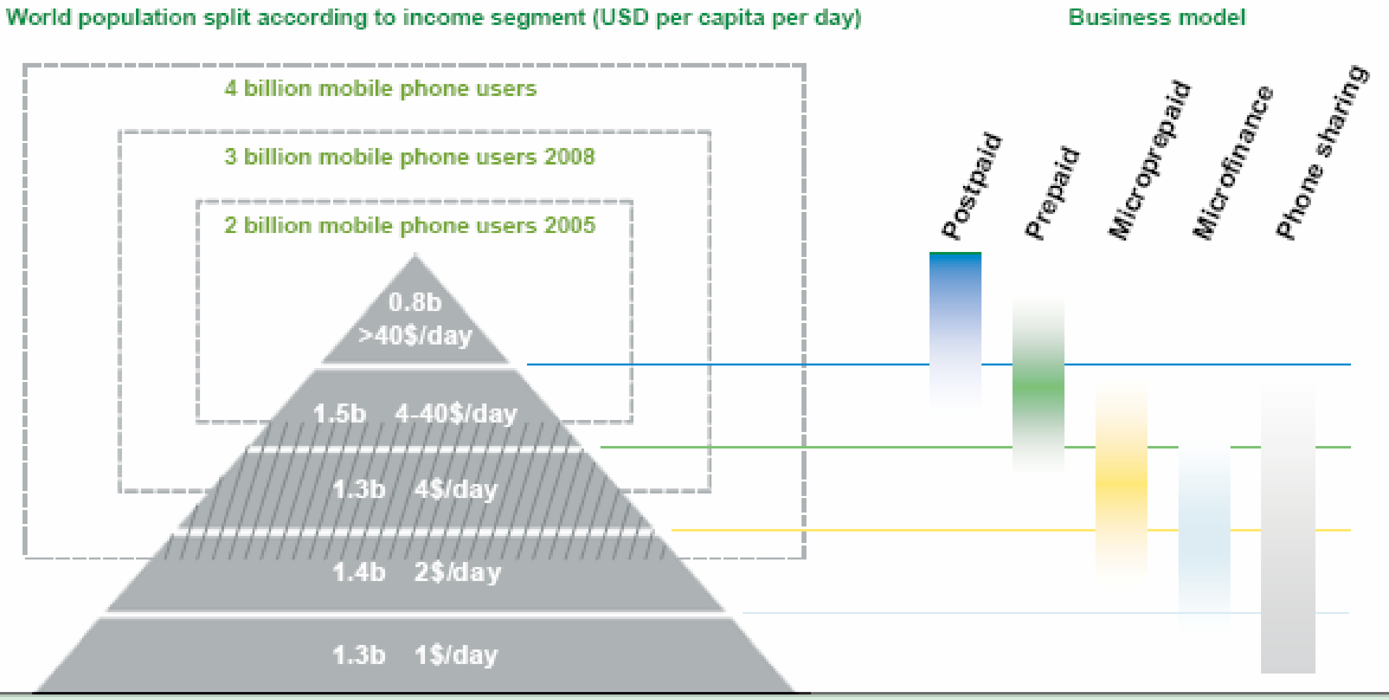
Oceania 72%

Europe 94%

* Users per 100 inhabitants

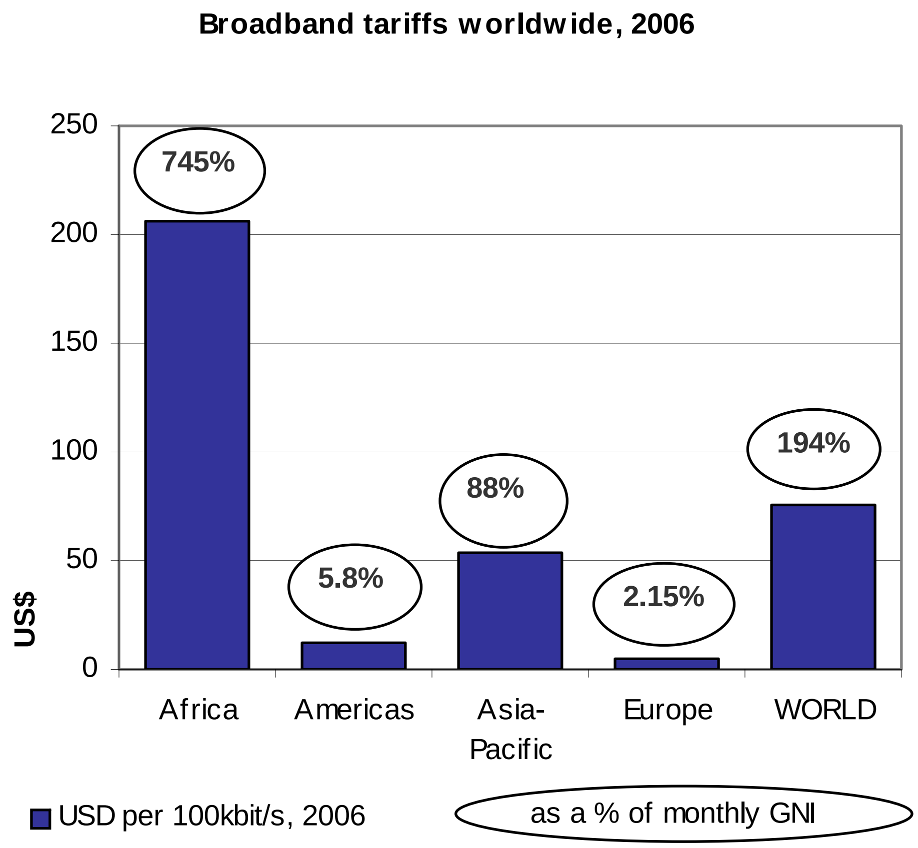
Source: ITU Trends in Telecommunication Reform 2007: The Road to NGNs and ITU World Telecommunication/ICT Indicators Database.

New business models enable growth into low-income segments



Source: "Voice services in new growth markets", presentation to the ITU Workshop, The Future of Voice (15-16 January 2007, Geneva), by Rauno Granath, Nokia

Tariffs: broadband



Broadband penetration*:

Africa 0.12%

Americas 8.93%

Asia 2.71%

Oceania 13.69%

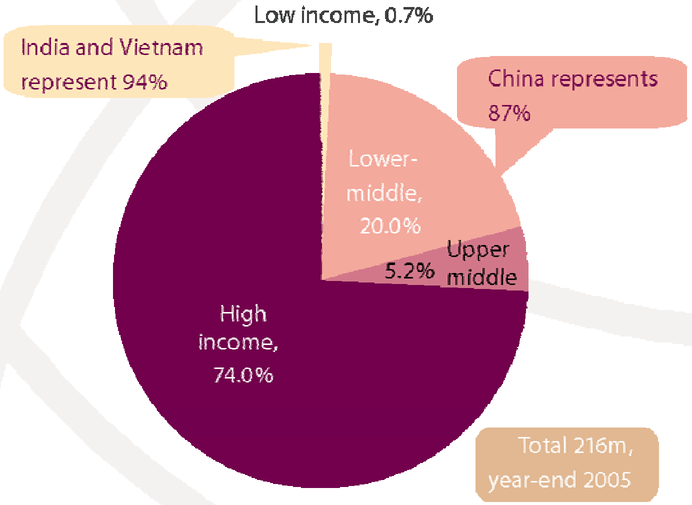
Europe 11.02%

* Users per 100 inhabitants

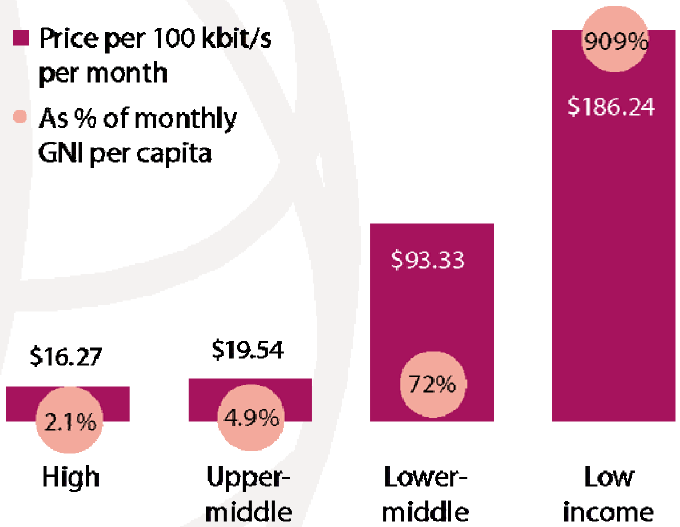
Source: ITU Trends in Telecommunication Reform 2007: The Road to NGNs and ITU World Telecommunication/ICT Indicators Database.

Broadband inequality… and it cause

Distribution of fixed broadband subscribers, by income group, 2005



Broadband prices and affordability, by income group, 2006 (in USD per month)



Source: World Information Society Report 2007: Beyond WSIS, using data from the ITU World Telecommunication/ICT Indicators Database

Tariffs: broadband

International survey of broadband prices

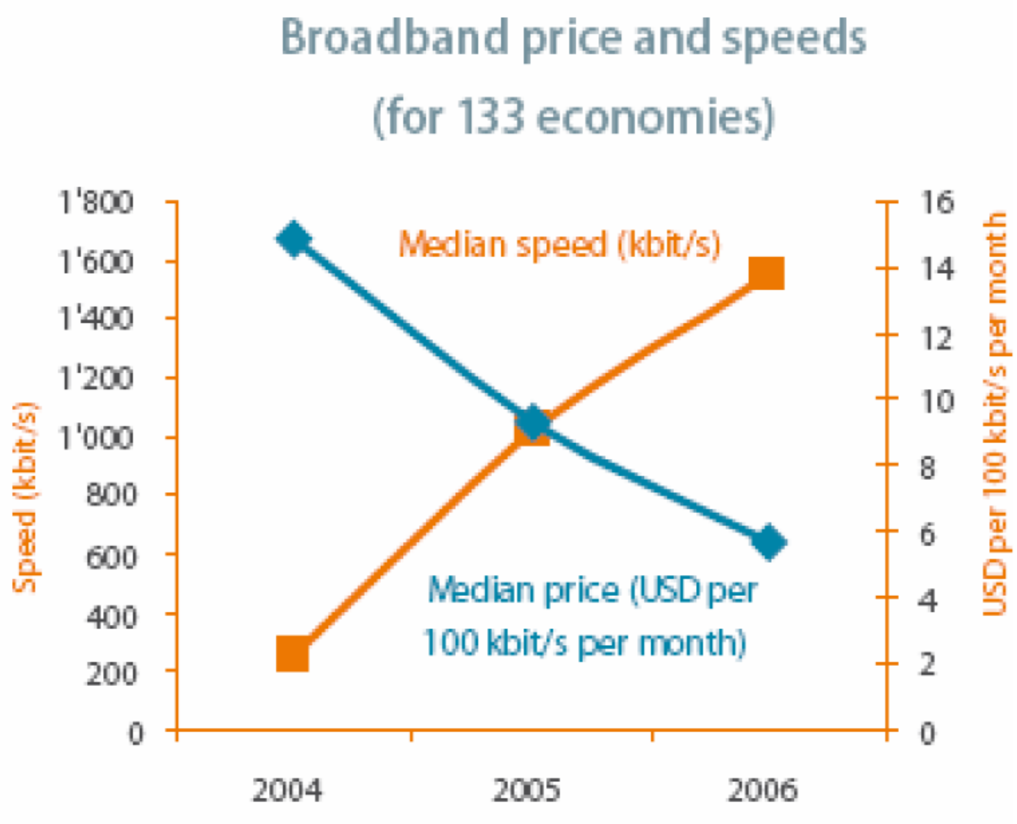
- Based on 133 economies that had broadband as early as 2004

Methodology

- Based on price in US$ per 100 kbit/s

Price trends

- Median price has fallen by 41% p.a.
- Median speed has risen by 66% p.a.
- Faster than Moore's Law



Source: ITU Internet Reports 2006: Digital.Life.

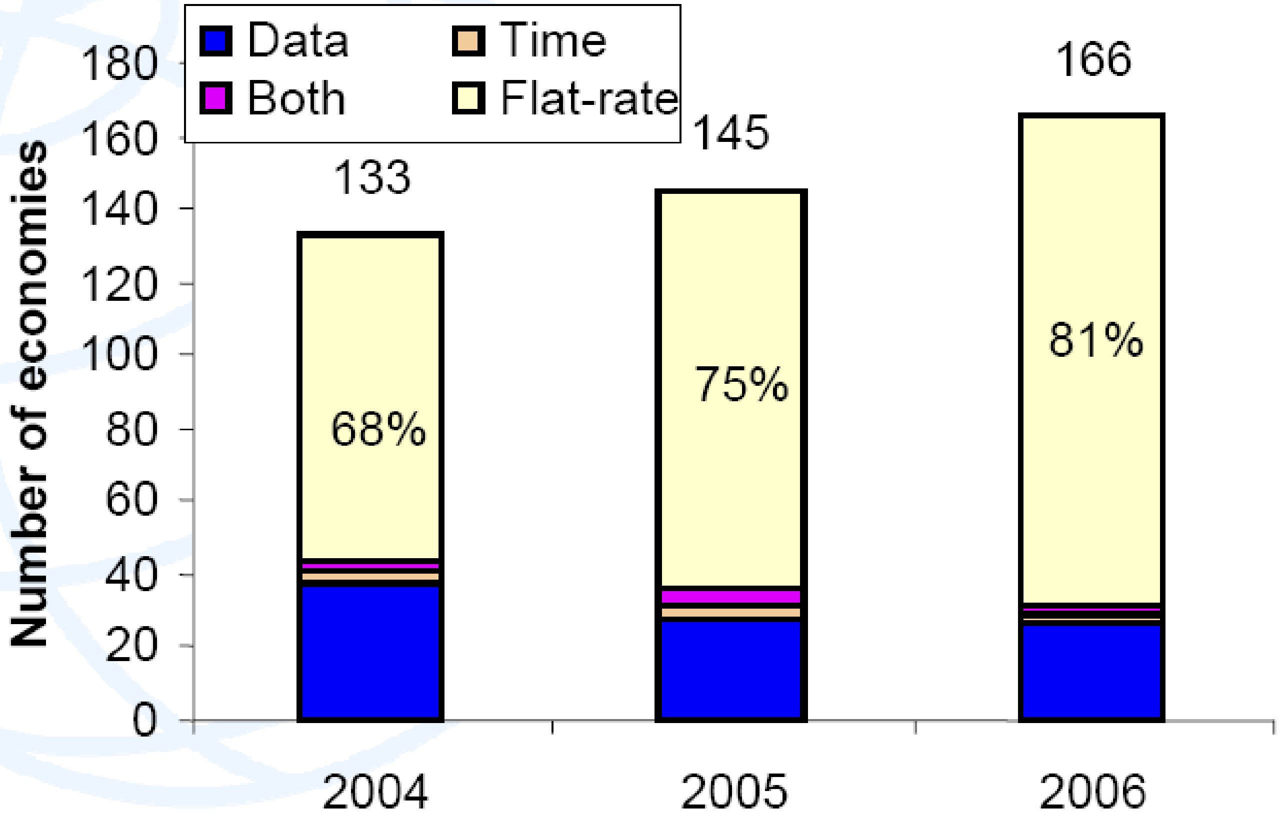
Tariffs: broadband

	Economy	Company	Speed Mbit/s	Price per month USD	Price per 100 kbit/s	Change 2005-06
1	Japan	Yahoo! BB	51.2	31.19	0.07	-12.5%
2	Rep. of Korea	Hanaro	51.2	40.59	0.08	...
3	Netherlands	internet Access	20.4	27.97	0.14	-81.3%
4	Taiwan, China	Chunghwa	12.3	22.67	0.18	...
5	Sweden		24.6	56.08	0.23	-6.5%
6	Singapore	Starhub	30.7	73.17	0.24	-85.0%
7	Italy	Libero	12.3	37.23	0.30	-73.8%
8	Finland	Elisa	24.6	85.64	0.36	-51.4%
9	France	Free	10.2	37.29	0.36	-90.1%
10	United States	Comcast	4.1	20.00	0.49	...
11	Germany	Freenet.de	6.0	30.95	0.52	...
12	United Kingdom	Pipex	8.1	50.89	0.63	-53.6%
13	Hong Kong, China	Netvigator	6.1	51.17	0.83	...
14	Portugal	Sapo	8.1	75.82	0.93	...
15	Canada	Bell	4.0	41.26	1.01	-3.9%
	Unweighted Average		18.3	44.33	0.42	-50.8%

Source: ITU Internet Reports 2006:Digital.Life

Tariffs: broadband

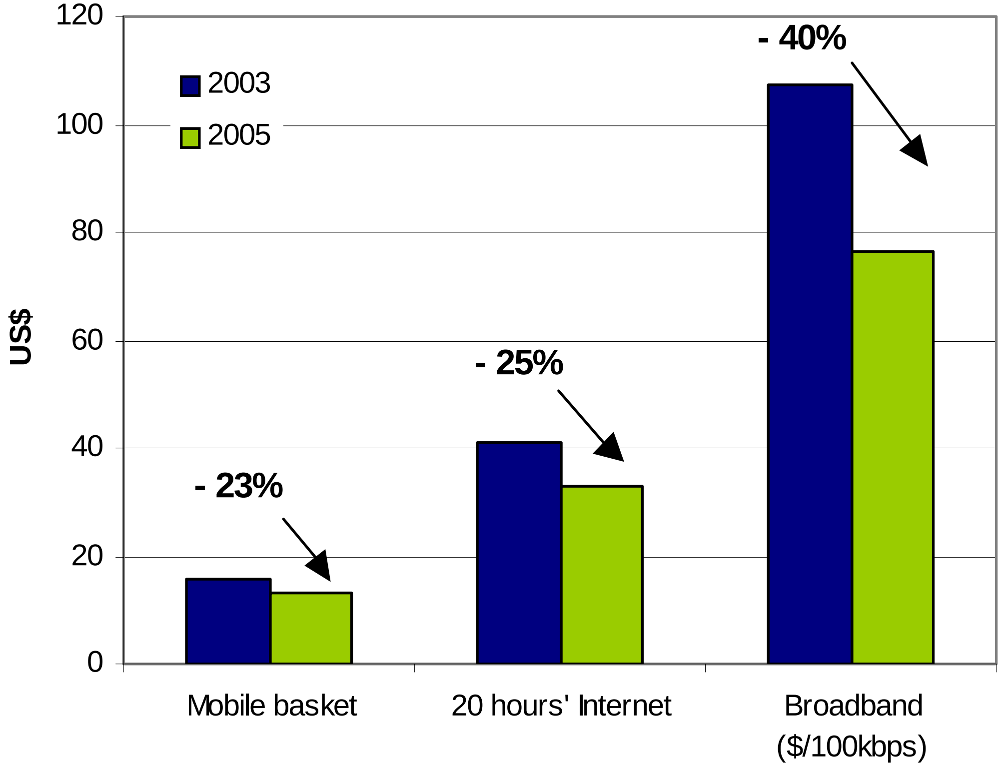
Global trends in broadband pricing schemes

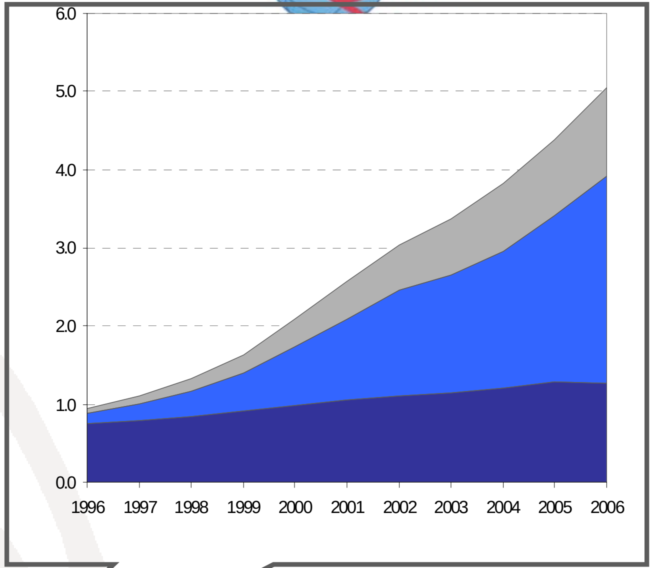


Note: Data" refers to price packages with bit caps. "Time" refers to time-metering . "Both" refers to packages with both data and time caps. "Fl rate" implies unlimited monthly use.

Source: World Information Society Report 2006

Average cost of ICTs worldwide, 2003-2005



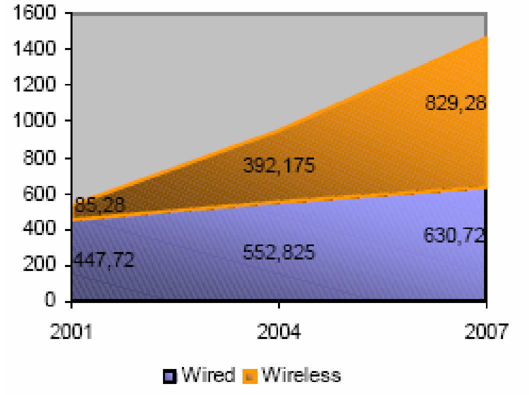


Source: ITU World Telecommunication/ICT Indicators Database

International Telecommunication Union

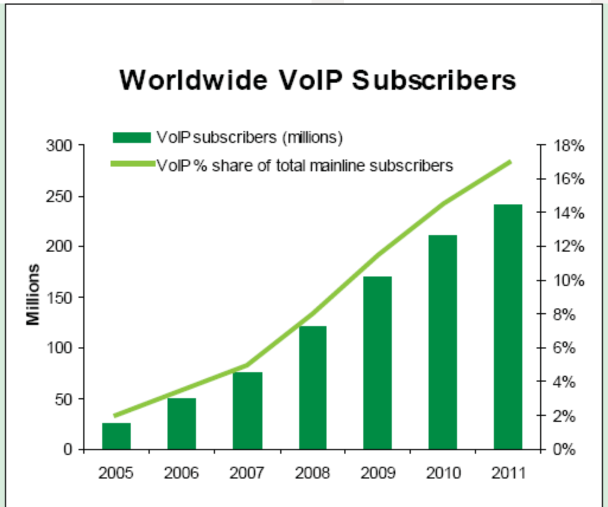
Emerging trends

- Demand and supply of the "ubiquitous" connectivity – wireless networks
- Consumption and provision of global services
- Technological disintegration of vertically integrated structures of services provision
- All over IP

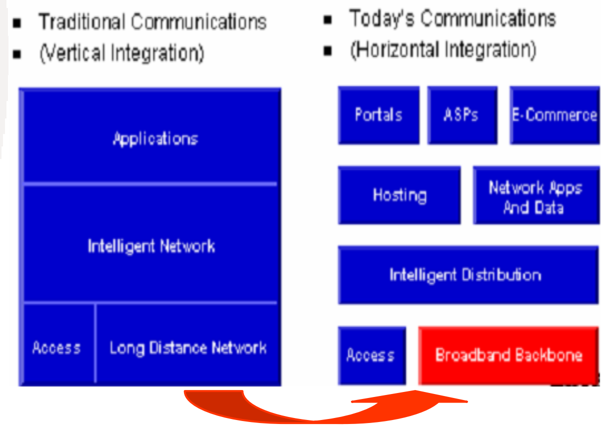


Source: eMarketer,2003

skype Microsoft Windows Google



Source: The state of VoIP worldwide 2006



Source: Ministry of Economic Affairs, Netherlands

Emerging trends

- From “one network, one service approach” to multi-service IP-native interoperable networks
- Convergence of IP-based networks with telephone, mobile and TV networks to build more efficient NGNs
- Reduced cost of deploying new networks that have more capabilities (voice, broadband, multi-media)
- Towards always on services: anywhere, anytime, anything
- Which are going to be the main drivers of the sector?
- What regulation in the NGN environment?
- How developing countries will benefit from these trends?

For more information on regulatory policy issues (research, data, publications), please visit:

www.itu.int/ITU-D/treg

Trends in Telecommunication Reform 2007: The Road to NGN

Thank you!

vaiva.lazauskaite@itu.int

www.itu.int/ITU-D/treg