

ITU Arab Regional Workshop for Arab LDCs on Interconnection Regulation in IP based environment

Emerging regulatory trends in Interconnection

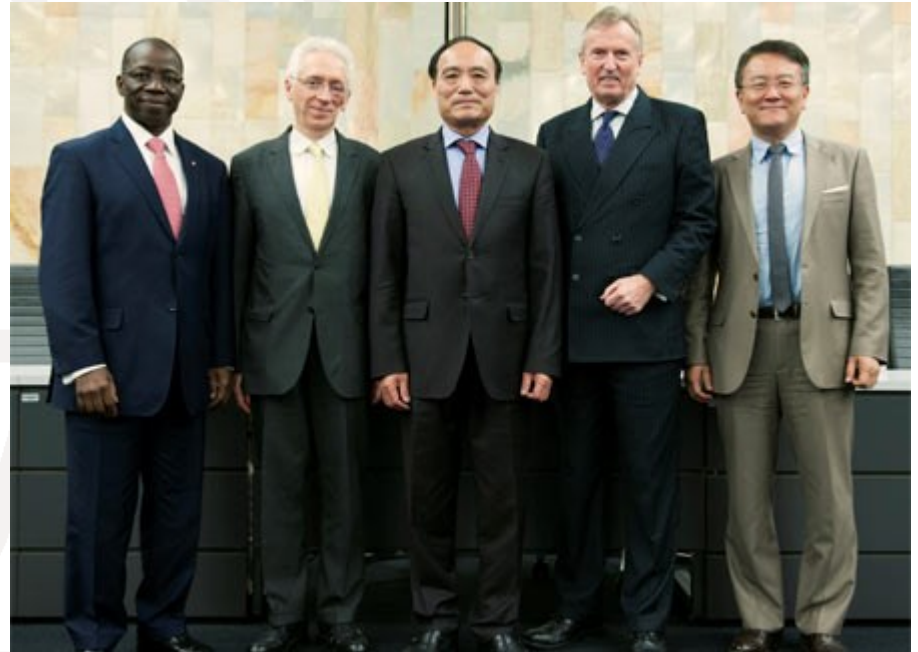
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International Telecommunication Union

OUTLINE

- Brief Background on ITU
- ITU-D Sector
- ITU-D: Global Development Objectives (2015-2018)
- Introduction to Interconnection
- The Importance of Interconnection
- Regulatory and Technical issues
- Economic and Policy issues in Interconnection:
 - Data Analysis
- IP Interconnection Regulatory Trends

ITU in brief

- Leading United Nations Agency for ICTs.
- 193 Member States, 750+ Sector Members
- SG & DSG
- Three sectors:
 - **Radiocommunication**
 - **Standardization**
 - **Development**
- ITU TELECOM Events



ITU's Global Presence



ITU Headquarters is in Geneva, Switzerland
There are 5 regional offices and 8 area offices around the world

ITU-D: the vision

To be the leading organization for promoting the availability and application of telecommunications/ICTs for socio-economic development



ITU-D: the mission

- A catalyst for multi-stakeholder partnerships, resource mobilization
- A neutral broker between government and industry
- An executing agency for project implementation and expert assistance to countries

ITU-D: Global Development Objectives (2015-2018)

Objective #1	Foster international cooperation on telecommunication/ICT development issues
Objective #2	Foster an enabling environment conducive to ICT development and foster the deployment of telecommunication/ICT networks as well as relevant applications and services, including bridging the standardization gap
Objective #3	Enhance confidence and security in the use of telecommunications/ICTs, and roll-out of relevant applications and services
Objective #4	Build human and institutional capacity, provide data and statistics, promote digital inclusion and provide concentrated assistance to countries in special need
Objective #5	Enhance environmental protection, climate-change adaptation and mitigation, and disaster-management efforts through telecommunications/ICTs

Introduction to Interconnection

- IP-based Interconnection represent the “marriage” of the Public Switched Telephone Network (PSTN) with the world of the Internet
- Very different interconnection arrangements prevail in these two worlds:
 - Different technology.
 - Different regulatory history.
 - Different industry structure.
- What should happen “when worlds Interfere?”
“the question to be answered by the workshop”

Introduction to Interconnection (Cont.)

- Why do we regulate?
 - Market failures: Market power
 - Market failures: Desirable capabilities that would not deploy without help (some of which constitute “public goods”)
 - Manage limited resources (spectrum, numbers)

The Importance of Interconnection

■ Key to developing competitive markets

- Interconnection is the main driver of growth and innovation in telecom market, it promote efficient infrastructure development
- But constructing a sound interconnection framework is no easy task

■ Approaches to Interconnection Policy

- National approach –Countries had established interconnection regulatory framework
- Regional Approach – European Union (interconnection directive), CITELE (Guidelines and Practices for Interconnection Regulation), APEC (Recommended Principles for interconnection), TRASA(Proposed interconnection guidelines)

■ WTO Reference Paper on Regulatory Issues

- ⇒ Puts forward a series of interconnection commitments:
 - Provide interconnection at any technically feasible point
 - Non discriminatory terms, conditions and rates
 - In a sufficiently unbundled and timely fashion
 - Calls for transparency

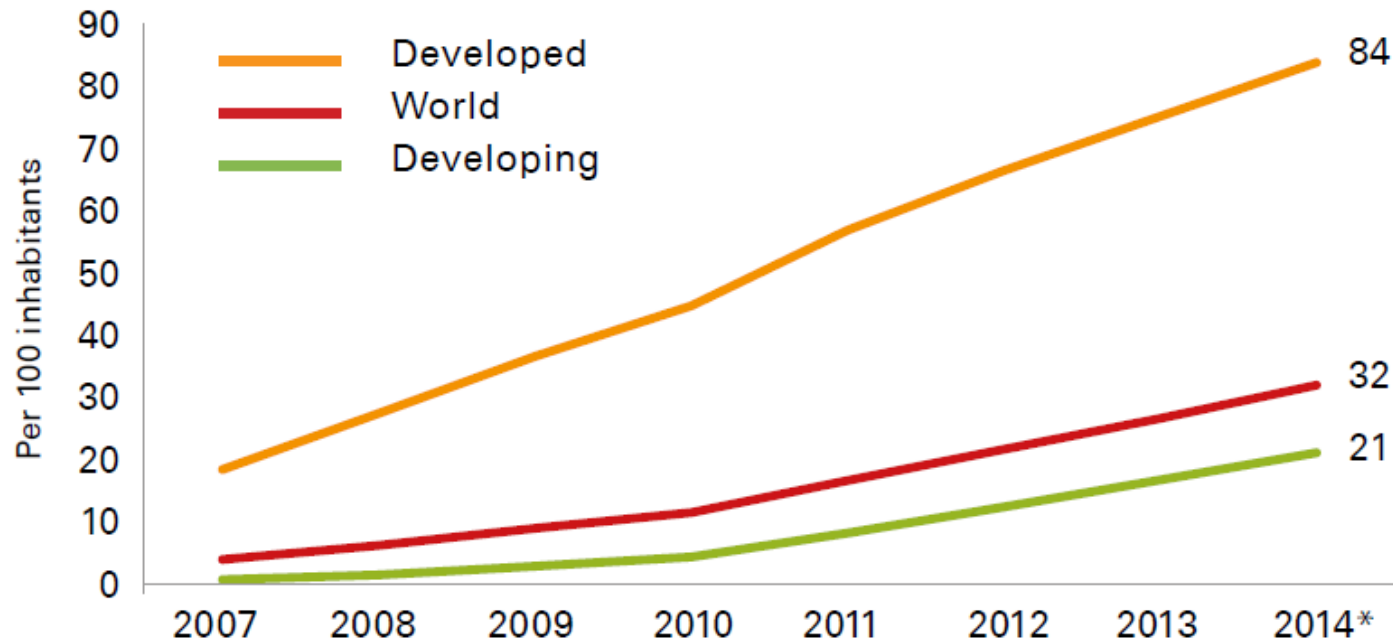
Regulatory and technical issues

- **Policy makers must resolve such basic questions as:**
 - which carriers are required interconnection
 - How the costs will be calculated and recovered, and
 - At what points in the PSTN interconnection should occur
- **Regulatory issues**
 - Establishing guidelines in Advance (without it, interconnection negotiation are frequently protracted, delaying the introduction of competition)
 - Introducing competition require “dominant carriers” to interconnect with other carriers
 - Cost orientation: excessive prices deter market entry, hinder competition, end user suffer and can provide a pool of revenue
- **Technical issues**
 - Points of interconnection: incumbent operators permit interconnection with their networks at any technically feasible point
 - Dialling Parity and Pre-selection: Call-by-call customer selection or Operator pre-selection by pre-subscription
 - Quality of Interconnection Service

Economic and Policy issues in Interconnection

Active mobile-broadband subscriptions are increasing world-wide

Active mobile-broadband subscriptions per 100 inhabitants, 2007-2014*



Note: * Estimate

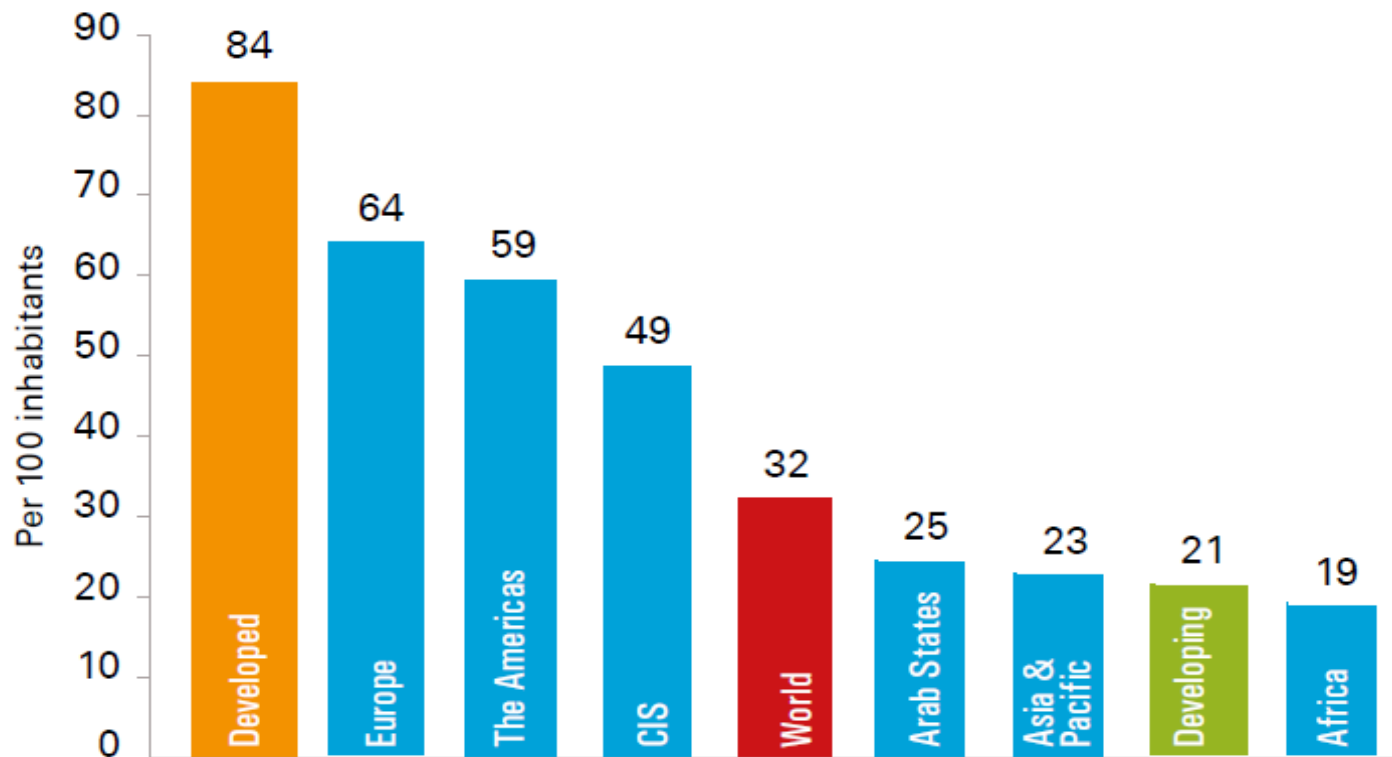
Source: ITU World Telecommunication/ICT Indicators database

Globally, mobile-broadband penetration will reach 32% by end 2014 – almost double the penetration rate just three years earlier (2011) and four times as high as five years earlier (2009).

Economic issues in Interconnection

Mobile-broadband penetration continues to show double-digit growth rates

Mobile-broadband penetration by region, 2014*



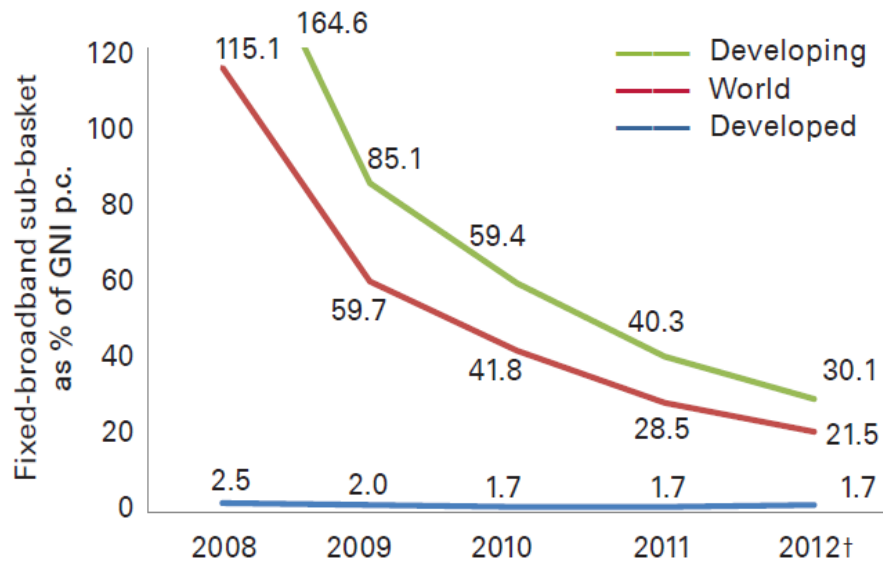
Note: * Estimate

Source: ITU World Telecommunication/ICT Indicators database

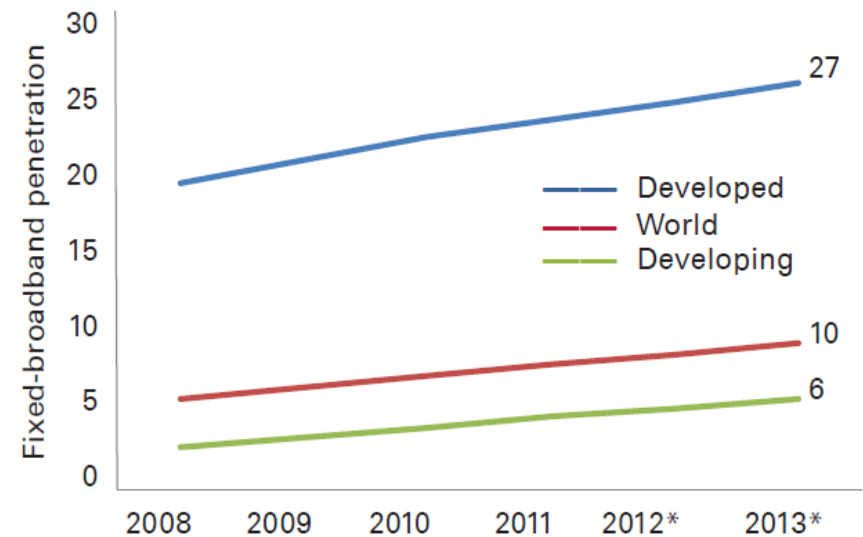
Economic issues in Interconnection

The good news is that fixed-broadband prices drop by 82%

Prices



Penetration



Source: ITU World Telecommunication /ICT Indicators database

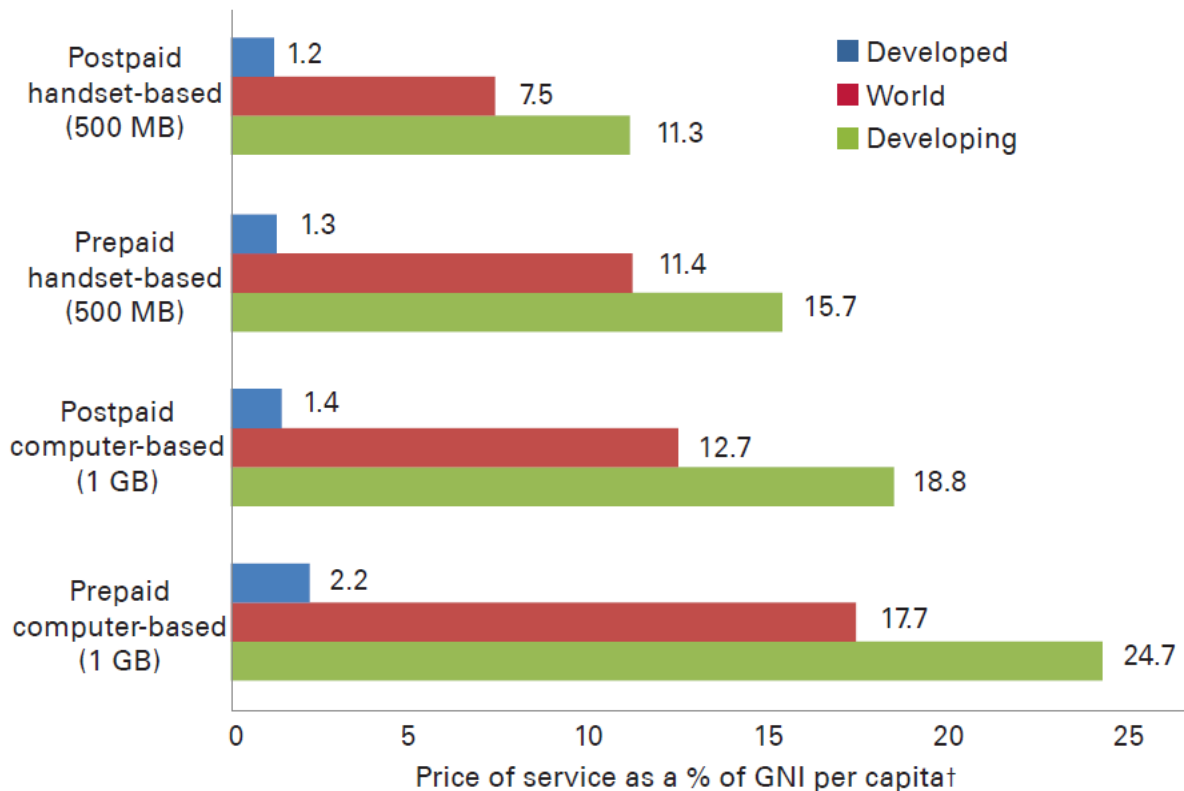
Note: Simple averages. † Preliminary result. * Estimate

As fixed-broadband services become more affordable, penetration increases

Economic issues in Interconnection

But Mobile broadband continues to be much more expensive in developing countries

Price of mobile-broadband services, early 2013[†]



But considerably cheaper than fixed-broadband services

By early 2013, the price of an entry-level mobile-broadband plan represents between 1.2-2.2% of monthly GNI p.c. in developed countries and between 11.3-24.7% in developing countries, depending on the type of service.

Source: ITU World Telecommunication /ICT Indicators database

Note: Simple averages. † Preliminary result

Economic issues in Interconnection

And the average price of mobile-broadband services remain largely unaffordable for LDCs

Price of mobile-broadband services by region, early 2013[†]

	% of GNI per capita					
	Europe	Arab States	CIS	The Americas	Asia & the Pacific	Africa
Prepaid handset-based (500 MB)	1.1	5.7	5.7	5.9	5.9	38.8
Postpaid handset-based (500 MB)	1.1	2.2	5.6	5.0	3.5	36.2
Prepaid computer-based (1 GB)	1.9	7.4	7.6	11.1	12.6	58.3
Postpaid computer-based (1 GB)	1.2	2.5	7.4	8.0	10.6	54.6

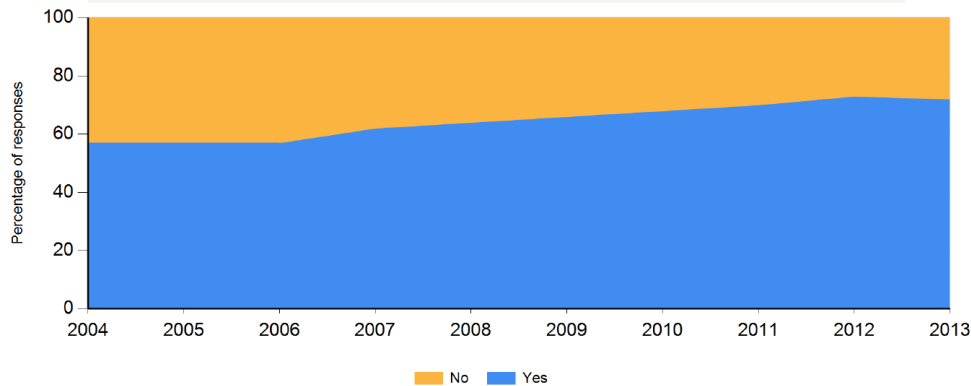
Source: ITU World Telecommunication /ICT Indicators database

Note: Simple averages. † Preliminary result

A regional comparison highlights that mobile-broadband services remain largely unaffordable in LDCs, for instance in Africa, where the price of a computer-based plan with 1GB of data volume represents on average more than 50% of GNI p.c.

Results from the ITU ICTEye database

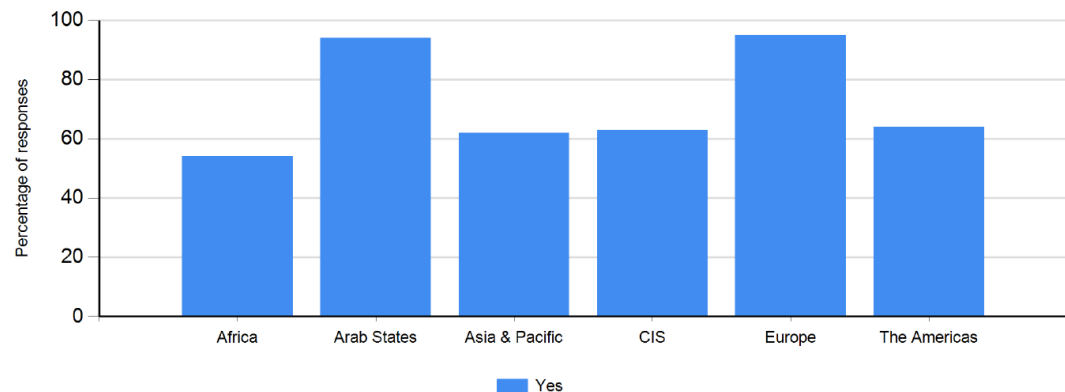
Are Interconnection prices publicly available?



Source: ITU Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Are Operators required to publish Reference Interconnection Offer (RIO)?

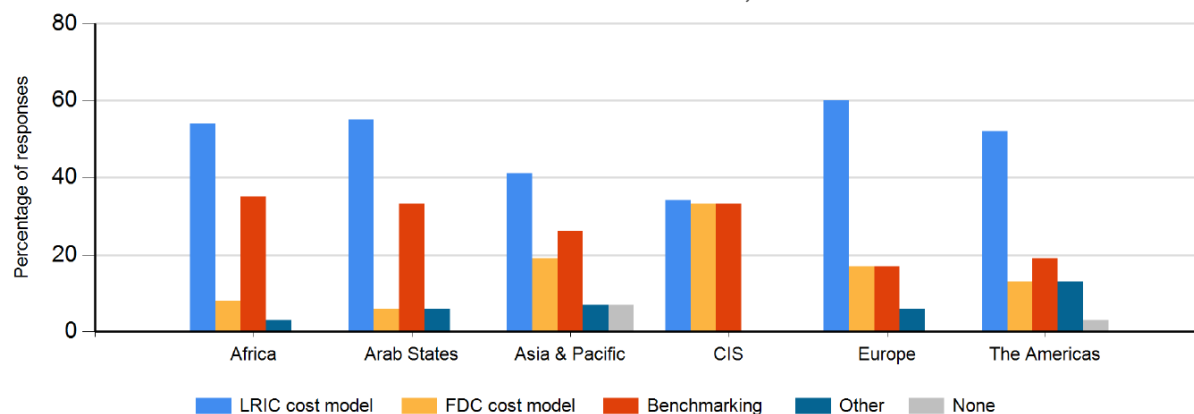


Source: ITU Telecommunication/ICT Regulatory Database

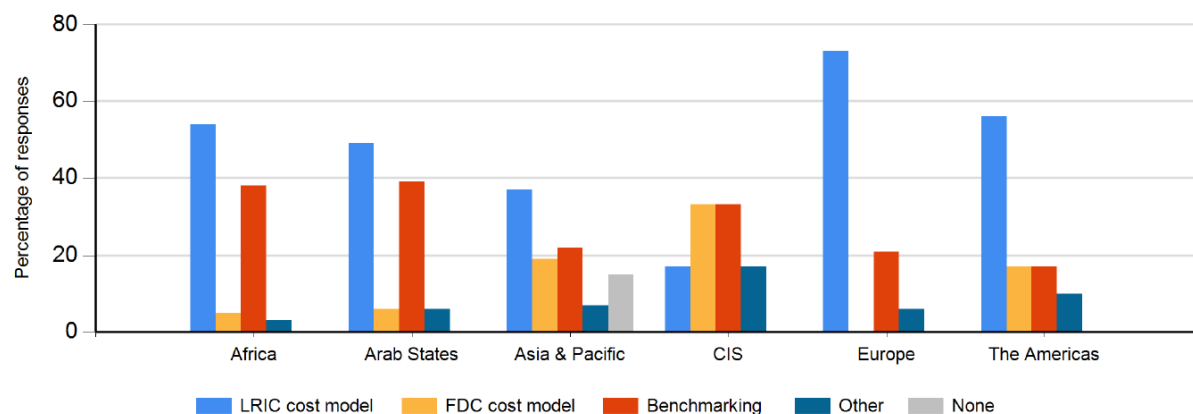
ITU ICT-Eye: <http://www.itu.int/icteye>

Approach used to regulate fixed and mobile termination rates

Fixed termination rates, 2014

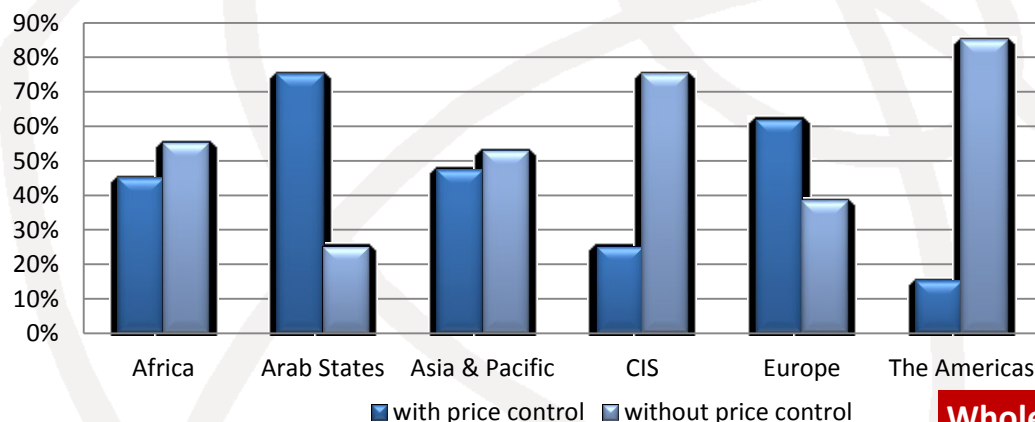


Mobile termination rates, 2014

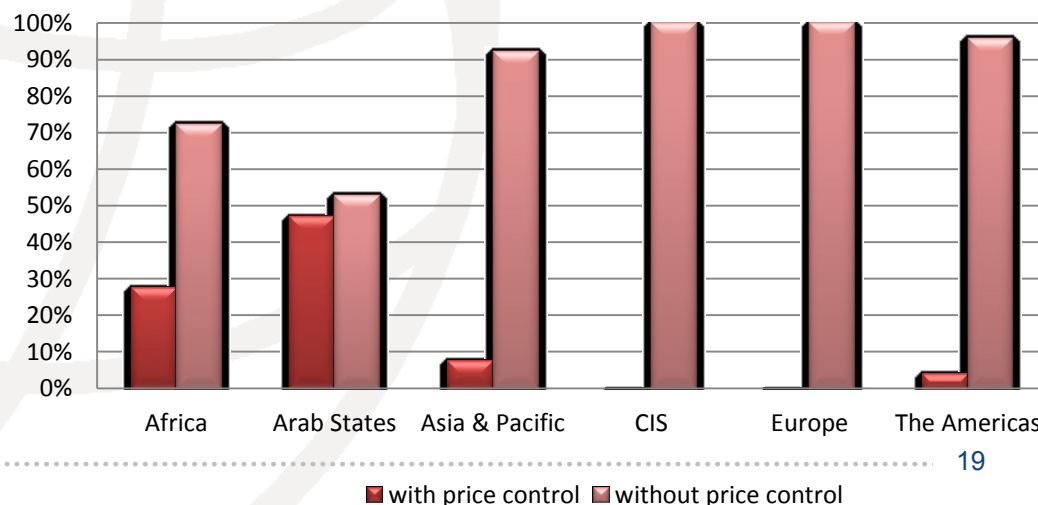


Regarding Broadband services, it is interesting to note that for wholesale Fixed services are more regulated than wholesale Mobile services

Wholesale fixed broadband access and services, 2013

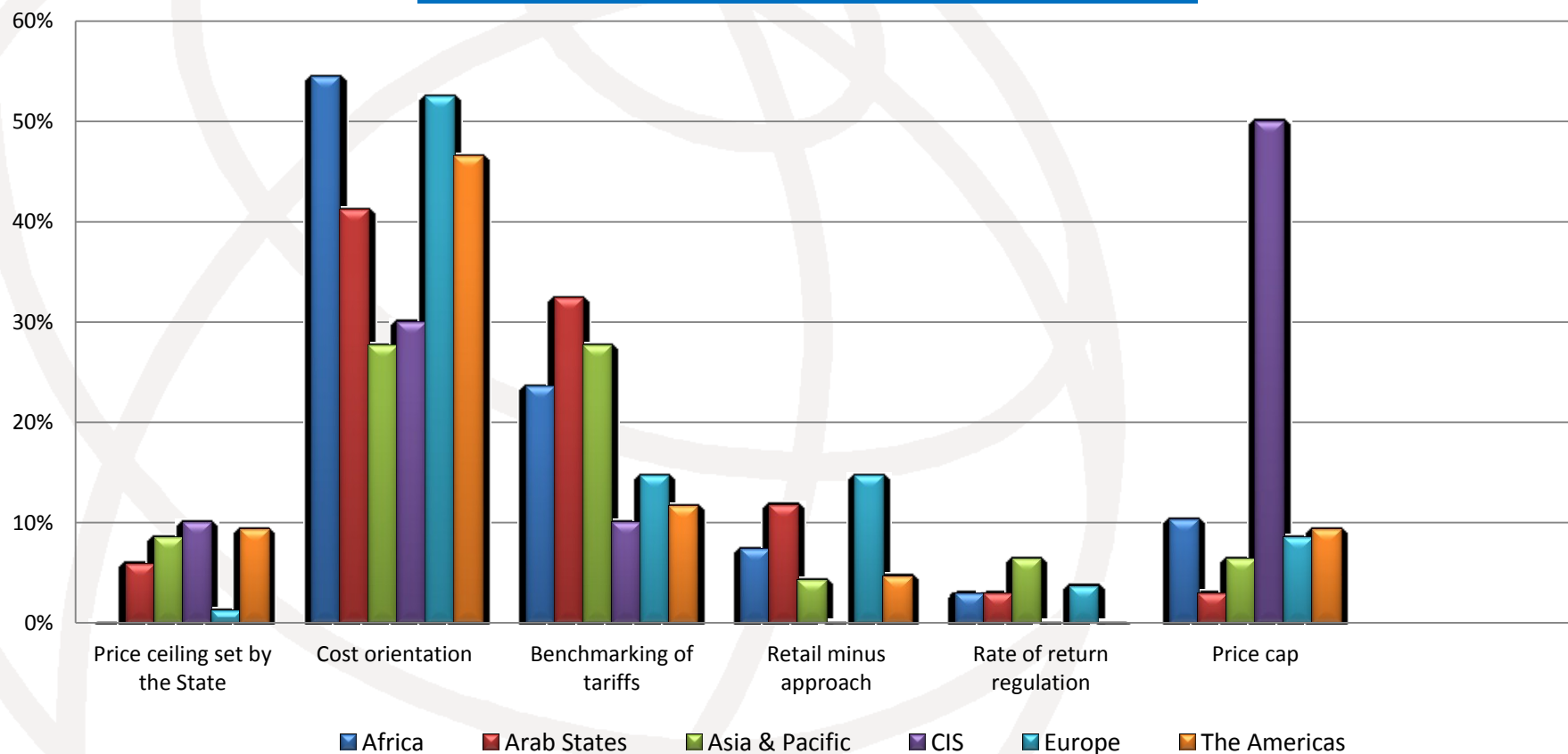


Wholesale mobile broadband access and services, 2013



How are the Broadband wholesale tariffs regulated?

Wholesale Services by region - World, 2013

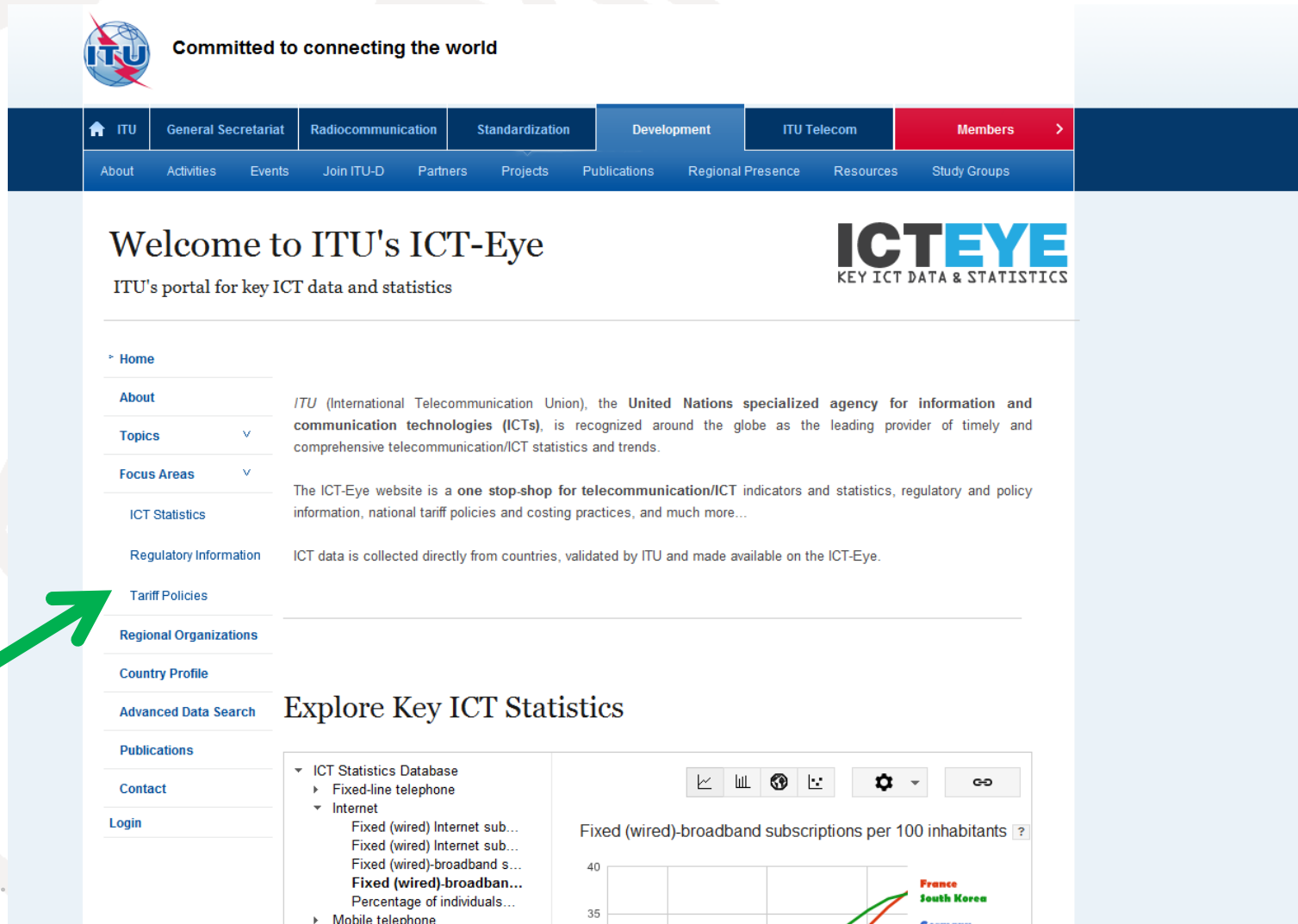


Source: ITU Tariff Policies Survey – ICTEye

ITU resources

- Resources and events organization information is available at the Regulatory and Market environment Website: www.itu.int/en/itu-d/regulatory-market/Pages/default.aspx
- ITU has developed a series of publications and studies on regulatory, economic and financial issues, including interconnection www.itu.int/en/ITU-D/Regulatory-Market/Pages/Studies.aspx
- In the framework of ITU-D Study Group 1, there is Question 4/1 on *Economic policies and methods of determining the costs of services related to national telecommunication/ICT networks, including NGN* www.itu.int/net4/ITU-D/CDS/sg/questions.asp?lg=1&sp=2014
- ITU is collecting data from NRAs with the:
 - ITU Regulatory Survey
 - ITU Tariff Policies SurveyThe data collected is available on the ITU ICTEye Database www.itu.int/ICTEYE

All the Tariff Policies data is available on the www.itu.int/ICTEYE



The screenshot shows the ITU ICT-EYE website. A green arrow points to the 'Tariff Policies' link in the left sidebar. The main content area includes a welcome message, a description of the portal, and a section for exploring key ICT statistics. The statistics section shows a tree view with 'Fixed (wired)-broadband s...' selected, and a line chart titled 'Fixed (wired)-broadband subscriptions per 100 inhabitants' comparing France, South Korea, and Germany.

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Welcome to ITU's ICT-Eye

ITU's portal for key ICT data and statistics

ICTEYE

KEY ICT DATA & STATISTICS

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About ITU (International Telecommunication Union), the United Nations specialized agency for information and communication technologies (ICTs), is recognized around the globe as the leading provider of timely and comprehensive telecommunication/ICT statistics and trends.

Topics

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Explore Key ICT Statistics

ICT Statistics Database

- Fixed-line telephone
- Internet
 - Fixed (wired) Internet sub...
 - Fixed (wired) Internet sub...
 - Fixed (wired)-broadband s...
 - Fixed (wired)-broadband s...**
 - Percentage of individuals...
- Mobile telephone

Fixed (wired)-broadband subscriptions per 100 inhabitants

40


35

France


South Korea


Germany



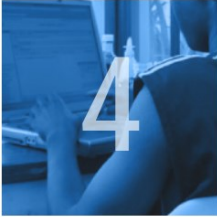


The ITU-InfoDev ICT Regulation Toolkit


[Toolkit](#)
[About](#)

interconnection


ICT Regulation Toolkit

WHAT'S THIS? The ICT Regulation Toolkit is a live resource for policy-makers, regulators, the telecom industry, and consumers. It provides a global overview of how telecom policy is best implemented with practical materials highlighting experience and results.	 1 Overview	 2 Competition and Price
	 3 Authorization of Services	 4 Universal Access and Service
	 5 Radio Spectrum Management	 6 Legal and Institutional Framework
	 7 Content regulation COMING SOON	 PLAYLIST ICT REGULATIONS and POLICIES PLAY ALL

SHORTCUTS
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RESOURCES
[ITU Blog](#)
[Broadband Toolkit](#)
[ITU Broadband reports](#)
[ITU Trends in Telecommunication Reform 2013](#)
[ITU Trends in Telecommunication Reform - Special Edition \(new\)](#)
[Training](#)

ITU/BDT Reports

Trends in Telecommunication Reform Special Edition New!
4th generation regulation: Driving digital communications ahead

www.itu.int/en/ITU-D/Regulatory-Market/Pages/Regulatory-Publications.aspx

Regulatory, Economic and Financial Reports 2013-2014:

- **New** A Practical Guide on Benchmarking Telecommunications Service Prices
- **New** Regulatory analysis of international mobile roaming services
- ITU Report on International Mobile Roaming services: Facilitating competition and protecting users
- Competition and regulation in a converged broadband world
- ITU Study on Taxing telecommunications/ICT services: an overview
- Strategies for the deployment of NGN and NGA in a broadband environment – regulatory and economic aspects
- Interconnection Charging Models in a national Broadband network environment

<http://www.itu.int/en/ITU-D/Regulatory-Market/Pages/Studies>



IP Interconnection Regulatory Trends

- Networks interconnect to exchange traffic and supply inputs in situations where the operators both compete and cooperate
- The legacy of the initial liberalization of markets and required interconnection remains in current interconnection charging practices
- Many agree that interconnection charges should be based on the necessary cost incurred by the receiving party of the additional traffic it has to carry – that is, the requesting party pays the providing party the relevant costs caused by the request
- Benchmarks may be more appropriate in developing markets where the informational requirements of these various approaches are too onerous for operators and regulators.

IP Interconnection Regulatory Trends (Cont)

- Now regulators are paying much closer attention to mobile interconnection and termination charges rather than allowing operators to set fees themselves.
- Regulators sometimes pursue market-based solutions to bring down interconnection charges. They can promote competition by encouraging new (e.g., “virtual”) mobile operators or by allowing customers greater opportunities to choose between mobile operators (by for instance number portability) and generally increasing transparency. Indirectly, more intense competition will reduce mobile termination charges.
- Regulators have continued to play a role in determining the interconnection charges of fixed operators.

Thank you for your attention

Please feel free to contact me on:

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