The views expressed in this presentation are those of the author and do not necessarily reflect the opinions of the ITU or its Membership.

ICT Market and Regulatory Trends

Planning Meeting for the HIPCAR Project
Enhancing Competitiveness in the Caribbean Through the Harmonization of ICT Policies, Legislation and Regulatory Procedures (HIPCAR)
Grenada, 15-16 December 2008

Susan Schorr, Head a.i.,
Regulatory and Market Environment Division
BDT, International Telecommunication Union

International Telecommunication Union
Committed to connecting the world

Agenda

1. Short history of sector reform and its results
2. 1st wave of regulatory reform
3. Leveraging the mobile miracle for broadband and convergence or a need for a 2nd wave of regulatory reform
4. Infrastructure sharing & open access policies
5. New issues in a global market on the move
6. Trends in Telecommunication Reform 2008
7. ITU Regulatory Resources

International Telecommunication Union

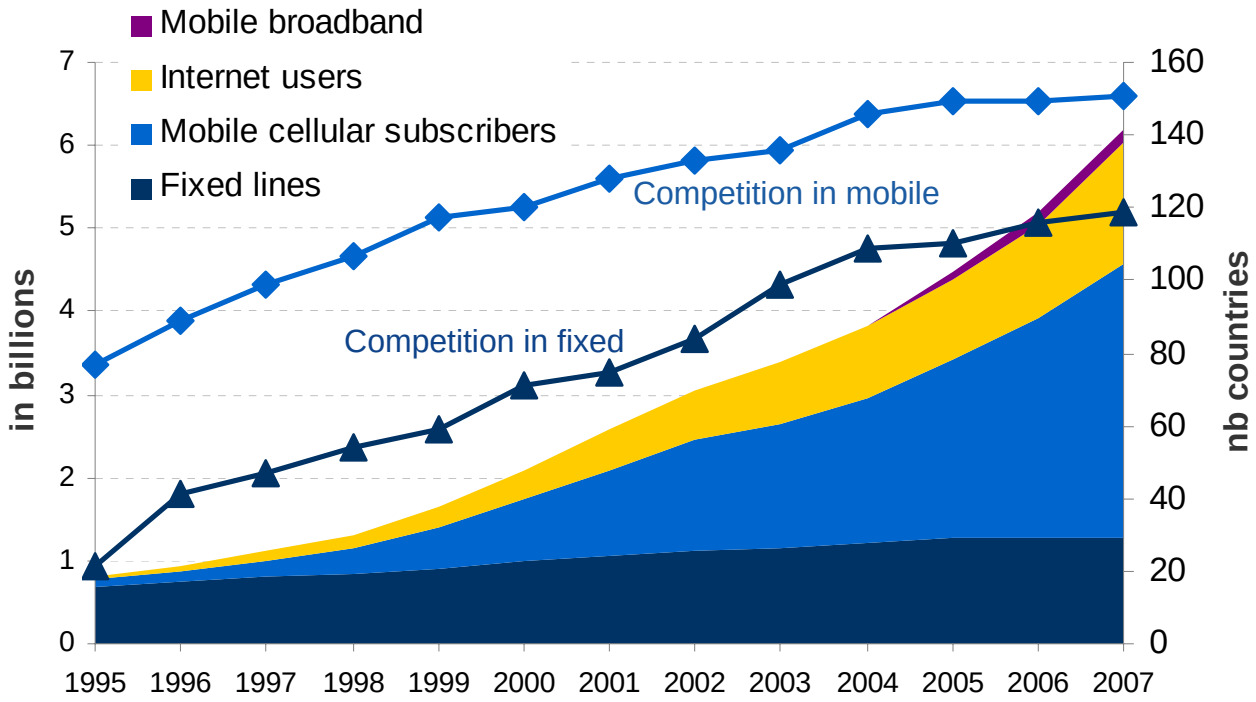
Committed to connecting the world

A Brief History of Sector Reform

- 10th Anniversary of WTO Basic Telecom Agreement
- Countries' Strategies
- ITU response
- Results of 1st wave of sector reform

Global telecom market on the move

Growth in fixed lines, mobile cellular subscribers, estimated Internet users and subscribers to mobile broadband networks, in billions, 1995-2007

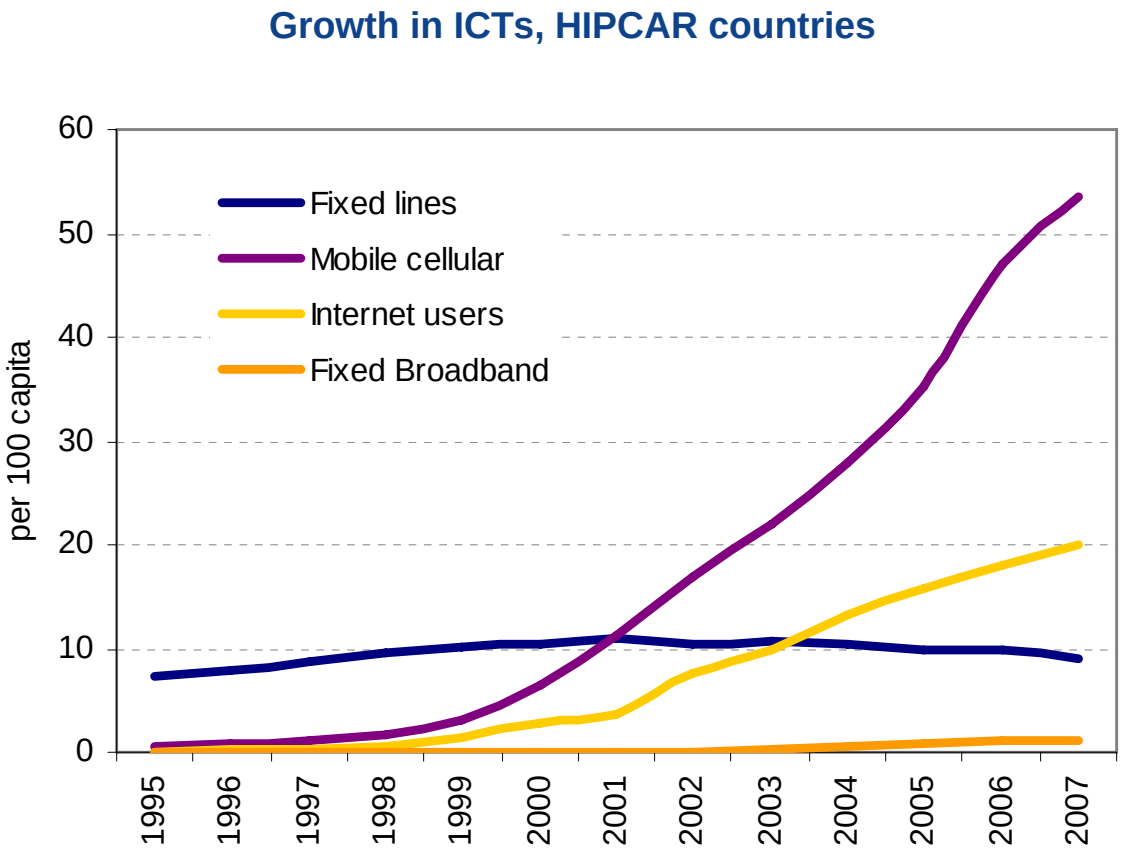


Source: ITU World Telecommunication/ICT Indicators Database and ITU Telecommunication Regulatory Database

International Telecommunication Union

Committed to connecting the world

Snapshot of ICTs in HIPCAR countries



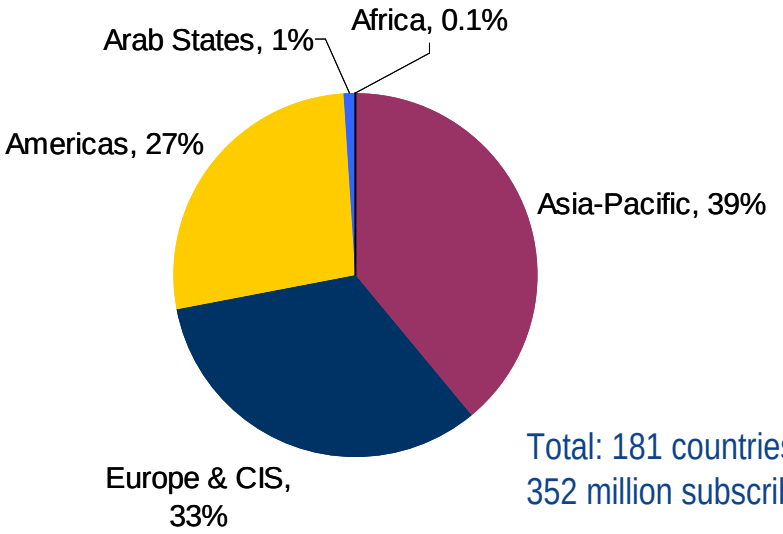
- Mobile is dominant
- Fixed lines decline
- Strong growth in Internet users
- Slow take up of broadband
- Combination of fibre backbone & mobile broadband access networks may provide a viable solution to connectivity problems.

Source: ITU World Telecommunication/ICT Indicators Database

International Telecommunication Union
Committed to connecting the world

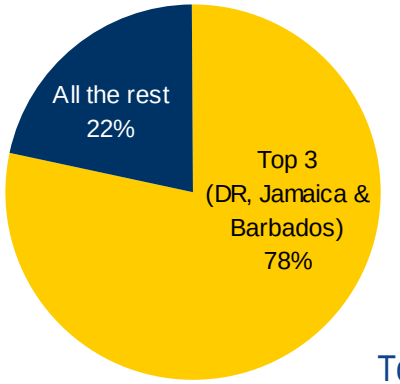
Broadband market trends

Fixed broadband subscribers, 2007



Total: 181 countries
352 million subscribers

Fixed Broadband in HIPCAR countries, 2007



Total:
385'000 subscribers

- Sustained growth, both of fixed and mobile broadband worldwide
- Important disparities between and within regions
- The world average broadband penetration was only 5.4% at the end of 2007 and it was 1.5 % in HIPCAR (against 11.2% in the Americas)
- Broadband connectivity needs to be extended to enable access to ICT services

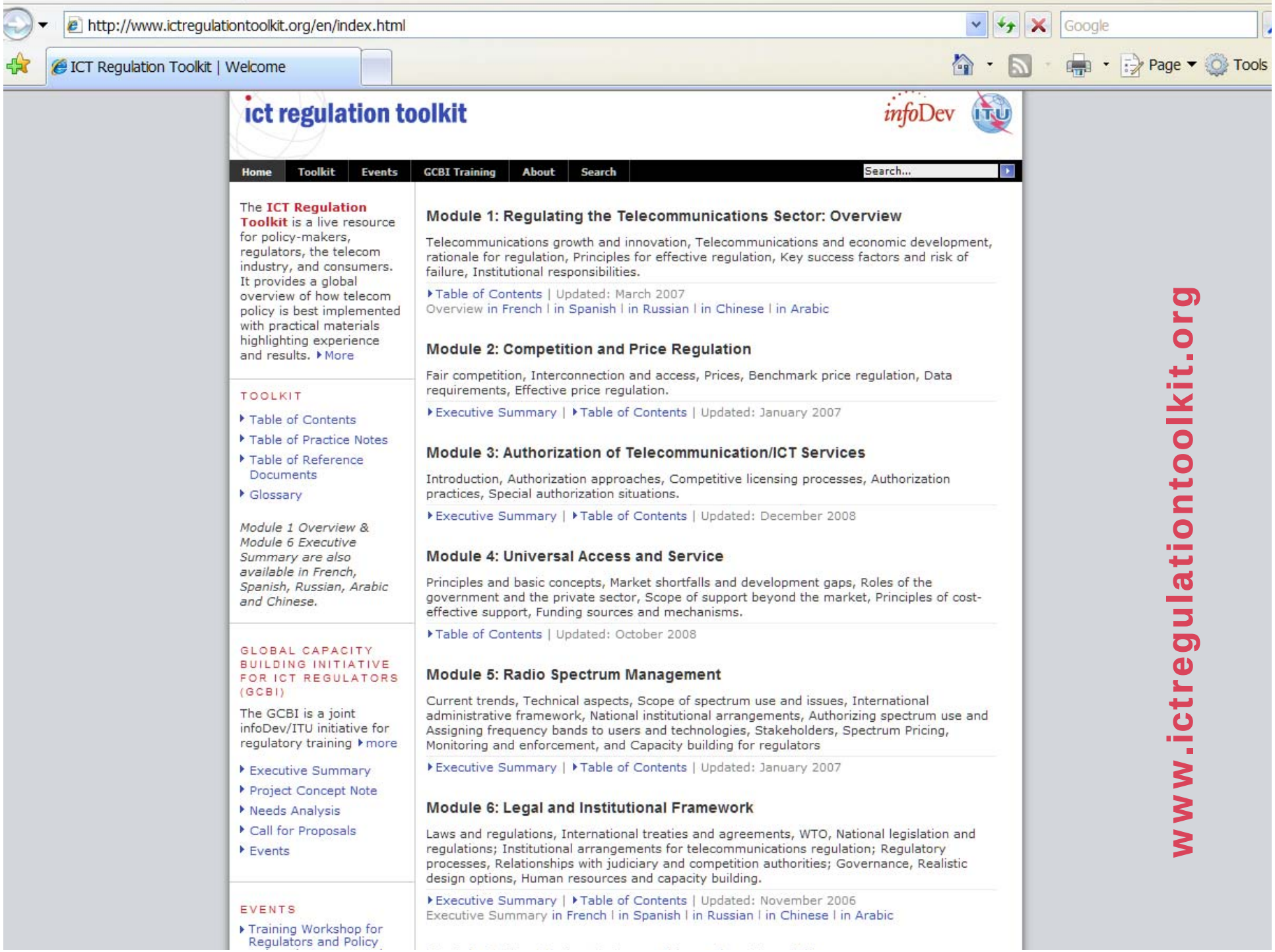
Source: ITU World Telecommunication/ICT Indicators Database

International Telecommunication Union
Committed to connecting the world

1st wave of regulatory reform

- Creation of separate regulatory authority
- Opening markets to competition
  - Licensing multiple operators (service-specific licences)
  - Lowering entry barriers
  - Promoting new business models
- Privatization of incumbent operators
- Flexible, accurate, transparent and non-discriminatory interconnection models
- Subsidies to universal access providers for fixed-line services
- Creating a level-playing field for investment (minimizing regulatory risk, tax incentives, etc.)

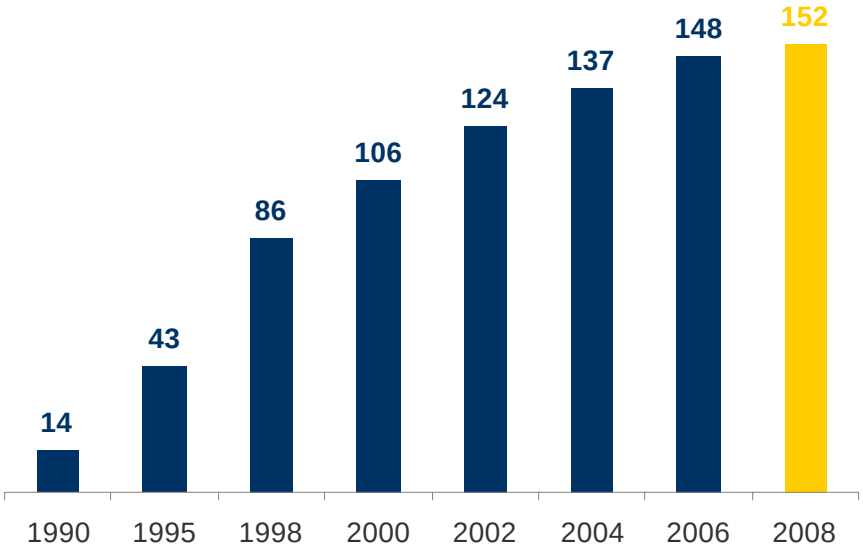
↳ Allowed the tremendous growth of ICTs in all regions over the past decade


http://www.ictregulationtoolkit.org/en/index.html
ICT Regulation Toolkit | Welcome
Google
Page
Tools
ict regulation toolkit
infoDev
ITU
Home
Toolkit
Events
GCBI Training
About
Search
Search...
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. More
TOOLKIT
Table of Contents
Table of Practice Notes
Table of Reference Documents
Glossary
Module 1 Overview & Module 6 Executive Summary are also available in French, Spanish, Russian, Arabic and Chinese.
GLOBAL CAPACITY BUILDING INITIATIVE FOR ICT REGULATORS (GCBI)
The GCBI is a joint infoDev/ITU initiative for regulatory training more
Executive Summary
Project Concept Note
Needs Analysis
Call for Proposals
Events
EVENTS
Training Workshop for Regulators and Policy
Module 1: Regulating the Telecommunications Sector: Overview
Telecommunications growth and innovation, Telecommunications and economic development, rationale for regulation, Principles for effective regulation, Key success factors and risk of failure, Institutional responsibilities.
Table of Contents | Updated: March 2007
Overview in French | in Spanish | in Russian | in Chinese | in Arabic
Module 2: Competition and Price Regulation
Fair competition, Interconnection and access, Prices, Benchmark price regulation, Data requirements, Effective price regulation.
Executive Summary | Table of Contents | Updated: January 2007
Module 3: Authorization of Telecommunication/ICT Services
Introduction, Authorization approaches, Competitive licensing processes, Authorization practices, Special authorization situations.
Executive Summary | Table of Contents | Updated: December 2008
Module 4: Universal Access and Service
Principles and basic concepts, Market shortfalls and development gaps, Roles of the government and the private sector, Scope of support beyond the market, Principles of cost-effective support, Funding sources and mechanisms.
Table of Contents | Updated: October 2008
Module 5: Radio Spectrum Management
Current trends, Technical aspects, Scope of spectrum use and issues, International administrative framework, National institutional arrangements, Authorizing spectrum use and Assigning frequency bands to users and technologies, Stakeholders, Spectrum Pricing, Monitoring and enforcement, and Capacity building for regulators
Executive Summary | Table of Contents | Updated: January 2007
Module 6: Legal and Institutional Framework
Laws and regulations, International treaties and agreements, WTO, National legislation and regulations; Institutional arrangements for telecommunications regulation; Regulatory processes, Relationships with judiciary and competition authorities; Governance, Realistic design options, Human resources and capacity building.
Executive Summary | Table of Contents | Updated: November 2006
Executive Summary in French | in Spanish | in Russian | in Chinese | in Arabic
www.ictregulationtoolkit.org

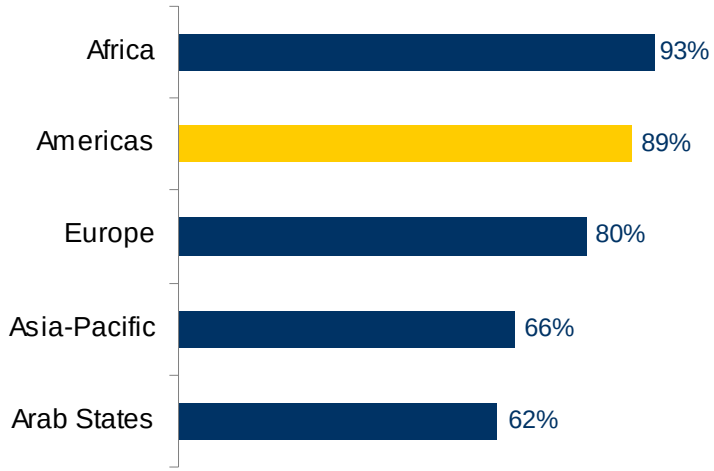
International Telecommunication Union - BDT - Windows Internet Explorer
http://www.itu.int/itu-d/icteye/Default.aspx
International Telecommunication Union - BDT
International Telecommunication Union
Our Sites News Events Publications Site Map About Us
Français Español
Print Version
Search
ITU ICT Eye
ICT Statistics
Regulatory Information
Tariff Policies
Scientific Institutions
WSIS Stocktaking
» ITU ICT EYE
» REPORTS
» SURVEY LOGIN
Welcome to ITU's ICT Eye
ITU, the UN specialized agency for telecommunications, has its "eye" on ICTs and is recognized around the globe as the leading provider of timely and comprehensive telecommunication/ICT statistics and trends.
The ICT "eye" website is a one stop-shop for ICT information and provides telecommunication/ICT indicators and statistics, regulatory and policy profiles, national tariff policies and scientific institutions, and much much more...
Please select a country/economy from the map or select from the following list:
-- Please Select --
China
Macromedia Flash MX plug-in is needed to view / use the map above. Download here.
Map used with permission from the United Nations Cyberschoolbus, Outreach Division, DPI.
The boundaries and names shown on this map do not imply official endorsement or acceptance by the International Telecommunication Union and the United Nations. All content linked to this map was created by the International Telecommunication Union.
Homepage
ICT Statistics
Regulatory Information
Tariff Policies
Scientific Institutions
WSIS Stocktaking
www.itu.int/icteye

Creating an independent & efficient regulator

Growth in the number of regulators worldwide



% of regulators per region, 2008



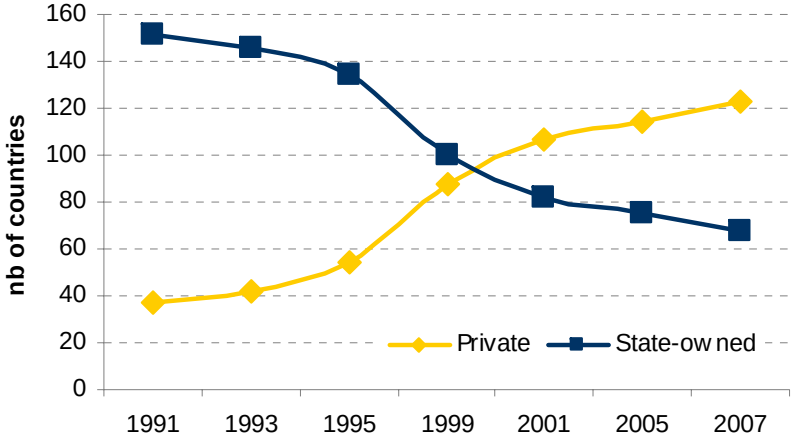
- Regulatory reform has been key to ICT development and enabled the move towards convergence
- Importance of independent and effective regulator
- Extending powers of regulators
- Converged regulators

Source: ITU Telecommunication Regulatory Database

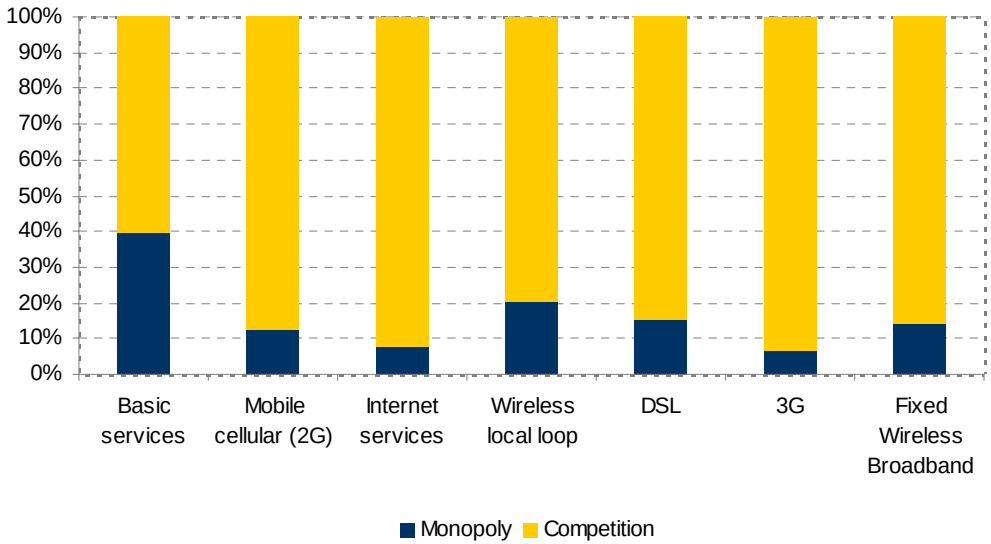
International Telecommunication Union
Committed to connecting the world

Competition & privatization

Evolution of status of fixed-line incumbents, world



Competition in selected services, 2007



- A competitive market environment is key to promote investment, spur growth and extend connectivity
- Additional reforms could ensure a level-playing field for all market players
- Removing market entry barriers & open access policies may speed up market development and provide a win-win scenario for investors, service providers & consumers

Source: ITU Telecommunication Regulatory Database

Leveraging the Mobile Miracle

- Moving from pervasive voice to widespread broadband Internet access
- Meeting the Information Society dream
- Is history repeating itself?

2nd wave of regulatory reform

Spurring competition

- Efficient and independent regulator with extended powers
  - From separate telecom & broadcasting regulators towards converged regulators
- Licensing
  - From service-specific licenses towards general authorizations, unified & class licences
  - From technology-specific towards technology-neutral licences
- Spectrum
  - From administrative approach towards flexible spectrum allocation practices (sharing, trading, etc.) to create new access networks that deliver both voice and broadband cost-effectively
- Network & bottleneck facilities
  - From exclusive ownership towards passive & active infrastructure sharing
  - Open access to network and bottleneck facilities (fibre backbones, LLU)
  - International gateway liberalization
- Universal access & services
  - From fixed-line voice towards broadband universal access
- Flexible, transparent & simplified procedures
  - Facilitate market entry
  - Stimulate innovation

ITU International Telecommunication Union
Committed to connecting the world

Addressing national backbone bottlenecks

Where backbone operator competes in downstream market for end-user customers

- Backbone operator has incentive to constrain competition:
  - **impose excessive access costs / limit availability of bandwidth and QoS supported / impose restrictions on points of interconnection**
- Regulatory remedies to facilitate access for competitors:
  - **regulate prices for leased lines**
  - **regulate collocation and connection services as well as terms & conditions for access to interconnection points**

Addressing national backbone bottlenecks

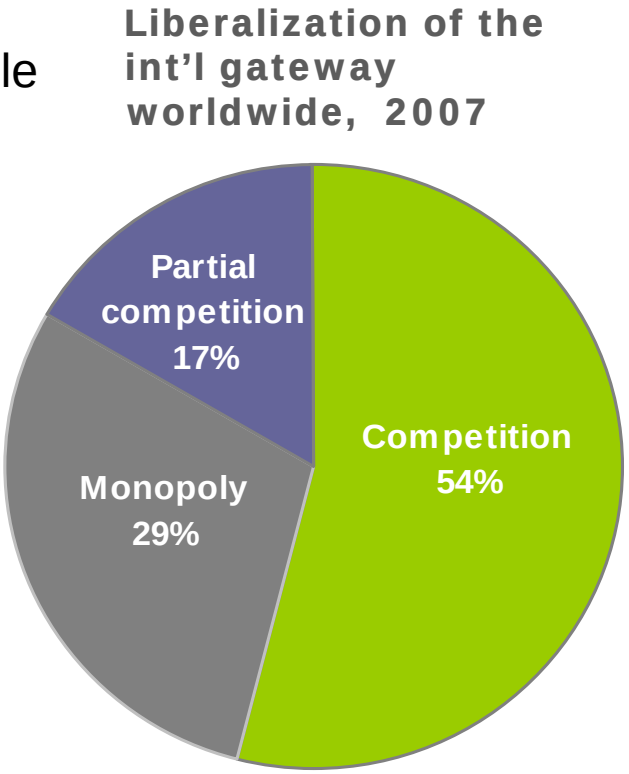
Where backbone operator does not compete for end users

- Backbone operator has incentive to sell as much capacity as possible
- Role of regulator and policy maker: encourage new backbone network deployment
  - **Foster grant of rights of way, e.g. giving fibre strands to local governments in exchange for rights of way**
  - **Authorize market entry by greenfield backbone providers that agree to make their infrastructure accessible on an open access/infrastructure sharing basis**

In addition regulators and policy makers can encourage coordination among other potential backbone providers such as power utilities, railways, pipelines and roads

Liberalization of International gateways

- Benefits include decreased tariffs and sector growth
- How to?
- India and Singapore models to open submarine cable landing stations:
  - require incumbent to provide collocation and connection services at SCLS
  - Reference interconnection offer sets prices for connection service
  - RIO sets prices & terms and conditions for collocation, power supply, A/C, access rights and maintenance
  - Enables competitors to provide international service to end-users
  - Result decrease price and increased traffic

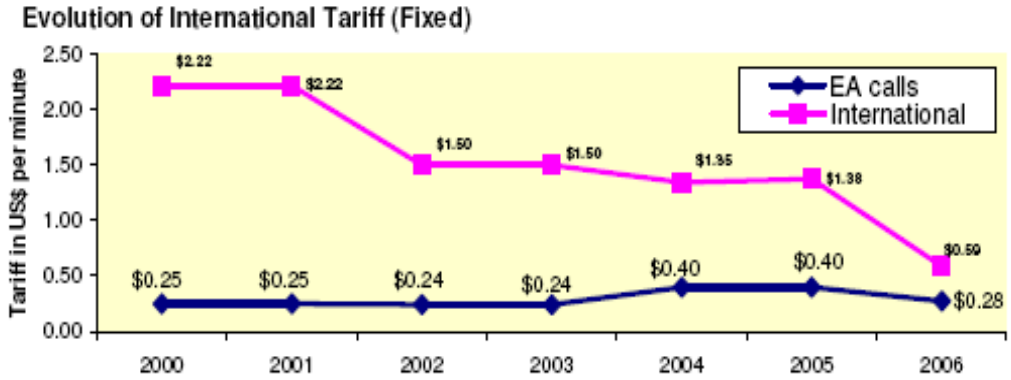


International Telecommunication Union
Committed to connecting the world

Liberalization of International gateways

Experiences : Tanzania

2005-2006
-Fixed international tariffs decreased by 57 %
- Mobile international tariffs decreased by 68%



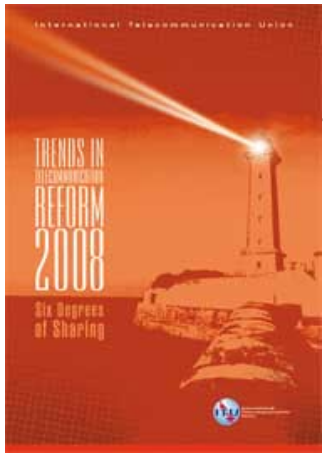
Source: Tanzania Communication Regulatory Authority

Singapore:

- IDD tariffs dropped by 90%
- Number of outgoing international telephone minutes per month increased from 64 to 581 million
- Broadband penetration increased from 5% to 77%

See GSR discussion paper on International Gateway Liberalization: the Singapore experience

International Telecommunication Union
Committed to connecting the world



Trends in Telecommunication reform 2008: Six Degrees of Sharing

- Chapter 1: Market and regulatory trends in the ICT sector
- Chapter 2: Six degrees of Sharing
- Chapter 3: Extending open access to national fibre backbones in developing countries
- Chapter 4: Mobile network sharing
- Chapter 5: Spectrum sharing
- Chapter 6: International sharing: International gateway liberalization
- Chapter 7: The emergence of functional separation
- Chapter 8: International mobile roaming
- Chapter 9: IPTV and mobile TV: New regulatory challenges for regulators
- Chapter 10: End-user sharing
- Chapter 11: Conclusion: Looking to the future

www.itu.int/publ/D-REG-TTR.10-2008/en

International Telecommunication Union
Committed to connecting the world

Bringing it all together

What regulatory framework to spur connectivity?

- Encourage deployment of a full-range of broadband access technologies (from FTTx to WiMax)
  - Broadband Wireless technologies promise improved access
  - Encourage build-out of backbone networks and regulate access to existing networks
  - Infrastructure sharing can reduce costs
  - Stimulate competition among various technologies through technology neutral regulation
  - Support small-scale deployment in rural areas
  - Creating national and regional Internet Exchange Points (IXPs), as well as VoIP peering exchanges, to keep the local Internet traffic local
- Design and implement a flexible, non-discriminatory, technology-neutral and service-neutral regulatory framework to create incentives for large and small operators considerations to ensure affordability of services.

» **GSR 2004 Best Practice Guidelines on Promotion of Low-Cost Broadband**

» **GSR 2008 Best Practice Guidelines on Infrastructure Sharing**

ICT sector on the move

Market

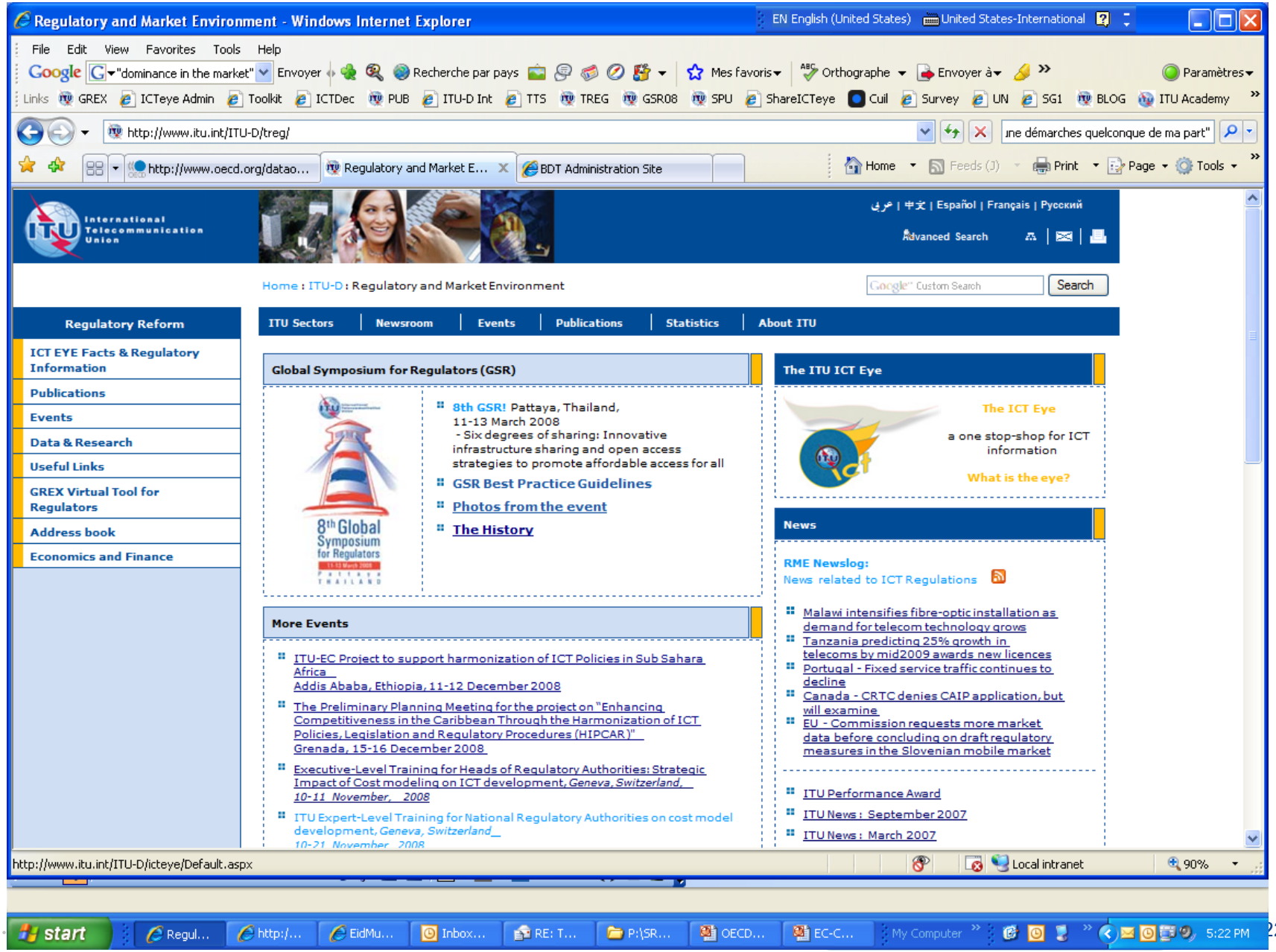
- from static market environments to dynamic fast-paced innovation
- from narrowband to broadband
- from fixed to mobile + fixed-mobile convergence
- from wired to wireless
- from voice to data
- from distinct to converged
- from sometimes-on to always-on
- from PSTN to IP (NGN)

Regulation

- from heavy-handed regulation to light-touch regulation
- from technology-specific approach towards technology-neutral approach
- from service-specific licences to unified licences
- from regulating multiple services over multiple delivery platforms towards NGN regulation
- from telecom regulation to converged regulation

Upcoming Regulatory challenges

- Competition policy
  - Significant market power will not go away in an NGN environment
  - Open access is key to growth in the sector
- Investment
  - Unbundle or share: what impact on investment in ICTs?
- Pricing
  - Will NGN offer prices that are significantly lower than those available today?
  - Spectrum pricing, MTR
- Bundling and billing:
  - How to distinguish real price of bundled services?
- Interconnection
  - Will current interconnection models work in an NGN?
  - To regulate or not IP interconnection?
  - IP & VoIP interconnection: towards cost-based pricing and flat rates?
- Net neutrality
  - How to deal with traffic prioritization?
- New converged services
  - What level of universal service obligation to impose?
  - To regulate or not content, and how?
- Security
  - Cybersecurity threats, privacy and identity management issues


Regulatory and Market Environment - Windows Internet Explorer
http://www.itu.int/ITU-D/treg/
International Telecommunication Union
Home : ITU-D : Regulatory and Market Environment
Search
Regulatory Reform
ICT EYE Facts & Regulatory Information
Publications
Events
Data & Research
Useful Links
GREX Virtual Tool for Regulators
Address book
Economics and Finance
ITU Sectors
Newsroom
Events
Publications
Statistics
About ITU
Global Symposium for Regulators (GSR)
8th GSR! Pattaya, Thailand, 11-13 March 2008
- Six degrees of sharing: Innovative infrastructure sharing and open access strategies to promote affordable access for all
GSR Best Practice Guidelines
Photos from the event
The History
8th Global Symposium for Regulators
More Events
ITU-EC Project to support harmonization of ICT Policies in Sub Sahara Africa
Addis Ababa, Ethiopia, 11-12 December 2008
The Preliminary Planning Meeting for the project on "Enhancing Competitiveness in the Caribbean Through the Harmonization of ICT Policies, Legislation and Regulatory Procedures (HIPCAR)"
Grenada, 15-16 December 2008
Executive-Level Training for Heads of Regulatory Authorities: Strategic Impact of Cost modeling on ICT development, Geneva, Switzerland, 10-11 November, 2008
ITU Expert-Level Training for National Regulatory Authorities on cost model development, Geneva, Switzerland
The ITU ICT Eye
The ICT Eye
a one stop-shop for ICT information
What is the eye?
News
RME Newslog:
News related to ICT Regulations
Malawi intensifies fibre-optic installation as demand for telecom technology grows
Tanzania predicting 25% growth in telecoms by mid2009 awards new licences
Portugal - Fixed service traffic continues to decline
Canada - CRTC denies CAIP application, but will examine
EU - Commission requests more market data before concluding on draft regulatory measures in the Slovenian mobile market
ITU Performance Award
ITU News : September 2007
ITU News : March 2007
http://www.itu.int/ITU-D/icteye/Default.aspx
Local intranet
90%
start
5:22 PM

ITU Global Regulators Exchange - Windows Internet Explorer
http://www.itu.int/ITU-D/grex/default_group.asp
International Telecommunication Union
G-REX
GREX Portal
Calendar
All Subscriptions
My Subscriptions
UserGroups
home discussion boards members search guide links last posts
Welcome lozanova!
Show profile
Edit Profile
FileManager
LOGOFF
Admin Options
9 Member(s) awaiting approval
Announcements
Call for papers!
I Congress "ICTs and its Social & Economic Impact in the Americas"
Mexico City, May 21-22 2009
Deadline for abstracts: 15 January 2009
More information...
(in English & Spanish)
G-REX, The Virtual Tool For Regulators
The Global Regulators' Exchange (G-REX) is a password protected website* for national communications regulators, policy makers and regional regulatory organizations.
This exciting initiative, launched by the Telecommunication Development Bureau (BDT) of the International Telecommunication Union (ITU) in May 2001 provides a vehicle for sharing information, views and experiences on pressing regulatory issues. Regulatory information is key to creating an enabling environment to bridge the digital divide.
The most popular feature of G-REX is the Hotline through which regulators and policy makers can pose any question they wish and seek feedback from their colleagues around the world. G-REX Advisors translate all postings into French, Spanish and English and research regulators' websites to find useful information responsive to Hotline queries..
G-REX also offers virtual conferences on cutting edge regulatory issues. G-REX virtual conferences combine a telephone conference call and a dedicated website through which participants can, in real time, share power point presentations and engage in online chat.
>> enter the forum
Direct Access
Regulators Hotline
Bulletin Board
Hot Links
TREG resource portal
A collection of resources on ICT Regulation
ITU ICT EYE
ICT Regulation Toolkit
ITU-infoDev joint programme
Slide 27 of 29
PPP New Logo
English (U.S.)

More Information

- ITU TREG website and ICT Regulation Toolkit
  - www.itu.int/treg/
  - www.ictregulationtoolkit.org
- Telecommunication Development Sector
  - www.itu.int/ITU-D/
- Telecommunication Standardization Sector
  - www.itu.int/ITU-T/
- Radiocommunication Sector
  - www.itu.int/ITU-R/

International Telecommunication Union

Committed to connecting the world

International Telecommunication Union

Committed to connecting the world

susan.schorr@itu.int