



Regional Workshop for Europe
New Issues in Quality of Service Measuring and Monitoring
25-26 November 2015
Bologna, Italy

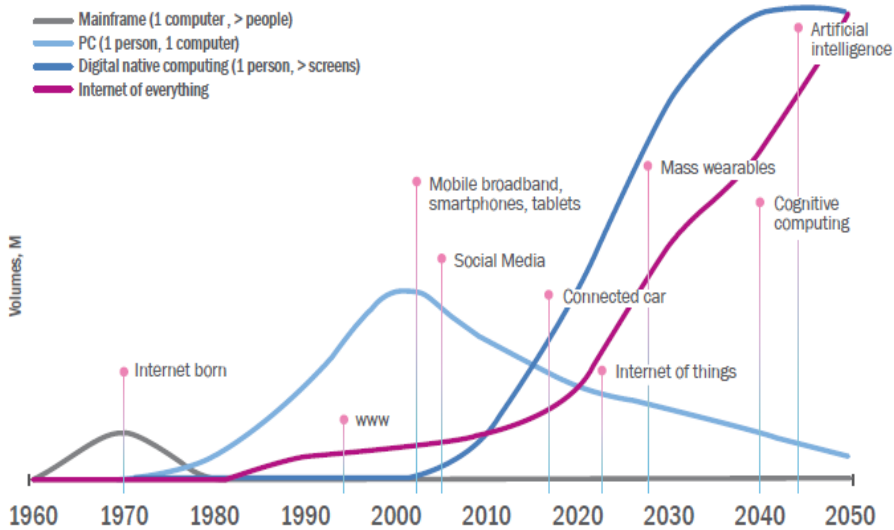
Regulatory Trends in the Digital Economy

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www.itu.int/treg

The History of our Future

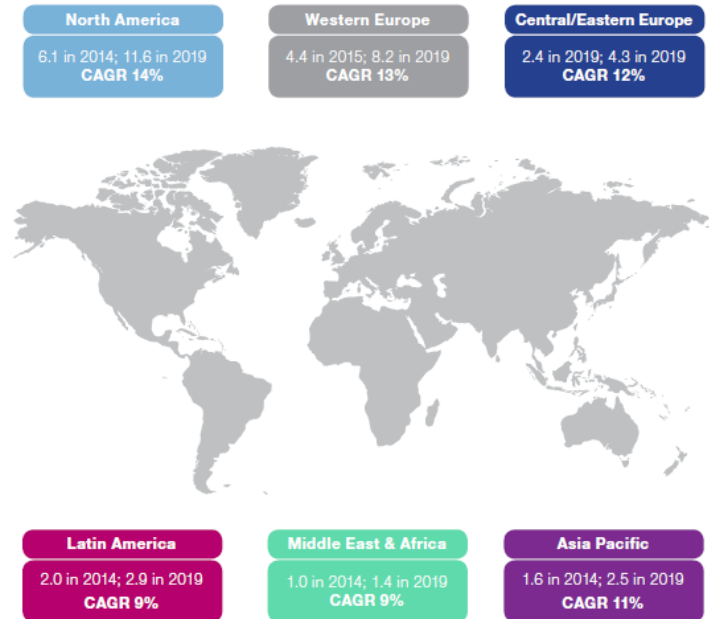
One to many to any: ICTs from happy few to the masses



Source: ITU

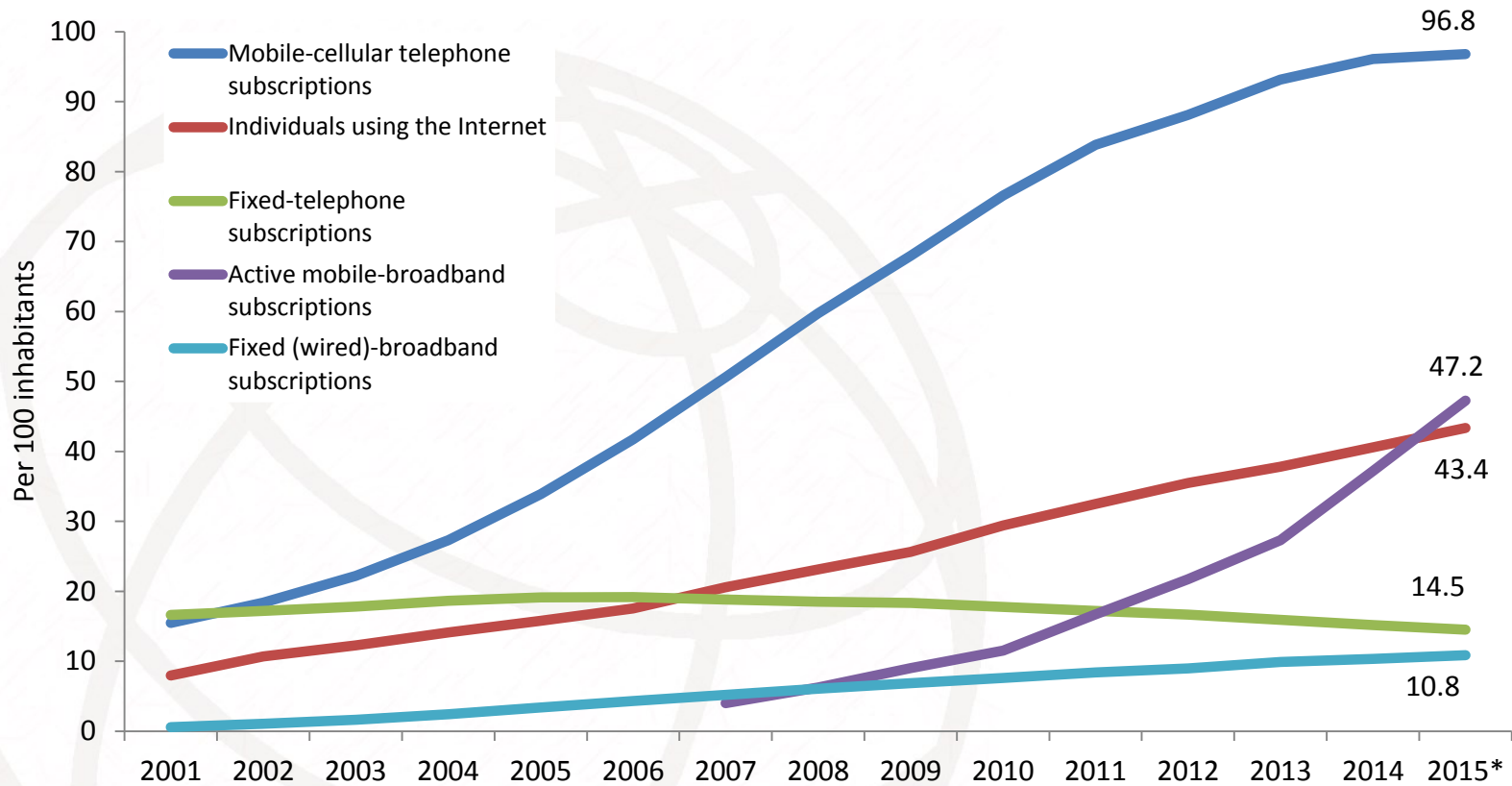
World Map: A Growing Digital Divide in the Internet of Everything?

Connected Devices Per Capita from 2014 to 2019; Devices' Compound Annual Growth Rates (CAGR)



Source: CISCO VNI.

Global ICT Developments, 2001-2015

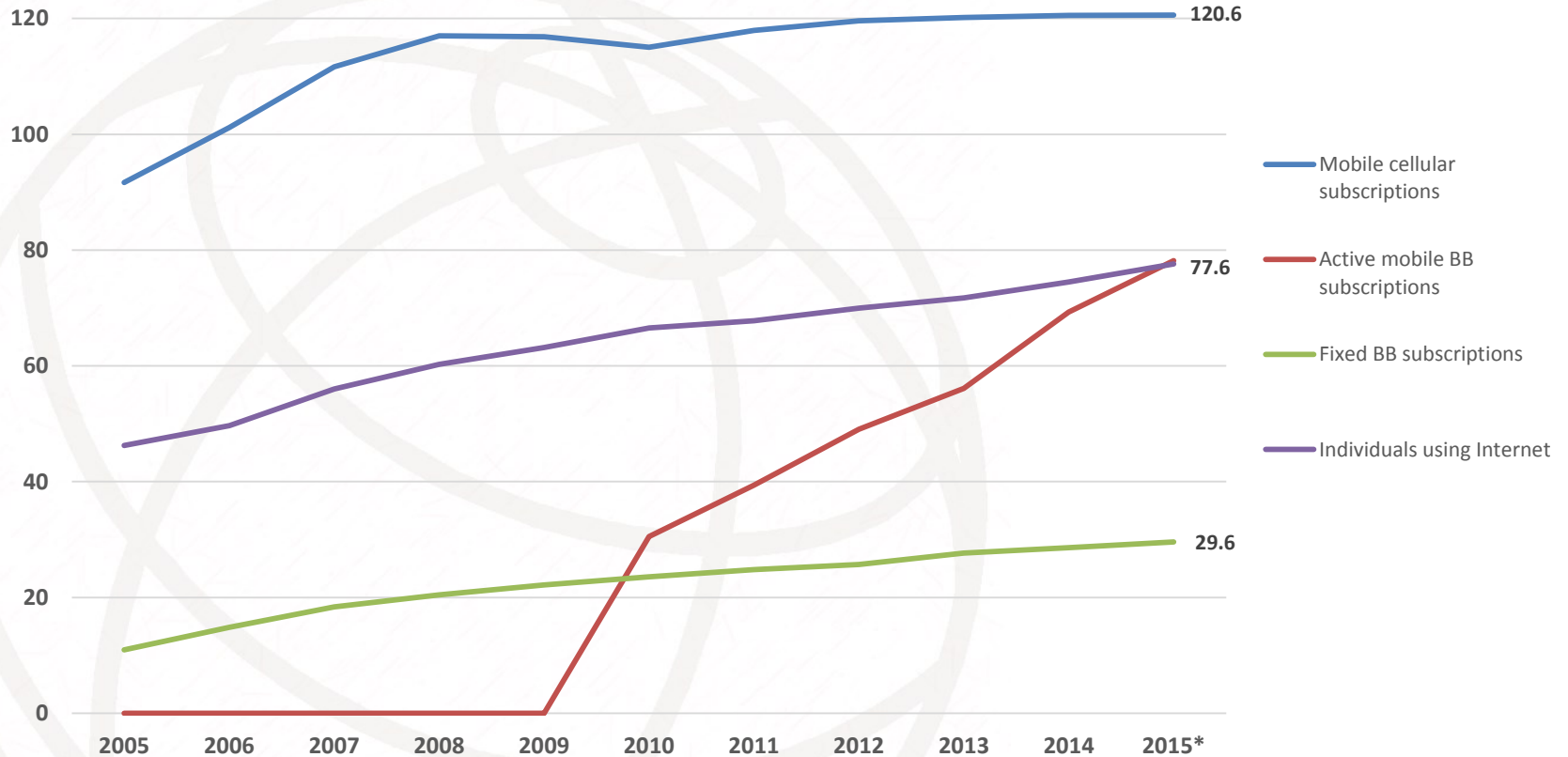


Note: * Estimate

Source: ITU World Telecommunication /ICT Indicators database

ICT Development Trends in Europe, 2005-2015

per 100 inhabitants

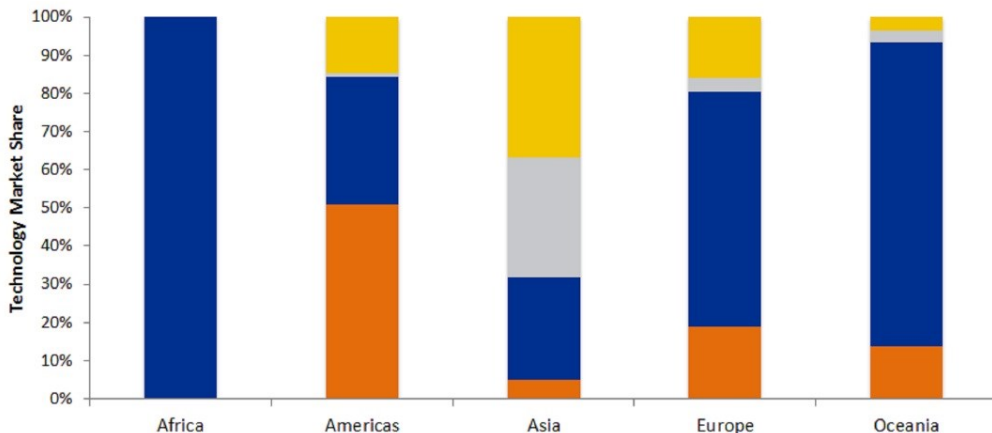


* Estimate.

Source: ITU World Telecommunication/ICT Indicators database.

Fixed broadband access, technology market share, by region, Q2 2015

Technology market share by region
Q2 2015

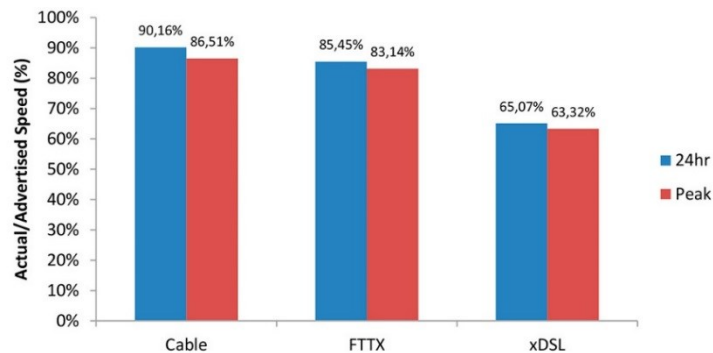


Source: Point Topic

■ Cable
 ■ Copper
 ■ FTTH
 ■ FTTx

Source: Point Topic.

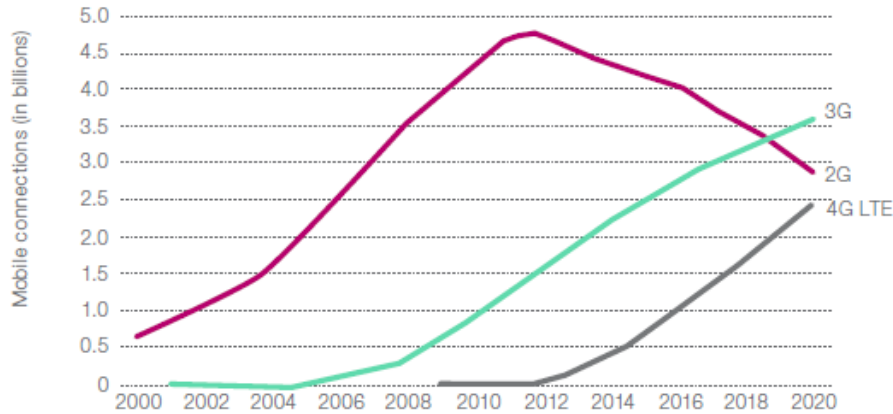
Discrepancies between actual and advertised speeds by technology, in Europe



Actual Peak and 24-hour Period Download Speed as a Percentage of Advertised Speed, by technology (higher is better)

Source: European Commission.

Mobile Broadband Network Deployment Trends



By the end of 2014:

- 2G networks in 200 countries
- Active 3G networks commercially available in 192 countries
- 4G networks deployed in 102 countries. LTE services offered by 3/4 of European mobile operators

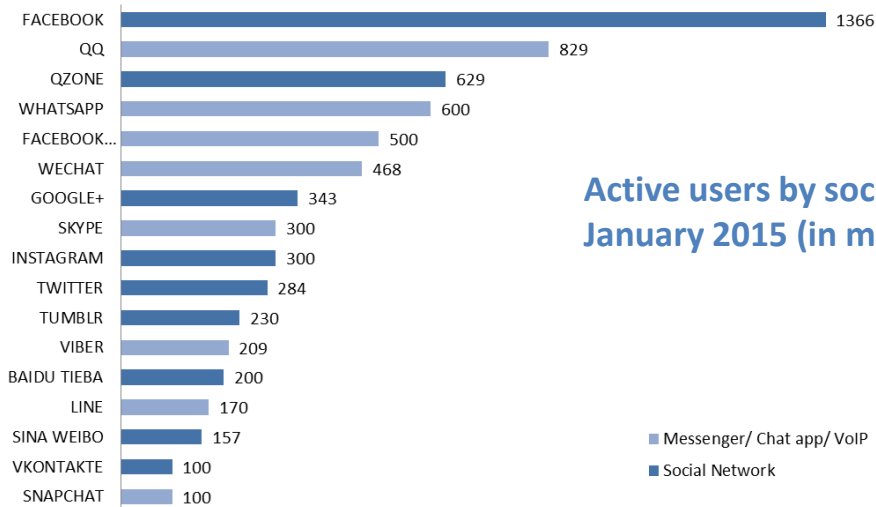


July 2015: 422 operators had launched commercial LTE services in 143 countries, 460 operators are expected to have launched LTE networks by end 2015.

•Sources: GSMA Intelligence, "Understanding 5G: Perspectives on future technological advancements in mobile", December 2014.

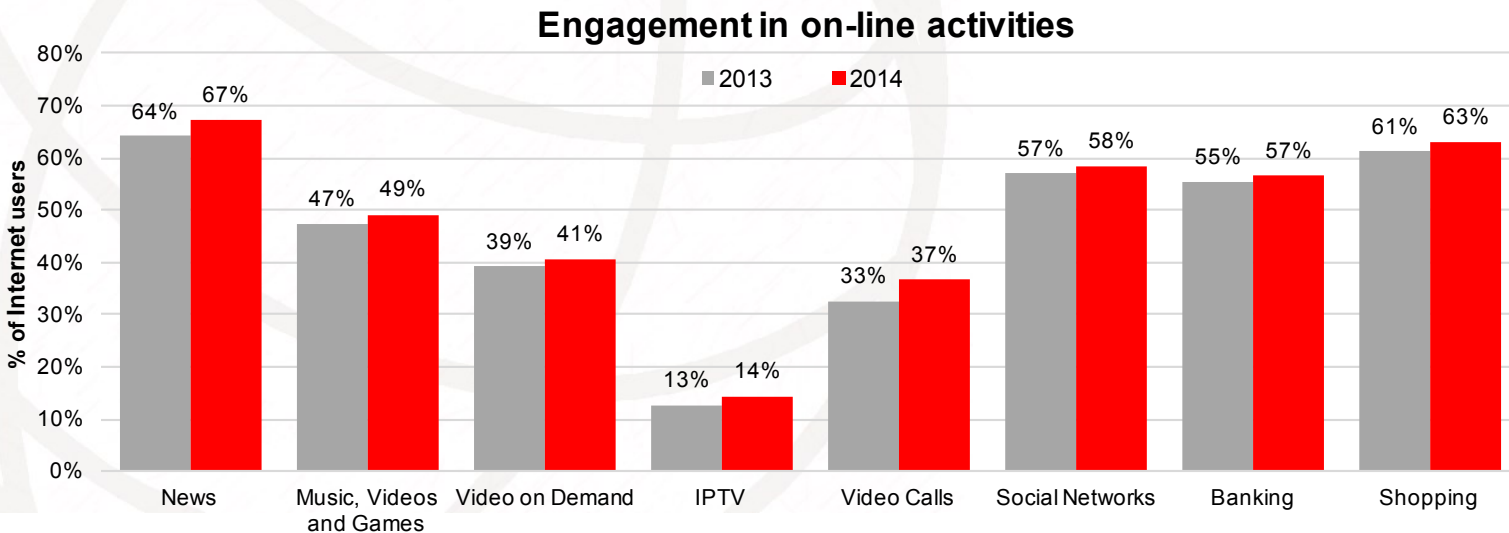
•(top); The Internet Society's "Global Internet Report 2015", based on Telegeography (bottom).

Online activities



Active users by social platform, January 2015 (in millions)

Source: ITU

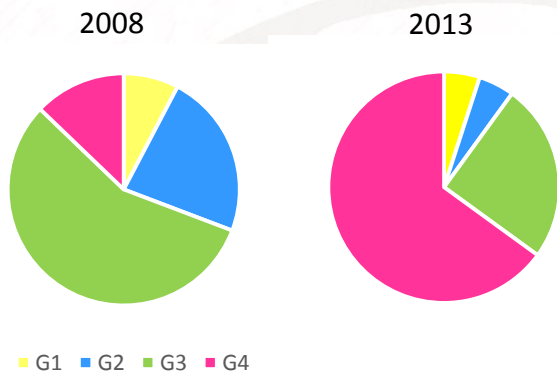


Source: Eurostat - Community survey on ICT usage in Households and by Individuals; IHS Technology databases - TV Media Intelligence Service.

Source: EC Digital Agenda Scorecard 2015

The role of Regulation

Maturity of Regulation, Europe



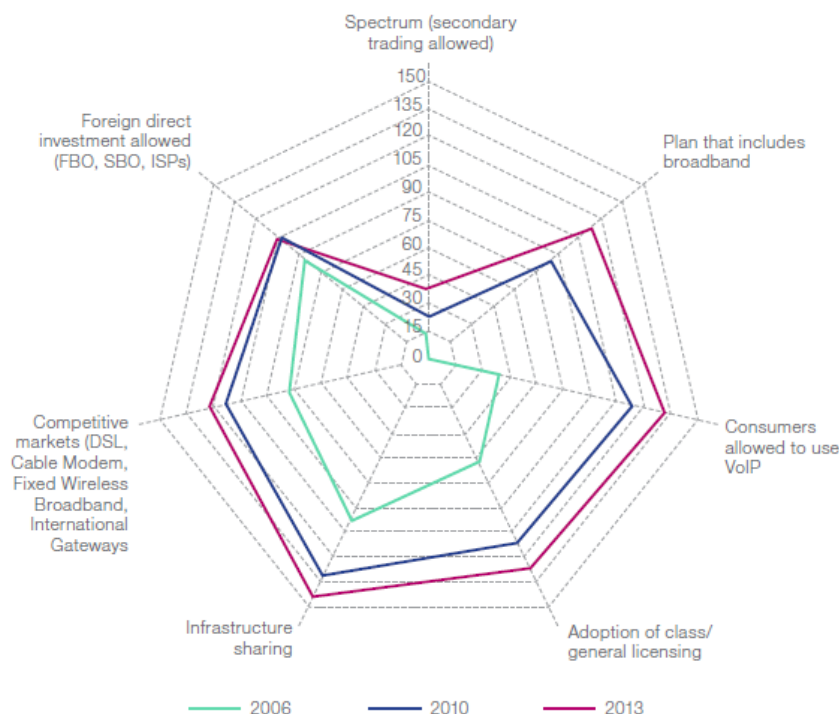
G4: Integrated regulation – led by economic and social policy

G3: Enabling investment, innovation and access – dual focus on stimulating competition in service and content delivery, and **consumer protection**

G2: Basic reform – partial liberalization and privatization across the layers

G1: Regulated public monopolies – command and control approach

Which Regulations Shaped the ICT Sector from 2006 to 2013?



Source: <http://www.itu.int/tracker>

Source: ITU's Trends in Telecommunication Regulatory Reform Report, 2015.

GSR-14 Best practice guidelines on consumer protection in a digital world

Quality of service and consumer experience: A series of measures can be taken to ensure consumers have easy and reliable access to ICT services as well as web content, such as, developing and regularly reviewing minimum quality of service standards and specifications of new technologies and services; monitoring network service providers; regularly assessing telecom/ICT services quality and publishing the results.

Consumers should thus be able to understand the nature of the services, including prices and how they are calculated, and the **quality of service** provided, in addition to their own rights and responsibilities.

GSR-13 Best practice guidelines on the evolving roles of both regulation and the regulators in a digital environment

Empowering consumers to make informed decisions through the development of **online tools** to check speed, quality of service and price of access is another measure regulators may take to foster competition.

...ensure a sufficient level of quality of service to the user (in particular for communication services that are sensitive to time delay.

GSR14

BEST PRACTICE GUIDELINES ON CONSUMER PROTECTION IN A DIGITAL WORLD

Regulating the ever-changing ICT sector is like aiming at a moving target. Developing and using best practices is the best way to track our efforts to adapt to change and embrace new technologies to foster development and business.



Mr. Mohammed Elmaghrabi, Director, Information and Communication Regulatory Authority (ICRA), Egypt
 Today's digital world makes users of aspects of our lives. In this globalized and interconnected landscape, we need to work together to protect the rights of the consumer, especially those of vulnerable people, by ensuring the development of modern and effective regulatory tools. The guidelines on Best Practices will help us to build a safer and trustworthy digital environment for all.



Dr. Mohammed Alwan, Director, Information and Communication Regulatory Authority (ICRA), Jordan
 One of our main responsibilities is to ensure users of enjoying their life to the fullest of benefits of the digital world is to regulate it in an effective and fair manner. This can only be achieved through the development of modern regulatory tools. The guidelines on Best Practices will help us to build a safer and trustworthy digital environment for all.



www.itu.int/gsr14

GSR13

BEST PRACTICE GUIDELINES ON THE EVOLVING ROLES OF BOTH REGULATION AND THE REGULATORS IN A DIGITAL ENVIRONMENT

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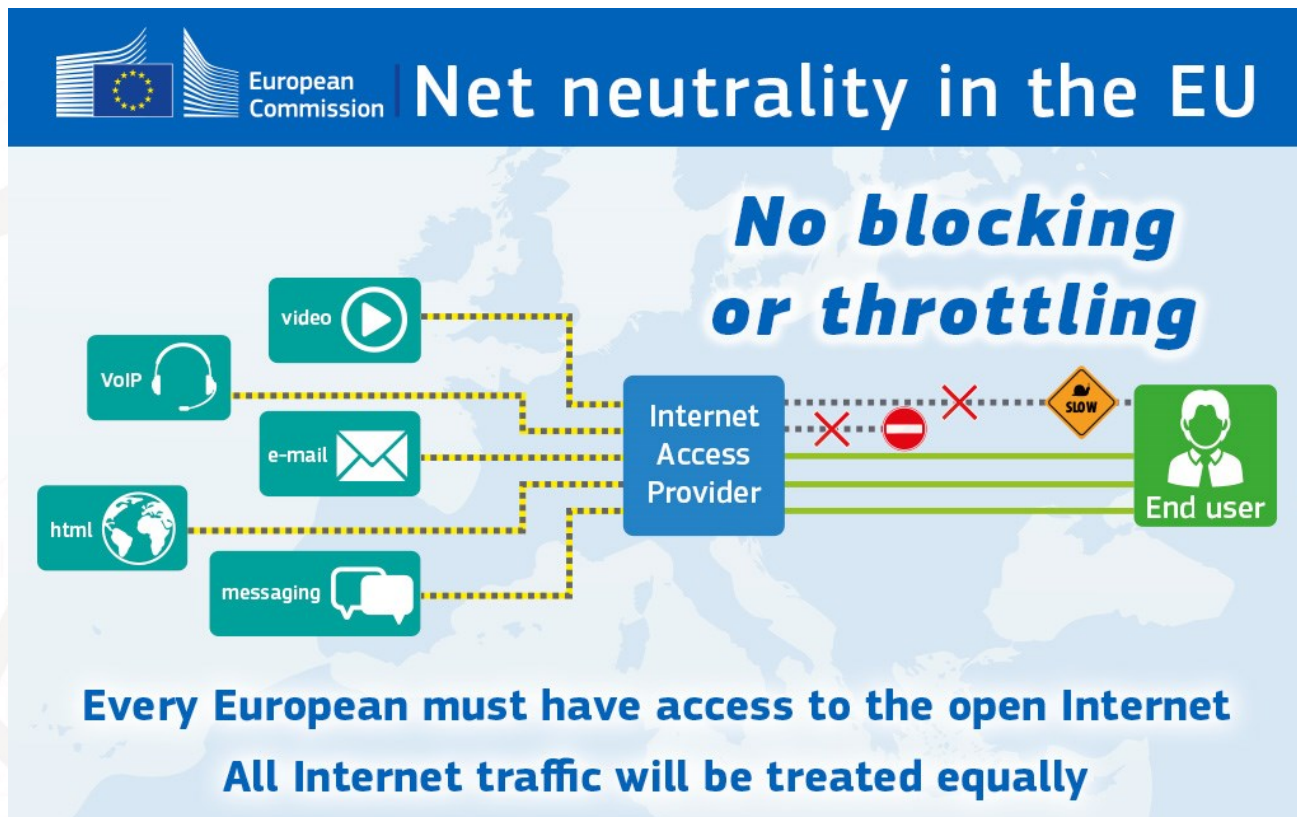
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Ms. Hilda Hernandez, Director, Information and Communication Regulatory Authority (ICRA), Mexico
 The ICT sector is a sector where there are many players and where there are many opportunities. Regulating this sector is a challenge. We need to work together to protect the rights of the consumer, especially those of vulnerable people, by ensuring the development of modern and effective regulatory tools. The guidelines on Best Practices will help us to build a safer and trustworthy digital environment for all.



www.itu.int/gsr13



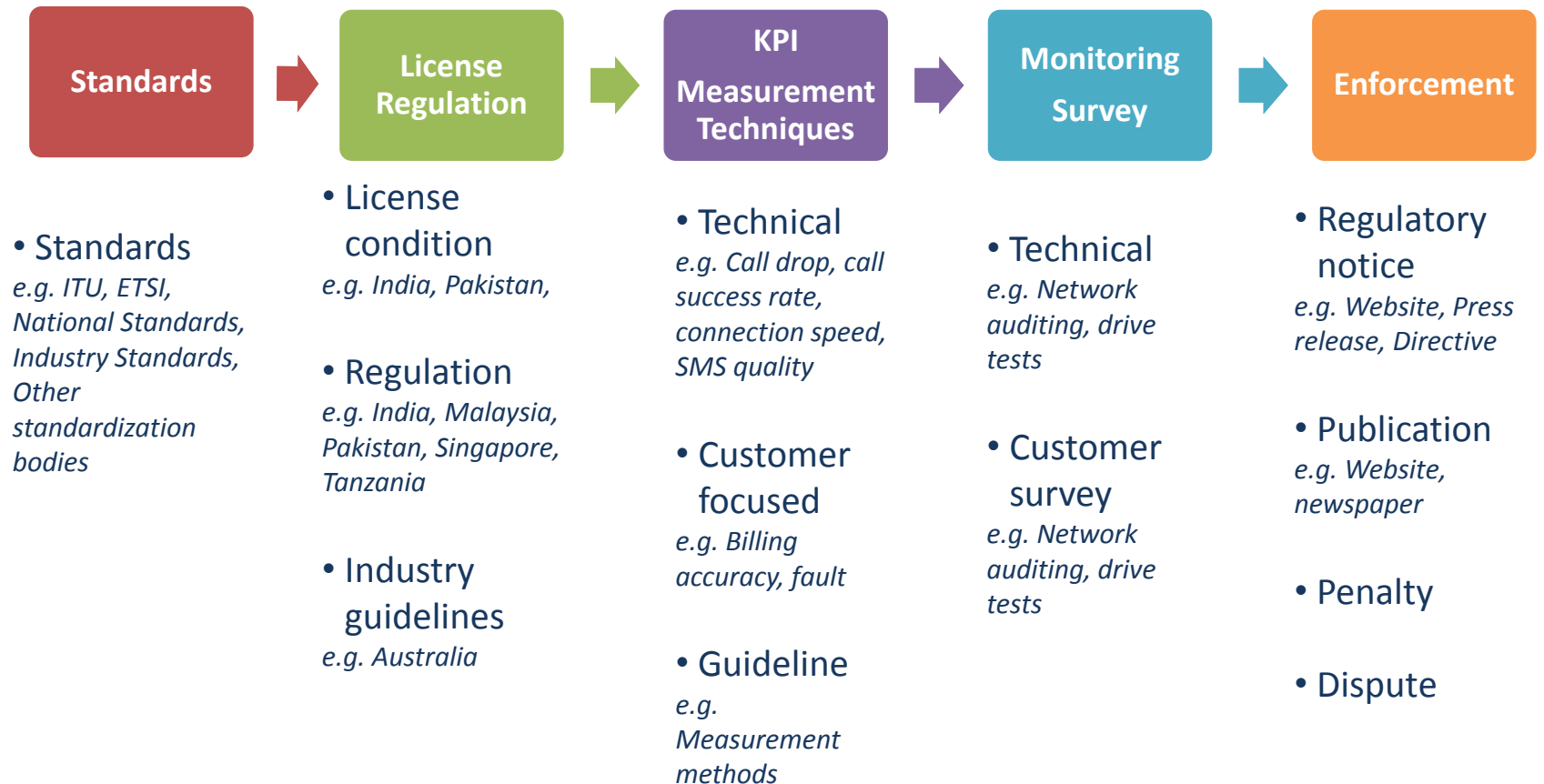
EC public consultation on the needs for Internet speed and quality beyond 2020

Quality of Service Regulation



- QoS Regulation is part of consumer protection
- Main purposes of QoS regulation are [ITU-T Supp. 9 of E.800 Series]:
 - Helping customers be aware of the Quality of service provided by Telecom Operators/ ISPs through networks (mobile & fixed), so that to make their own choices
 - Checking claims by operators
 - Understanding the state of the market
 - Maintaining / improving the QoS in presence of competition
 - Maintaining / improving the QoS in absence of competition
 - Helping operators to achieve fair competition; and
 - Making interconnected networks work well together

Quality of Service Regulatory Framework



Element in Regulator's Approach to QoS

Appropriate Information

- *Obtaining appropriate information on the level of QoS and identifying the problem areas*
- *Essential for undertaken other elements*

Publishing Information

- *Publishing information on QoS performance so that customers can be better informed*

Regulation Imposing

- *Imposing regulations on performance such as required minimum levels*
- *Fines or compensation*

Constructive Dialogue

- *Undertaking a constructive dialogue with the operator concerned to encourage and foster improvements*

Reporting and Monitoring Tools

- Reports of QoS submitted Monthly or Quarterly by Telecom Operators to the Regulatory Authority
- QoS Monitoring tools for auditing the QoS
- Penalties and Disincentives
- Independent customer survey and their publication
- Online test of Internet connection



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MEASURE YOUR BROADBAND ACCURATELY.

Join our Canadian campaign...

Sign up with us today to accurately measure your broadband performance.



Sign up for a free Whitebox to accurately measure your broadband performance.

[JOIN TODAY](#)

The Canadian Radio-television and Telecommunications Commission (CRTC) and SamKnows have established the 'Measuring Broadband Canada' program in order to provide Canadian citizens with reliable and accurate data concerning broadband provision across the country.

Anyone who would like to be part of this project just needs to [sign up](#). It might be worth reading the [requirements](#) before doing so just to make sure you're eligible to join!

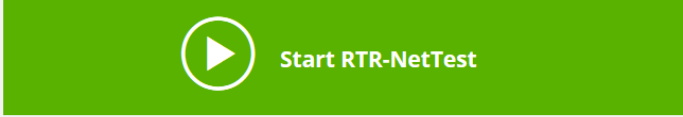
On signing up, volunteers will receive a purpose-built broadband measurement unit, also known as a SamKnows Whitebox. The Whitebox is easy to [install](#); once it has been plugged into the existing modem / router then it is good to go. Volunteers will also be able to see their own data from their broadband connection using a purpose-built SamKnows dashboard.





Please note, not everyone who registers will necessarily receive a SamKnows Whitebox. We do want to thank everyone for signing up and for working together to make Canadian broadband better!

RTR-NetTest

The RTR-NetTest informs users about the current service quality (including upload, download, ping, signal strength) of their Internet connection. In addition, a map view and statistics of previous tests can be accessed.

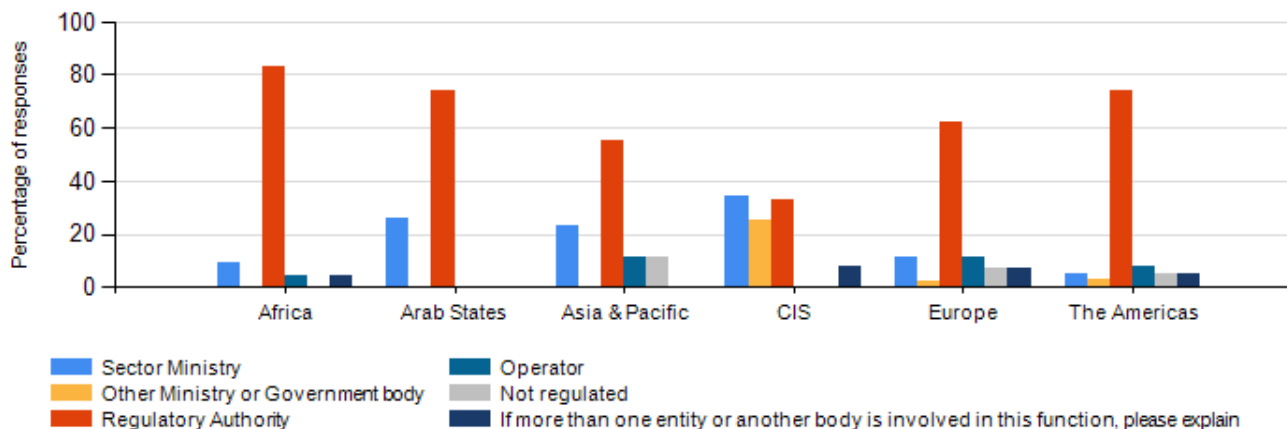
[Privacy Policy and Terms of Use](#)



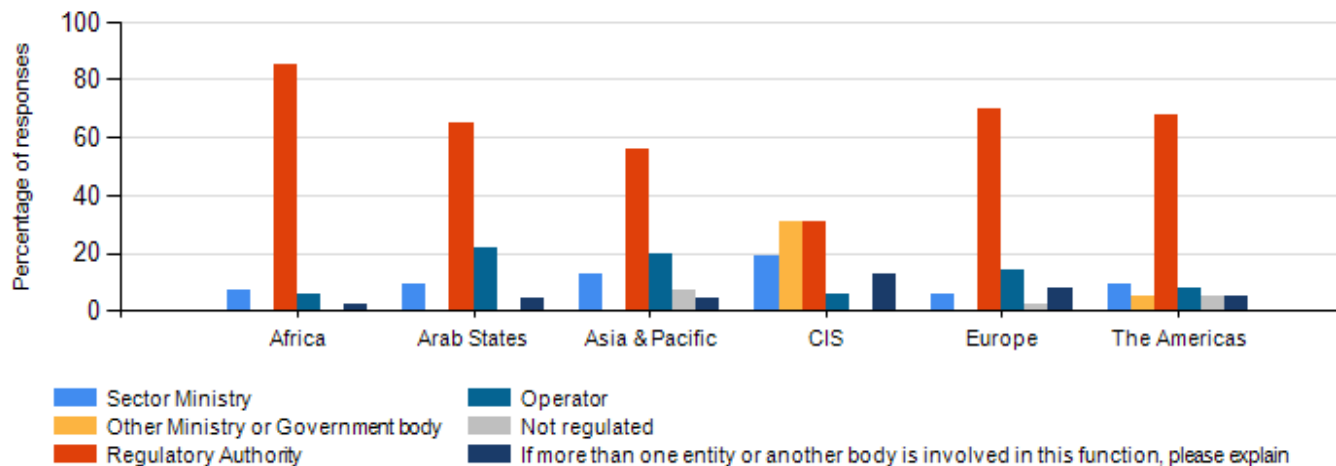
 <p>App and Browser Test</p> <p>Download iOS or Android App or conduct the browser test.</p>	 <p>Statistics</p> <p>Statistics on the test results</p>
 <p>Map view</p> <p>Map with test results</p>	 <p>Help</p> <p>Detailed background information</p>

Who's in Charge of QoS Standards Setting and monitoring?

Quality of service standards setting, 2014



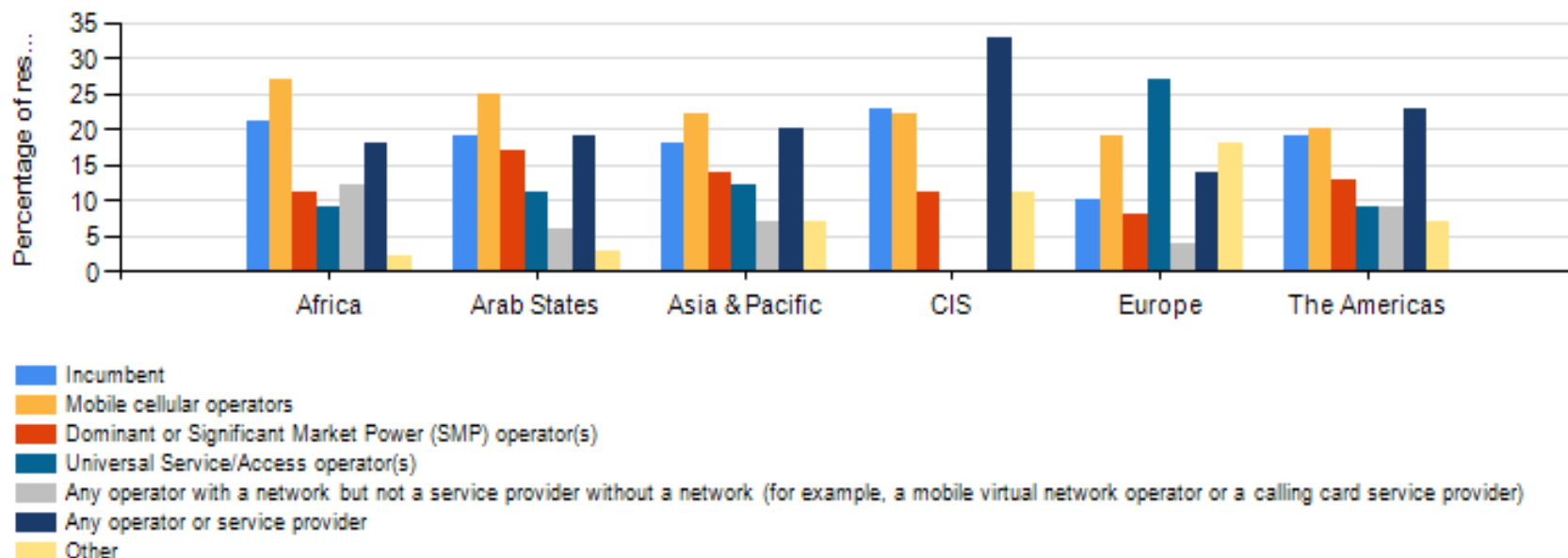
Entity in charge of service quality monitoring, 2014



Who is Subject to QoS Monitoring?

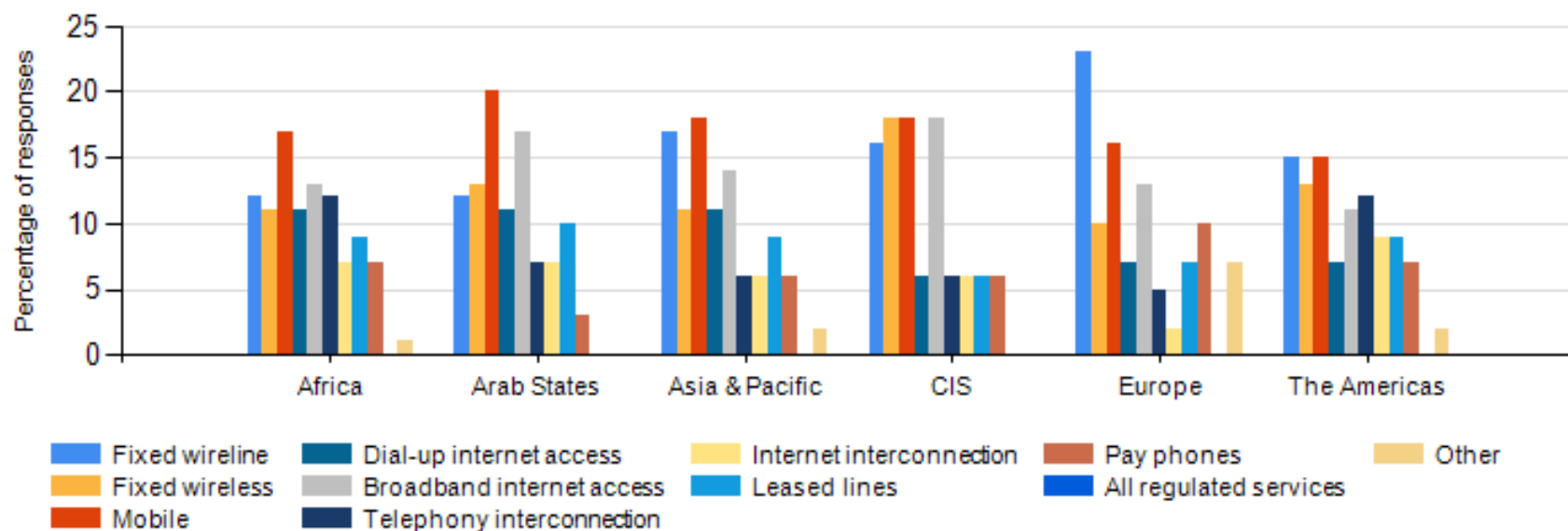
QoS monitoring required in 92% of the countries worldwide

Operator/service providers subject to quality of service monitoring, 2014



Which Services are Subject to QoS Monitoring?

Services subject to quality of service monitoring, 2014



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

Regulatory and Market Environment

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Trends Special

Trends in Telecommunication Reform 2015
Getting ready for the digital economy *Now!*

More information available in [Press release](#).



GSR

Since its launch in 2000, the annual Global Symposium for Regulators (GSR) provides a unique venue for regulators and policy-makers from both developed and developing countries to meet and exchange views and experiences. The meeting fosters an open dialogue between regulators and industry.

- GSR15: Mind the Digital Gap - Regulatory incentives to achieve digital opportunities, 9-11 June 2015, Libreville, Gabon
- GSR14: Capitalizing on the potential of the digital world, 3-5 June 2014, Manama, Bahrain
- GSRs Best Practice Guidelines and documents

ONLINE TOOLS

We have designed and are constantly enhancing a series of resource and collaborative platforms for regulators, policy makers and the broader audience.

- [ICT Eye](#)
- [ICT Regulation Toolkit](#)
- [ICT Regulatory Tracker](#)
- [ITU ICT Regulatory Decisions Clearinghouse, ICTdec](#)
- [International Mobile Roaming Resources](#)

PUBLICATIONS & STUDIES

We produce a number of flagship reports including Trends in Telecommunication Reform focusing on best practice regulation to enable ubiquitous broadband markets to thrive. Various thematic studies provide valuable viewpoints and strategies on multiple issues that affect regulation and economics in a converged broadband world.

- Trends in Telecommunication Reform Series
- ITU Broadband Thematic Reports Series
- Publications on Economics & Finance
- Other publications

SURVEYS

In order to build an extensive knowledge base, inform analysis, and facilitate decision making, we conduct annual surveys on the most pressing issues in the area of ICT policy, regulation and finance.

- ITU Telecommunication/ICT Regulatory Survey
- ITU Tariff Policies Survey

Broadband

- Broadband Thematic Reports
- Case studies
- GSRs and Best Practice Guidelines
- Broadband Commission for Digital Development
- Broadband Commission Reports
- Understanding patents, competition and standardization

HIGHLIGHTS

ICTEYE

Events

- ITU Regional Economic and Financial Forum of Telecommunications/ICTs for Africa and meeting of the ITU-T SG3RG-AFR Group
Abidjan, Côte d'Ivoire
18-19 January 2016
- ITU Regional Economic and Financial Forum of Telecommunications/ICTs for Arab Countries and meeting of the ITU-T SG3RG-ARB Group
Manama, Bahrain
29 November 2015
- ITU-BDT Arab Regional Workshop on Mobile Roaming: National & International Practices
Khartoum, Sudan
27-29 October 2015
- ITU Regional Economic and Financial Forum of Telecommunications/ICTs for Asia and Pacific and meeting of the ITU-T SG3RG-AO Group
Kuala Lumpur, Malaysia
22-24 October 2015

Global Symposium for Regulators (GSR-16)

Trends in Telecommunication Reform 2015

- Why Competition Matters and How to Foster It in the Dynamic ICT Sector
- Consumer protection in the online world
- New frontiers in spectrum licensing
- Big Data - Opportunity or Threat?
- The economic influence of data and their impact on business models
- Monitoring the Implementation of Broadband Plans and Strategies

Broadband Thematic reports Publications on economic and Finance