

**ITU Workshop on Performance, QoS and QoE for Multimedia Services
Johannesburg, South Africa, 24-25 July 2017**

INTRODUCTION
**BDT & ROA Programs and activities on
QoS**

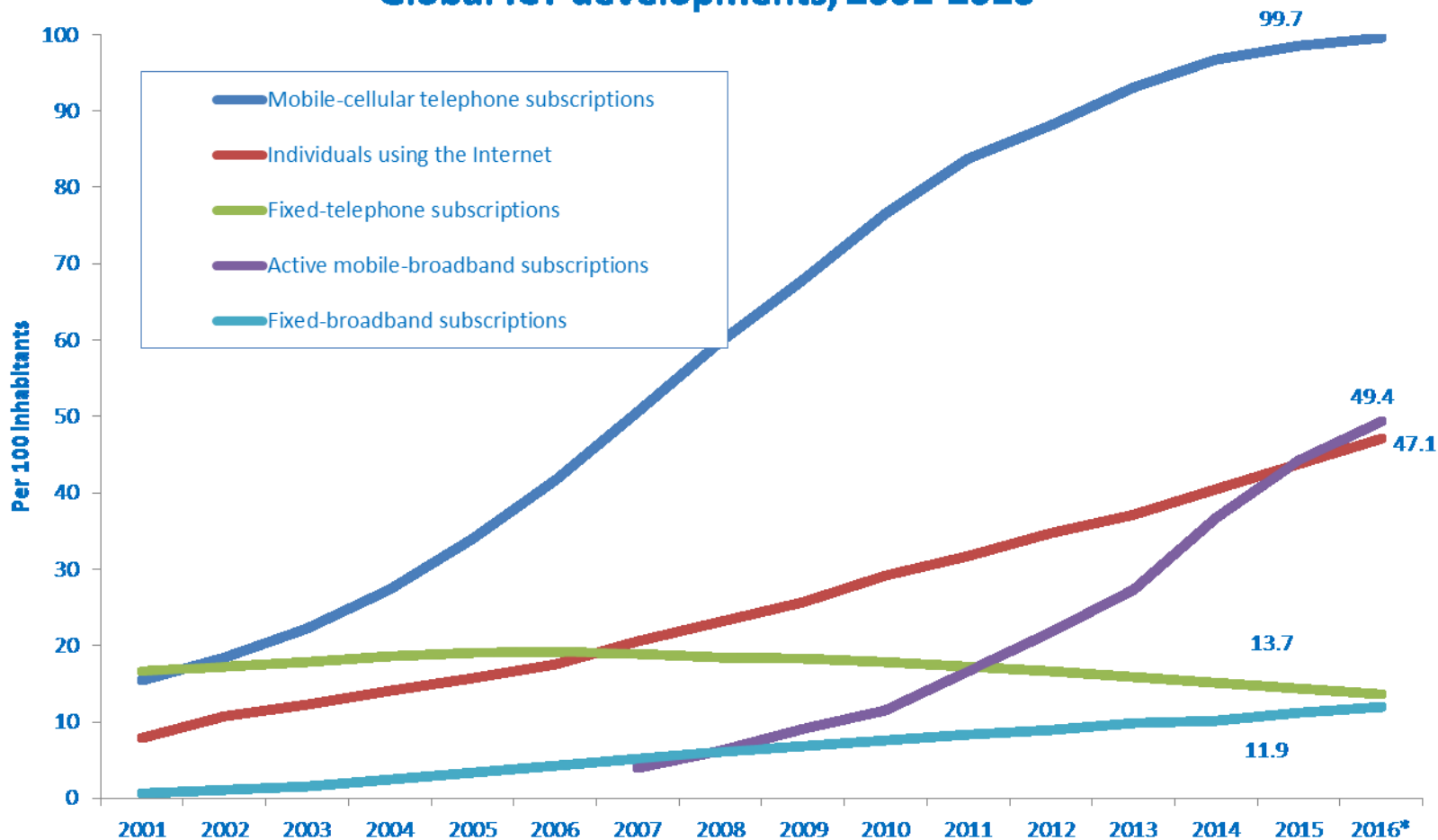
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Introduction

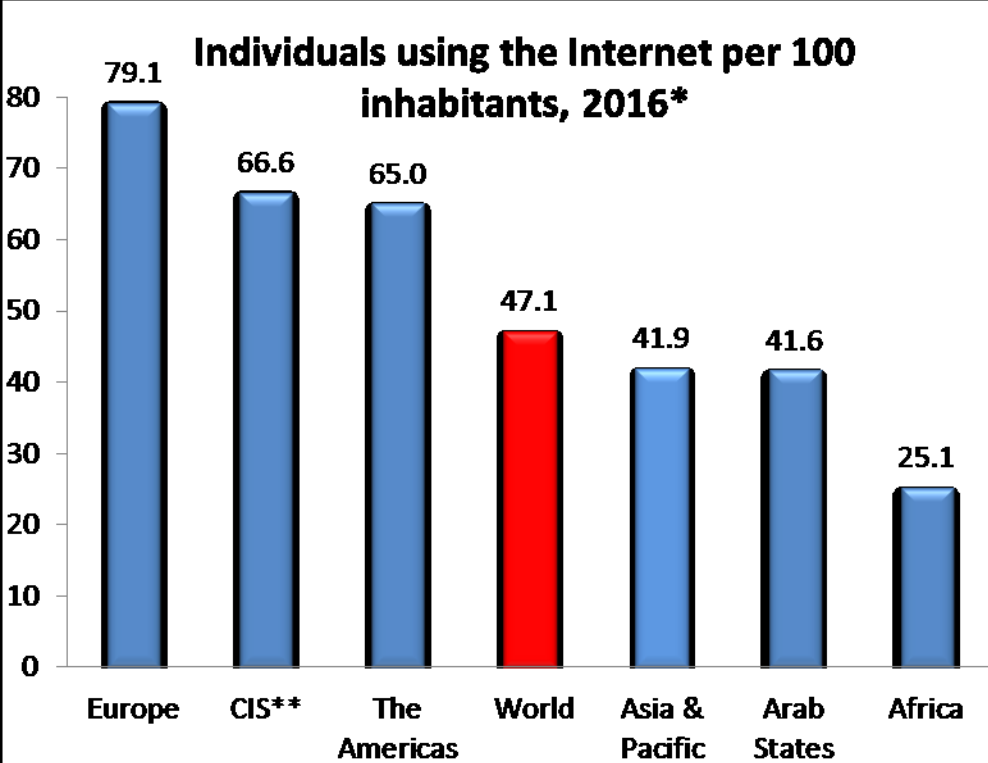
- **QoS is important for both customers and service providers.**
- Quality of service and quality of experience measuring is becoming more and more complex as quality can be impacted by many factors at the **network level** and along the **value chain such as with the device**, the hardware, the infrastructure, the service and the apps. In addition differences may arise between perceived and assessed QoS
- For that purpose, based on the QoS standards, specific QoS policies should be established in each country by the appropriate authority (e.g., National Regulatory Authority – NRA, ICT Ministry or other Ministry or Government body), and QoS provisioning should be monitored as well as encouraged and enforced when needed-
- BDT Supports Member States , RECs in defining Policy and Regulatory Models and Frameworks for QoS

Global ICT developments, 2001-2016



Note: * Estimate

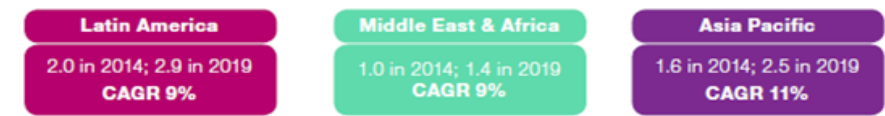
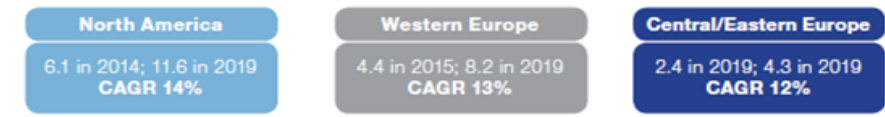
Source: ITU World Telecommunication /ICT Indicators database



Digital Divide

- Access
- Usage
- Digital services
- AI

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)



Concerns

- Infrastructure
 - Capacity and price
 - Reliability and QoS



ITU-D Objectives –WTDC-14

- Obj. 2- Foster an enabling environment for ICT development; the development of telecommunication/ICT networks as well as relevant applications and services, including bridging the standardization gap.
 - Policy and regulatory framework
- Obj.4- Build human and institutional capacity
 - Enhanced capacity building of membership in international Internet governance, knowledge and use

Related Resolutions , Regional Initiative and SG

- RESOLUTION 64 (Rev. Dubai, 2014) -Protecting and supporting users/consumers of telecommunication/information and communication technology services-
- RESOLUTION 23 (Rev. Dubai, 2014) Internet access and availability for developing countries and charging principles for international Internet connection;
- AFR Initiatives 2 _ Strengthening and harmonizing policy and regulatory frameworks for the integration of African telecommunication/ICT markets- including developing frameworks for Consumer protection and QoS and QoE

Global Outputs 1- QoS Regulation Manual

Content of the Manual:

- i. QoS framework from a technical perspective, drawing from the work done by ITU-T on QoS standardization
- ii. QoS regulatory framework and the role of National Regulatory Authorities (NRAs) in addressing QoS
- iii. Traffic management , QoS parameters and Key Performance Indicators (KPIs)
- iv. Broadband QoS measurement, examining different measurement tools and platforms. The economic principles for QoS regulation
- v. Network neutrality and its regulation worldwide
- vi. Consumer protection and privacy aspects
- vii. QoS enforcement
- viii. 16 Country case studies 8 of which are from the SADC region

To be released in September 2017

Global Outputs 2- Regulatory Tracker

1. Examines regulatory practices across ITU Membership in a range of areas including QoS. See country by country tracker

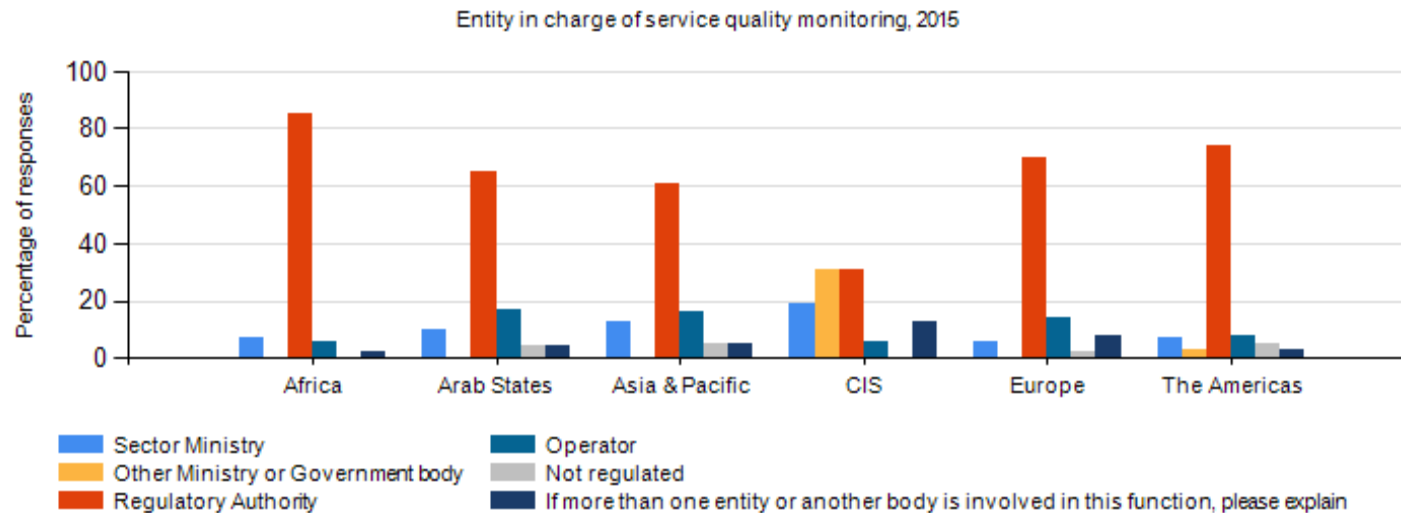
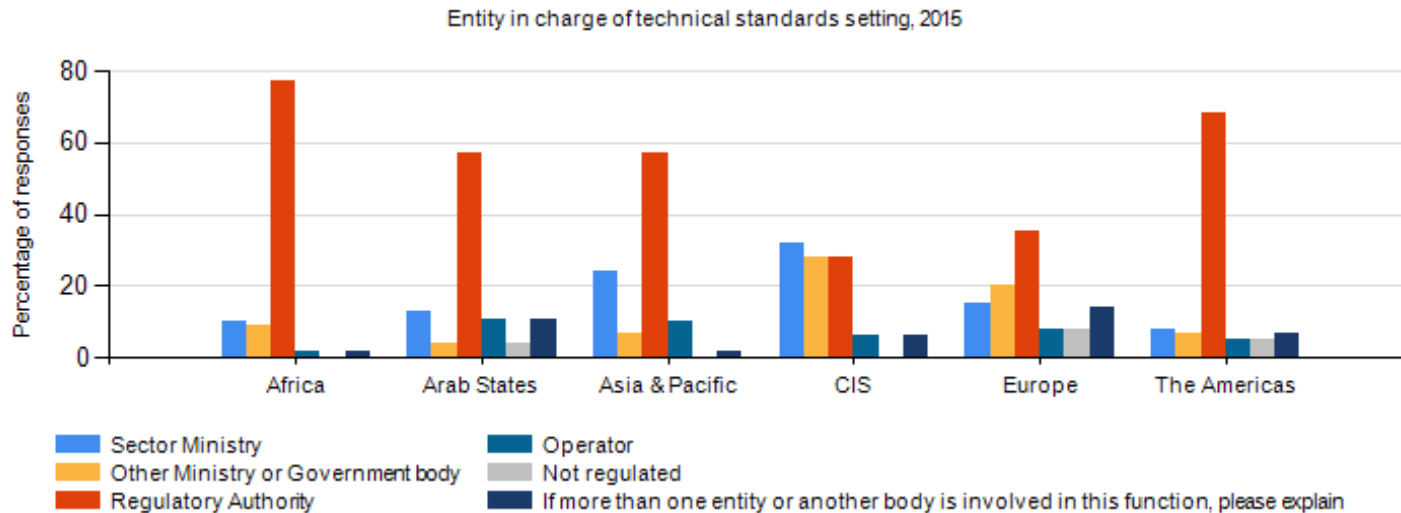
2. QOS Parameters tracked include:

- i. Who defines policies for QoS
- ii. What services are subject to QoS Monitoring
- iii. Enforcement approaches among others

<http://www.itu.int/net4/itu-d/irt/#/tracker-by-country/regulatory-tracker/2015>

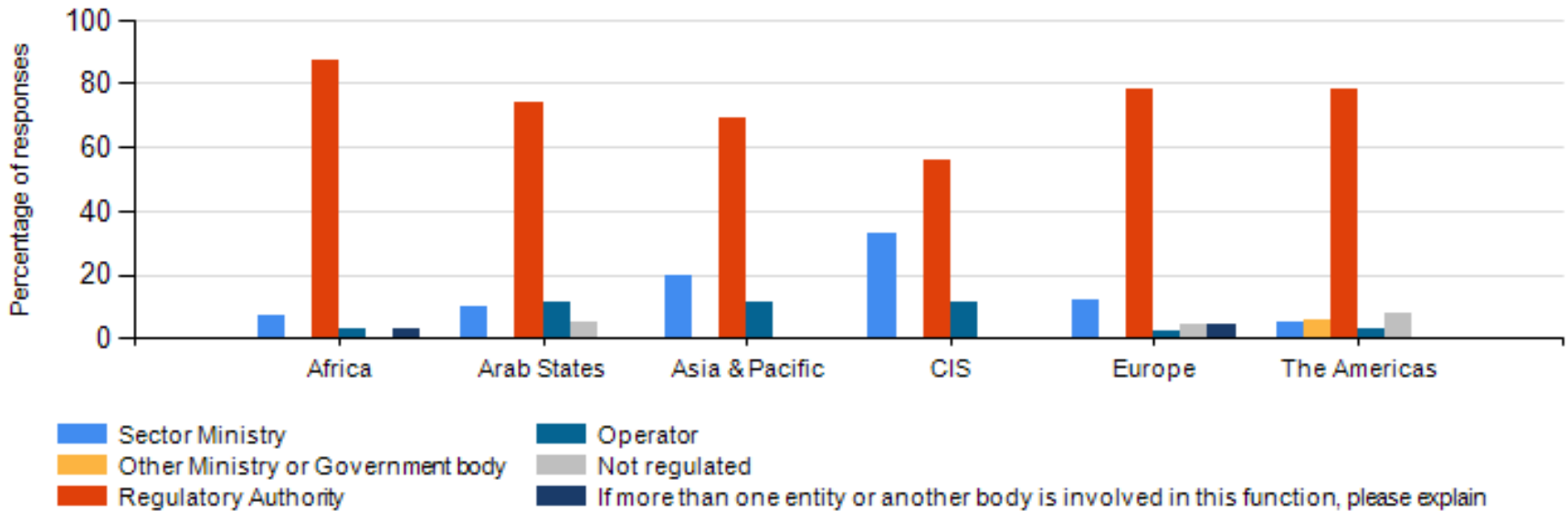
Cluster	C1. Regulatory Authority	C2. Regulatory Mentise	C3. Regulatory Regime	C4. Competition Framework	Overall Score
Max Score:	20	22	30	28	100
Country					
Afghanistan	13.00	20.00	22.00	16.67	71.67
Albania	18.00	17.00	20.00	21.00	82.00
Algeria	18.00	17.00	18.00	11.00	64.00
Andorra	4.00	9.00	10.00	6.00	23.00
Angola	17.00	20.00	18.00	16.67	65.67

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



Who's in Charge of Enforcement of QoS?

Entity in charge of enforcement of quality of service obligations, 2015

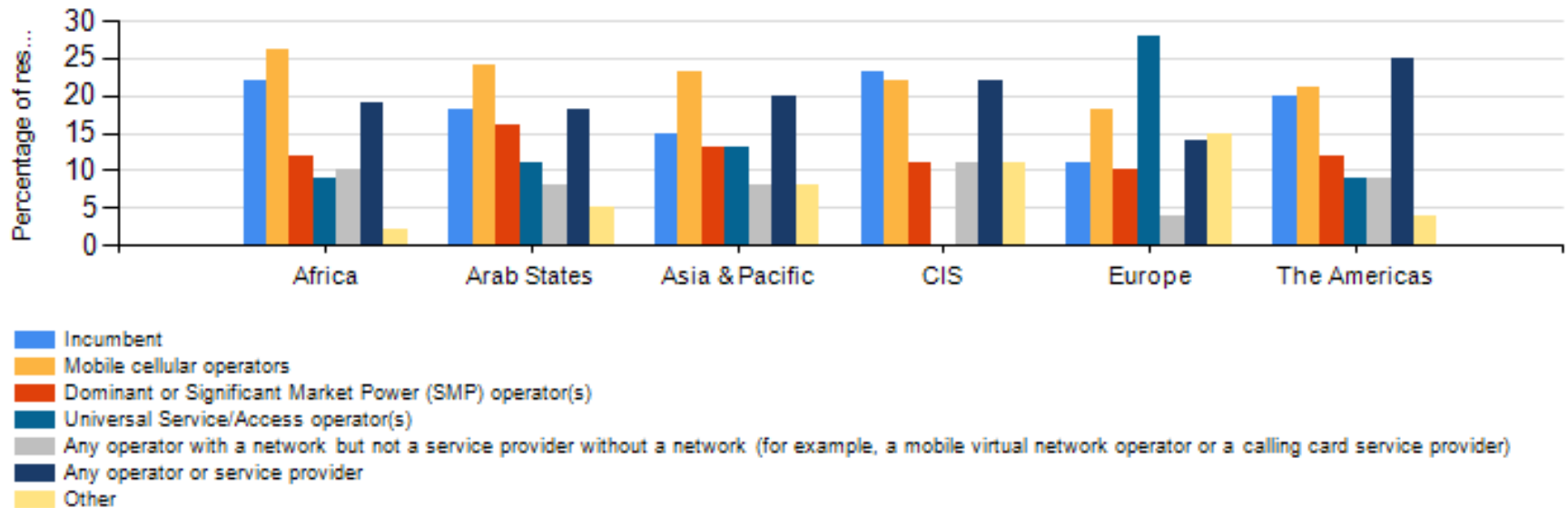


Source: ITU ICT-Eye: <http://www.itu.int/icteye>

Who is Subject to QoS Monitoring?

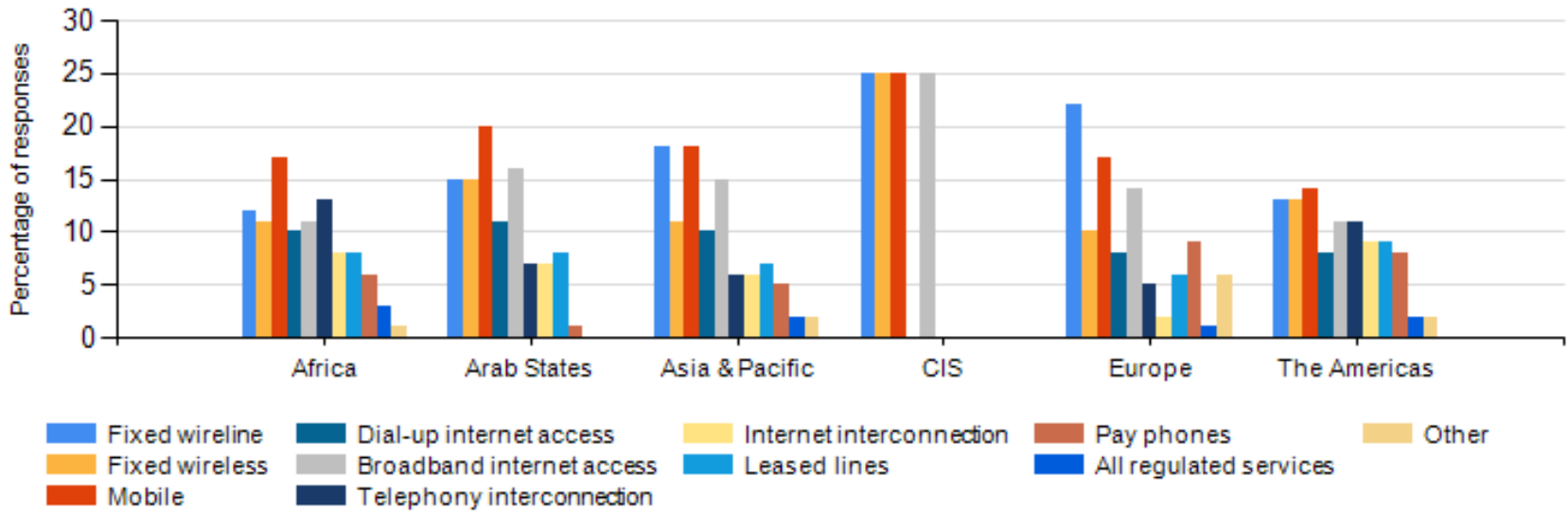
QoS monitoring required in 92% of the countries worldwide

Operator/service providers subject to quality of service monitoring, 2015



Which Services are Subject to QoS Monitoring?

Services subject to quality of service monitoring, 2015



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

Global Output 3- Quality of Service Training Programme



2 Programs

1. OM5- Regulatory Aspects of QoS- Online training
2. QoSSTP is a second in a series of high-level training programmes developed under the ITU Academy;
 1. Offers access to QoS training and forward-looking professional vision
 2. It is a full set of high-level materials prepared by high caliber external and internal subject-matter experts;
 3. Designed for anyone either a beginner or a specialist;
 4. Provides a certain level of knowledge and possibility for different certification options;
 5. Provides international recognition, with possible options of university credits/diploma

https://academy.itu.int/index.php?option=com_content&view=article&id=101&Itemid=642&lang=en

ITU/BDT Regulatory Activities

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Global ICT Regulatory Outlook 2017

A new landmark publication of ITU released!



GLOBAL ICT REGULATORY
OUTLOOK
2017



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Quick links

- ITU Thematic Reports
- GSRs and Best Practice Guidelines
- ICT Regulatory Tracker
- International Mobile Roaming Resources

HIGHLIGHTS

ICTEYE

Events

Links

- ITU Workshop on Collaborative cross-sectoral regulatory mechanisms and competition analysis in digital economy
Bangkok, Thailand
07-11 August 2017
- V Regional Forum on Inter-connectivity & Reduction of telecommunication service prices and Internet access cost
Mexico City, Mexico
22 September 2017
- ITU Regional Economic and Financial Forum of Telecommunications/ICT for Latin America and

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.

- **GSR17: Living in a World of Digital Opportunities**
11-14 July 2017, Nassau, Bahamas
- **GSR16: Be Empowered, Be included!** Building blocks for smart societies in a connected world, **11-14 May 2016, Sharm el-Sheikh, Egypt**
- GSRs Best Practice Guidelines and documents

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 Thematic Reports Series
- Publications on Economics & Finance
- EUIPO-ITU Report: The economic cost of IPR Infringement in the Smartphones Sector
- Global ICT Regulatory Outlook 2017 **NEW!**
- Other publications

New!

Global ICT Regulatory Outlook 2017

See the various thematic reports!

Coming soon: Manual on QoS Regulation

www.itu.int/treg

Regional Initiative For Africa

1. Capacity Development -The Quality of Service and Quality of Experience (QoS/QoE) co-organised with CRASA and hosted by Botswana Communications Regulatory Authority (BOCRA) from the 8th to 10th May 2017- Agreed
 - Work towards a common position on Net Neutrality for the regional group which consequently shall determines QoS policies and regulations on Internet services
 - developing a common broadband measurement platform as being done by the EU.

Regional Initiative For Africa

- 2 day Quality of Service Training and consultation meeting on QoS framework for WATRA Region planned- 2017
- ROA is developing a QoS, QoE framework and Guideline for the WATRA Region –to ensure a harmonized policy and regulatory approaches on QoS- in partnership with WATRA Secretariat

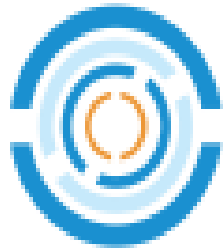
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ITU WTDC

BUENOS AIRES 2017

9-20 October

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25 YEARS
OF ACHIEVEMENTS

