



Regulatory Trends and Enablers for Convergence

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ITU: A brief overview

193 Member States

567 Sector Members

159 Associates

60 Academia



ITU-R: ITU's Radio-communication Sector globally manages radio-frequency spectrum and satellite orbits that ensure safety of life on land, at sea and in the skies.



ITU-T: ITU's Telecommunication Standardization Sector enables global communications by ensuring that countries' ICT networks and devices are speaking the same language.



ITU-D: ITU's Development Sector fosters international cooperation and solidarity in the delivery of technical assistance and in the creation, development and improvement of telecommunication/ICT equipment and networks in developing countries.

Headquartered in Geneva,

4 Regional Offices

7 Area Offices.

IMPROVING QUALITY OF LIFE..



Emergency



Education



Health



Agriculture



Investment



Applications



Policy & Regulation



Governance



Sensor Networks



Universal Broadband



Green ICT & E-Waste



Capacity Building



Transport



Measurements



Electricity



Privacy & Security



Water



**SMART
SOCIETY**



Infrastructure Security



Digital Inclusion



Spectrum Management



Standards, Conformity & Interoperability



Teleworking

Agreed Global Telecommunication/ICT Targets – 2020



ITU Plenipotentiary Conference 2014

Goal 1 Growth : Enable and foster access to and increased use of telecommunications/ICTs

55%

of households should have access to the Internet

60%

of individuals should be using the Internet

40%

Telecommunications/ICTs should be **40%** more affordable



GROWTH

Goal 2 Inclusiveness – Bridge the digital divide and provide broadband for all

50%

of households should have access to the Internet in the developing world; **15%** in the least developed countries

50%

of individuals should be using the Internet in the developing world; **20%** in the least developed countries

40%

affordability gap between developed and developing countries should be reduced by **40%**

5%

Broadband services should cost no more than **5%** of average monthly income in the developing countries



INCLUSION

90% of the rural population should be covered by broadband services



Gender equality among Internet users should be reached



Enabling environments ensuring accessible ICTs for persons with disabilities should be established in all countries

Goal 3 Sustainability – Manage challenges resulting from the telecommunication/ICT development

40%

improvement in cybersecurity readiness

50%

reduction in volume of redundant e-waste

30%

decrease in Green House Gas emissions per device generated by the telecommunication/ICT sector



SUSTAINABILITY

Goal 4 Innovation and partnership – Lead, improve and adapt to the changing telecommunication/ICT environment



Telecommunication/ICT environment conducive to innovation

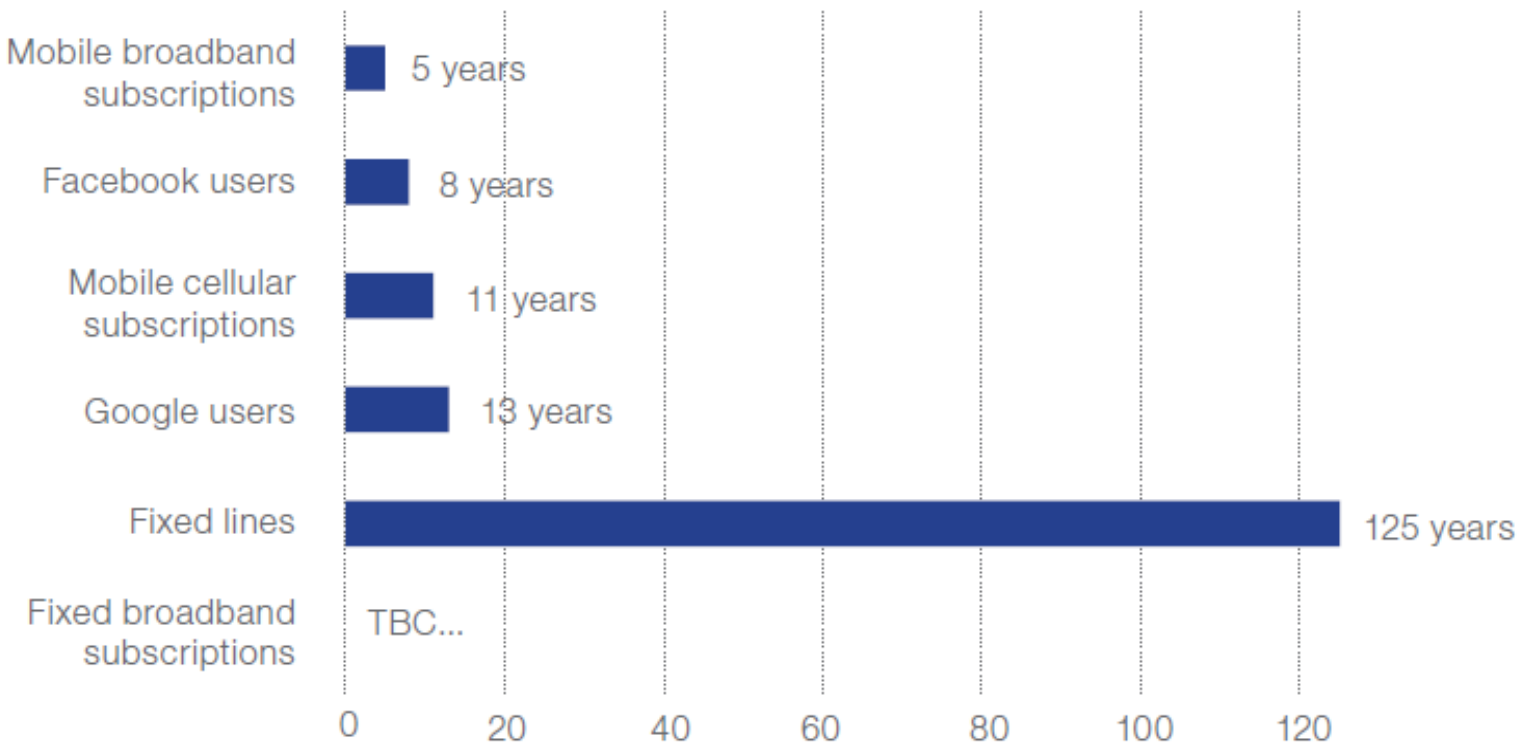
Effective partnerships of stakeholders in telecommunication/ICT environment



INNOVATION

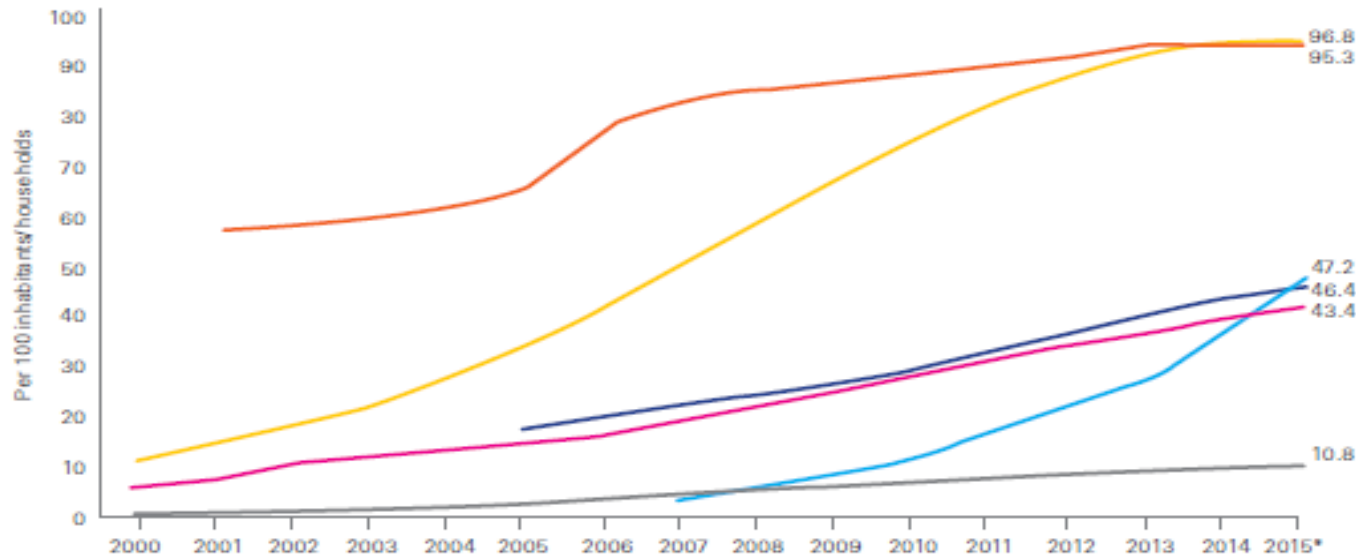
Mobile Broadband is the Fastest-Growing ICT Service in History

Years to Achieve One Billion Users (from Launch)



Source: State of Broadband 2015

15 Years of ICT Growth: What has been achieved?



Source: ITU.
Note: * Estimates.

Mobile-cellular telephone subscriptions
Mobile broadband subscriptions

Individuals using the Internet
Fixed-broadband subscriptions

Population covered by 2G mobile-cellular network
Households with Internet



- By end 2015, there are more than 7 billion mobile cellular subscriptions, corresponding to a penetration rate of 97 %, up from 738 million in 2000



- Between 2000-2015, global Internet penetration grew 7 fold from 6.5% to 43%



- Mobile broadband is the most dynamic market segment; globally, mobile-broadband penetration reaches 47% in 2015, a value that increased 12 times since 2007



- The proportion of households with Internet access at home increased from 18% in 2005 to 46% in 2015



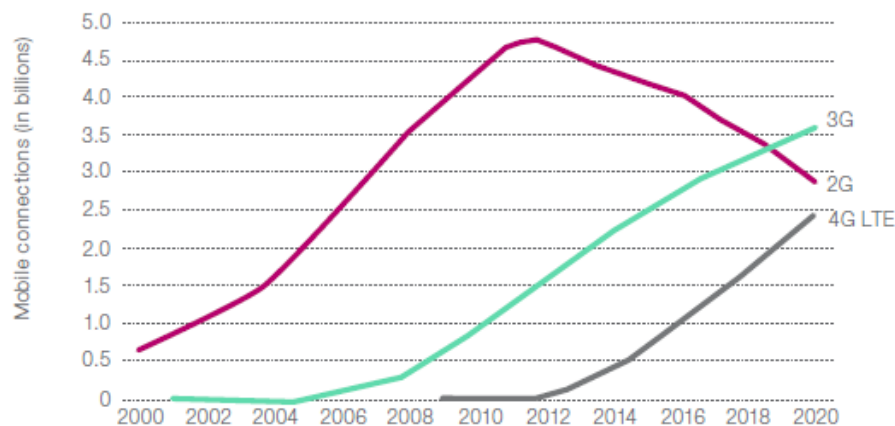
- Fixed-broadband uptake is growing at a slower pace, with a 7% annual increase over the past three years and reaching 11% penetration by end 2015



- The proportion of the population covered by a 2G mobile-cellular network grew from 58% in 2001 to 95% in 2015



Mobile Broadband Network Deployment Trends



By the end of 2014, Telegeography reports that 2G networks had been deployed in 200 countries, active 3G networks were commercially available in 192 countries and 4G networks had been deployed in 102 countries.



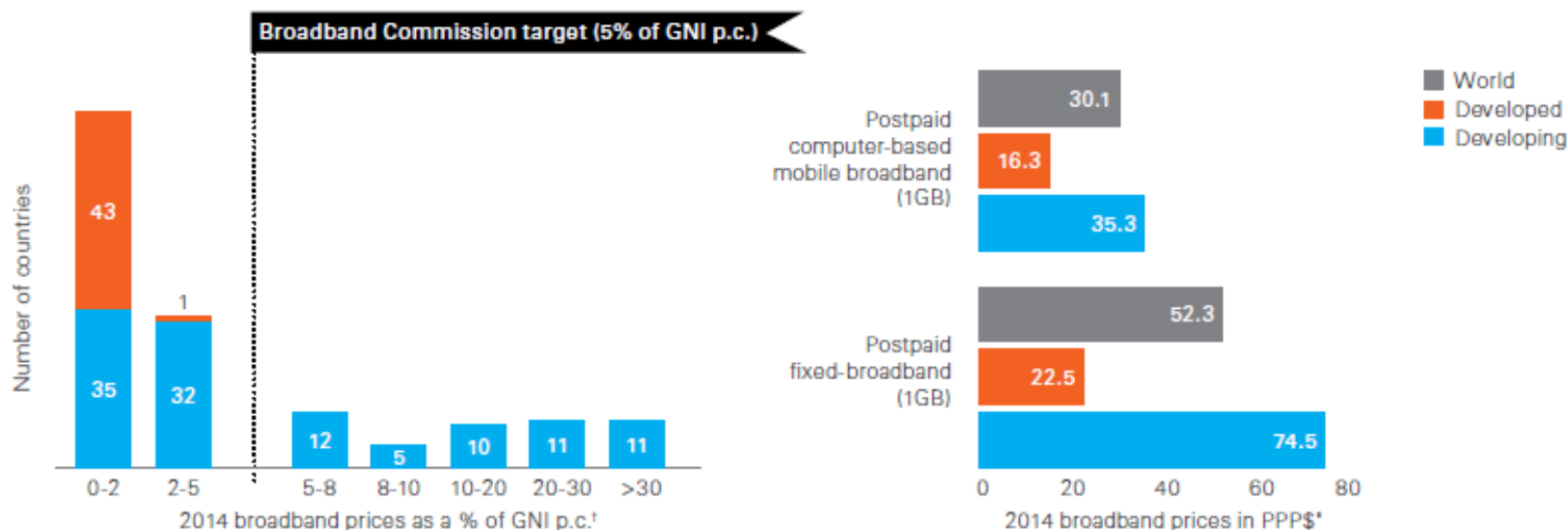
In July 2015, the Global mobile Suppliers Association (GSA) reported that 422 operators had launched commercial LTE systems in 143 countries, projecting 460 commercially launched LTE networks by end 2015.

•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).

Affordability of Broadband?



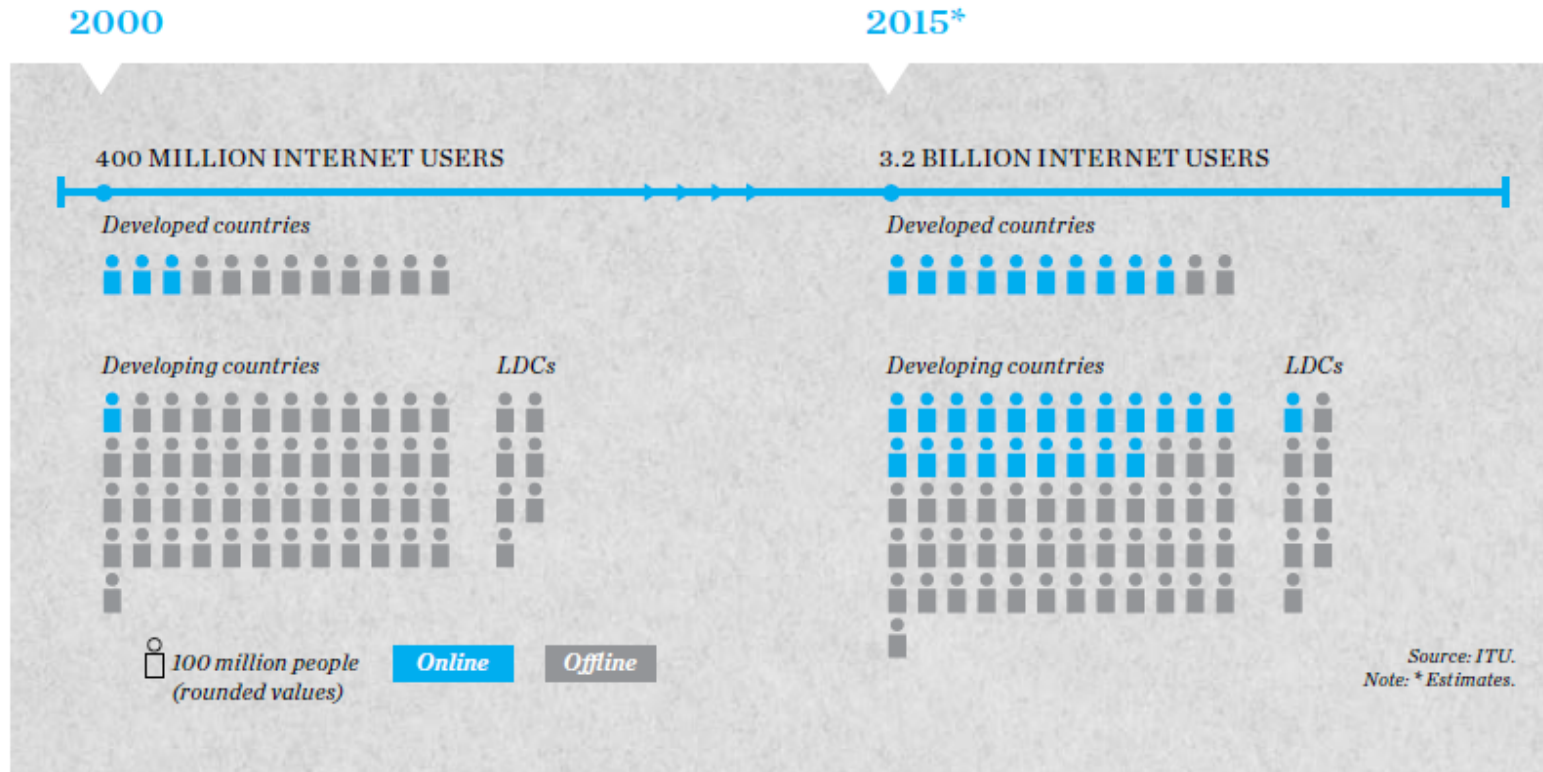
*Broadband now affordable in 111 countries
with mobile-broadband less expensive than fixed-broadband plans*



- In 2014, in 111 countries the price of a basic (fixed or mobile) broadband plan corresponds to less than 5% of average GNI per capita, thus meeting the Broadband Commission target
- The global average price of a basic fixed-broadband plan (52 PPP\$) is 1.7 times higher than the average price of a comparable mobile-broadband plan (30 PPP\$)
- In developing countries, average monthly fixed-broadband prices (in PPP\$) are 3 times higher than in developed countries; mobile-broadband prices are twice as expensive as in developed countries

Source: ITU.
Note: ¹ Either fixed broadband or mobile broadband. *Based on simple averages including data for 160 economies.

Status of Internet Access



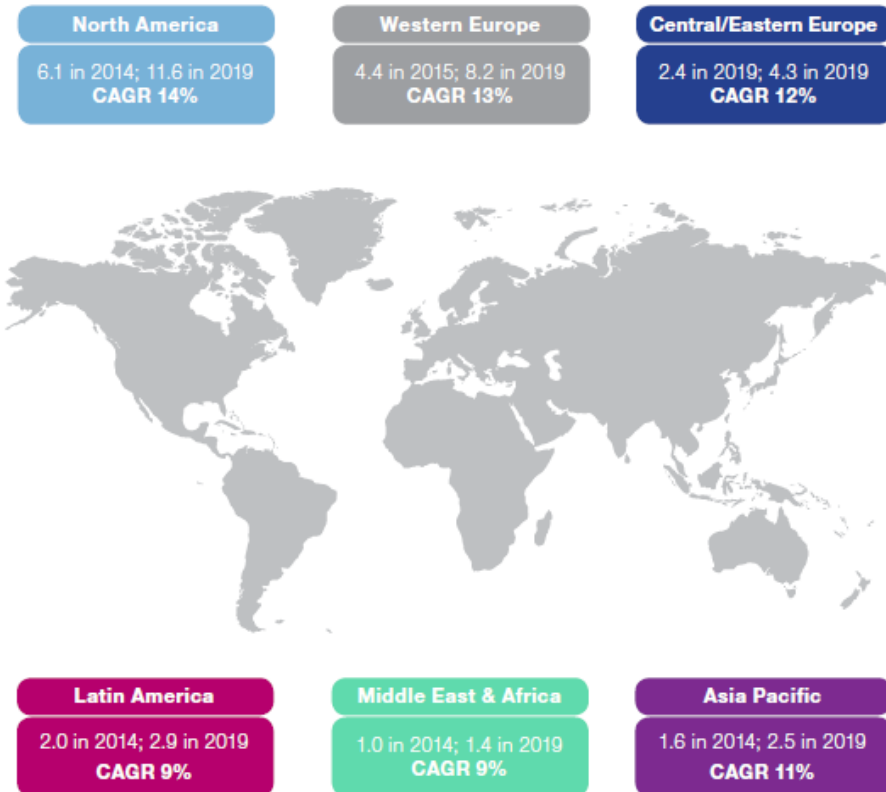
- Globally 3.2 billion people are using the Internet by end 2015, of which 2 billion are from developing countries
- For every Internet user in the developed world there are 2 in the developing world
- However, 4 billion people from developing countries remain offline, representing 2/3 of the population residing in developing countries
- Of the 940 million people living in the least developed countries (LDCs), only 89 million use the Internet, corresponding to a 9.5% penetration rate



Connected devices trends

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)



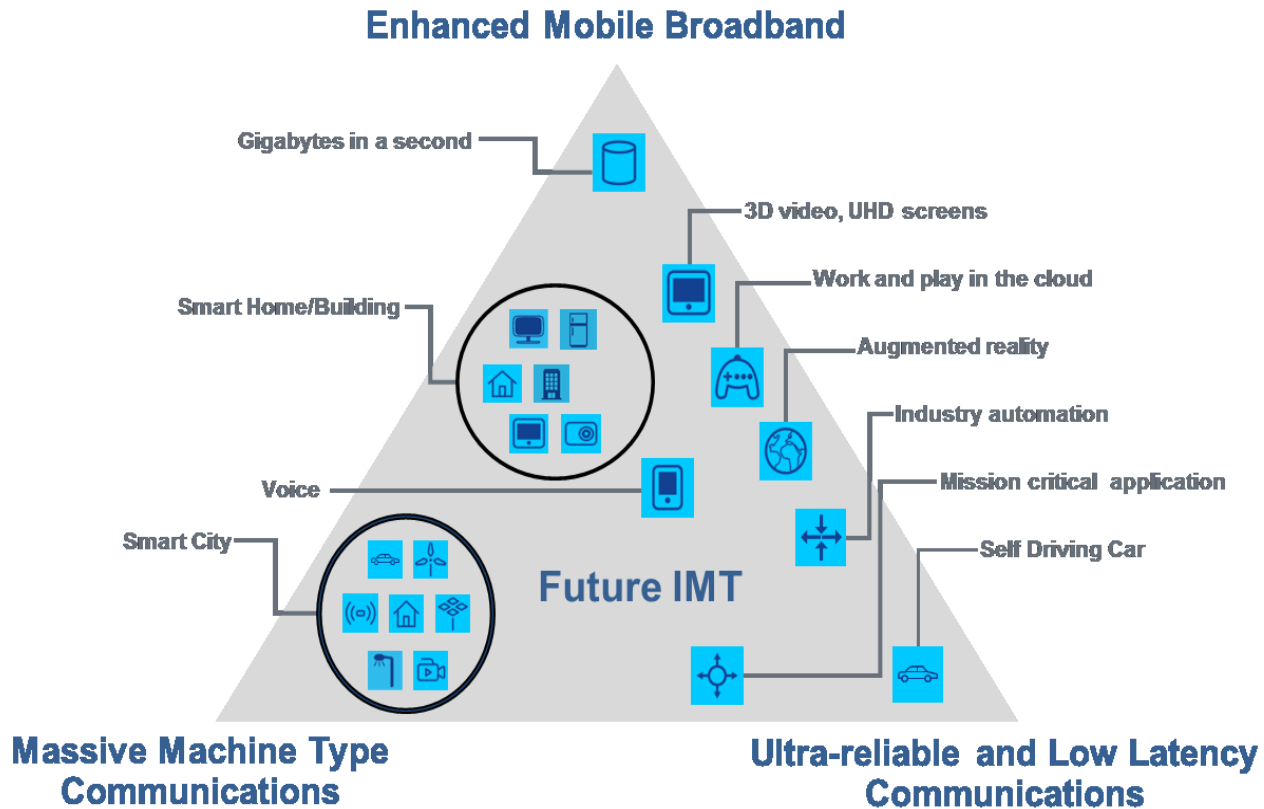
For every new person connecting to the Internet over the next five years, ten times as many devices will connect.

Source: Cisco VNI Global IP Traffic Forecast, 2014-2019.

IMT 2020 (5G)



Usage Scenarios for IMT 2020

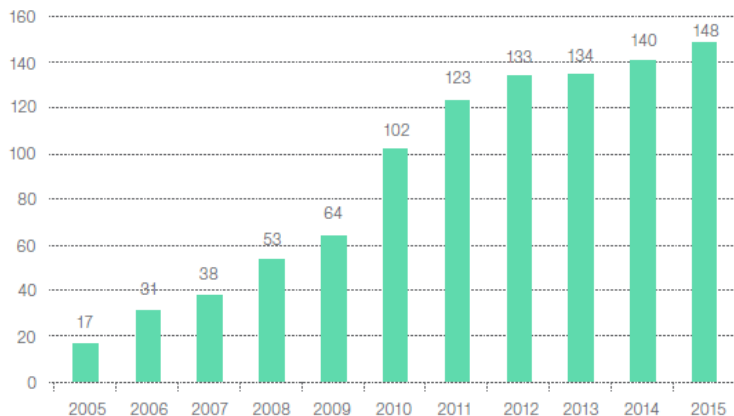


ITU-R Recommendation M.2083-0 (09/2015)

Broadband Plans : Policy Leadership

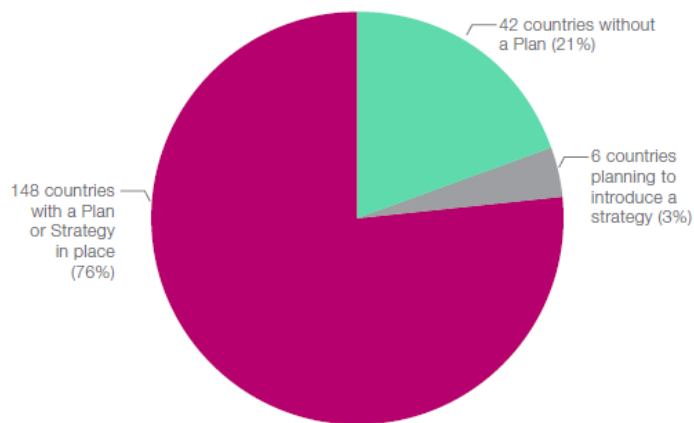


Number of Countries with National Broadband Plans, 2005-2015



Broadband plans 2005-2015

148 governments worldwide have adopted or are planning to adopt a national broadband policy or plan.



Phase	1) Deployment	2) Adoption	3) Integration
Focus	Broadband network availability	Broadband access & capacity building for effective use	Broadband integration in economy and society
Examples	Optical fibre cable and wireless broadband access networks	Digital literacy programmes; community access projects & programmes	e-health, e-governance, e-education and e-commerce strategies
Indicators	Telecom indicators	Performance indicators	Outcome/impact measures

National Broadband Policy: Experiences from ITU



- Currently, **six countries fully approved** the National Broadband Policy at the highest level while **the rest are close** to finalizing their policy
- All these policies set out **clear vision, key objectives and principles** as well as **short to mid-term goals** and detailed **implementation action plans**
- **Comprehensive action plans** consist of a thorough list of issues (& responsible organizations and deadlines) including:
 - Broadband availability target
 - Reducing regulatory burdens
 - Review of licensing/spectrum management
 - Improving adoption, affordability
 - Universal Service Obligations
 - Sector-specific plans (e-government, e-health, e-education, e-agriculture, etc.)
 - Fostering innovation and local service/contents

Status	Country	Broadband Availability Target
✓ Approved	Bhutan	80% of the population
	Brunei D.	80% of the households by 2017
	Fiji	50% of the population by 2016
	Indonesia	75% of the population by 2017
	Papua N.G.	50% of the population by 2018
	Nepal	45% of the households by 2018
Under Review	Bangladesh	Not specified
	Cambodia	90% of the population by 2018
	Lao PDR	60% of the post offices as community access points by 2016
	Pakistan	50% of the population by 2017
In draft	Philippines	Not specified
	Marshall I.	Not specified
	Myanmar	Not specified
	Samoa	Not specified
	Vanuatu	98% of the population by 2018



Legislation

Legislations embracing the power of convergence as well as addressing concerns such as Cybersecurity on the rise.



Institution

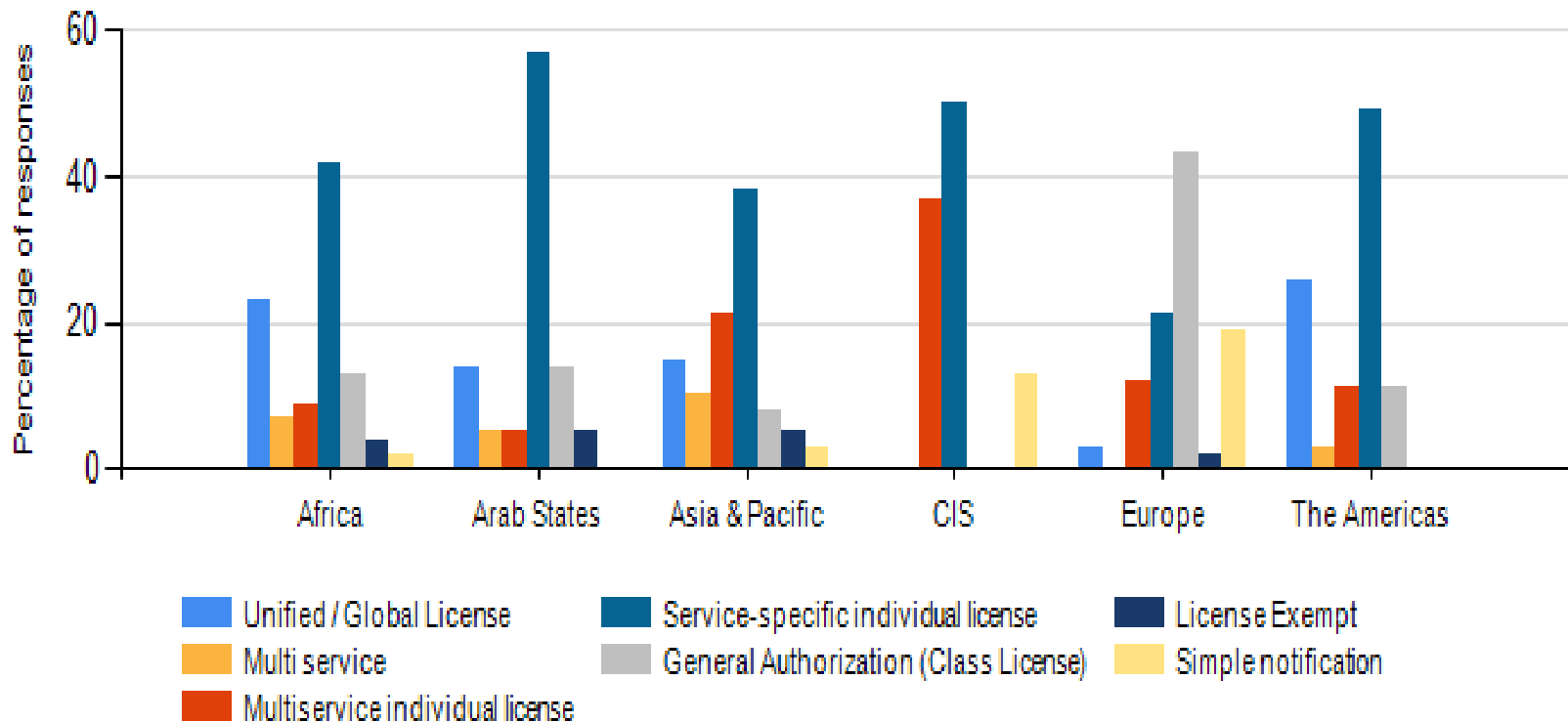
Institutional convergence including Telecom, Broadcasting, IT and in some cases even beyond on ground: e.g., Australia, China, India, Republic of Korea, Malaysia,



Policies & Regulations

Converged policy & regulatory frameworks evolving: e.g., Converged Licensing (Malaysia), Authorization (European Union), Unified Access License (India). Digital Signature, etc.

Autorisation Type, 2015

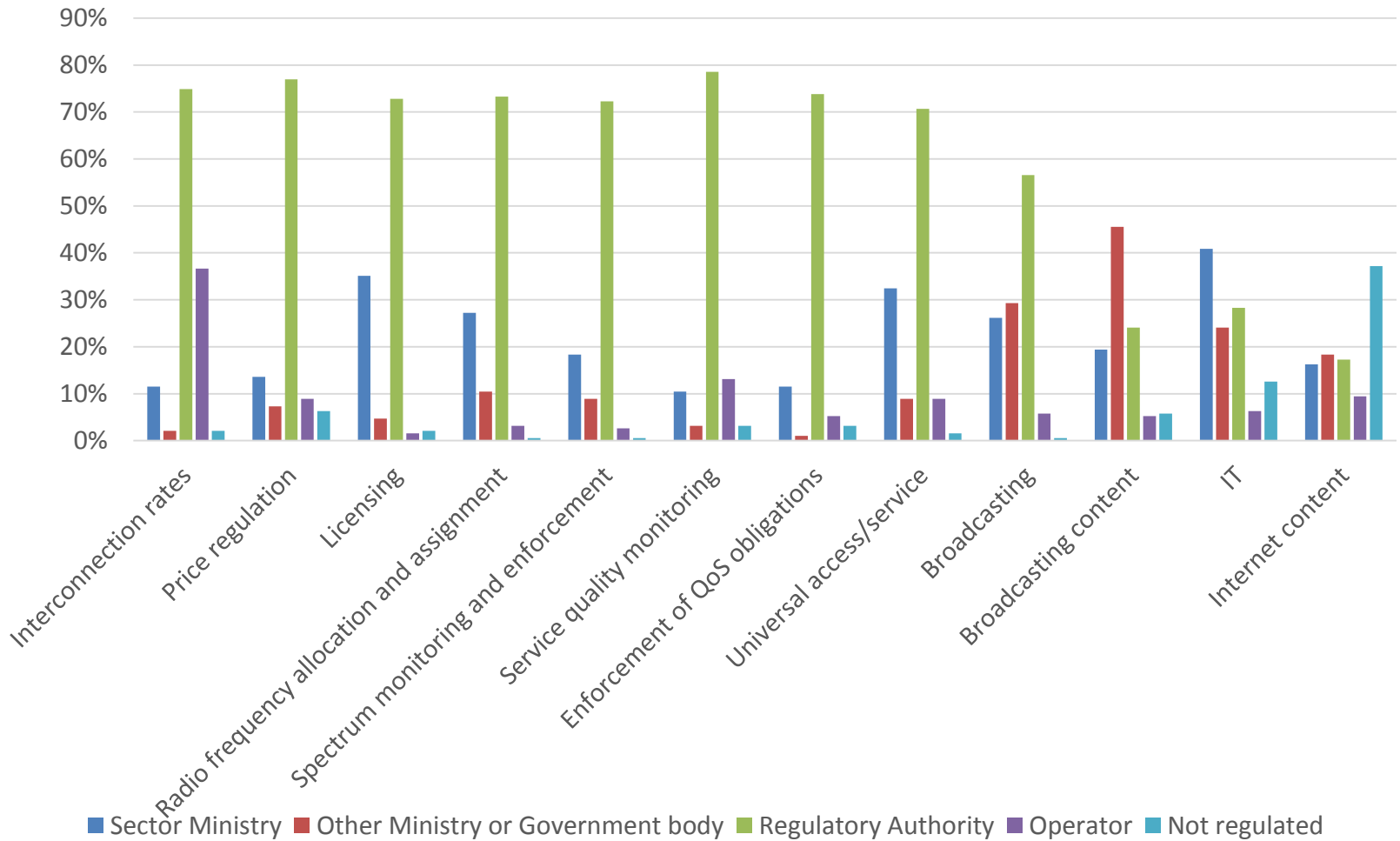


Note: This question allows multiple answers per country/economy.

Source: ITU Telecommunication/ICT Regulatory Database.

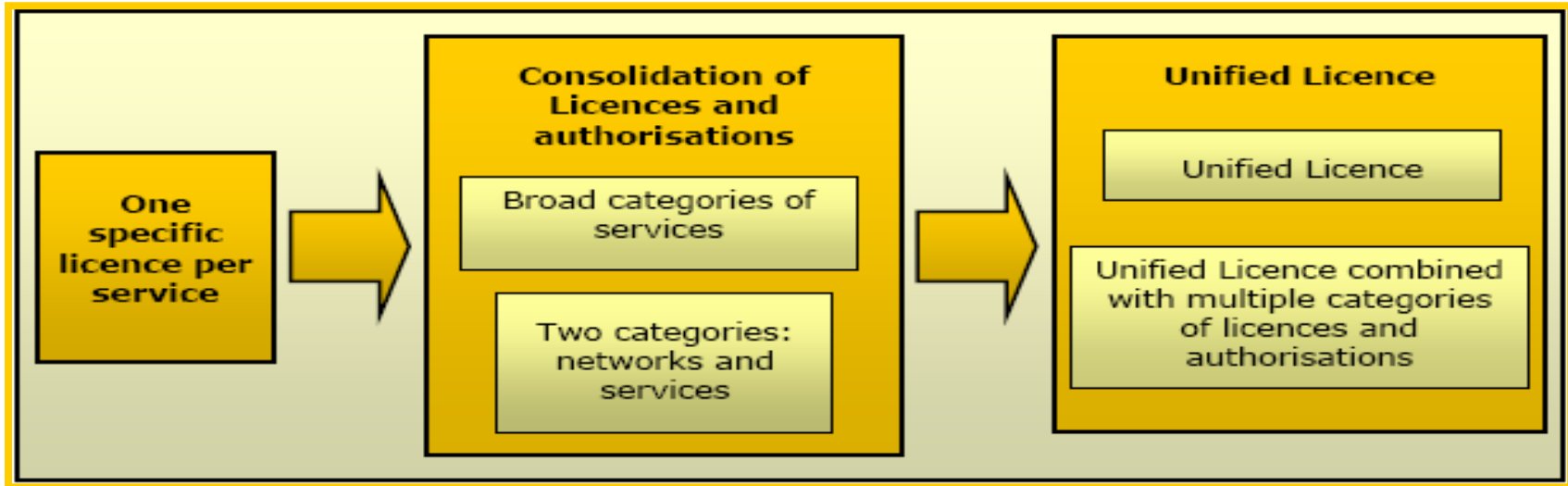


Regulatory Mandate, 2015

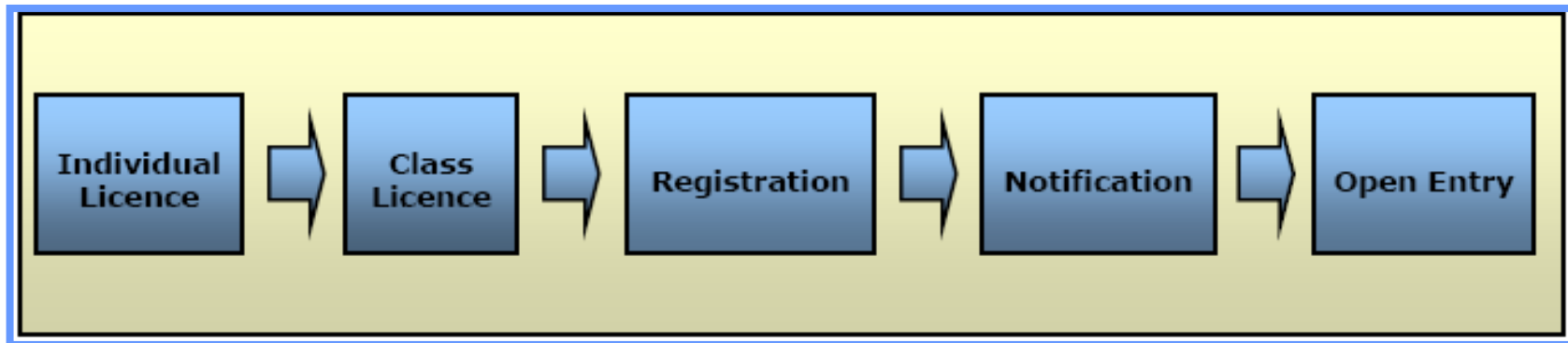


Source: ITU World Telecommunication Regulatory Database

What Could be the Licensing Models?

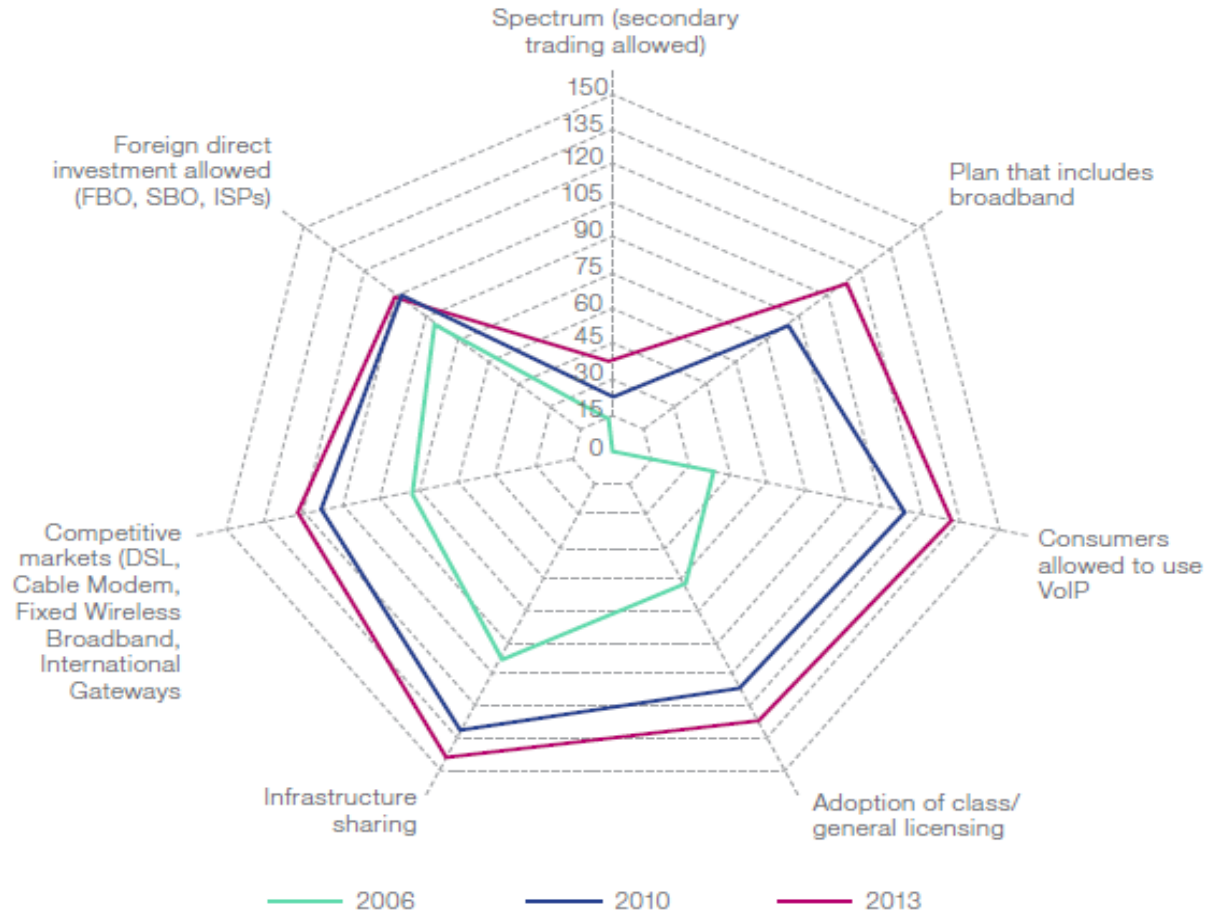


Simplification of Licenses



Models for Reduction of Administrative Requirements

Which Regulations Shaped the ICT Sector from 2006 to 2013?



Regional and Global IDI

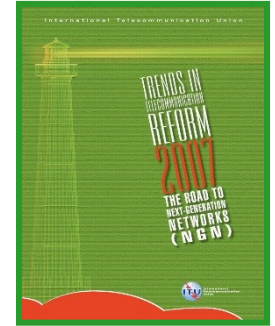
Economy	Regional Rank 2015	Global Rank 2015	IDI 2015	Global Rank 2010	IDI 2010	Global Rank Change 2015-2010
Korea (Rep.)	1	1	8.93	1	8.64	0
Hong Kong, China	2	9	8.52	13	7.41	4
Japan	3	11	8.47	9	7.73	-2
Australia	4	13	8.29	15	7.32	2
New Zealand	5	16	8.14	19	7.17	3
Singapore	6	19	8.08	11	7.62	-8
Macao, China	7	24	7.73	14	7.38	-10
Malaysia	8	64	5.90	61	4.85	-3
Brunei Darussalam	9	71	5.53	53	5.05	-18
Thailand	10	74	5.36	92	3.62	18
Maldives	11	81	5.08	82	3.92	1
China	12	82	5.05	87	3.69	5
Mongolia	13	84	5.00	97	3.52	13
Iran (I.R.)	14	91	4.79	99	3.48	8
Philippines	15	98	4.57	105	3.16	7
Fiji	16	101	4.33	102	3.28	1
Viet Nam	17	102	4.28	94	3.61	-8
Indonesia	18	108	3.94	109	3.11	1
Tonga	19	110	3.82	111	3.08	1
Sri Lanka	20	115	3.64	115	2.97	0
Bhutan	21	119	3.35	128	2.02	9
Samoa	22	122	3.11	121	2.43	-1
Vanuatu	23	125	2.93	124	2.19	-1
Cambodia	24	130	2.74	131	1.98	1
India	25	131	2.69	125	2.14	-6
Nepal	26	136	2.59	140	1.75	4
Laos P.D.R.	27	138	2.45	135	1.92	-3
Solomon Islands	28	139	2.42	139	1.78	0
Myanmar	29	142	2.27	150	1.58	8
Pakistan	30	143	2.24	138	1.79	-5
Bangladesh	31	144	2.22	148	1.61	4
Afghanistan	32	156	1.83	156	1.37	0
Average			4.70		3.85	

Road to Next-Generation Regulation

Regulators Roadmap to address NGN migration and meet the WSIS goals

“An enabling regulatory regime can foster innovation, investment and affordable access to NGNs and facilitate migration to NGNs”

- Establish forward-looking regulatory regimes
- Recognizing the need for regulatory flexibility and technology neutrality
- Removing undue regulatory barriers to competition and innovation
- Establish investment-friendly regulation while maintaining a level playing field and protecting consumer interests

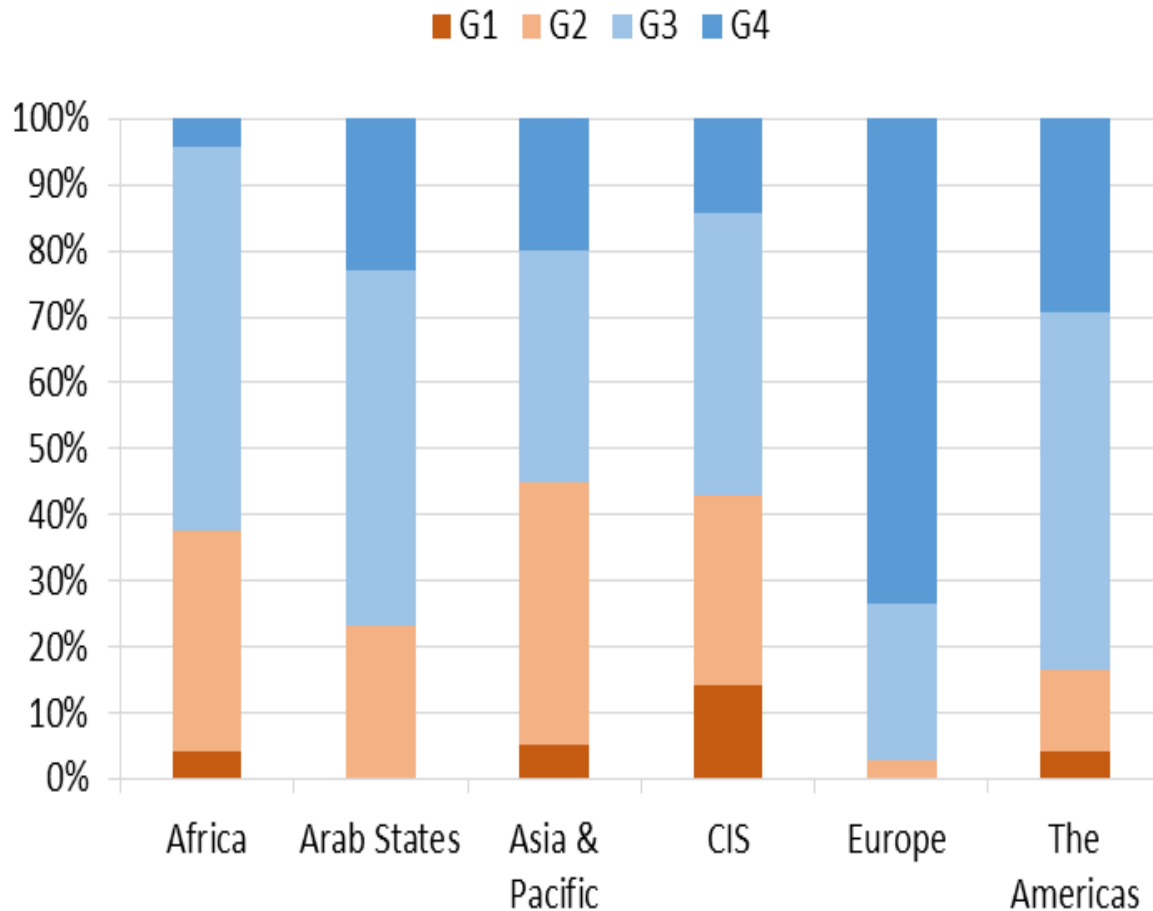


The best practice guidelines cover as well authorization, access, interconnection, numbering and NGN identification systems, universal access, quality of service, consumer awareness, security and protection.

**GSR 2007 Best Practice Guidelines
for Next-Generation Networks Migration**



Maturity of Regulation



Source: ITU.

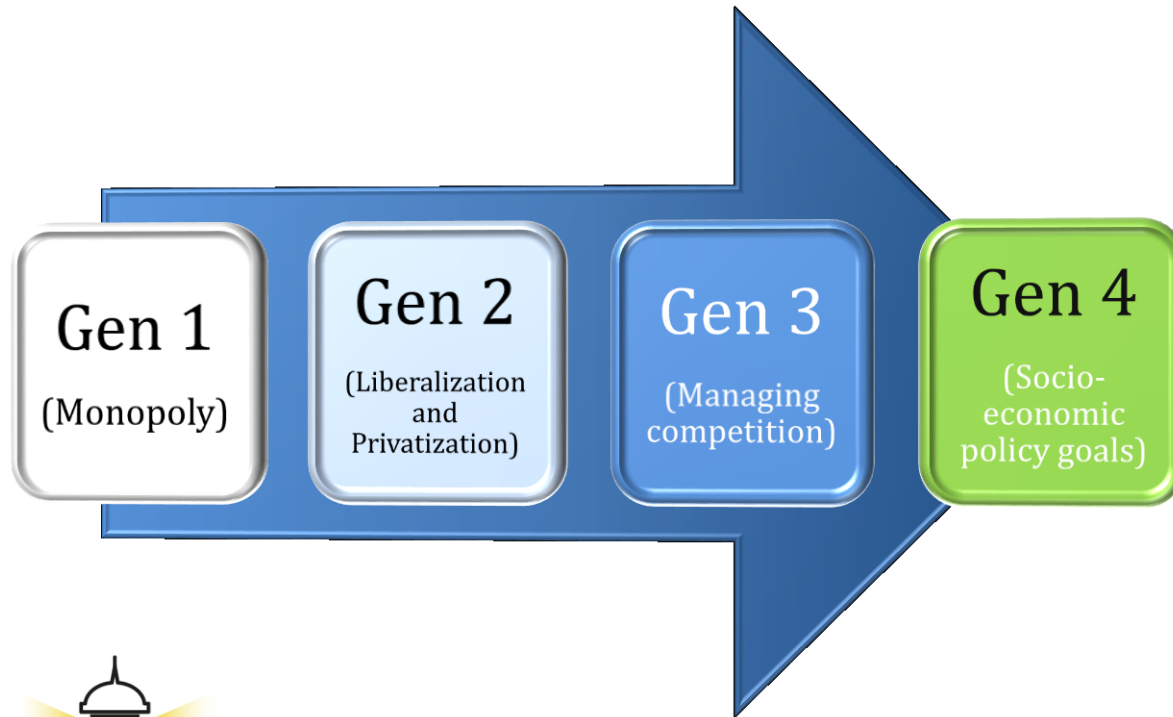
G4: Integrated regulation – led by economic and social policy

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

Regulation 4.0 - GSR 13 Best Practices



1 Innovative and smart regulatory approaches fostering equal treatment of market players without putting extra burden on operators and service providers

2 The evolving role of the regulator: the regulator as a partner for development and social inclusion

3 The need to adapt the structure and institutional design of the regulator to develop future regulation



Global Symposium for Regulators 2016 (GSR-16)

Be Empowered, Be Included!

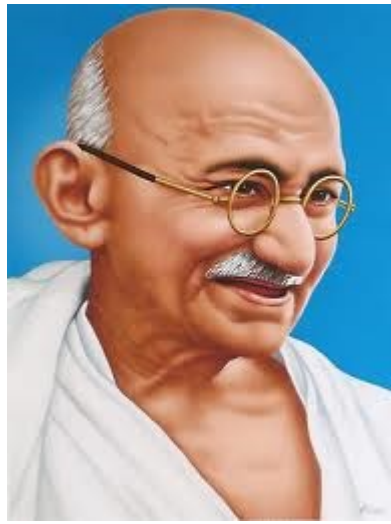
Building Blocks for Smart Societies in a Connected World

Review of Licensing Framework Sri Lanka



Terms of reference

- Review existing telecoms licensing framework
 - Identify potential barriers to convergence
- Recommend an alternative licensing model
 - Including license conditions, licensing processes and fee structure
 - Identify any necessary amendments to law
 - Draft any necessary regulations
- Advise on planning for the implementation and transition process



“Be the change that you wish to see in the world.”