ITUWTDC
BUENOS AIRES 2017
9-20 October

WORKSHOP ON COMPETITION AND TARIFF REGULATION

Session 1: Telecommunications Market Definition and Market Assessment

ITU-D 1992 2017
CELEBRATING 25 YEARS OF ACHIEVEMENTS

Goals for a Sustainable Future : The SDGs

ITUWTDC
BUENOS AIRES 2017
9-20 October

ICTs have become even more multi-sectoral and can be leveraged to achieve SDGs


Emergency


Education


Health


Agriculture

Governance


Investment


Applications


Policy & Regulation


Capacity Building


Transport


IoT, Sensor Networks


Universal Broadband


Green ICT & E-Waste


Measurements


Electricity


Privacy & Security

SMART SOCIETY


Infrastructure Security


Water


Digital Inclusion


Spectrum Management


Standards, Conformity & Interoperability


Finance

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SEVEN MAJOR TRENDS MOVING ICT MARKETS

1. ICTs move centre-stage as the digital economy gains momentum.
2. Mobile – the engine for expanded local access to the Internet.
3. ICTs are less visible but more prevalent.
4. ICTs are enabling and disrupting industries.
5. The rise of the app economy.
6. Market concentration and consolidation.
7. Cyber threats have grown in scope and scale.

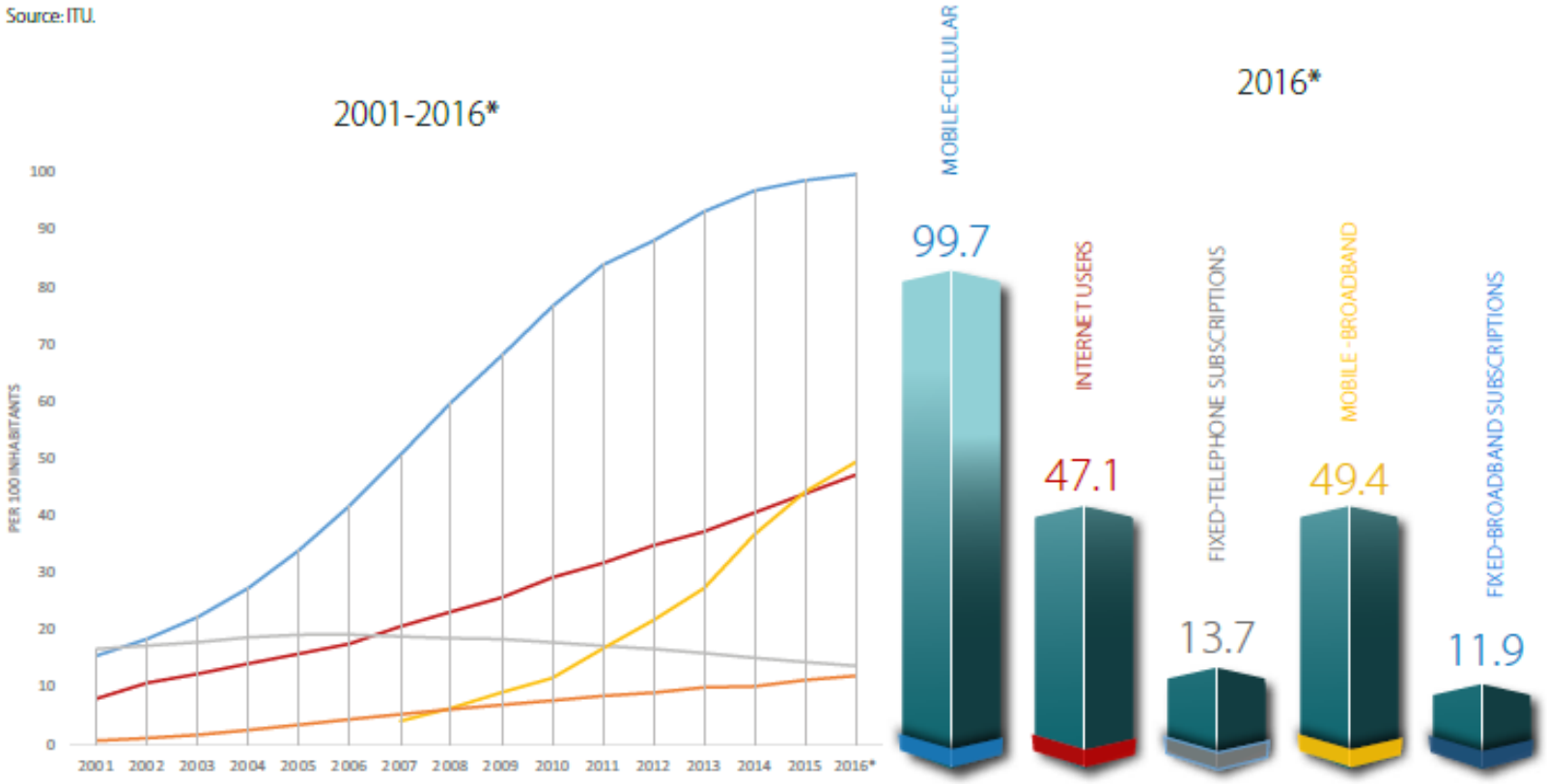
GLOBAL ICT REGULATORY OUTLOOK 2017

Source: ITU

GLOBAL ICT DEVELOPMENTS WORLDWIDE, PER 100 CAPITA, 2001-2016 AND 2016

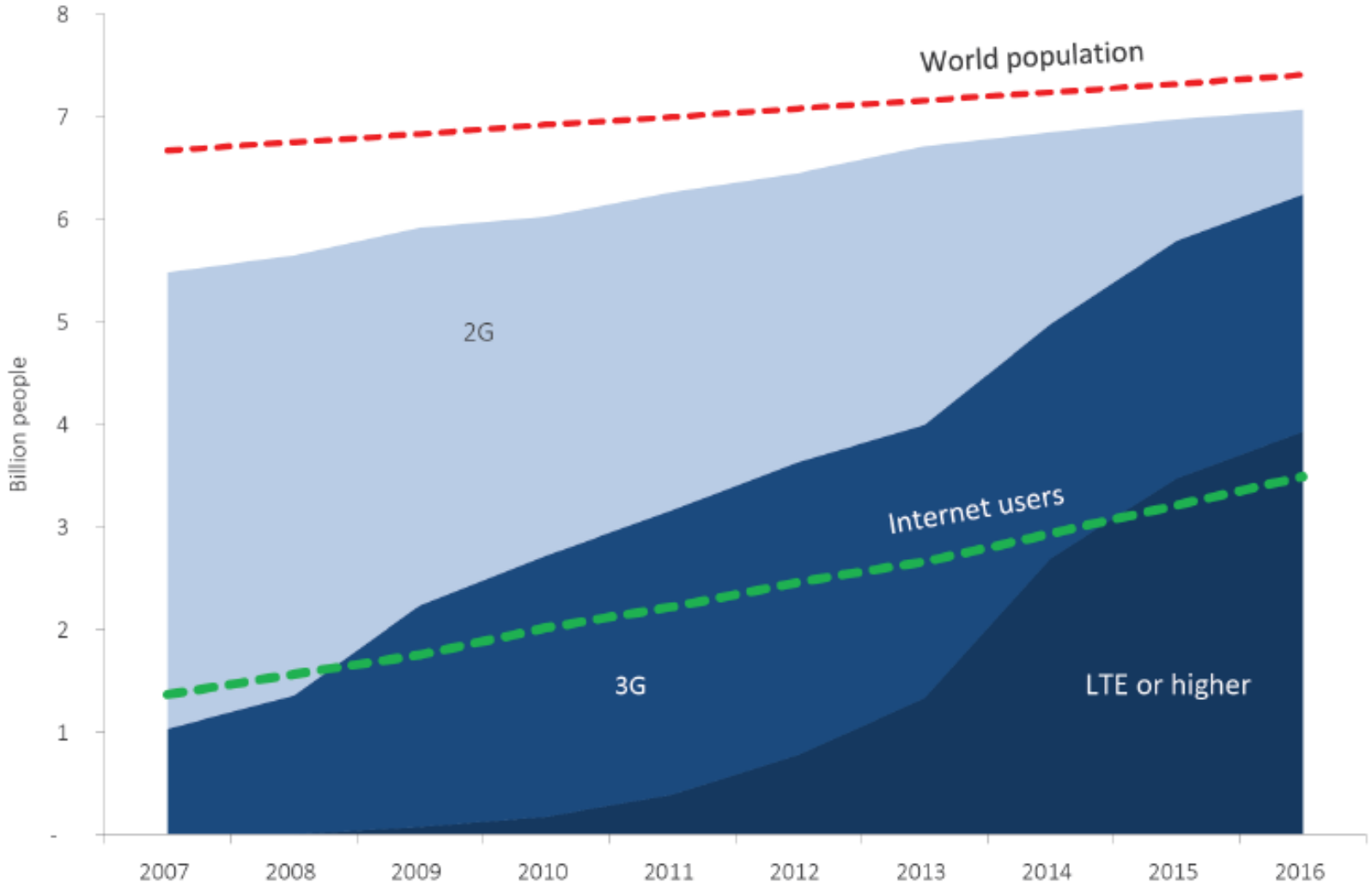
Note: *Estimates.

Source: ITU.



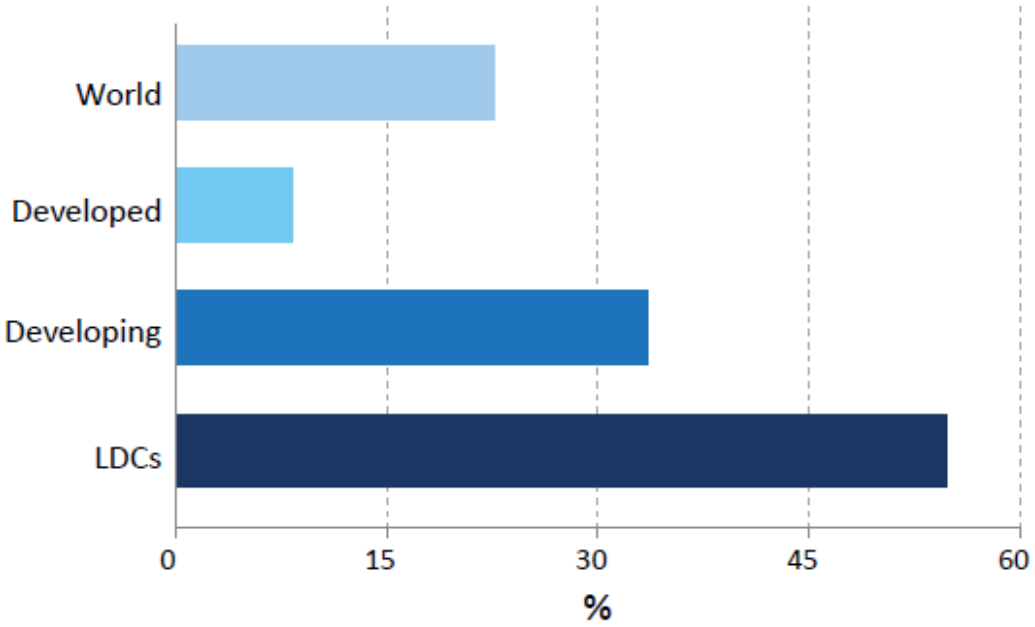
Source: ITU

Coverage of mobile-cellular networks in relation to world population and the number of Internet users (2007-2016)

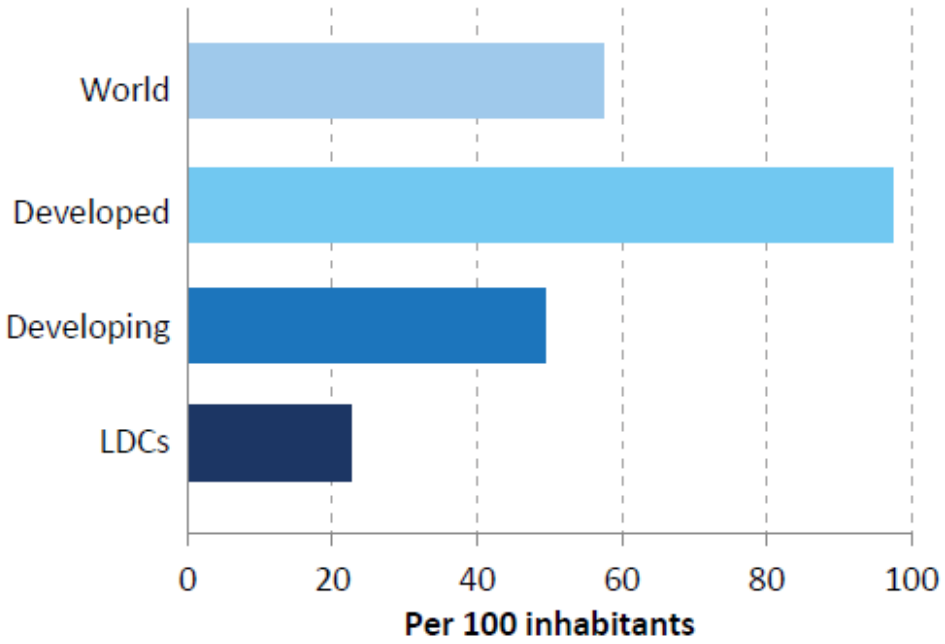


Source: ITU.

Growth of mobile-broadband subscriptions, CAGR, 2012-2017*

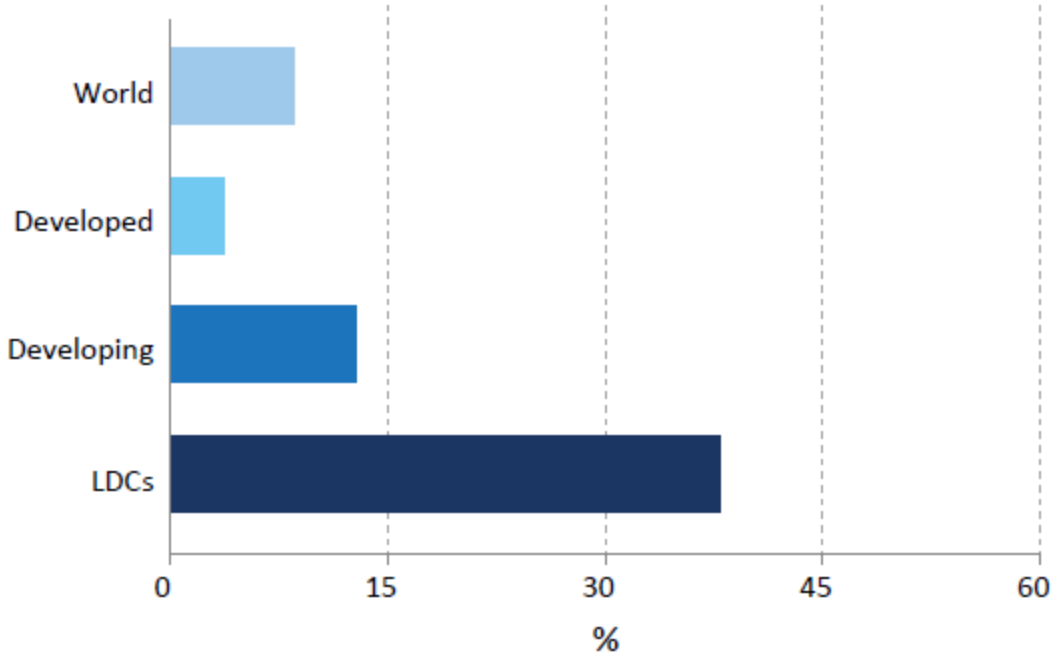


Mobile-broadband subscriptions, 2017*

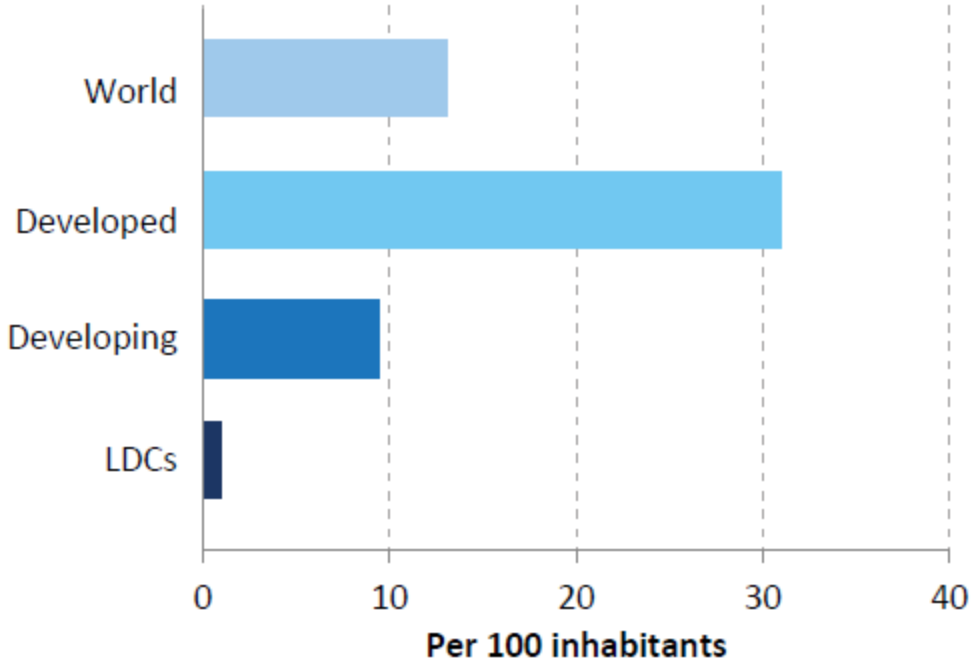


Source: ITU.
Note: *Estimates. CAGR refers to the compound annual growth rate.

Growth of fixed-broadband subscriptions, CAGR, 2012-2017*

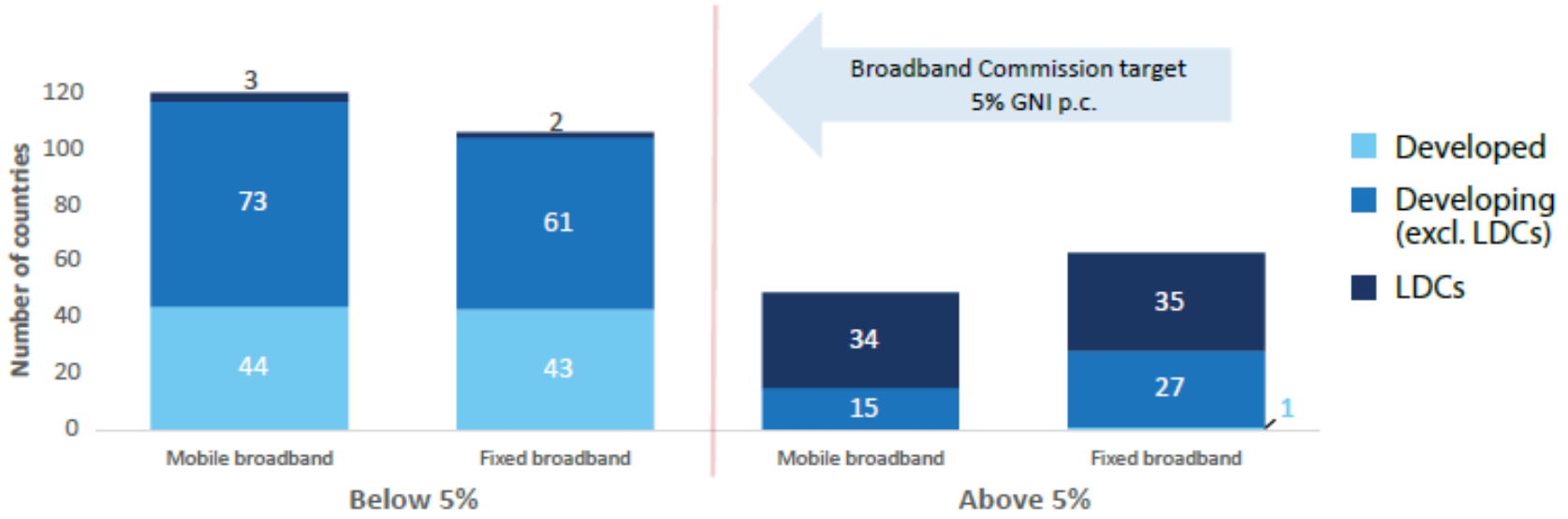


Fixed-broadband subscriptions, 2017*



Source: ITU.
Note: *Estimates. CAGR refers to the compound annual growth rate.

Broadband prices as a percentage of GNI per capita, 2016



Mobile broadband is more affordable than fixed-broadband services in most developing countries. However, mobile-broadband prices represent more than 5% of GNI per capita in most LDCs and are therefore unaffordable for the large majority of the population.

Source: ITU.
Note: Based on data available for 169 countries. Prices are based on entry-level plans with a minimum data allowance of 1 GB per month.

Level of competition (1)

		Number of countries/economies						
		Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas	Total
Level of Competition: Cable modem	Monopoly	3	2	4	0	2	1	12
	Partial competition	1	1	4	0	0	2	8
	Full competition	5	3	13	4	36	23	84
	N/A	16	9	5	1	3	2	36
Level of Competition: Cable Television	Monopoly	2	2	5	0	3	1	13
	Partial competition	2	3	3	0	1	4	13
	Full competition	8	1	11	9	36	25	90
	N/A	18	8	7	0	1	0	34
Data - Data	Monopoly	2	2	3	1	2	1	11
	Partial competition	3	1	3	0	1	1	9
	Full competition	11	2	7	4	10	7	41
	N/A	0	1	1	0	1	0	3
Level of Competition: Domestic fixed long distance	Monopoly	18	7	10	3	4	7	49
	Partial competition	6	4	6	1	1	0	18
	Full competition	13	7	14	6	38	24	102
	N/A	3	1	2	0	0	2	8
Level of Competition: Fixed Satellite Services (FSS)	Monopoly	8	4	4	1	1	2	20
	Partial competition	5	1	5	0	0	1	12
	Full competition	13	8	15	5	25	23	89
	N/A	8	4	3	1	12	3	31
Level of Competition: Fixed Wireless Broadband	Monopoly	9	3	2	0	2	0	16
	Partial competition	3	5	7	1	3	4	23
	Full competition	21	7	18	6	31	27	110
	N/A	1	1	1	0	5	0	8
Level of Competition: IMT (3G, 4G, etc.)	Monopoly	2	2	3	0	2	0	9
	Partial competition	8	4	7	0	9	3	31
	Full competition	22	6	17	5	28	25	103
	N/A	4	4	1	1	1	0	11

* This indicator allows multiple choice per country/economy
Year: 2016 or latest available data.

Source: ITU World Telecommunication/ICT Regulatory Database

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

Level of competition (2)

		Number of countries/economies							
		Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas	Total	
Level of Competition: International Gateways	Monopoly	9	7	5	1	2	2	26	
	Partial competition	10	5	5	0	2	2	24	
	Full competition	17	6	17	7	30	19	96	
	N/A	2	1	1	0	6	1	11	
Level of Competition: International Fixed Long Distance	Monopoly	18	7	11	3	4	4	47	
	Partial competition	6	4	3	0	1	2	16	
	Full competition	14	9	18	6	38	26	111	
	N/A	3	1	1	0	0	0	5	
Level of Competition: Internet Services	Monopoly	4	1	4	0	3	0	12	
	Partial competition	3	4	4	0	0	4	15	
	Full competition	34	14	25	8	37	30	148	
	N/A	0	0	0	0	0	0	0	
Level of Competition: Leased Lines	Monopoly	14	7	4	3	3	5	36	
	Partial competition	5	3	6	1	3	0	18	
	Full competition	19	10	20	5	36	25	115	
	N/A	1	0	0	0	0	0	1	
Level of Competition: Mobile	Monopoly	3	4	3	0	2	1	13	
	Partial competition	12	7	9	1	10	5	44	
	Full competition	26	8	20	10	30	28	122	
	N/A	0	0	0	0	1	0	1	
Level of Competition: DSL	Monopoly	16	5	7	0	4	7	39	
	Partial competition	2	4	3	1	0	1	11	
	Full competition	16	8	17	6	37	24	108	
	N/A	2	1	0	0	0	0	3	
Region size		44	21	40	12	43	35	195	

* This indicator allows multiple choice per country/economy

Year: 2016 or latest available data.

Source: ITU World Telecommunication/ICT Regulatory Database

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

Competition law and policy (1)

Common elements of competition law

Competition policy is central part of economic regulation. Provides set of tools to promote sustainable competition. In a competitive market, individual suppliers cannot dictate terms but must respond to actions of competitors. Market power occurs when an industry participant can unilaterally set and maintain prices and other commercial terms.

Competition policy may be implemented **through general competition laws**, or through **competition enhancing rules in specific sectors**. Competition laws aim to promote efficient competition by penalising or undoing conduct that reduces competition in a market.

Competition laws generally include:

- Provisions to **prevent firms from colluding** to increase prices or reduce quantities of services, or to exclude other competitors from the market;
- Provisions to prevent firms with dominant position or significant market power from **using their market power to exclude competitors** from the market;
- Provisions to **stop (or make subject to certain rules) mergers or acquisitions** that would reduce competition.

Competition law and policy (2)

***Ex post* or *ex ante*?**

Ex post:
After the event regulation relating to specific allegations of market abuse

Advantages:

- Attempts to stop conduct only shown to be harmful
- Lower information and monitoring requirements
- Least disruptive regulatory approach for emerging markets

Disadvantages:

- Triggered only after anti competitive conduct has occurred
- Securing information from accused firm is difficult
- General competition provisions may be unsuitable for industry specific issues

Ex ante:
Anticipatory intervention mainly concerned with market structure

Advantages:

- Sets forward looking expectations for firm behaviour
- Provides industry certainty by setting clear rules
- Promotes a greater degree of transparency

Disadvantages:

- Can lead to excessive or unnecessary regulation
- Can create market distortions through regulatory arbitrage
- Regulatory processes are costly and prone to capture by regulated entities

Competition law and policy (3)

Common approaches to competition regulation

Most countries regulate competition in the telecommunications sector in the following ways:

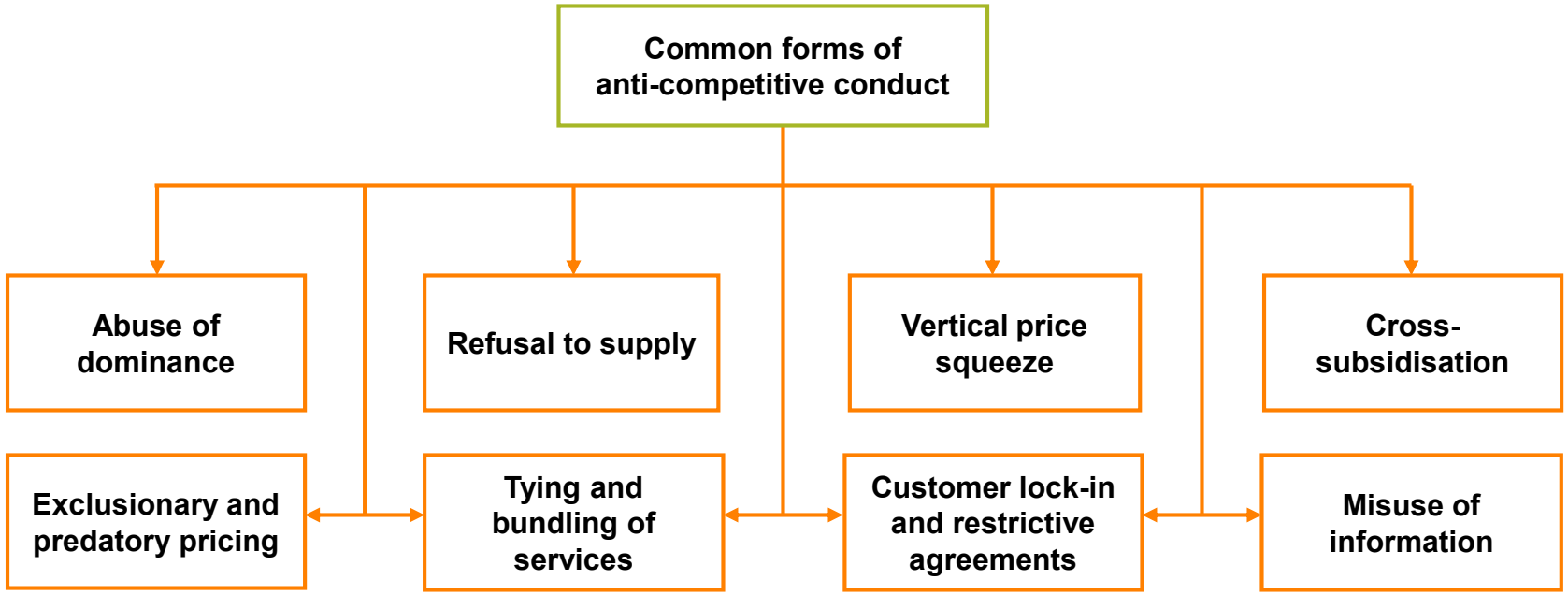
- Operators are prohibited from engaging in anti-competitive conduct which has the purpose of **substantially lessening competition** in the market.
- Operators are prohibited from **linking arrangements** and entering into **collusive arrangements** that provide for market sharing, rate fixing, boycott of another competitor or supplier of telecommunications system or equipment.
- The regulator may direct operators in a **dominant position** to cease a conduct which has or may have the effect of substantially lessening competition in the market.
- The setting of formal **access and interconnection rules** in relation to essential facilities.

Competition law and policy (4)

Common forms of anti-competitive conduct

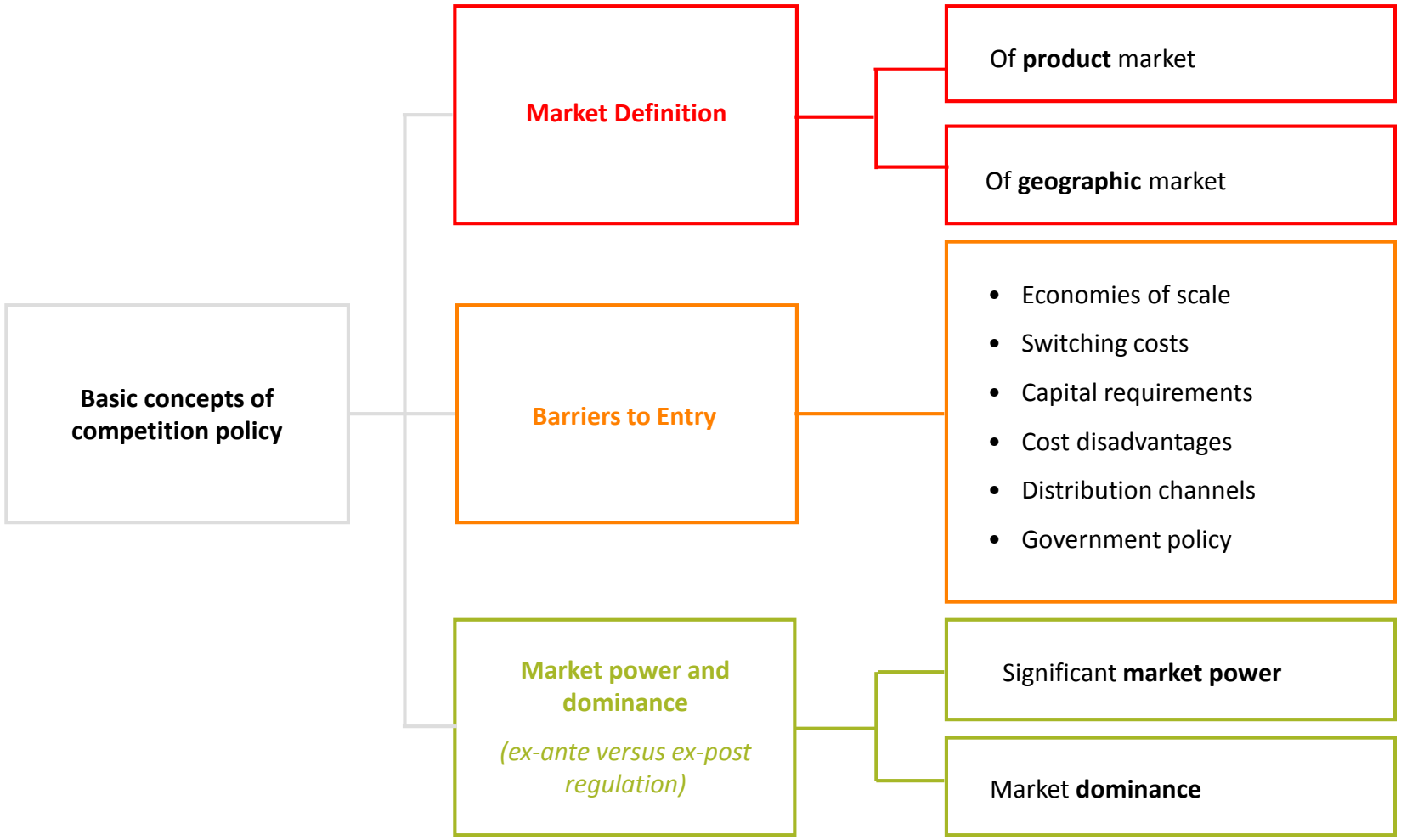
Competition regulation takes into consideration the strong market position that an incumbent operator may have or the operator's control of infrastructure and networks that are essential for the development of competition in the particular country.

Telecommunication operators with market power (usually incumbent players with legacy assets) may try to use their position to reduce competition.



Competition law and policy (5)

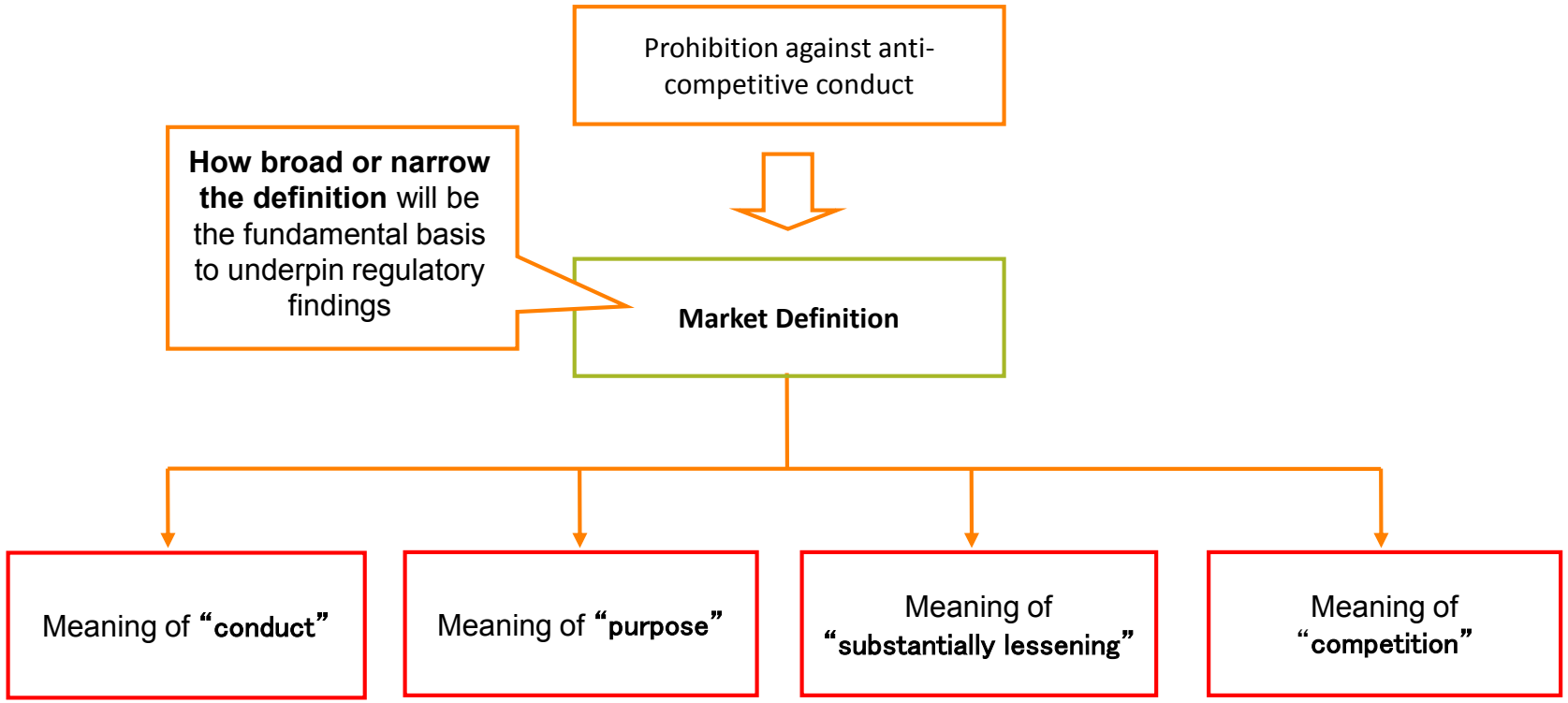
Basic concepts of current competition policy



Competition law and policy (6)

Concepts and definitions

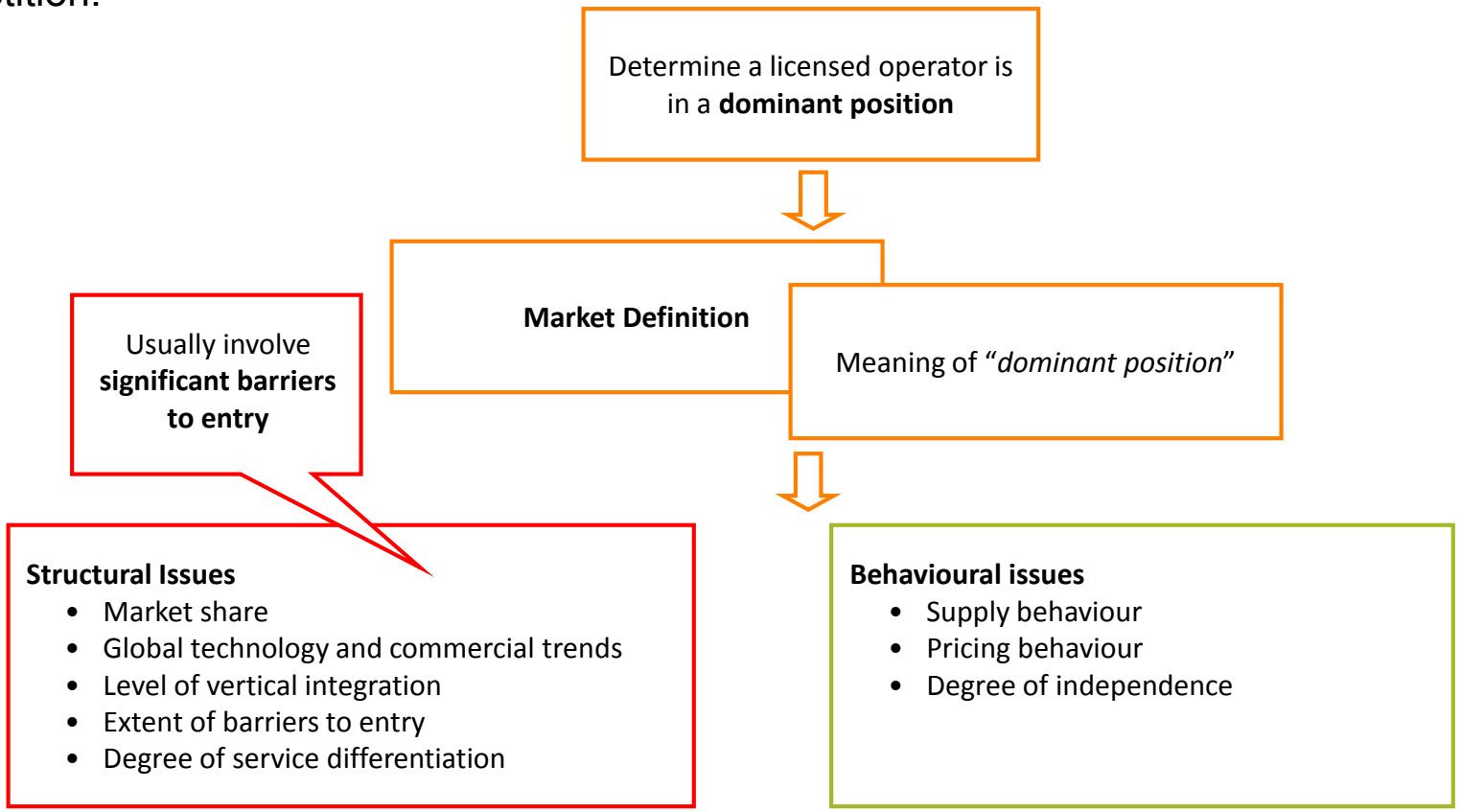
Key Prohibition: A licensee shall not engage in any conduct which has the purpose or effect of substantially lessening competition in a market.



Competition law and policy (7)

Dominance or significant market power (SMP)

Regulators may determine that an operator is dominant and direct it to cease conduct which has or may substantially lessen competition.



Regulatory principles - 1

- Forbearance is best; if there is effective competition let it be.

Effective competition is where the level of competition is likely to be self-sustaining and where the outcomes of price, quality and productive capacity are close to those that would be expected of a perfectly competitive market.

Regulatory principles - 2

- To determine whether competition is effective regulators need to define and analyse markets.
- Markets are defined by the limits of product substitutability.

Markets are domains defined by product and geography. Two products are in the same market if they have broadly similar service characteristics and are provided in the same geographical location.

Regulatory principles - 3

The focus of regulation should be on dominant suppliers.

A firm is considered to be dominant in a market if it is not unduly constrained in its behaviour (especially pricing and production) by its competitors or customers.

Dominance Vs Abuse of Dominance

Regulatory principles - 4

- Ex-post intervention is the default position.
- Ex-ante regulation requires application of the the Three Criteria Test.

A market is susceptible to ex-ante regulation in cases where:

- there are high and non–transitory barriers to market entry;
- there is no tendency towards sustainable competition behind such barriers; and
- ex-post control by competition rules is insufficient to address market failures.

In summary

- Principle 1: Do not regulate unless proven necessary
- Principle 2: Start by identifying the relevant market
- Principle 3: Regulate only those suppliers that are dominant*
- Principle 4: Use ex-ante regulation sparingly and under specific conditions.

* Note: this is true for competition analysis; but there could still be reasons to regulate for other reasons, e.g. consumer protection or any-to-any connectivity

Ex-ante regulation: principles and procedures

Three-criteria test for markets susceptible to ex ante regulation (ITU-T Rec. D.261)

A relevant market will be subject to ex ante regulation by Member States and NRAs, only if all the three criteria given below are met:

- High and non-transitory structural, legal and regulatory barriers to entry are present
- Market structure does not tend towards effective competition within the relevant time horizon (having regard to the state of other competition behind the barriers to entry)
- Competition law alone is insufficient to adequately address market failure(s)

Market analysis – 3 stage process

Market definition

(in terms of product, customers and geography)

Market analysis

(to determine dominance in the relevant markets)

Determination of remedies

(that are appropriate, proportionate and reasonable)

Defining Markets

Identifying relevant markets is a critical first step in any competition analysis. Markets shall be identified with reference to their product and geographical dimensions, but may also consider other dimensions, as set out below:

a) Product dimension: Characteristics, prices and intended use of products and services in question.

b) Geographic dimension: Geographic area in which products and services are supplied.

c) Temporal dimension: Time period over which products and services are supplied.

d) Functional dimension: Position in the supply chain, i.e. retail or wholesale

For each of the dimensions above, the relevant market must then be defined through the concept of substitutability. Substitutability refers to the ability of a customer or supplier to switch from one product or service to an alternative in response to a change in the relative price, service or quality of the first product or service. For example, under the product dimension, products and services are considered 'substitutable' if customers and suppliers consider the products or services to be close alternatives in terms of characteristics and usage.

Source: ITU-T Recommendation D.261

Defining Markets (2)

A market is defined by the boundaries of supply-side and demand-side substitutability

- When buyers exhaust practical substitution possibilities for goods and services then we have found the demand-side boundary of a market.
- When there is no practical prospects of entrants with relevant capacity seeking to enter a market in the short term then we have found the supply-side boundary of a market
- The actual definition will be expressed in terms of services, geography and customers.

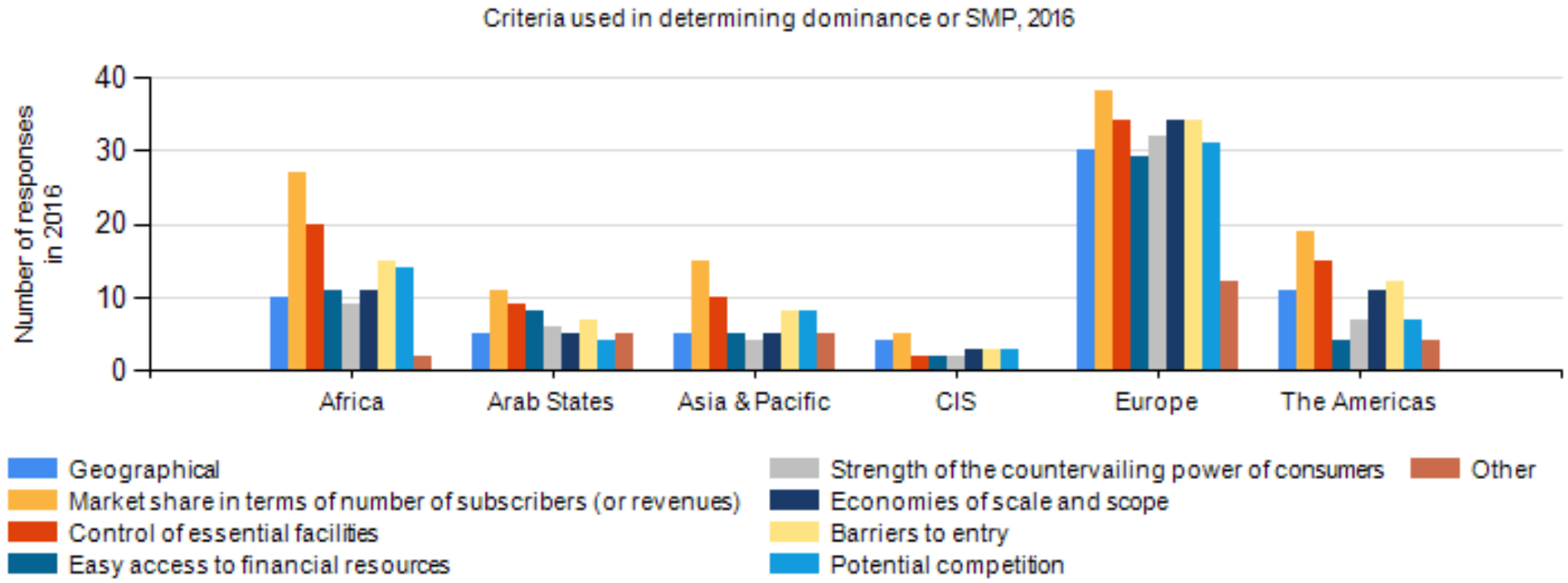
Hypothetical Monopolist Test

- The HMT is a test for determining the scope of a market, based on a focal product that is provided by a hypothetical monopolist.
- If a hypothetical monopolist were to implement a small but significant non-transient increase in price (a SSNIP) would that be unprofitable because customers would use substitute products or new suppliers might enter the market?
- If the SSNIP would be profitable then we have found the limits of substitution and hence the boundaries of the market.
- If the SSNIP is unprofitable then the substitute services would be included in the market and the test run again.

Determining dominance

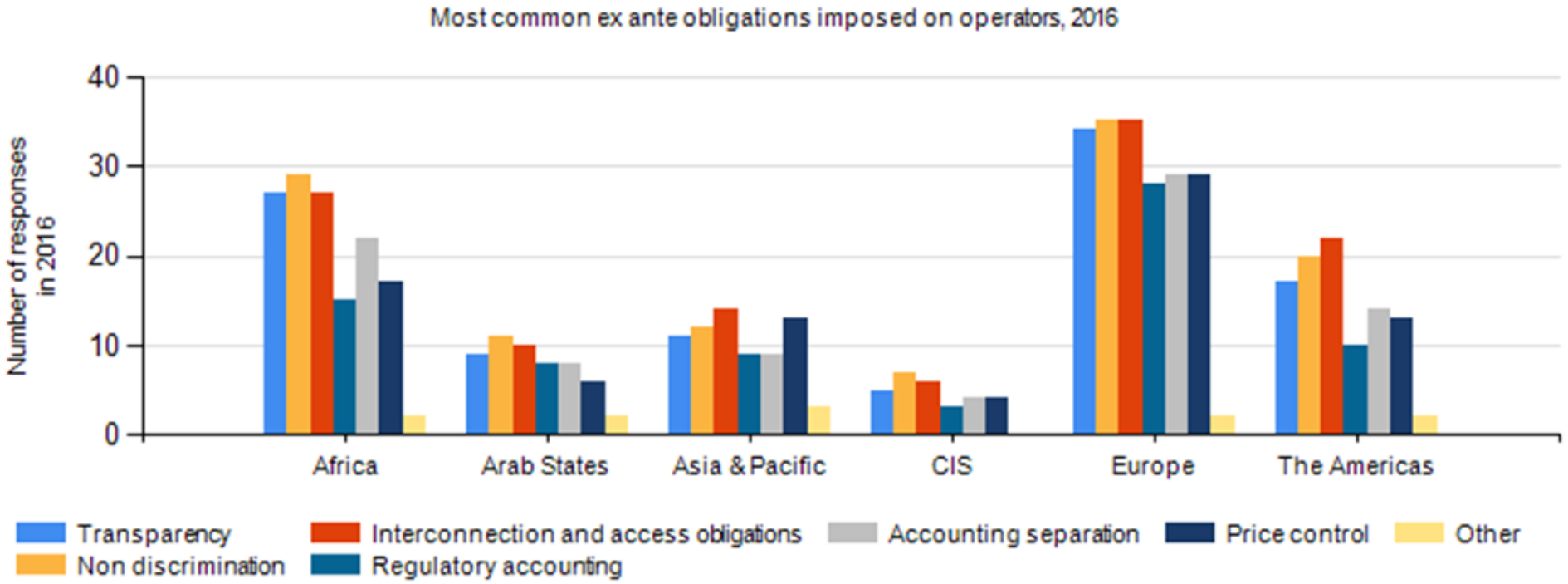
- The objective:
  - To assess the level of competitiveness in the market we have defined to identify any operators that may have a position of dominance or significant market power (SMP)
- Dominance/SMP is defined as:
  - *An operator shall be deemed to have SMP if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position giving it the power to behave independently of other competitors, buyers and, ultimately, consumers, to a significant extent. (ITU-T Rec. D.261)*
- Note that it is the **abuse** of SMP, not having market power, that is the ultimate concern:
  - Ex-ante regulation is concerned about the achievement of SMP as it creates a risk of harm from, and an incentive to engage in, anti-competitive behaviour

Criteria used in determining dominance or SMP, 2016



Source: ITU ICTEye, 2016 (Regulatory Survey)

Most common ex ante obligation imposed on operators, 2016



Source: ITU ICTEye, 2016 (Regulatory Survey)

Typical criteria for single dominance

The existence of SMP is found by reference to a number of criteria and its assessment is based on a forward-looking market analysis based on existing market conditions.

Member States or NRAs should consider a combination of the following criteria, inter alia, as determinative of SMP:

- market share;
- control of essential facilities;
- barriers to entry;
- potential competition;
- easy access to financial resources;
- strength of the countervailing power of consumers;
- economies of scale;
- economies of scope;
- vertical integration

Source: *ITU-T Rec. D.261*

Competition remedies

- Once the (potential) competition problems in a market have been identified, the potential remedies to those problems can be developed
- The commonly-used remedies can be broadly categorised as:
  - *transparency;*
  - *isonomic and non-discriminatory treatment;*
  - *wholesale price control;*
  - *interconnection and open access;*
  - *reference offers obligation;*
  - *functional and accounting separation*

Source: ITU-T Rec. D.261

Generally wholesale-focused remedies - the EU's Access Directive.

Access obligations

- Can be used to require an SMP operators to accommodate requests for access to, and use of, specific network elements and associated facilities
- Requires that a balance be struck between the rights of the SMP operator to exploit its own infrastructure for its own benefit, and the rights of other service providers to access facilities that are essential to the provision of competing services.
- Examples of the types of potential access obligations:
  - provide access to specific network elements or facilities
  - provide certain wholesale services for resale
  - accommodation collocation
  - accommodate interoperability
  - provide certain operational support
  - behave fairly, reasonably and within a particular timeframe

Transparency obligations

- Can be used to require the public disclosure of particular information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, or prices
- Can help to overcome the information asymmetry in favour of the SMP operator
- Best used an accompaniment to another remedy as a transparency obligation is unlikely to be an effective remedy against a competition problem
    - Example, a cost accounting obligation + a transparency obligation

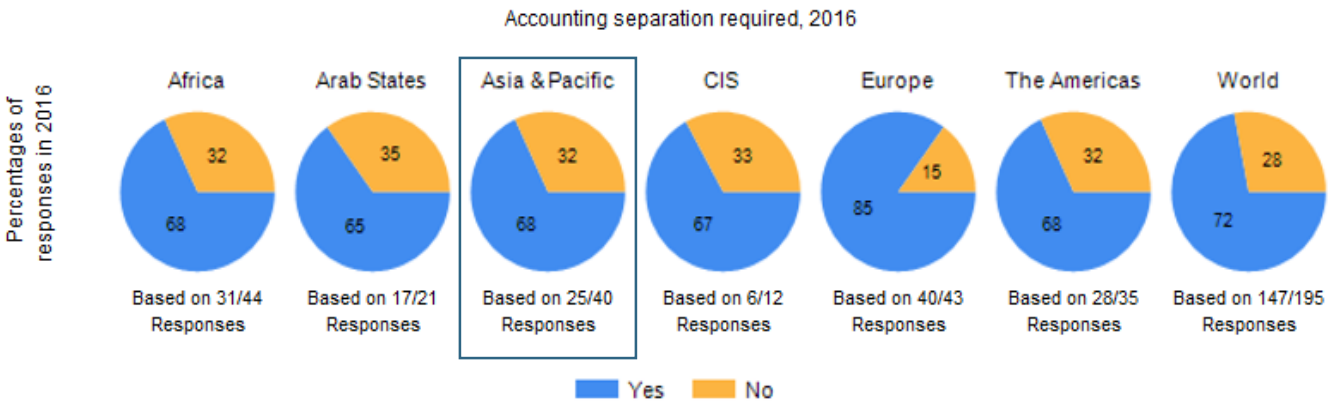
Non-discrimination obligations

- Can be used to ensure that access seekers are treated no less favourably than the SMP operator's own internal divisions or downstream operations
- Typically used to oblige a supplier with SMP operator to:
  - apply equivalent terms and conditions in equivalent circumstances, regardless of whether dealing with a rival or its own downstream operations
  - provide services and information to others under the same terms and conditions, and of the same quality, as that which it provides the same to its own subsidiaries, partners or affiliates
- Commonly combined with other complementary remedies
  - a transparency obligation is a natural complement to a non-discrimination obligation

Accounting separation

- Can be used to ensure:
  - there is an appropriate allocation of costs between the SMP operator's wholesale and retail divisions
  - the cost of wholesale inputs are based on relevant production costs
  - a vertically integrated operator is not engaging in an unfair cross-subsidisation or a price squeeze.
- Often also used to support the administration of price controls and cost accounting obligations

Accounting separation required, 2016



Source: ITU ICTEye, 2016 (Regulatory Survey)

Country	Accounting separation required	If yes, whom does it apply to (which kind of operators)?	Functional separation required by law
Australia	No[1]		Yes[1]
Bangladesh	Yes[1]	The Operators shares a certain percentage of their Gross-Revenue with Regulator (e.g. Mobile Operator, International Voice Gateway, Interconnection Exchange, etc.)[1]	No[1]
Cambodia	No		No
China			No[3]
India	Yes[1]	The Accounting Separation is applicable to all the service providers have aggregate turnover of not less than rupees one hundred (100) crore, during the accounting year for which report is required to be submitted, from operations under the telecom license(s) issued to them under section 4 of the Indian Telegraph Act 1885.1**	No[1]
Indonesia	Yes	Network operator who also act as service provider.	No
Japan	Yes[2]	Telecommunications carriers with Category 1 designated telecommunications facilities[2]	Yes[2]
Korea (Rep.)	Yes[6]		No[6]
Lao P.D.R.			Yes[2]
Malaysia	Yes	Network Facility Provider (Individual) and Network Service Provider (Individual) licence	
Myanmar	Yes[1]	SMP[1]	No[1]
Singapore	Yes[1]	Dominant Licensees and their related companies[1]	No[1]
Thailand	Yes[2]	SMP operators only[2]	Yes[2]
Viet Nam	No[1]		

Price controls and cost accounting

- Can be used to address the risk of excessive pricing or price squeezes occurring within a particular market
- Such remedies can range from light-handed obligations (e.g. an obligation that prices are “reasonable”) to heavy-handed obligations (e.g. an obligation that prices are cost oriented or cost based)
- Cost based or cost-oriented price controls typically require some form of cost model to be built and for service costs to be estimated (although international benchmarking is also sometimes applied as an interim or alternative measure)
    - Where cost accounting obligations and cost models are required, regulator can specify the costing methodology to be used

Broadband services pricing: price control

Service		Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas	Total
Retail fixed broadband access	With price control	14	7	6	0	3	5	35
	Without price control	20	7	22	7	31	23	110
Retail fixed broadband services	With price control	12	8	7	0	2	6	35
	Without price control	22	7	22	7	32	22	112
Retail fixed broadband applications	With price control	8	5	4	0	0	2	19
	Without price control	22	6	22	6	32	26	114
Wholesale Fixed broadband access	With price control	19	10	9	2	26	6	72
	Without price control	15	4	14	5	9	20	67
Wholesale Fixed broadband services	With price control	15	9	9	2	17	5	57
	Without price control	17	5	16	5	15	20	78
Retail mobile broadband access	With price control	15	6	7	0	0	3	31
	Without price control	19	7	21	7	33	23	110
Retail mobile broadband services	With price control	11	5	7	0	0	3	26
	Without price control	21	8	21	7	33	23	113
Retail mobile broadband applications including content	With price control	4	3	4	0	0	0	11
	Without price control	22	6	21	6	31	25	111
Wholesale Mobile broadband access	With price control	13	5	3	0	2	3	26
	Without price control	18	6	19	7	30	21	101
Wholesale Mobile broadband services	With price control	17	5	5	0	1	3	31
	Without price control	17	7	20	7	31	22	104

Source: ITU ICTEye, 2016 (Tariff Policies Survey)

Principles in the selection of remedies

Remedies "*shall be based on the nature of the problem identified, proportionate and justified in light of the objectives laid down*" for NRAs in the Framework Directive.
- Article 8(4) of the EC Access Directive

- **Appropriate** — the choice of remedy should be based on the nature of the identified problem
- **Reasonable** — the choice of remedy should be explained and justified through the publication of a reasoned decision
- **Proportionate** — the least burdensome remedy (or combination of remedies) should be applied

  - However, this does not mean that the potential effectiveness of the remedial action should be compromised

When selecting remedies, ask yourself…

- What is the competition problem that is anticipated?
  - What is the nature of that problem? (e.g. is it at the wholesale or the retail level? Is it a pricing issue or an access issue?)
- Which category of remedy might address the problem?
  - Can the onerousness of this remedy be reduced without detracting from its effectiveness?
- Would that specific remedy in itself be sufficient to address the problem?
  - If not, what additional remedies are necessary?
  - Can the onerousness of this combination of remedies be reduced without detracting from its effectiveness?
- Is this combination of remedies complementary and mutually reinforcing?
  - If not, do particular remedies need to be remove from the combination?

Ex-post regulation: principles and procedures

The need for ex-post regulation

- Traditional ex-ante regulation has focused on curbing market dominance … but experience tell us this is a difficult task
- The Internet has shown us another model – dynamic markets find their own equilibrium over time, without regulatory intervention – although not without costs in other ways
- Ex-ante regulatory forbearance, with ex-post intervention where necessary to curb anti-competitive behaviour, is generally the way forward.
- This is especially true where the App Economy blurs the boundaries between internet, telecommunications and the wider service sector.

Rationale for ex-post regulation

What reasons might there be for avoiding or limiting ex-ante regulation of the Digital Economy?

- High transaction costs of ex-ante regulation (including regulatory mistakes)
- Tendency to limit investment incentives
- Inability to predict market developments
- Dominance in new broadband service markets not yet established
- Some protection offered by existing regulation of telecoms markets
- Risk of creating a culture of regulatory dependency

How does ex-post differ from ex-ante?

- Ex-post regulation attempts to punish and correct for actual instances of anti-competitive behaviour.
- Still it applies only to dominant suppliers, but now actual evidence of abuse of that position is required.
- Ex-post regulation usually proceeds from the investigation of complaints made by other market players rather than the regulator's own initiative.
- Quick and decisive regulation is required because the abuse (if the complaint is well-founded) has already created negative impacts which increase over time ...
- ... but quick decisions are difficult to achieve given the legal processes involved.

What is anti-competitive behaviour?

Anti-competitive behaviour is behaviour that has the intention or effect of significantly lessening competition in a market

How to handle complaints

1. Receive the complaint	Obtain as much detail as possible for source
2. Gather evidence	Including from alleged perpetrator
3. Determine category of behaviour	Categorise the form of abuse
4. Determine relevant criteria	May need additional evidence
5. Analyze behaviour	Is it anti-competitive?
6. Determine remedies	Implement as appropriate

Examples of anti-competitive behaviour

- Abuse of a Dominant Position in a Market
- Anti-Competitive Agreements
- Price Discrimination
- Predatory Pricing
- Margin Squeeze
- Excessive Pricing
- Tying and Bundling
- Mergers and Acquisitions

Emerging ICT Infrastructure and Policy and Regulatory issues

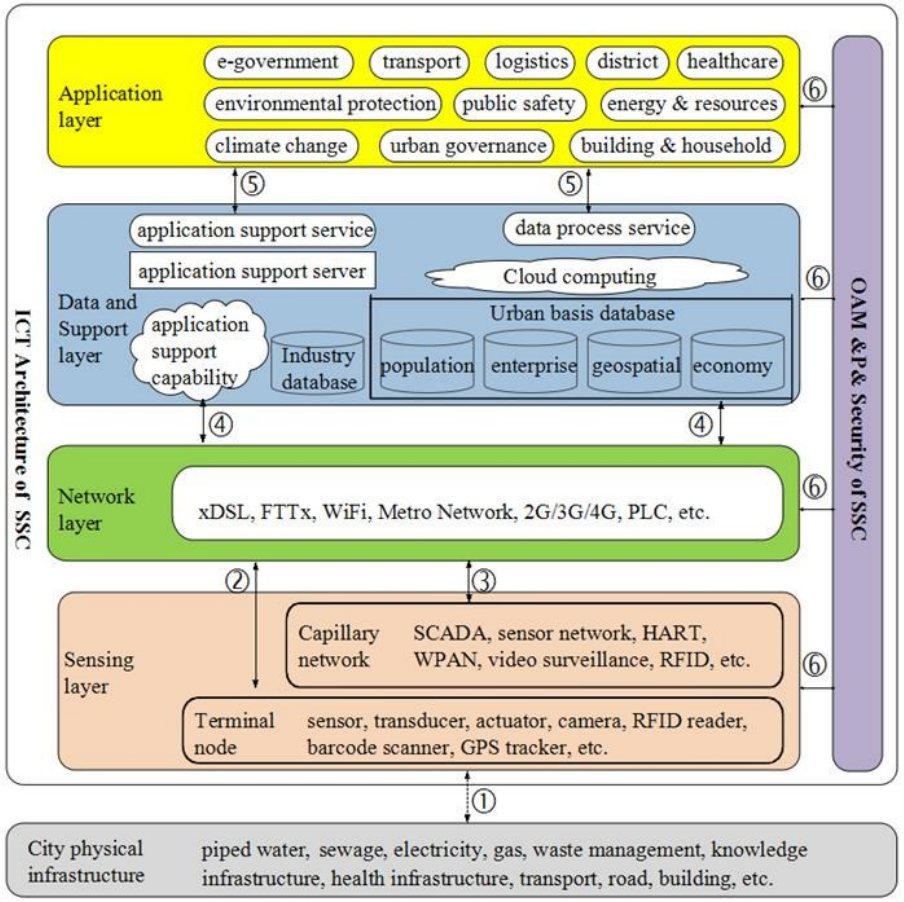
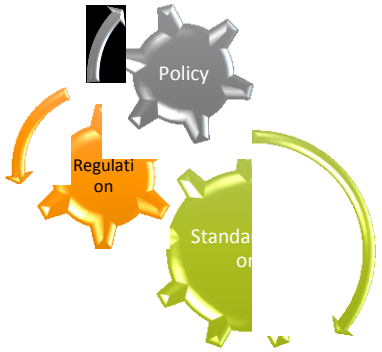


Figure source: ITU-T Focus Group on Smart Sustainable Cities: *Overview of smart sustainable cities infrastructure*

A multi-tier SSC (smart sustainable city) ICT architecture from communication view (physical perspective)

Telecom/ ICT Sector Issues (examples)



- Cross-Sector Collaboration
- Competition
- Investment
- Licensing
- Spectrum
- HetNets
- Broadband
- Cloud
- Roaming
- Interoperability
- QoS/QoE, Consumer
- Numbering & Addressing
- Big Data & Open Data
- Security
- Privacy
- Right of Way
- Green ICTs
- Infrastructure Sharing
- Data Centres
- e-Waste
- Number Portability
- Emergency Telecommunications

What type of network is required to deliver Mission Critical services?

- Private networks
- Public networks

What preparations are required to make best use of commercial networks to deliver smart services (some of them such as Emergency Telecommunication, Utilities, Transportation critical in character)?

- Technical (e.g. coverage, resilience, quality, spectrum, interoperability)
- Commercial (e.g. availability, long term pricing, SLAs)
- Policy & Regulatory (e.g. critical services as priority, quality of service, long term tariffs, security, privacy, USO, infrastructure sharing, licensing)

Business Models and Market Power in the App Economy (1)

- Online service providers base their strategy around reaching as many users as possible, offering them a compelling free service, locking them into it to the extent possible, then trying to monetize it/fund its continued deployment.

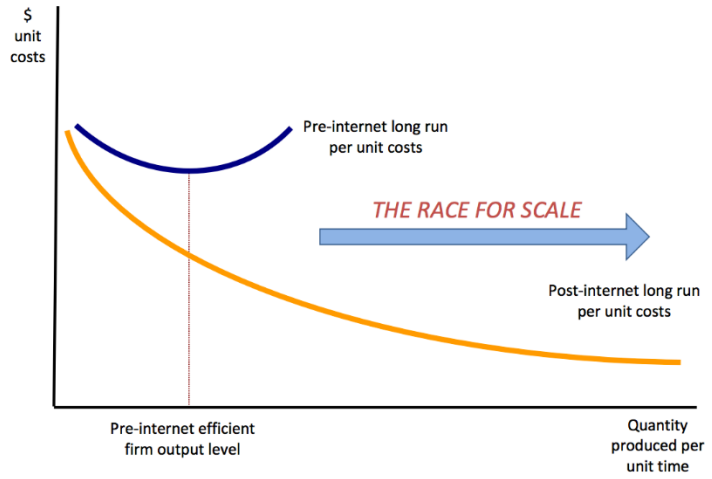
- Funding of the service has generally been via four main approaches:

1) **Advertising** e.g. inter alia Google, Facebook, Twitter, WeChat and others.
2) **Connectivity to PSTN** e.g. Skype
3) **Value-added services**, such as multipoint video calling, stickers, mobile money etc.
4) **Initial public offering** (IPO) e.g. Snap
5) **Cashing out upon acquisition** e.g. Viber with its acquisition of Rakuten (LINE)

Business Models and Market Power in the App Economy (2)

- This business model is driving new ways in which market power is created, preserved and used.
  - App economies are in a 'race for scale' (as displayed below) which has led to a series of monopolies or near monopolies occupying various market niches
  - App markets are also driven by network effects - meaning that they become more valuable to every user when the total number of users increases (e.g. Facebook, Uber and AirBnb)

- Consequently, once a particular firm begins to pull significantly ahead of its competitors, it begins to enjoy costs savings and network benefits that mean it becomes increasingly difficult to compete with.



Business Models and Market Power in the App Economy (3)

The OTT universe is diverse. Particularly consumer applications are often funded by advertisement (an example of two sided markets) – the operation itself is not profitable.

The OTT Business Models

OTT Classes	Example	Revenue source
OTT Communications	Skype, WhatsApp, Viber, Tencent	■ Advertisement ■ Subscription for premium services ■ Free services
OTT Media	YouTube, Spotify, NETFLIX, WATCHEVER	■ Advertisement ■ Subscription for premium services ■ Transaction based ■ Free services
Commerce	amazon, WebShop, PayPal, ebay	■ Transaction based
Social Media	facebook, foursquare, twitter, LinkedIn	■ Advertisement ■ Subscription for premium services ■ Free services

Question of Profitability and Market Impact

- Business application funded by users, **consumer applications** rely on **advertising**
- **Consumer** applications **hardly profitable** – free service model has **disruptive** market effects
- High **valuation** not justified by business figures. **Market model** focus is on establishing market presence rather than monetization

→
- OTT are **demand** and **innovation** drivers, but …
- … with the current business model they **extract value** from national markets, and…
- … **take out resources** that are required for broadband infrastructure investment and operations

Source: Detecon, The Rise of OTT Players – The Regulatory Answer?, 28 August 2015, page 17

Business Models and Market Power in the App Economy (4)

- Further, many new app economy players are competing directly with the telecommunications operators, with their dazzling array of over the top ('OTT') services, such as WhatsApp.
- These OTT players often have a global scale and reach dwarfing that of the telecommunications companies.
- Critically, they undermine consumer demand for telecom operators' most profitable services, tending to commodify their outputs, threaten their margins and constrain their capacity for investment.
- This is happening just at the time that the app economy and OTT services are driving the demand for bandwidth even higher.

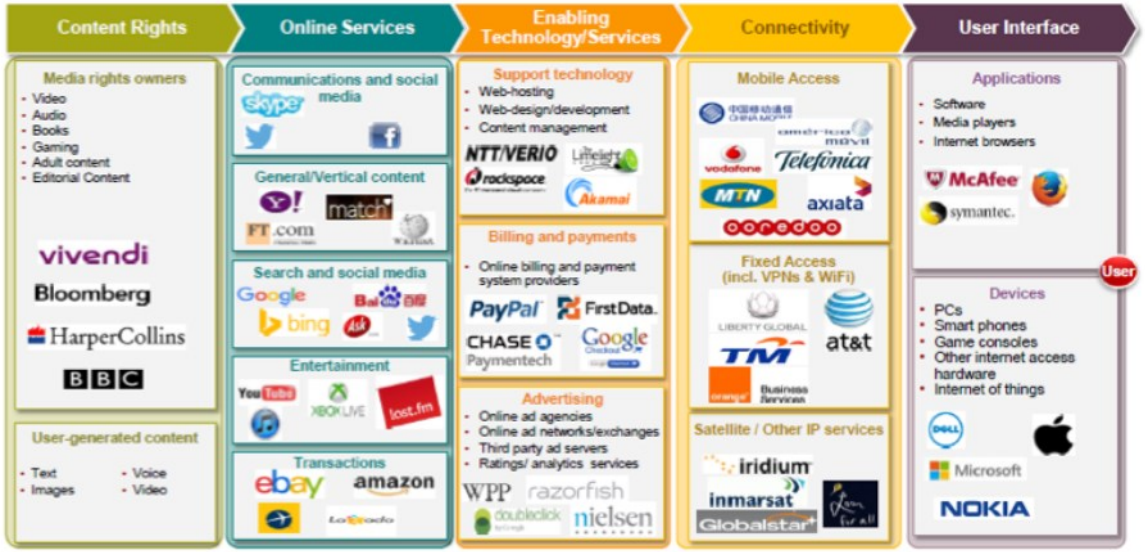
Competition Regulatory Considerations in the App Economy (1)

- Competition policy is designed fundamentally to protect consumer interests against the abuse of market power in a wide variety of forms.
- Until recently, the main economic driver of regulatory intervention has been the natural monopoly characteristics of carrier businesses.
- Such controls were, for the most part, specific to the telecommunications industry and focused, to a large extent, on the prices which could be imposed on end-users as well as the minimum service standards which operators had to meet to fulfil universal service obligations.
- Notably, online service providers do not fall within the traditional definitions of such regulation.
- Governments and regulators thus need to find a balance between maximizing the benefits of this disruptive trend while countering the market power of its leading players and balancing sectorial regulation.

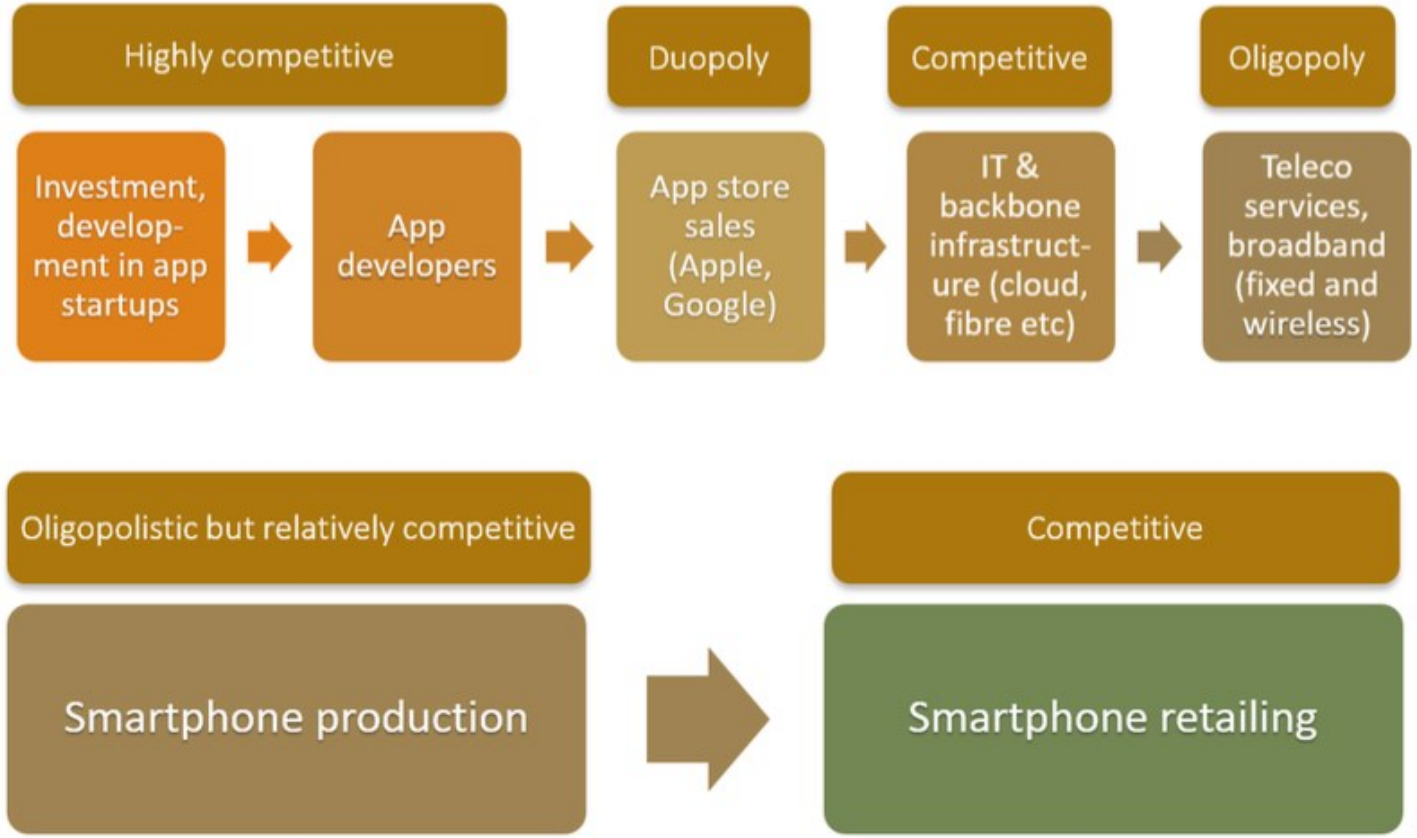
Competition Regulatory Considerations in the App Economy: Defining the Market (2)

- An indispensable first step in forming appropriate competition regulatory responses is to think carefully about market definitions. However, the app economy and value chain have become very complex and global in nature, making its definition challenging.

- One way in which the App Economy can be defined is ‘the sum of all economic activity, products and services, required to deliver app functionality to end users via mobile broadband services’.



Competition Regulatory Considerations in the App Economy: Defining the Market (3) - Example



Competition Regulatory Considerations in the App Economy: Significant Market Power (4)

- The history of competition regulation in the information technology industry suggests that ***recurring waves of technological change weaken the market power of dominant firms in the long run***.

- It is important therefore not to over generalize or make unsubstantiated assumptions about the nature and extent of market power in the app economy, particularly in relation to the formation of new regulatory responses.

- **Market power is thus very much a moving target in the digital area**. The acquisition of market power is a central strategic concern for large firms, and from time to time, their strategies meet with success and failure.

Global Approaches: Europe (1)

- In July 2015, the European Parliament Directorate for Internal Policies issued a paper entitled Challenges for Competition Policy in a Digitalised Economy. It explored the specific characteristics of digital economy markets and how these characteristics impact competition policy. The study focusses on competition policy and its instruments such as anti-trust laws, merger regulation, State aid and sector regulation.

- They examined 10 problems specifically related to the characteristics of the digital markets that are either caused by or result in a competition problem. These problems are that:
  - Digital monopolies can hamper competition and innovation;
  - Digital monopolies can monopolise other markets;
  - Digital monopolies have an incentive to lock-in customers;
  - Digitalisation causes problems related to privacy and data protection;
  - Geo-blocking may hamper the Digital Single Market;
  - Patents can be used to prevent access to technology;
  - Gatekeeper positions of Internet Service Providers(ISP) may have a negative impact on market dynamics;
  - State aid for broadband deployment can disturb markets;
  - Spectrum auctions potentially create/raise entry barriers; and
  - Tax planning/avoidance potentially distorts competition.

http://www.europarl.europa.eu/RegData/etudes/STUD/2015/542235/IPOL_STU%282015%29542235_EN.pdf

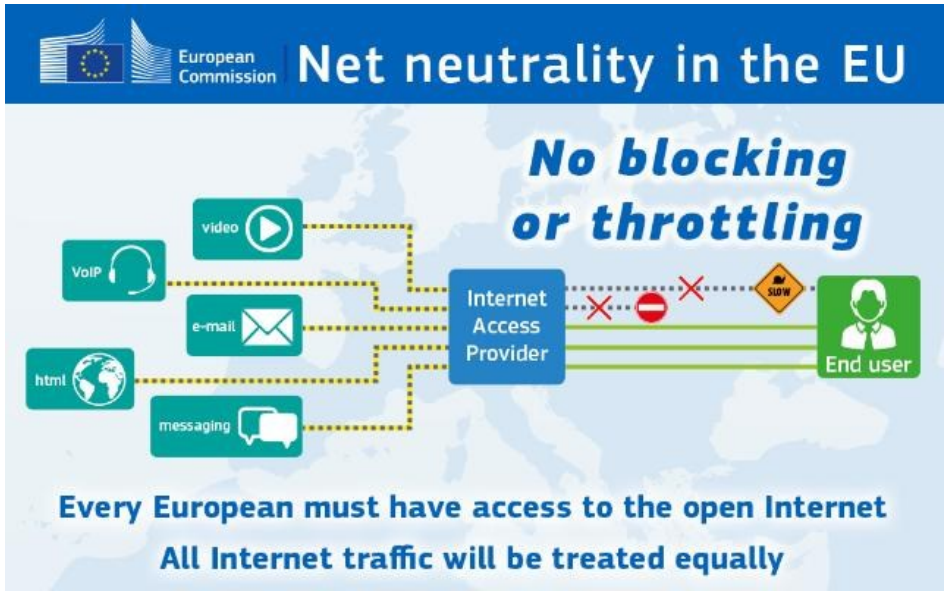
Global Approaches: Europe (2)

In response to these challenges, competition authorities may want to:

- Take the **business models as a starting point**, focusing on how a company makes profits and which other companies or business models may steal that profit away. Such approach integrates the market definition and market power assessment stages. It allows to better account for interdependencies between multiple platforms and the interactions;
- ***Rely less on traditional indicators*** such as market shares or profit margins. Competition authorities should rather focus on indicators that inform about contestability, such as the presence of entry barriers, the availability of alternative routes to reach end-users (including the presence of measures aimed at locking-in end-users), and the degree of innovation;
- ***Follow a more future-oriented approach because of the central role of potential competition***. In practice this means following a cautious approach and relying on self-correcting powers of digital markets that make permanent harm less likely;
- Involve more external IT experts to help them to understand better business models and future trends;
- Cooperate with competition authorities from various nations/continents while the digital economy (and thus the relevant geographical market) has become worldwide in scope.

http://www.europarl.europa.eu/RegData/etudes/STUD/2015/542235/IPOL_STU%282015%29542235_EN.pdf

Net Neutrality: Europe Union



REGULATION (EU) 2015/2120 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 November 2015
laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union

Article 3
Safeguarding of open internet access

Article 4
Transparency measures for ensuring open internet access

Article 5
Supervision and enforcement

Article 6
Penalties

Case Study : Republic of Korea

'Cable only' cartel between five multiple system operators (MSO), (South Korea, 2011)

- In May 2011 the South Korean competition authority, KFTC, issued a cease and desist order and imposed on 24 system operators active in the pay-TV market a total fine of approximately 6.7 million Euros. According to the authority, from November 2008 until May or July 2010 the operators participated in the cartel agreement whose objective was to hamper the development of IPTV as a new competing platform.
- *The background of the South Korean pay-TV market*
- In South Korea, television industry consists of free-to-air and pay-TV broadcasting markets. The following group of players operate within the pay-TV market:

- *System Operators (SOs):* they operate more than seventy broadcasting channels in each regional area. Their revenues come from subscription and installation fees, as well as fees from renting set-top boxes to consumers. There are one hundred system operates in seventy-seven regional broadcasting areas.

- *Multiple System Operators (MSOs):* are the SOs who operate their business in at least two regional areas and have many affiliated SOs. There were eight MSOs in 2009, and 78 of 100 SOs belonged to one of the eight MSOs. The top three MSOs have 63.4% market share in the system operator market.

- *Satellite Broadcasters (SBs):* they transmit their broadcasting service to consumers on a national wide basis. There are two Satellite Broadcasters.

- *Internet Protocol TV (IPTV):* they transmit their broadcasting service to consumers on a national wide basis.

Since IPTV was permitted in February 2009, three IPTV broadcasters entered into the pay-TV market.

- *Program providers (PPs):* they contract with System Operators (or Satellite Broadcaster, or IPTV) and provide their content. Their revenues come from both SOs (or SBs or IPTV) in exchange for the supply of the broadcasting content and from advertisement fees in return for releasing advertisement during the showing of the content. There are one hundred eighty-four PPs undertakings the in pay-TV market. In 2008, the imbalance between SOs and PPs was increasing. Even though there are many SOs in the pay-TV market, most of them are affiliated with one of 8 MSOs. Therefore, MSOs have a power to decide which channel will be granted to individual PPs. In particular, the top three MSOs, who have 63.4% market share, have strengthened their position in the SO market. On the other hand, there are also many PPs (about 184), and each PP really wants to contract with MSOs to acquire a low and most preferred channel number, as such channels can attract more viewers, which in turn can bring more advertising revenues. Given the above features of the pay-TV market, there is an imbalance between numerous PPs and a just a few MSOs with respect to supply and demand of broadcasting channels. As a result, PPs become more structurally dependent on MSOs than before with respect to contracts concerning channel assignment. At the same time, MSOs are in the position to engage in a number of unfair practices that can affect the PPs, such as i) unilateral changing of the channel number, ii) unilateral refusal to renew contracts, iii) requiring the PPs not to supply its popular contents

(movie, sports) to their competitor (SBs or IPTV) by threatening them that unless they accept such a constraint, MSOs will either stop contracting altogether or will give the less attractive channel number.

- *The cartel 'cable-only' agreement*
- Since the Multimedia Broadcasting Business Act was enacted in January 2008, it was expected that new IPTV operators would enter the pay-TV market as competitors. However, five MSOs67 reached an agreement in order to ensure that PPs would provide content only to them. Such policy sought to prevent the IPTV operators from successfully entering the market. Still, one of the PPs, One Media68 decided to provide its content to IPTV in October 2008. The five MSOs were concerned that many other PPs may follow One Media's policy. Therefore, together with their affiliates, the five MSOs69 concluded on 14 October 2008 an agreement, called "cable only". First, under this agreement, the MSOs decided to punish One Media by decreasing the number of One Media's channels transmitted through their broadcasting facilities. Second, the MSOs collected together money and offered another PP, CJ Media70 who was planning to contract with IPTV, financial support (approximately 25 million dollar) on the condition that it would not provide its contents to IPTV.

The effect of the cartel agreement: ***Substantial lessening of competition***

- After the agreement, the five MSOs together with their nineteen affiliates decreased the number of channels of One Media by 19%~28% when they renewed the contracts in 2009, so that One Media would no longer be able to supply its content to the decreased channels. CJ Media, encouraged by the financial support it received from the cartel participants decided not to provide its contents to IPTV. The action directed at One Media brought a threat and signalled to other PPs that they would be better off not supplying their programs to IPTV. As a result, many other PPs chose not to provide their contents to IPTV operators. Since IPTV operators could not secure any good and popular contents from many other PPs as well as from the top two PPs -CJ Media and One Media – they could not succeed in winning consumers and increasing their market share in the pay-TV market. In other words, IPTV providers could not compete effectively with the established cable TV broadcasters. Overall, the cartel among the five MSOs i) hindered the commercial freedom of PPs, ii) allowed the MSOs involved to strengthen their monopoly or oligopoly market position in their regional areas, iii) restricted the substantial competition in the pay-TV market, and iv) decreased consumers' right to choose among various channels.

Source: **Competition Issues in Television and Broadcasting, 2013, OECD**

Competition and Institutions : ITU Survey

		Number of countries/economies						
		Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas	Total
Does a Competition Authority exist in your country?	Yes	21	11	18	7	38	20	115
	No	17	4	11	0	3	10	45
Jurisdiction over telecom/ICT competition issues *	Telecommunication/ICT regulatory authority	11	8	9	3	11	15	57
	Competition authority	4	1	3	2	13	8	31
	Both authorities	11	2	10	4	19	1	47
	None of the above	3	0	1	0	5	2	11
Legal instruments defining competition *	General competition law	10	1	5	2	14	5	37
	Telecom/ICT law	9	8	7	3	2	9	38
	Both	13	3	11	4	22	13	66
	None of the above	2	2	6	0	1	4	15
Concept of merger defined in law	Yes	2	0	0	1	0	2	5
	No	0	0	3	0	0	0	3
Region size		44	21	40	12	43	35	195

* This indicator allows multiple choice per country/economy

Year: 2016 or latest available data.

Source: ITU World Telecommunication/ICT Regulatory Database

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

Regulation and e-applications: ITU Survey

ITUWTDC BUENOS AIRES 2017 9-20 October

		Number of countries/economies						
		Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas	Total
Does the Telecom/ICT regulator have responsibilities related to e-applications and/or m-applications (e.g., e-health, e-education, e-agriculture, e-commerce)?	Yes	16	5	8	1	6	2	38
	No	12	8	16	7	32	24	99
If yes, please specify:		12	3	5	1	4	2	27
If No, who is responsible for e-applications in your country? *	Sector Ministry	9	2	6	3	12	8	40
	Other Ministry	2	1	2	1	7	4	17
	Specialized agency	3	3	2	4	4	0	16
	Other	1	2	1	1	4	4	13
Has your country adopted any policy/legislation/regulation related to e-applications and/or m-applications?	Yes	8	9	11	5	16	6	55
	No	17	4	12	3	16	15	67
If Yes, please indicate which area(s) they address *	Government services	8	9	11	4	13	6	51
	Business/entreprise services	6	4	8	3	8	4	33
	Employment	5	3	2	2	3	0	15
	Education and learning	7	6	8	3	5	4	33
	Health	6	5	10	3	4	3	31
	Environment	4	1	3	2	3	0	13
	Agriculture	5	1	3	2	3	1	15
	Science	4	2	5	1	4	1	17
	Near field communications (NFC)	3	0	2	1	2	1	9
	Financial services/banking	6	7	7	2	7	3	32
	Advertising	4	4	2	2	4	0	16
	Other	2	2	1	0	3	1	9
Region size		44	21	40	12	43	35	195

Source: ITU World Telecommunication/ICT Regulatory Database

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

Competition Issues: ITU Survey

		Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas	Total
Criteria used in determining dominance or SMP *	Geographical	10	5	5	4	30	11	65
	Market share in terms of number of subscribers (or revenues)	27	11	15	5	38	19	115
	Control of essential facilities	20	9	10	2	34	15	90
	Easy access to financial resources	11	8	5	2	29	4	59
	Strength of the countervailing power of consumers	9	6	4	2	32	7	60
	Economies of scale and scope	11	5	5	3	34	11	69
	Barriers to entry	15	7	8	3	34	12	79
	Potential competition	14	4	8	3	31	7	67
	Other	2	5	5	0	12	4	28
Most common ex ante obligations imposed on operators *	Transparency	27	9	11	5	34	17	103
	Non discrimination	29	11	12	7	35	20	114
	Interconnection and access obligations	27	10	14	6	35	22	114
	Regulatory accounting	15	8	9	3	28	10	73
	Accounting separation	22	8	9	4	29	14	86
	Price control	17	6	13	4	29	13	82
	Other	2	2	3	0	2	2	11
Status of dominance or SMP reviewed	Every year	10	2	4	1	0	1	18
	Every two years	4	0	2	3	4	3	16
	Every three years	6	2	1	0	23	0	32
	More than three years	1	4	0	0	2	2	9
	Other	7	3	11	3	7	13	44
Accounting separation required	Yes	21	11	17	4	34	19	106
	No	10	6	8	2	6	9	41
Functional separation of SMP/dominant network operator(s) required by law	Yes	14	3	8	2	13	5	45
	No	16	12	15	5	26	15	89
Please indicate the website where the law/regulation on functional separation can be found:		10	1	6	2	13	6	38
Region size		44	21	40	12	43	35	195

Source: ITU ICTEye, 2016 (Regulatory Survey)

OTT and Regulation: ITU Survey

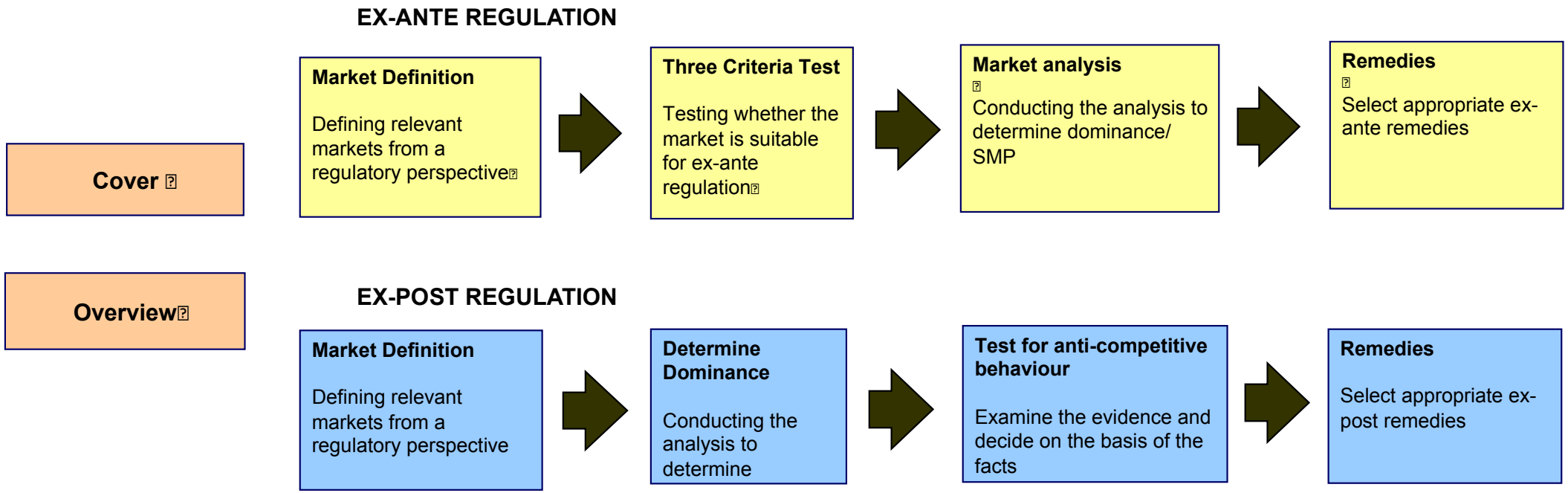
		Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas	Total
Does the Telecom/ICT regulator have the jurisdiction to regulate Over-the-Top players (OTTs, e.g., companies producing Internet content, value-added services providers)?	Yes	10	2	7	1	6	4	30
	No	11	9	5	3	23	12	63
If yes, please specify:		8	1	5	1	9	3	27
Has your country adopted any policy/legislation/regulation related to OTTs?	Yes	1	1	2	0	7	3	14
	No	20	10	10	4	21	14	79
If Yes, please indicate which area(s) they address: *	Two-sided markets/ Digital platforms	1	1	1	0	0	0	3
	Social media	0	1	3	0	0	1	5
	Content Delivery Networks (CDNs)	1	1	2	0	0	0	4
	Other	0	0	0	0	7	2	9
If no, are there plans to adopt a regulatory framework for OTTs?	Yes	6	4	4	1	3	4	22
	No	10	3	1	1	13	6	34
Region size		44	21	40	12	43	35	195

* This question allows multiple answers per country/economy

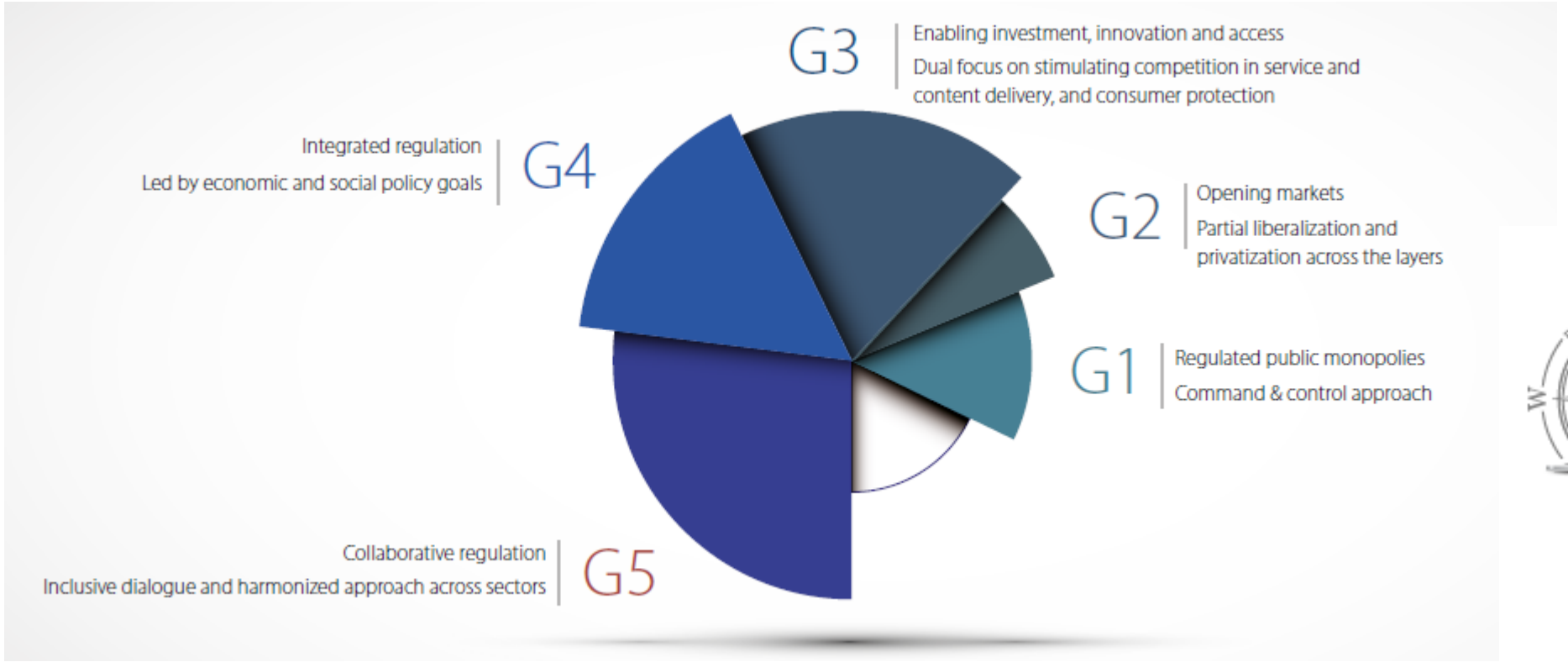
Year: 2016 or latest available data.

Source: ITU ICTEye, 2016 (Regulatory Survey)

One of the possible options



Evolution of ICT Regulation



GLOBAL ICT REGULATORY OUTLOOK 2017

Source: ITU

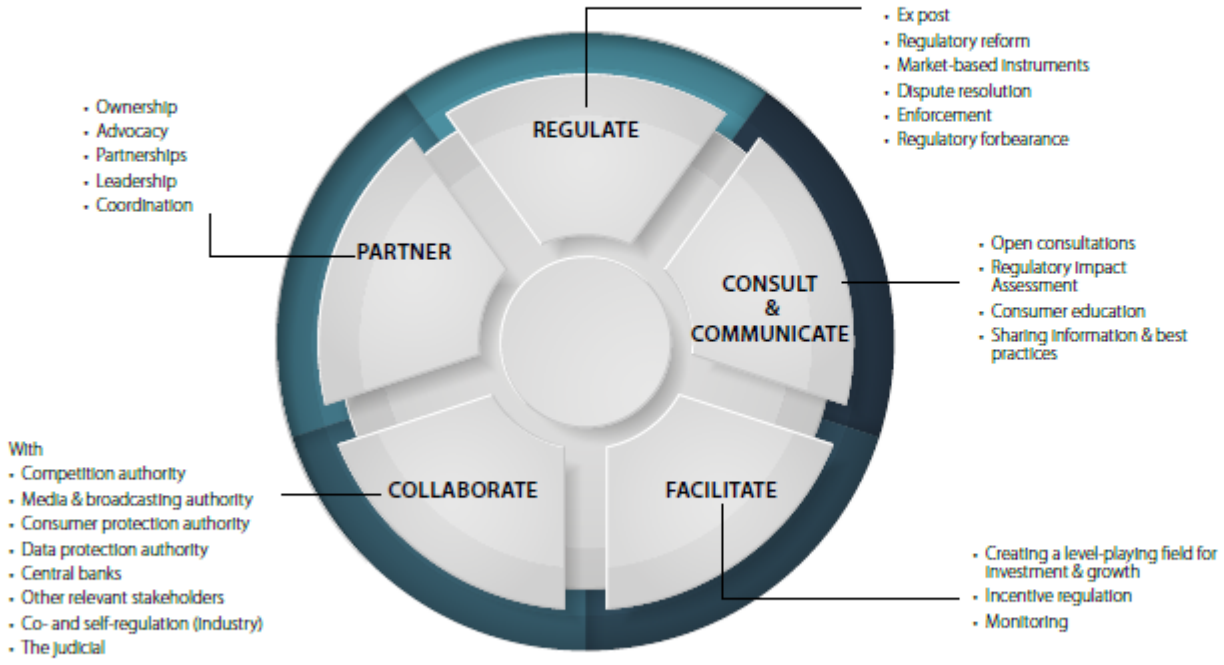


Figure 43:

THE WHEEL OF COLLABORATIVE REGULATION

Source: ITU.

GLOBAL ICT REGULATORY OUTLOOK 2017

Source: ITU

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Thank You