

Regional Development Forum 2008
“Bridging the Standardization Gap in Developing Countries”
Accra, Ghana, 26-28 May 2008

**Overview of ITU-T,
highlighting
Study Group 3 activities**

Saburo TANAKA
Chief, Services Department/TSB
Accra, May 2008



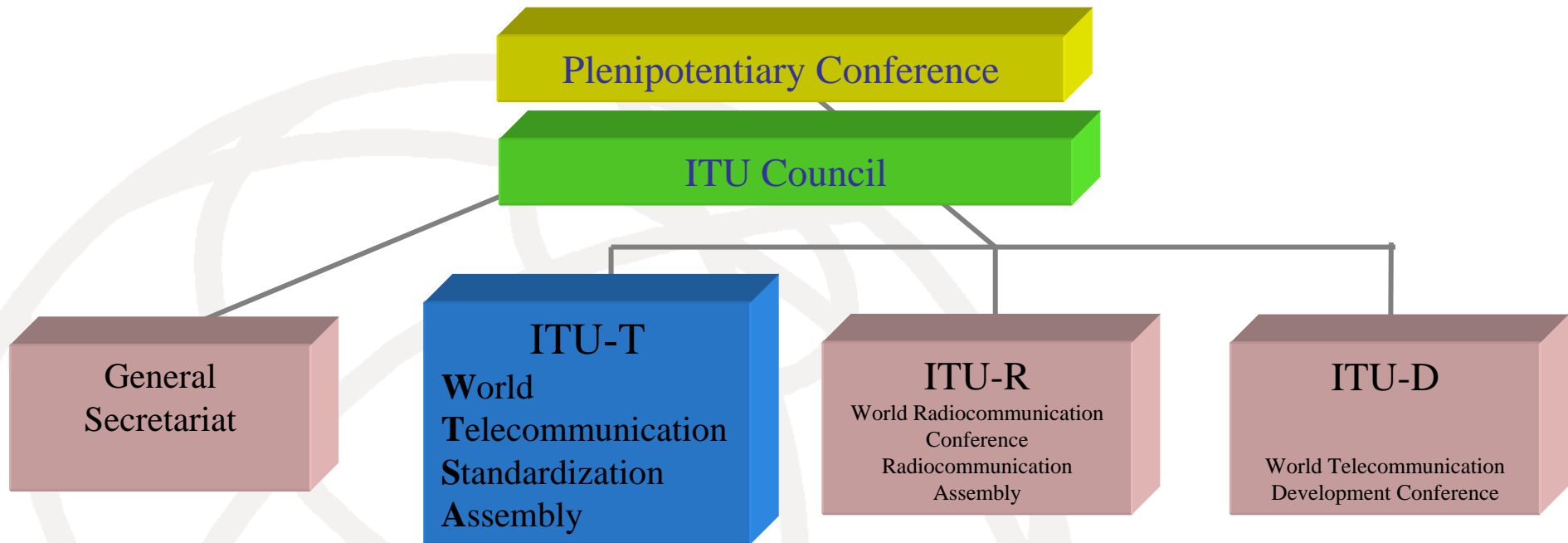
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Overview of ITU

**ITU-T - Leader in ICTs and
Telecommunications Global
Standards**



ITU Structure



ITU-T: Telecommunication standardization on a world-wide basis on technical, operating and tariff, Questions. TSB: ITU-T Secretariat

ITU-R: Radio communications and wireless

ITU-D: Use and deployment of telecom networks and services in developing countries and countries with economy in transition

Gen. Sec.: Coordinates the Union's activities and the overall management of the union

Regional working

- 5 ITU Regional Offices:
 - Africa Region
 - Americas Region
 - Arab Region
 - Asia & Pacific Region
 - Europe & CIS Region
- 6 Regional Organisations:
 - APT
 - Arab Group
 - ATU
 - CEPT
 - CITEL
 - RCC
- Various regional groups

ITU Membership

- **Member States** (voluntary financial contributions)

- » ITU 191

- **Sector Members** (usual fee 31,500 CHF per annum)

- » ITU-T 303
- » ITU-R 277
- » ITU-D 299

} 560

Total ITU-T
424

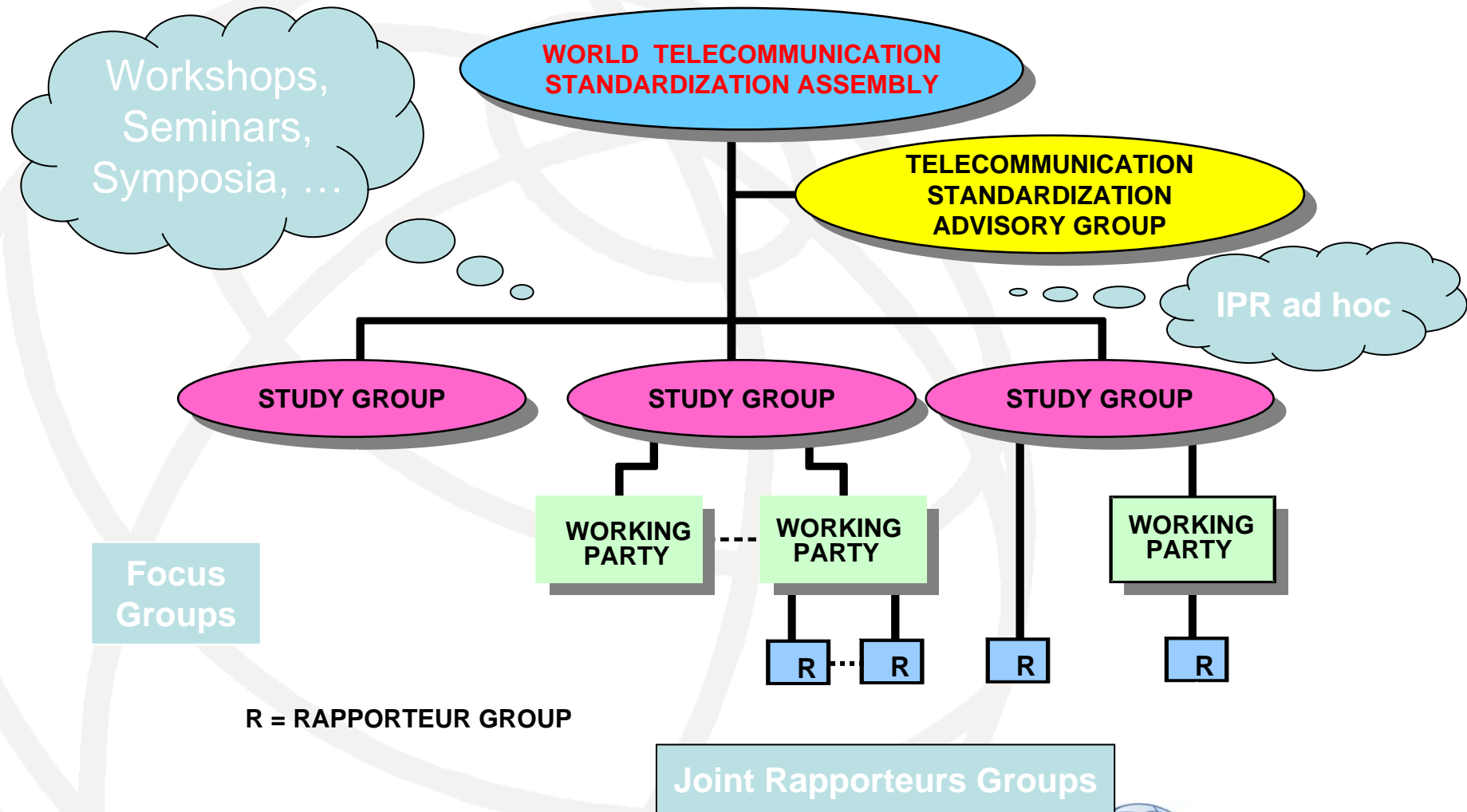
- **Associates** (10,600 CHF per annum)

- » ITU-T 121
- » ITU-R 27
- » ITU-D 7

} 155

Total: 715

ITU-T Organizational Structure



ITU-T positioning

Intergovernment

ITU

(ITU-T and ITU-R)

NGOs
ISO, IEC

.....

Forums / Consortia / SDOs

1394TA	3G.IP	3GPP	3GPP2	AIM	AMF
AMI-C	AOEMA	AOW	ARIB	BINTERMS	IPsphere
Bluetooth	Cable Modems	CBOP	CDG	CIF	CII
CommerceNet	CommerceNet J	Committee T1	COS	CPR	CTFJ
DHF	DISA	DOPG	DSL Forum	ECE	ECHONET
ECMA	ECOM	ECTF	EDIFICE	EDS	EEMA
EIDX	EMA	EMF	ERTICO	ETSI	EWOS
FCIA	FCIA-J	FIPA			FSAN
GSM Assoc.	HNF	Home API	HomePNA	HRFWG	IDB Forum
IEEE	IETF	IFIP	IFSA	IMTC	IMWA
IPv6	IrDA	ITS America	ITS UK	JAVA	JCTEA
JECALS	JEDIC	JEMA	JICSAP	JIMM	JMF
LONMARK	MCPC	MDG.org	MITF	MMCF	Mobile Web
MOPA	MFA	MSF	MWIF	OASIS	ODVA
OIF	OMG	OSGi	PCCA	PCISIG	PCMCIA
PHS MoU	PICMG	PKI	POF	Salutation	SCF
SCTE	SDL Forum	SDR	SSIPG	STA	TIA
	TM Forum	TOG	TSC	TTA	TTC
UMTS	USBIF	UWCC	W3C	WAP	WDF
Web 3D	WfMC	WIN Forum	WLIF	XTP Forum	

.....

Why ITU-T is different

- Unique partnership of private sector (Sector Members) & government (Member States)
 - Today, 95% of work is done by private sector
 - Remaining 5% due to regulatory impact
- Truly global and not-discriminatory standards
- Working together for consensus decisions
- Very flexible to start new initiatives
- Fast & transparent procedures
- Brand name
- Translated into national rules/specifications
- IPR Policy and copyright

www.itu.int/ITU-T

ITU-T is fast

- **start** work: 1 day / few weeks (from 2-4 yrs)
- **develop** work: from weeks to 2-3 yrs (from 2-3 yrs)
- **approve** standards: 2 months (from 4 yrs)
 - Alternative Approval Process (= AAP) for technical standards (=95% of work)
- **publish** work: couple of days after approval (from 2-4 yrs)

ITU-T product

- Around 210 new and updated Recommendations are produced each year
- Approx. 90% approved under AAP rules
- AAP cut approval time by 80 to 90% to as little as five weeks
- More than 3150 ITU-T Recommendations are in force

Free Recommendations

- From the beginning of 2007, ITU-T Recommendations are available without charge for a trial period.
- With only a small number of exceptions all in-force ITU-T Recommendations are available in PDF form via a simple mouse click.

itu.int/ITU-T/publications/recs.html

Why participate?

- Only UN agency dealing with ICT standards in a public-private in an open, transparent, flexible and global consensus based forum
- Outreach to 191 countries
- High credibility in emerging markets especially Africa, China and more recently India
- Opportunities for exercising corporate social responsibilities
- Excellent meeting facilities, convenient location
- Fast working

Dynamic Environment

- Looking towards technologies of the day after
- Organizing SG, WP and Rapporteurs meetings, workshops on standards worldwide to involve more the experts from the regions also assisting in the creation of Regional Groups
- Increase opportunities to create Focus Groups for very hot issues urged by the market & new topics
- Improve dissemination of information, communication and promotion, adoption of specific e-tools: the “Lighthouse”, webinars, podcast, e-flash, ...
- Looking towards the standards of the future cooperating with Academia and R&D institutions

ITU-T hot topics

- Next generation network (NGN)
- IPTV
- Home networking
- Cybersecurity & identity management (IdM)
- Ubiquitous networks
- Next generation multimedia conferencing
- Videocoding
- Broadband access
- Packet based transport
- Fibre optics
- Accessibility
- Tariff and Policy related issues

ITU-T's Focus Group concept (Recommendation A.7)

- Create forum-like entities as an “arms-length” organization under ITU-T Study Group
- Goal:
 - Encourage participation of non-members / members of other organizations (forums) / experts / individuals
- Organizational freedom to establish its own rules
 - can keep own brand name and at the same time benefit from ITU's branding, have its own deliverables

ITU-T Focus Groups

“Target Accounting rates”: the first ITU-T FG (1998)



In operation

- **NGN Management**
- **From/In/To Cars Communication**

Concluded activities

- **Identity Management IdM - trusted attributes of an entity**
- **IPTV not only entertainment**
- **Security Baseline for Network Operators**
- **Open Communications Architecture Forum (OCAF)**
- ...

Regional Groups

Set up on a case-by-case basis cooperating with regional organizations and to improve the level of participation by the regions in standardization activities.

ITU-T secretariat (TSB) support

Workshops: some activities in 2008

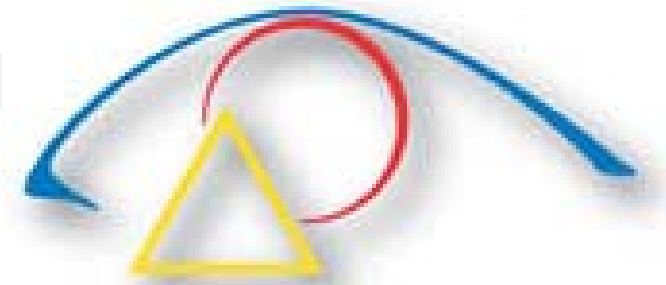
Up coming:

- ITU Symposium 2 on ICTs and Climate Change, London, United Kingdom, 17 – 18 June 2008
- ITU-T/IEEE workshop on the next generation optical access
Geneva, 19 – 20 June 2008
- ITU Workshop: “ICT Standards and Intellectual Property Rights”,
1 July 2008, Geneva
- IPv6 4/5 September 2008, Geneva

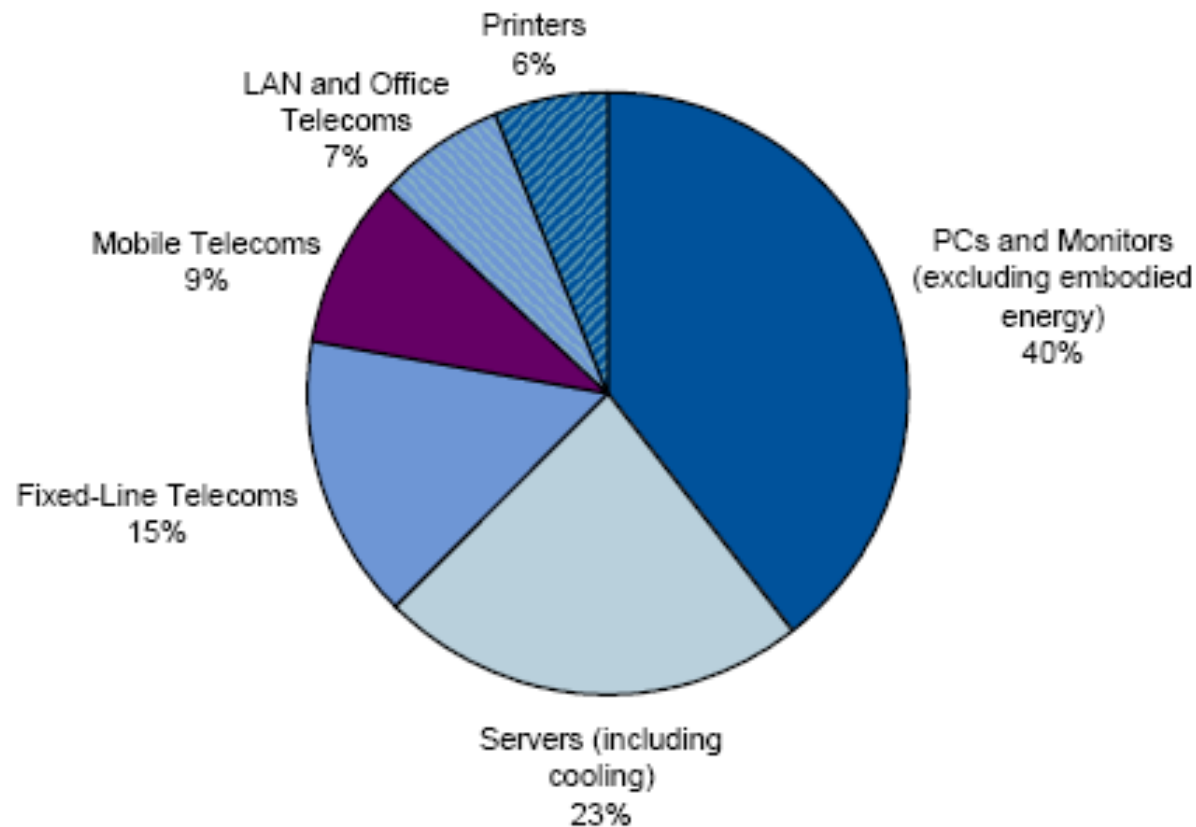
<http://itu.int/ITU-T/worksem>

Technology Watch

- **Technology Watch** surveys the ICT environment for new study topics
- **Technology Watch Briefing Reports** provide an up-to-date assessment of promising new technologies. Recent papers:
 - Remote collaboration tools
 - Ubiquitous Sensor Networks
 - ICTs and Climate Change
 - Telepresence
 - High-performance video-conferencing
 - Intelligent Transport Systems
 - Lawful interception
- **All available free on ITU-T website**



ICTs and global warming



- ICTs (excluding broadcasting) contribute an estimated 2-2.5% of global Greenhouse Gas emissions
- Around 0.9 tonnes GtCO₂e in 2007
- Telecoms contributed around one quarter of this total
- But think : Where we would have been without ICTs?

Source: Gartner Group (2007)

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Cooperation between ITU-T and Universities

Given the knowledge that many new technologies find life in the minds of the academic and research communities, ITU is increasingly looking to attract more involvement from the world's universities and other academic institutions

Following the Consultation meeting held in January 2007 an informal discussion group has been formed to discuss ways to increase this cooperation with participation of ITU-T and academia, which is open to all interested parties. To participate in the discussion please join the mailing list by sending a request to tsbuni@itu.int

(see <http://itu.int/ITU-T/uni>)

Direct participation mechanisms in ITU-T work

- Invited experts
 - Cannot submit written proposals
 - Contribution source not acknowledged
- Sponsored by members (countries and private sector)
 - No membership fee
 - Contribution source not acknowledged
 - Level of participation limited according to national processes or company rules
- Associate members
 - Contribution source properly acknowledged
 - Participation limited to one SG; can have only a limited number of roles
 - Membership fee (CHF 10,600 per year)
- Sector members
 - Participation in any SG of the sector x higher fee (CHF 31,800 per year)
- Membership in special groups: Focus Groups; Joint groups with ISO/IEC; Coordination activity on RFID

Some opportunities already offered by ITU-T

- Open and free participation in meetings of Focus Groups
- Free participation by invitation to SG and Rapporteur' groups meetings as experts
- Free participation in Workshops and Seminars
- Available web-based collaboration tool (Technology Watch)
- Free Recommendations on line (3 million copies downloaded free of charge in 2007)
- Possibility to co-organize events
- Research project sponsors
- Internships (e.g. visiting professors, students, researchers)

Kaleidoscope Conferences

In order to solicit standardization work on emerging technologies, ITU-T organizes multi-topic events (Kaleidoscopic Conferences) with the aim to enhance participation of Academia and research organizations in ITU-T activities

**The first “Innovation in NGN took place on 12-13 May 2008
(see: <http://itu.int/ITU-T/uni/kaleidoscope>)**

One place to share knowledge, procedures, experiences and results by experts, scientists, visionaries and academics from all over the world

Unique networking environment in which to discover new standardization areas and new technologies those can be input into ITU-T Study Groups and Technology Watch-Correspondence Group

Innovations in NGN – Future Network and Services

An ITU-T Kaleidoscope Event Technically co-sponsored by IEEE Communications Society

- More than 136 expert paper reviewers from academia and industry worldwide
- More than 140 scientific papers received
- Accepted 32 Lecture papers plus 22 Poster papers for presentation at the Conference
- Best 3 papers awarded prizes totalling \$10,000
- Special edition of IEEE Communications magazine

<http://itu.int/ITU-T/uni/kaleidoscope>
kaleidoscope@itu.int

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Reducing the standardization gap

– Objective

- End disparities in the ability of representatives of developing countries, relative to representatives of developed countries, to **access, implement, contribute to and influence international ICT standards**, specifically ITU Recommendations

– Status

- Much has been done to improve access:
 - » Regional Forums
 - » Regional Groups
 - » Remote working
 - » Meetings in the regions

– Expected Results

- Revision of related Resolutions

Possible new initiatives

- Recommendation to Council/PP-10 for new category of membership for academia
- Reduced Sector Membership fee for SMEs, at least SMEs from developing countries
- Action to address proliferation of standards bodies
- Proposals to improve collaboration with and participation of research institutes
- New work on climate change
- New work on testing and certification

Study Group 3 Activities

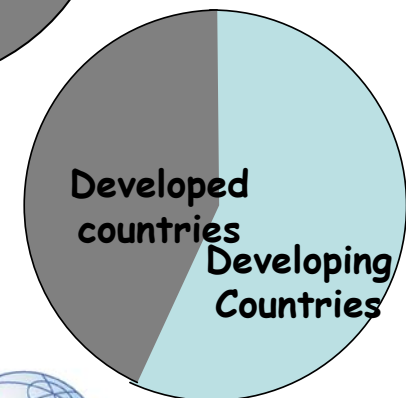
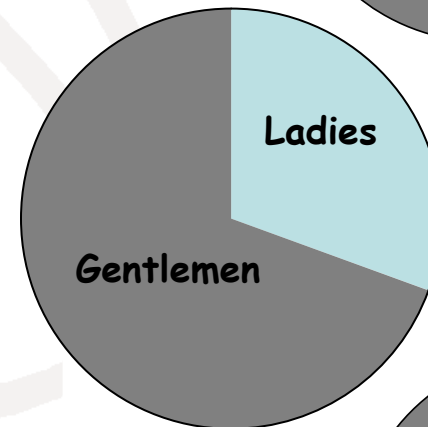
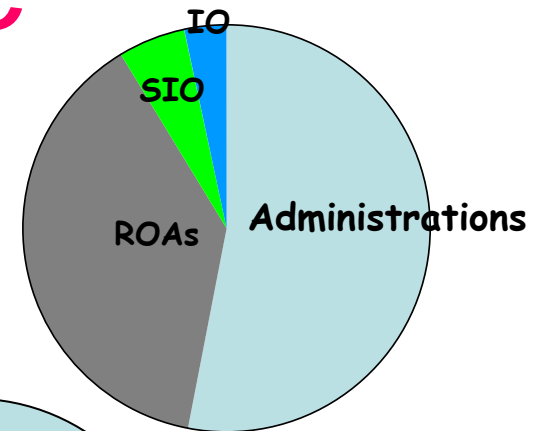
- To better understand SG3
- Hot issues studied in SG3 and results

SG3 is unique

- Because of its composition



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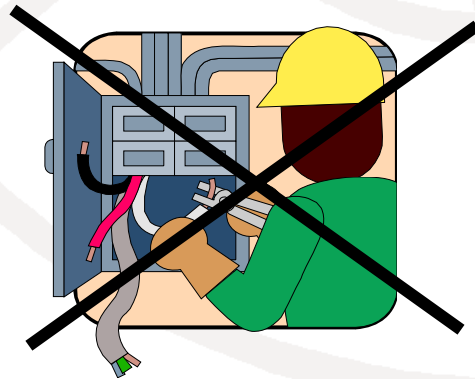


Unique because

- Provide fellowships
- Interpretation in six languages
- Contribution translated in six languages
- Meeting in series (no meeting in parallel)
- Engineers, lawyers, economist, policy maker
- Only four broad questions to study
- Report in six languages
- Regional Tariff Groups once a year:
TAF, TAL, TAS + (TEUREM)

Dealing purely with non-technical standards and ...

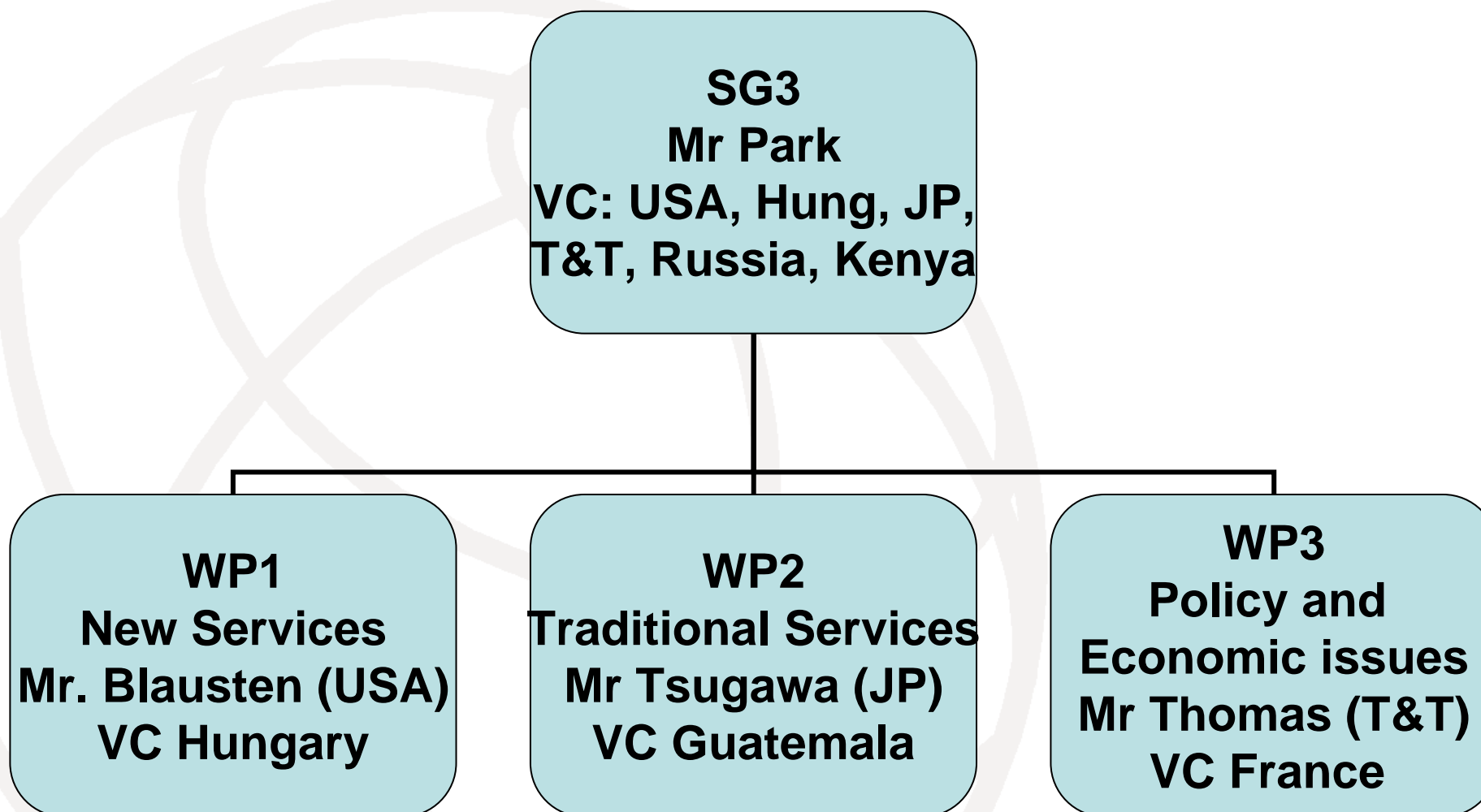
- Tariff/Economic/Policy related issues



- There are 4 Regional Tariff Groups



SG3 structure



Study Group 3 activities

- What is going well
 - Number of participants (constant :140)
 - Study on traditional services (dying)
 - Good information exchange (business opport)
 - Questionnaires (but too much)
- Things to improve
 - Many Rapporteur Groups but few activities
 - Contributions to the meeting on new issues
 - Elaboration of more Recommendations

Main study items

- Accounting rate reform
 - From accounting rate system to new settlement system
 - Network externalities (replace USO)
 - Mobile termination charge
- Alternative calling procedure
 - Refile, Cross-boarder traffic, IP-Telephony
- International Internet Connectivity
 - Implementation of Recommendation D.50
 - Improving connectivity in LDCs
- NGN tariff principles
 - Determining new parameters
- Other studies

Accounting rates, what's the problem?

- Accounting rates are the traditional way of sharing revenues from int'l services
 - BUT, creates incentives among recipient countries to sustain rates at high level
 - Accounting rate system not well-adapted to competitive market environment
- Strong pressure to move towards a cost-oriented system
 - BUT, a cost-oriented system would be asymmetric
 - Developed countries want cost-oriented but reject asymmetric charges for call termination
- Old system, not matching to the market reality
 - Only 25-30% of traffic use accounting rate system

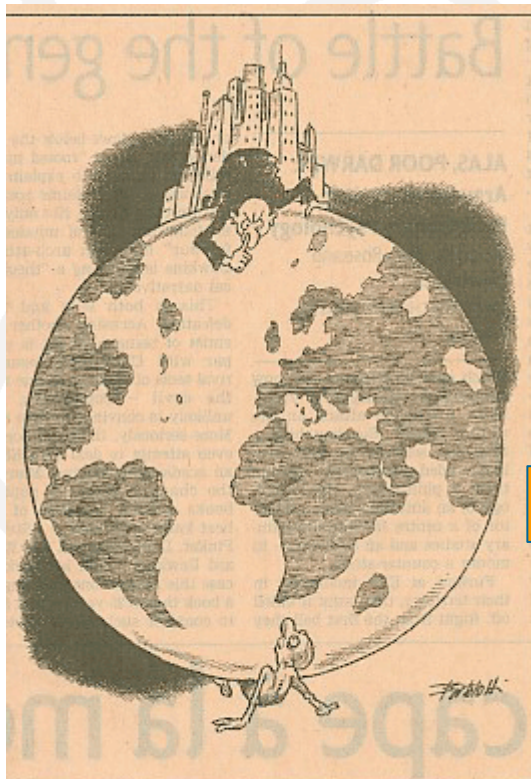
Status of Accounting Rate System (ARS) Today:

Alive, but not very well

- Only 20% of international traffic today still uses the accounting rate system
- Developing country → Developing Country
- Developing country → Developed Country
- No traffic between developed countries uses the ARS

Developing Countries Now Pay \$2 billion to Developed Countries

What's Wrong with this Picture?



(FT of London, 27/27.08.2000)



Developing countries used to receive \$5 billion in settlement payments

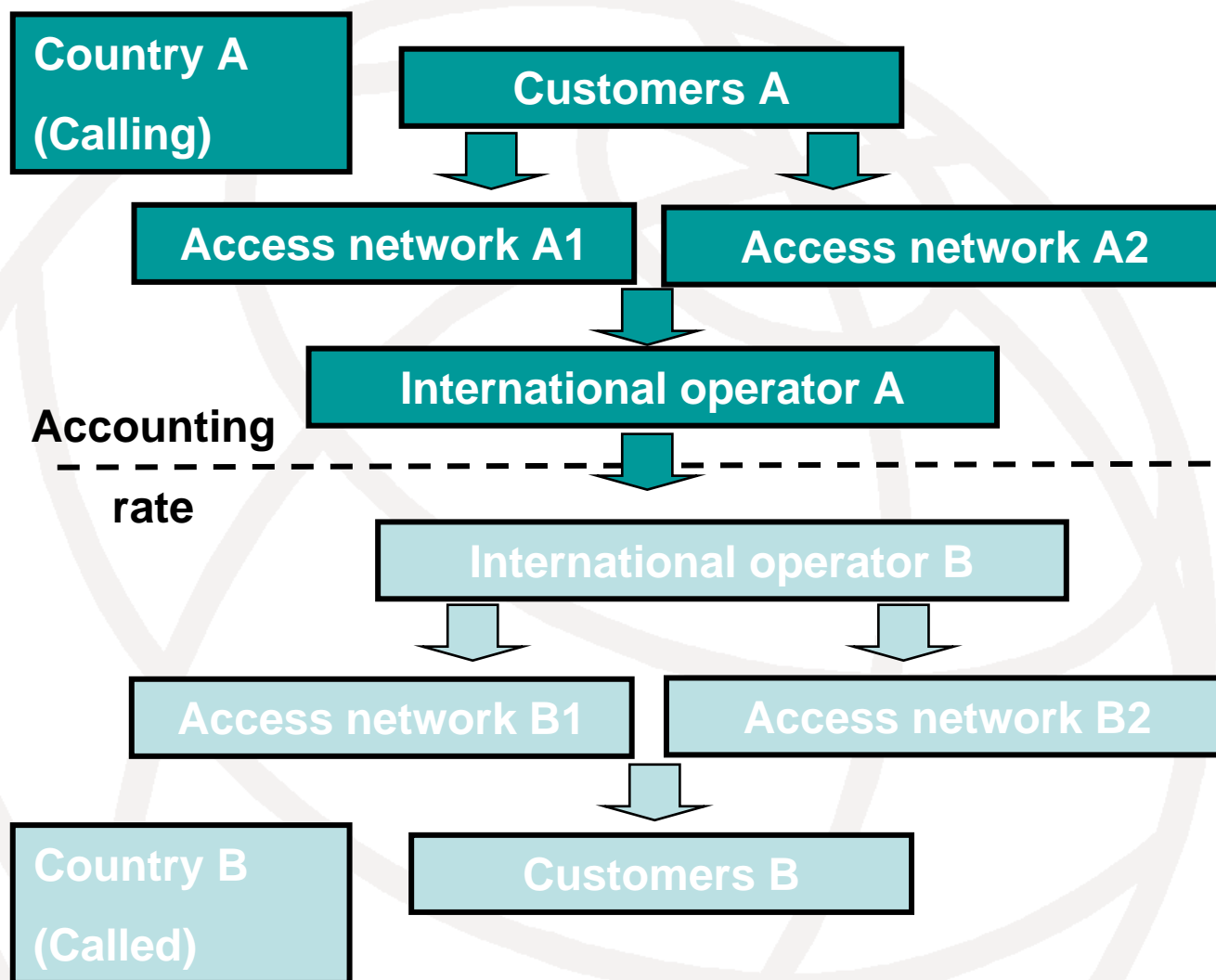
Solutions & challenges

- New Remuneration system (adopted)
 - Termination charge system
 - Settlement rate system
 - Special arrangement
- Difficulty to quickly implement those systems
 - Condition is to reach cost-oriented rate, but
 - No cost data or model for some administrations ⇒
 - SG3 developed guiding principles and TAF, TAS, TAL cost models
- Transitional arrangements (review at WTSA)
 - To facilitate staged reduction to cost based rate
 - to avoid sudden fall of revenue (smooth transition)
- SG3 developed:
 - Guidelines for negotiation

Network Externality

- Network externality = increase utility of a network to users
 - operators to provide incentives for users to join the network = this can be added to the usage price or to the monthly subscription fee
- Universal Service Obligation Fund = Cross Subsidy
 - Not recognized as cost
- the network externality effect has a solid basis in economic analysis and had successfully – at least with some regulators – been brought to bear by mobile operators on their case for higher termination rates
 - Can be used by the developing countries to enhancing take-up and roll-out of the network

International externalities



Do Customers in A derive benefit from more Customers in B?

If so, how much?

Is benefit to calling operators in A enough incentive to agree prices above cost?

How can we be sure that an externality will be passed through to connect more customers in B?

SG3 proposed Recommendation

- At the last SG3 meeting (04/08) solution was found
- A concept of “premium” was acknowledged
- The guiding principles to determine premium has been agreed
- Adopted five recommends
 - Developing countries examine whether it would be appropriate for a premium
 - Premium be negotiated on a commercial basis
 - Premium be paid from developed to developing countries
 - Fund be used exclusively for extending networks in developing countries
 - Use of fund be monitored
- However, one administration objected and it goes to WTSA-08

International calls terminating on the mobile network

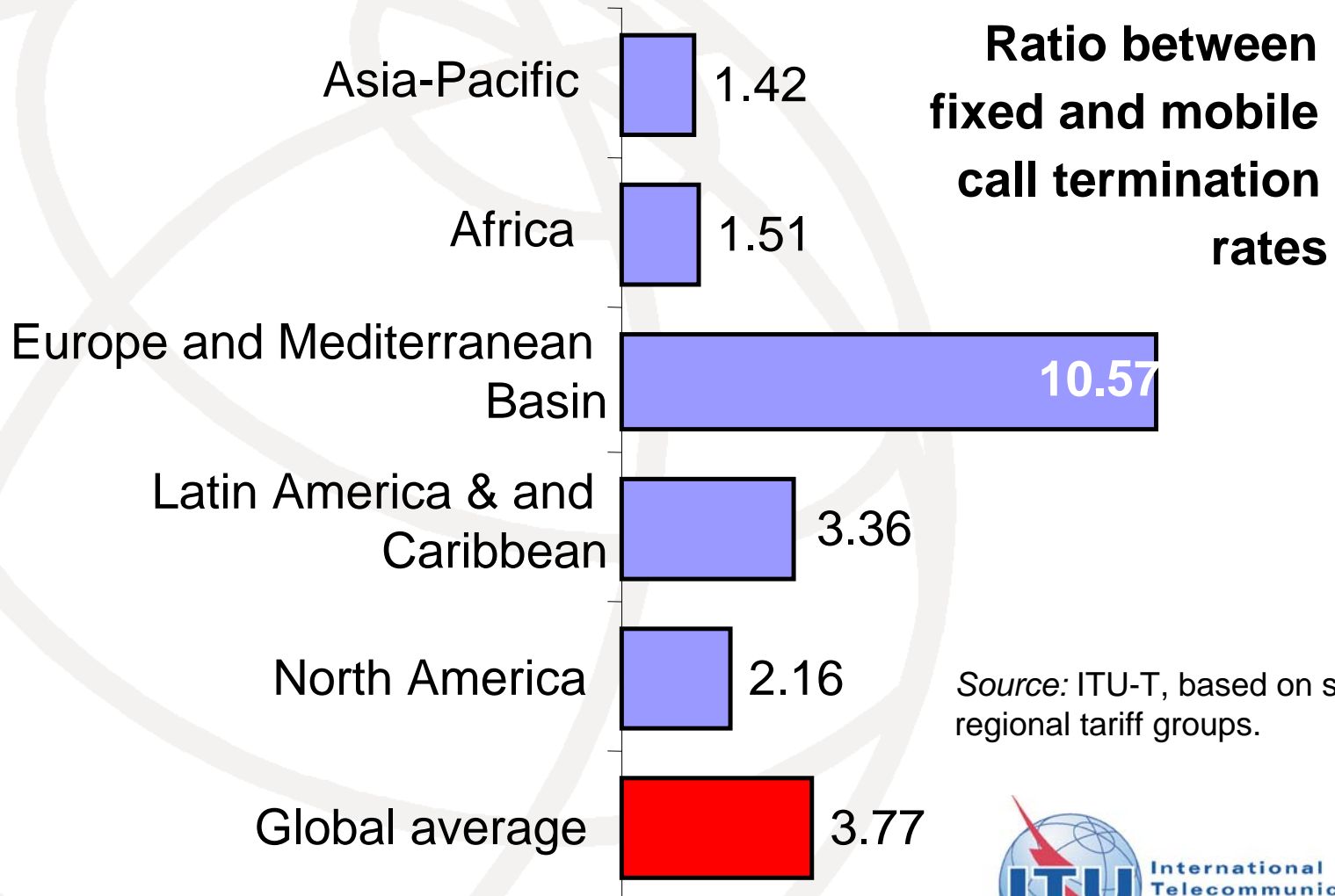
- SG3 revised D.93 in 2000, allowing to negotiate
 - a separate rate for traffic terminating on a mobile network
 - however, this is by bilateral negotiation and when the rate is cost orientated
 - The difference between the two rates should be as small as possible
- Many countries now request very high settlement rates (ten times)
 - SG3 revised this situation in modifying D.93

Termination rates worldwide

Termination rates in US cents per minute	Average fixed rate	Average mobile rate
Asia-Pacific	11.69	16.58
Africa	13.62	20.57
Europe and Mediterreanean	3.11	32.86
Latin America and Caribbean	4.88	16.43
North America	2.81	6.07
Global average	5.77	21.76

Source: ITU-T, based on survey of regional tariff groups 2006-2007.

Spot the odd one out

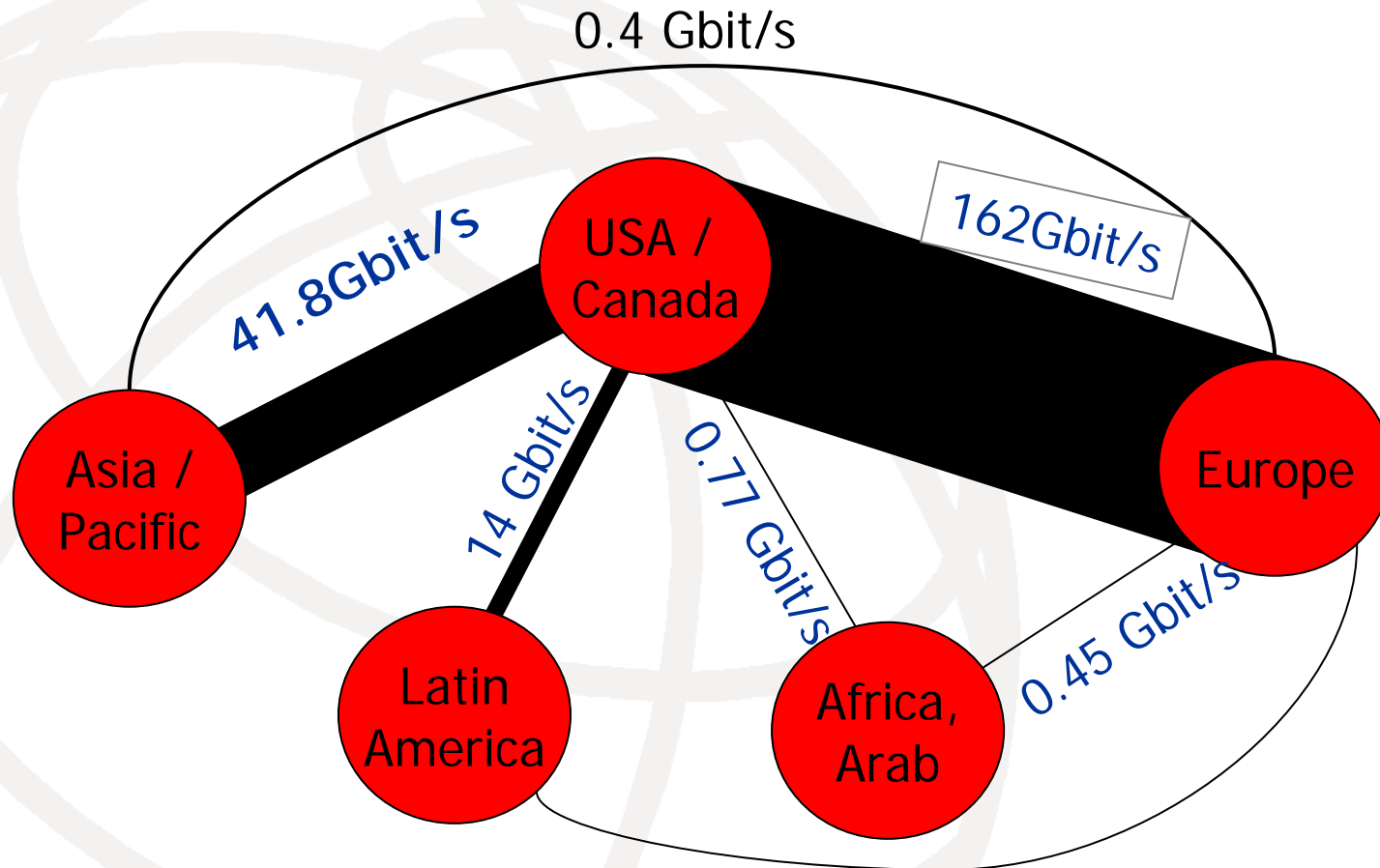


Source: ITU-T, based on survey of regional tariff groups.

Solution agreed by SG3

- Study Group 3 adopted a Recommendation D.99 which discuss the question of an indicative rate.
 - with some conditions, national regulator may wish to impose a ceiling
 - relevant factors to take into account
 - may consider current international fixed termination rate as an initial basis

Inter-regional Internet connectivity

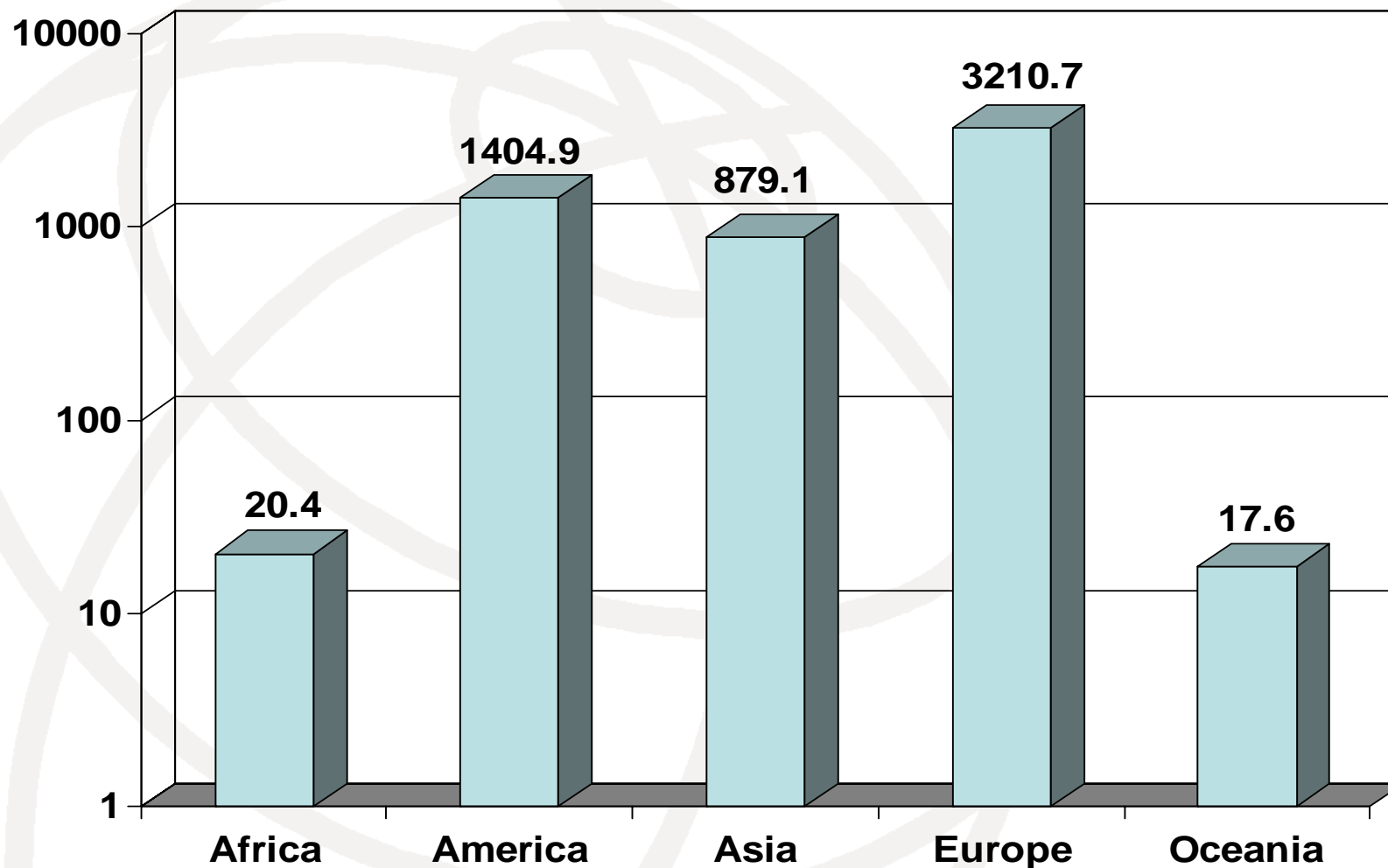


Note: Gbit/s = Gigabits (1'000 Mb) per second.
Source: ITU adapted from TeleGeography.

0.1 Gbit/s

International Bandwidth by region

(1000 Mbps, year 2007)

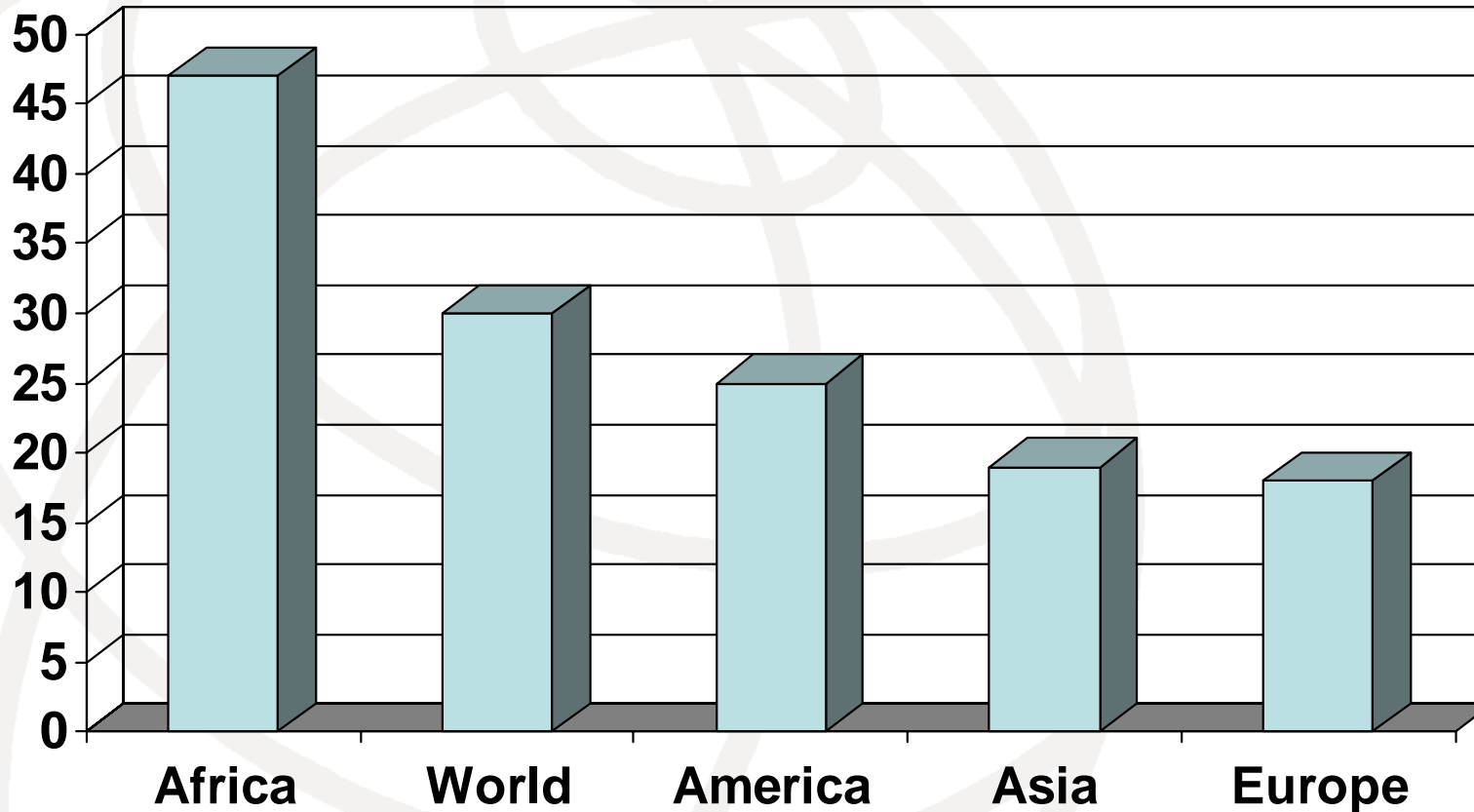


Logarithmic scale
Source: ITU

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Price basket for Internet (US \$ per month, 2006)

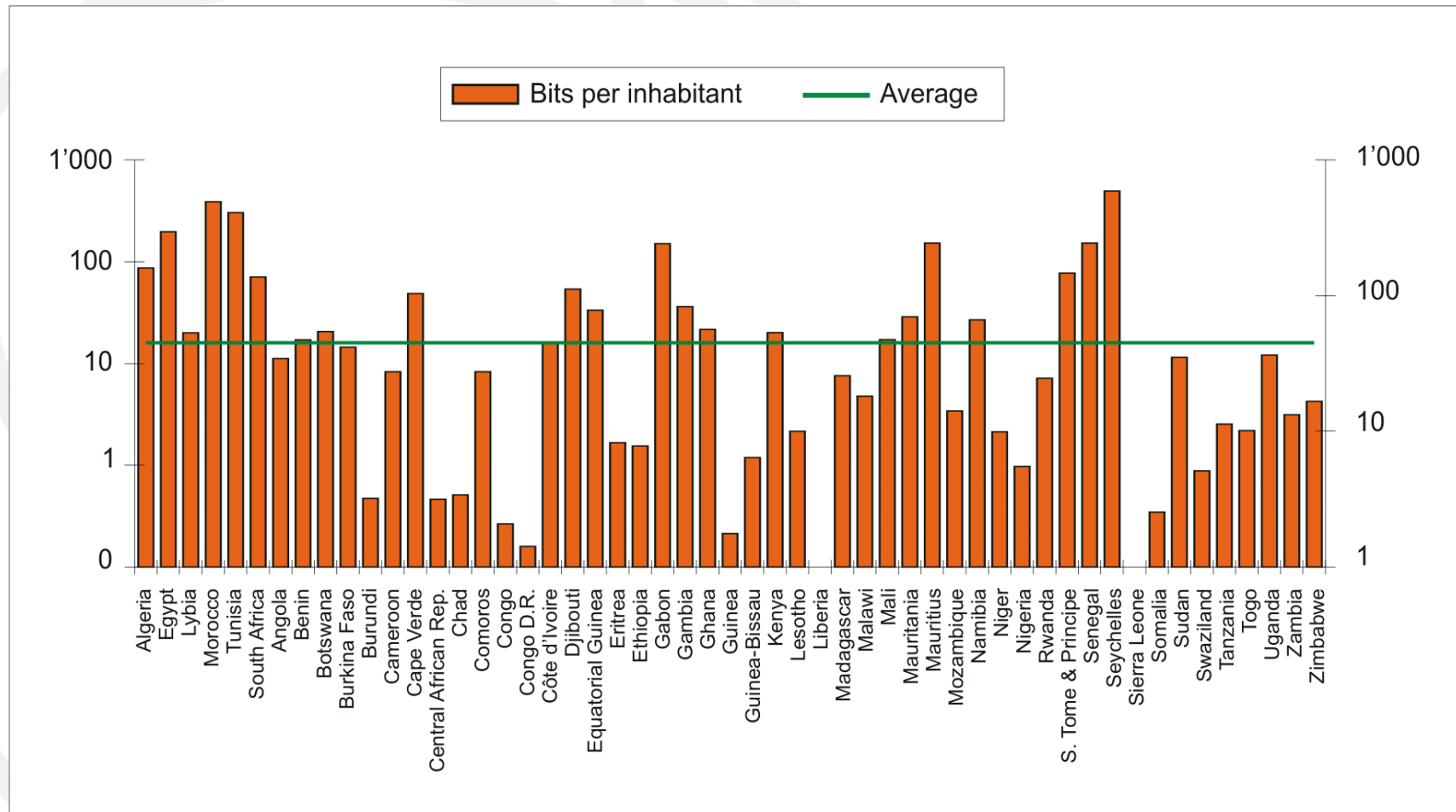


Source ITU

20 hours of internet use/month



International Internet bandwidth (bits per inhabitant) 2007



ITU-T Recommendation D.50

(International Internet Connection)

- ITU-T Study Group 3 Recommendation D 50 calls for arrangements to be negotiated and agreed upon on a commercial basis when direct Internet links are established internationally. It requires that the two providers involved reach a mutual agreement.
- It does not prescribe any particular formula or system, thus leaving to providers the freedom to determine the forms or methodologies to be used in implementing the principle.
- In Appendix, there are general considerations for charging criteria and options for international Internet connectivity

<http://www.itu.int/rec/T-REC-D.50/en>

Not everyone agreed

- Recommendation D.50 is voluntary, and suggests that parties involved take into account the possible need for compensation for elements such as traffic flow, number of routes, geographical coverage and the cost of international transmission among others when negotiating such commercial arrangements. In addition, the WTSA agreed that while international Internet connections remain subject to commercial agreements between operating agencies, there is a need for on-going studies in this area. The Chairman recalled that the decision made in Montreal provided a framework for future discussions and was therefore only the beginning of a process where issues would be further analyzed.
- Two countries - the US and Greece - made reservations and stated that they would not apply it in their international charging arrangements

Current System Hard on Many Developing Countries

- ITU-T Study Group 3 has agreed that the high costs of the international circuit for Internet connectivity between least developed countries and the Internet backbone networks remains a serious problem for these countries.
- Solutions include efforts to facilitate the creation of traffic aggregation within localities, countries or within regions in developing countries in order to avoid sending this traffic over satellite or cable links used for intercontinental traffic, for example between Africa and Europe or North America.
- This effort would aim to maximize the retention of local and national traffic within these regions and thus reduce the dependence on international communications links.

Possible Solutions to IIC Problem

- Self-provide – a few countries have succeeded here, most developing countries can't afford
- Increase internet volume:
 - Promote competition
 - Drive demand through local content and low-cost internet access devices
 - Promote migration to all IP networks and NGN
- Aggregate traffic through IXPs
- Explore new avenues of negotiation

Conclusions

Big effort in offering the membership a more transparent, dynamic, innovative, and evolving international public/private partnership for standardization, ready to listen to the needs of the regions:

**ITU:
The place for ICT global
standards**



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Thank you for your attention

