Introduction to ITU Standardization Sector

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- About ITU and ITU-T
- Hot topics
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About ITU and ITU-T

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Importance of Global Standards

- Global Standards **essential** in a complex world
- Standards make things easier
- Essential for international communications and global trade
- Drive **competitiveness**, for individual businesses and world economy
- Help organisations with their efficiency, effectiveness, responsiveness and innovation
- Lower prices and increase availability by **reducing technical barriers** and promoting **compatibility** between systems and networks
- Manufacturers, network operators and consumers benefit

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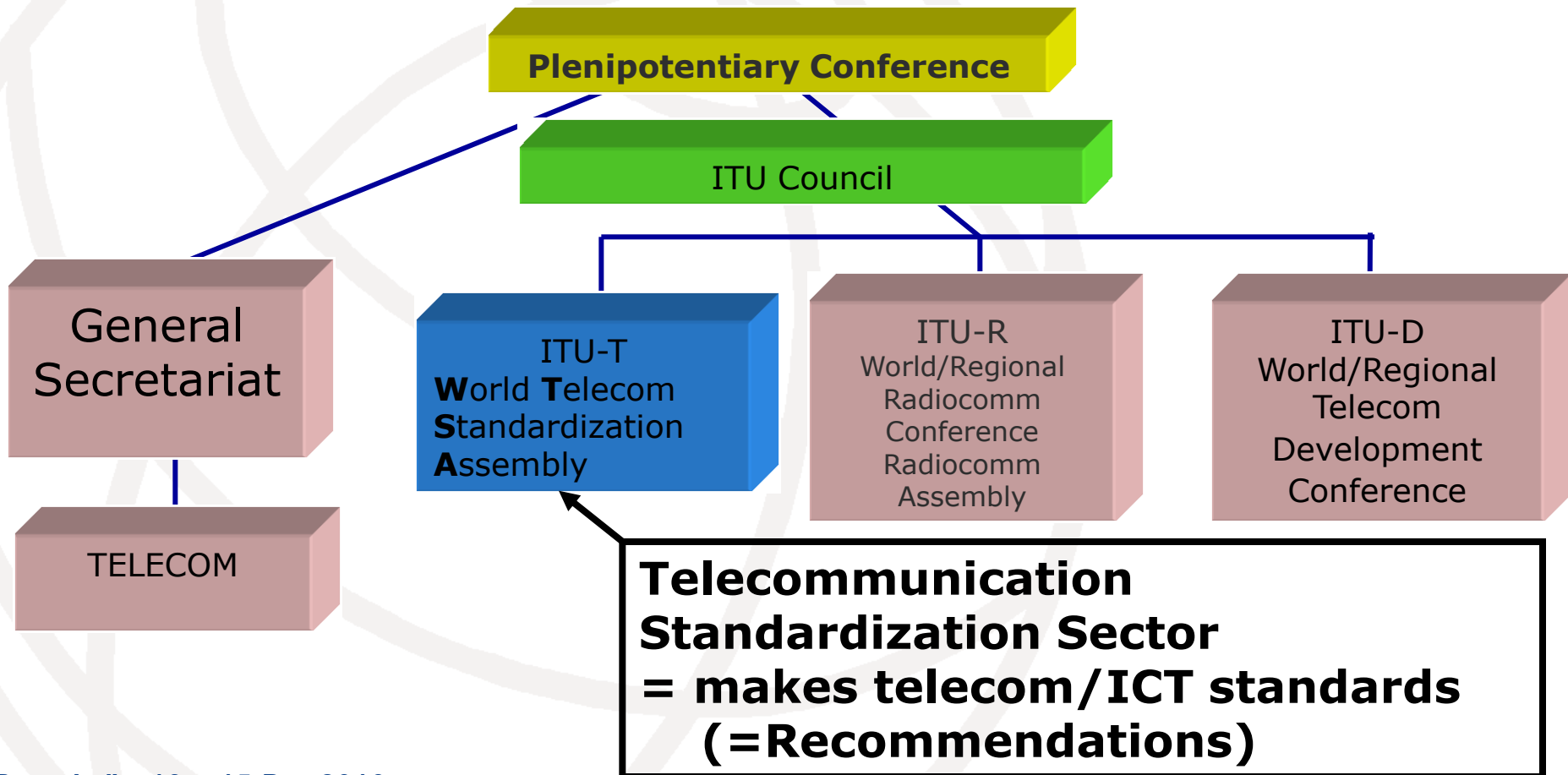
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Standards proven economic tool

- WTO trade report 2005

- British Standards Institute (BSI): standards make annual contribution GBP 2.5 billion.

- German standards body (DIN): economic benefits standardization about 1% GDP.

- Canada: 17 % of labour productivity increase and nine per cent of growth of GDP 1981-2004.

- Standards have a significant effect on limiting the undesirable outcomes of market failure.

- The work of ITU has smoothed the more economical introduction of new technologies.

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Introduction to ITU

- Specialized agency of the United Nations system for telecommunications
  - Founded in 1865, it is oldest UN specialized agency
  - Standards making: one of the ITU's first activities
- Named as one of the world's ten most enduring institutions by Booz Allen
- HQ Geneva, 11 regional offices, 760 staff / 80 nationalities
- Membership:
  - Member States: **192 governments**
  - Sector Members: +**500 private sector**
  - Associates: +**140 private sector**
    - can participate in one Study Group only
  - **New!** New categories for **Universities** and for Sector Members from Developing countries
- Today, +95% of the work in ITU-T is done by the private sector (Sector Members and Associates)

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ITU Structure

Oldest UN specialized agency (founded in 1865)

Plenipotentiary Conference

ITU Council

General Secretariat

TELECOM

ITU-T
World Telecom Standardization Assembly

ITU-R
World/Regional Radiocomm Conference Radiocomm Assembly

ITU-D
World/Regional Telecom Development Conference

Telecommunication Standardization Sector = makes telecom/ICT standards (=Recommendations)

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ITU-T Recommendations connect the world...

Without ITU-T standards you couldn't make a telephone call from one side of the world to another.

Without ITU-T standards the Internet wouldn't function.

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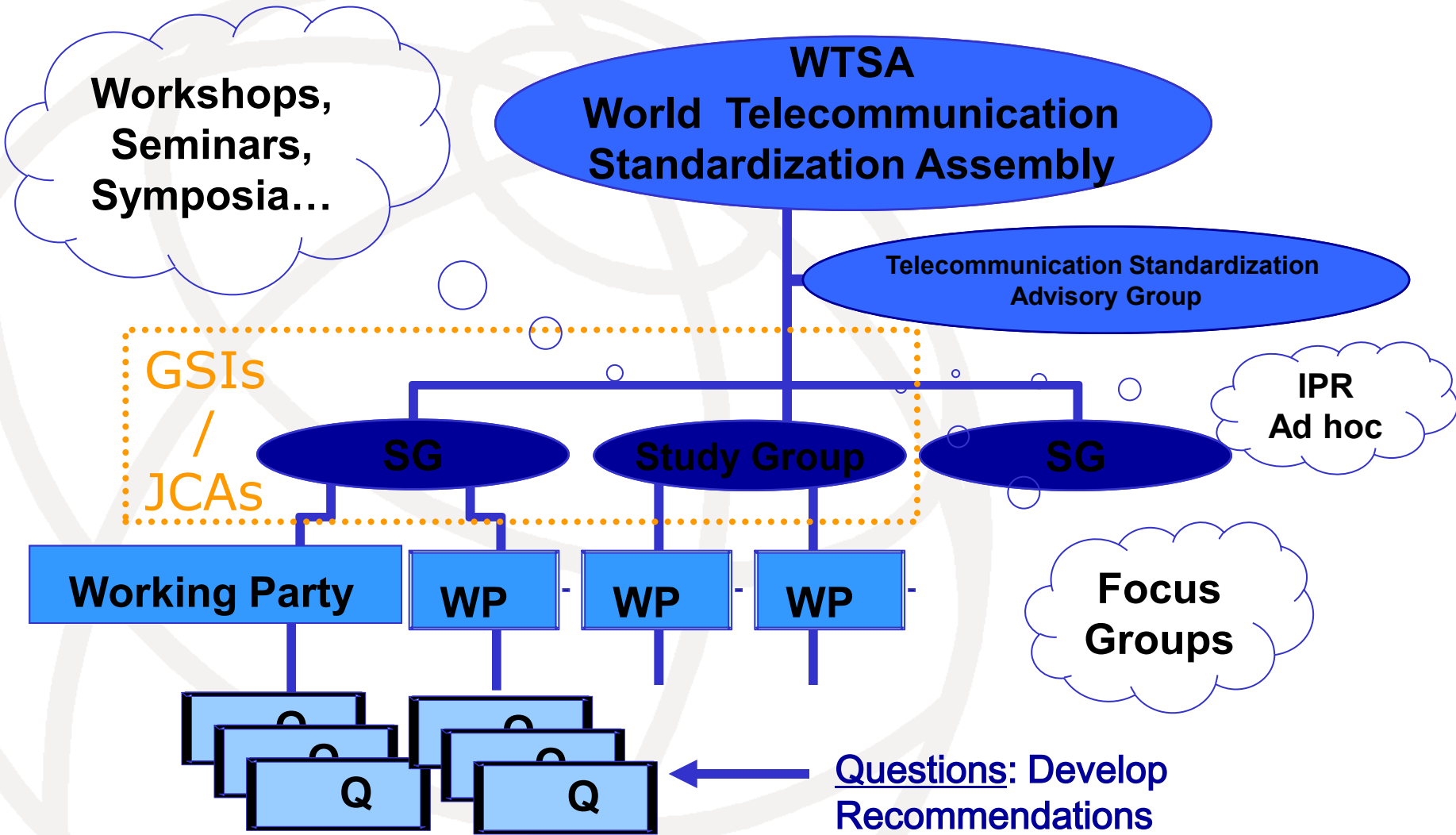
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ITU-T's strategic goals*

- Develop interoperable, non-discriminatory **international standards** (ITU-T Recommendations)

- Assist in **bridging the standardization gap** between developed and developing countries

- Extend and facilitate **international cooperation** amongst international, regional and national standardization bodies

* 2012-2015

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ITU-T in a Nutshell

- Work (mostly) done in Study Groups (10 of them)
  + Telecommunication Standardization Advisory Group (TSAG)
- ITU-T Product: Recommendations (= "standards")
  - Freely available to the public once published
- Unique partnership of private sector (Sector Members) & government (Member States)
- Brand name
- Truly global
- Contribution driven; Consensus decisions
- Very flexible
- Fast & transparent procedures
  - Average approval time: 9.5 weeks
- Common Patent Policy ITU-T/ITU-R/ISO/IEC
- New project: Interoperability events / ITU-T Conformity database

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ITU-T Structure

WTSA
World Telecommunication Standardization Assembly

Workshops, Seminars, Symposia…

Telecommunication Standardization Advisory Group

GSIs / JCAs

SG

Study Group

SG

IPR Ad hoc

Working Party

WP

WP

WP

Focus Groups

Q

Q

Questions: Develop Recommendations

GSI = Global Standards Initiative events

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Study Groups: the heart of ITU-T standardization work

- Ten Study Groups
- Work progresses on the basis of proposals received from the members
- Standardization work grouped by wide themes
- Within a SG, work in Questions ("projects" covering very narrow standardization topic)
  - Working parties: grouping of like-Questions
- Example:
  - SG 16 on Multimedia
  - Q6/16 on Visual coding
  - WP3/16 on Media Coding.

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ITU Secretariat Services

- Dedicated *Counsellor* per SG:
  - Key role: facilitation of the standards development process
  - Administrative support with technical knowledge (engineer)
  - Management of meeting logistics
  - Responsible for quality of Recommendations (ITU is publishing house)
  - Responsible of website (part of it in 6 languages)
  - Organizes SG-related Workshops (technical programme

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Other tools for developing standards

- Focus Groups (ITU-T Rec.A.7)
  - Creation of "arms-length" groups to complement the SG work
  - Non-ITU members may participate
- Workshops
- GSIs (Global Standards Initiative)
- JCAs (Joint Coordination Initiative)
  - E.g. IPTV-GSI, JCA-IPTV
- Technology Watch
- Kaleidoscope

Exploratory

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Examples from this morning session

- SG 15
  - Autogenous work
- IPTV
  - Born as a focus group
  - Passed on to SGs for standardization
  - Coordinated via IPTV-GSI
- Focus Group on Future Networks
  - Pre-standards work
  - Born in Kaleidoscope 2008

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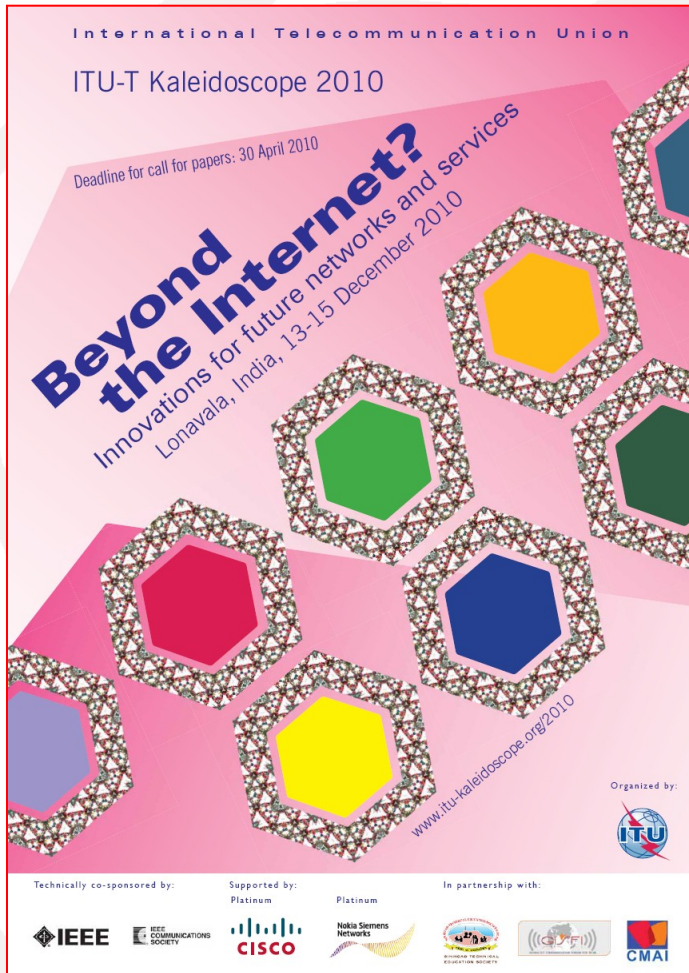# Technology Watch: Scouting for future technologies …

- **Recent papers:**
  - Using Submarine Communications Networks to Monitor the Climate (November 2010)
  - ICT as an Enabler for Smart Water Management (October 2010)
  - Decreasing Driver Distraction (August 2010)
  - Biometrics and Standards (December 2009)
  - ICTs and Food Security (July 2009)
  - The Future Internet (April 2009)

- **Complete list:**
  - http://itu.int/en/ITU-T/techwatch/Pages/reports.aspx

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Involving future engineers

- 1st Kaleidoscope event 2008: *"Innovations in NGN", Geneva*
  - **141** contributions, **223** attendees from worldwide academia
  - **Practical outcomes** → establishment of Focus Group on Future Networks

- Kaleidoscope 2009: *"Innovations for Digital Inclusion", Mar del Plata*
  - **83** contributions, **120** attendees
  - Local University **Exhibition**

- 3rd Kaleidoscope event 2010: **"*Beyond the Internet?" Pune*
  - **115** contributions, **200+** attendees
  - Jules Verne Corner

- **Kaleidoscope 2011: "Fully networked human?"**

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Hot topics

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ITU-T puts the Super in Information *Super* Highway

- All main means of accessing the Internet have been via ITU standards from modems and ISDN to broadband cable and DSL technologies

- Most recently:
    - Optical access via Fiber To The Home (FTTH)

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Next Generation Networks

- Massive challenge for the telecoms industry.

- One of the most complex transitions ever to have occurred telecoms

- ITU standards crucial

- New work:
  - Identify visions of future networks

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Future networks

- Focus Group
  - **Proposal born in Kaleidoscope 2008**

- Collect and identify visions of future networks

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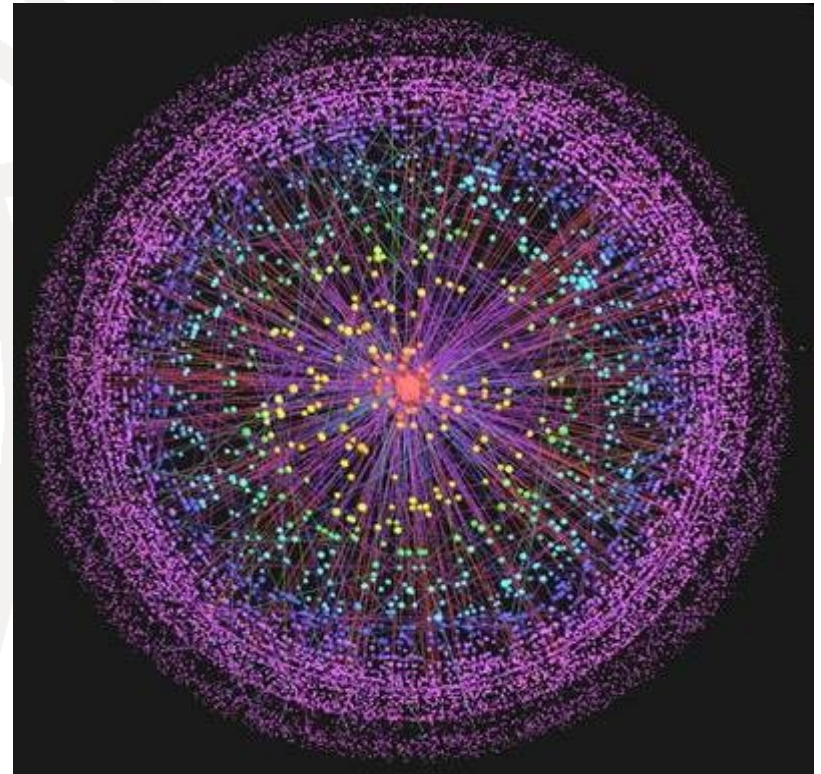
The network knocks at your door

- **Home Networking** to achieve interoperability on a global scale

  - PC World (US) 13.12.08: "The powerful world standards organization …[ITU]… has reached agreement on G.hn a set of specifications that would encompass phone lines, power lines, and coaxial cable to provide HDTV room to room…"

- **IPTV**: high quality TV using IP infrastructure
  - Flexible, cost-effective in support of convergent services
  - NGN integration and legacy support
  - First set of standards agreed, implementations starting

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ITU-T's quantum leaps in speech, audio and video quality

- Video codec H.264 in iPhone, Bluray, 3G etc
- Primetime Emmy award
- Working on next gen, together with MPEG (JVT-VC)
- Extension of work on speech coding:
  - Wider bandwidths, richer user experience

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Intelligent Transport Systems

THE **FULLY NETWORKED CAR**

- ITU, ISO and IEC and Geneva Motor Show
  - Annual Event

- New work:
  - Wideband communication in cars
  - Vehicle gateway protocol

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Safety in the cyber world

- Identity management
- Security standards for:
  - NGN
  - IPTV
  - Home networks,
  - Ubiquitous sensor networks
  - Mobiles
- Traceback
- Countering spam

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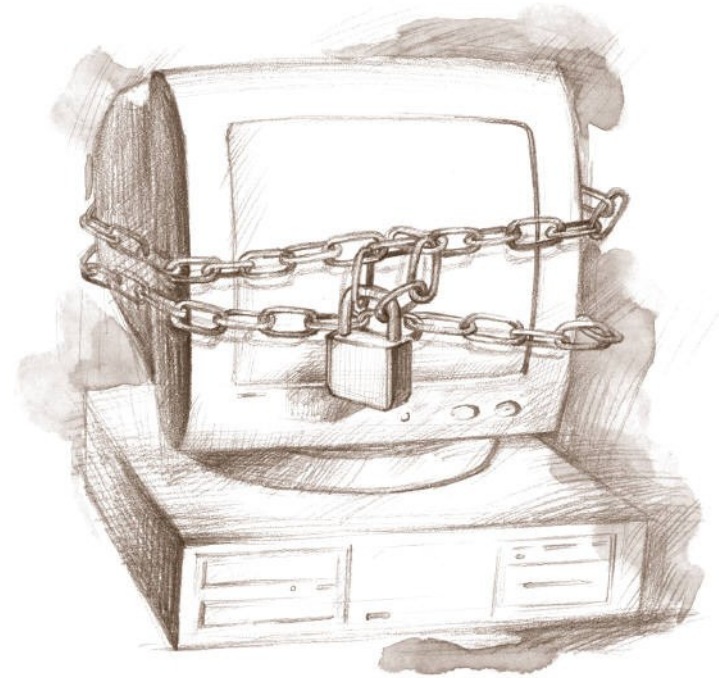
ICTs and Climate Change

UN Secretary-General, Ban Ki-moon: "ITU is one of the very important stakeholders in the area of climate change."

- Methodology to describe and estimate present and future user [energy] consumption of ICTs over their entire life-cycle
- Smarter standards for greener systems
- Participation in COP15

Participants in Focus Group ICT and Climate Change

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Universal charger

- L.1000 – an ITU standard
- Delivers 50% reduction in standby energy consumption, eliminates 51,000 tonnes of redundant chargers, and cuts GHG emissions by 13.6 million tonnes CO_2 annually

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Emergency Communications

- Common Alerting Protocol (CAP)
  - A consistent method of delivery for warning messages
- Call priority schemes
  - Giving priority in disaster zones to emergency calls
- In Case of Emergency numbers

ITU has deployed satellite terminals to help restore communications in the aftermath of disasters around the world

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ITU and IPv6

- Massive deployment of Internet-related resources=depletion of IPv4 addresses
- ITU actively promoting IPv6 deployment

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Accessibility

- Champions principles of inclusion and Universal Design enshrined in the UN Convention on Rights of Persons with Disabilities
  - Preceded UN Convention by 8+ years with the **ITU-T F.703** *Total Communication* concept applied to multimedia systems and services
- ITU includes accessibility features in all its standards
- Advocacy has become the thrust of ITU accessibility
- Established a group to coordinate activities on accessibility
  - Dedicated TSB staff to lead effort on accessibility
- ITU initiated the Dynamic Coalition on the Internet and Accessibility at the Internet Governance Forum (IGF)
- World Telecommunication Standardization Assembly (WTSA-08) adopted the first ITU Resolution recognizing the importance of the work on accessibility

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ITU-T and Academia

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Academia & ICT standardization

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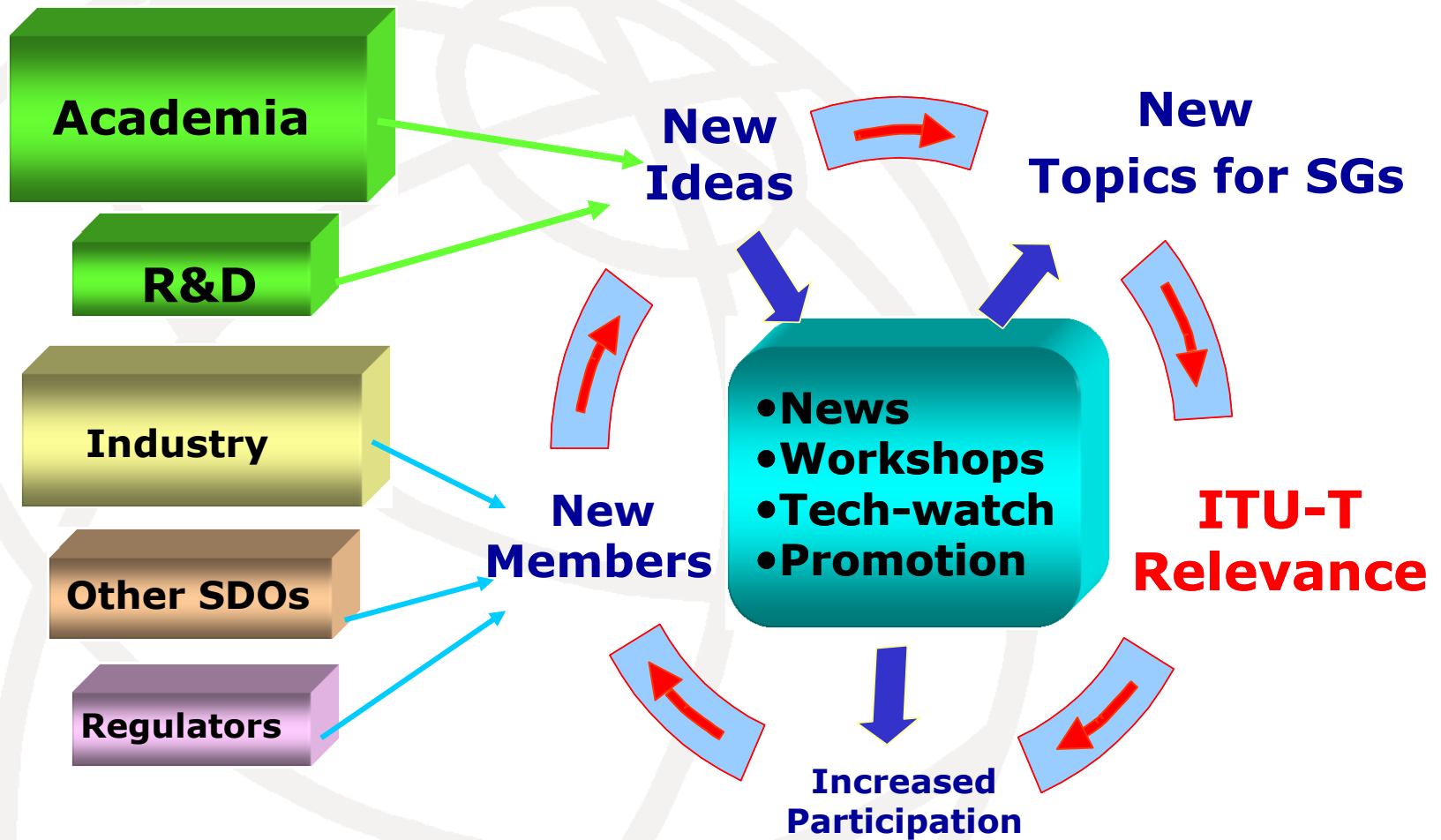
ITU-T and Academia

- Important pool of **technological innovation** largely untouched in the standards development process
- Consultation meeting in Jan 2007
- List of actions to be pursued
  - Kaleidoscope conferences (Done! 2008, 2009, …)
  - New membership category (Done! 2010)
- To follow:
  - Structured **education** about standardization
  - Increased **presence** in academic environment
  - Develop **attractive environment** for increased participation of academia (pre-standards, recognition of contribution, internships, visiting scholars)

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New membership category for Academia

- Membership fee:
  - Universities/institutes from developed countries – CHF 3'975
  - Universities/institutes from developing countries – CHF 1'987.50

- Can participate in all ITU-T Study Groups (*like Sector Members*), but with some limitation on the roles it can take (*like Associates*)
  - Compare to normal Sector Membership fee: CHF 31'800

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Conclusions

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Win-Win proposition

- ITU is well positioned as an excellent standards development platform

- Global, transparent, fast, affordable

- Standardization activities **relevant** to countries, industry and societies

- **Major** ICT industry **players**, 192 countries, working together

  - All members have a say… many opportunities to be explored

WHY NOT JOIN US???

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http://itu.int/ITU-T

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Extra slides

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Reduced membership fee for Sector Members from developing countries

ITU-T Sector membership fee for Sector Members from developing countries with annual per capita income of less than USD 2,000 (according to the UNDP classification):

CHF 3'975

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Current Study Groups 1/4

- **SG2 - Operational aspects of service provision and telecommunications management**
  - Service definition, numbering and routing
  - Telecommunication for disaster relief/early warning
  - Telecommunication management

- **SG3 - Tariff and accounting principles including related telecommunication economic and policy issues**

- **SG5 - Environment and climate change**
  - Electromagnetic compatibility and electromagnetic effects
  - Harmful Effects of radiation
  - ICTs and climate change
  - Recycling and e-waste

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Current Study Groups 2/4

- SG9 - Television and sound transmission and integrated broadband cable networks
  - integrated broadband cable and television networks

- SG11 - Signalling requirements, protocols and test specifications
  - Signalling and protocols
  - Intelligent networks
  - Test specifications

- SG12 - Performance, QoS and QoE
  - quality of service and quality of experience

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Current Study Groups 3/4

- SG13 - Future networks including mobile and NGN
  - Future networks and NGN
  - Mobility management and fixed-mobile convergence

- SG15 - Optical transport networks and access network infrastructures
  - Access network transport
  - Optical technology
  - Optical transport networks

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Current Study Groups 4/4

- **SG16 - Multimedia coding, systems and applications**
  - Multimedia coding, systems and applications
  - Ubiquitous applications ("e-everything", such as e-health)
  - Telecommunication/ICT accessibility for persons with disabilities
- **SG17 - Security**
  - Telecommunication security
  - Identity management (IdM)
  - Languages and description techniques

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Promotion:
Use of social media …

ITU-T and Wikipedia. Many entries updated

Newsfeeds picked up in media all around the world

Social bookmarking

ITU YouTube channel

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Promotion: Feeding the press

Programme of global
media briefings

Unprecedented levels of worldwide coverage on
Universal Charging Solution.
The story was the number one most read story
on the BBC News site.

In the run up to COP-15 a pro-active media
engagement policy led to global coverage of
related ITU activities in many places

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CTO: Advisors Group

Identify and coordinate standards priorities and ways to best meet the needs of the private sector.

- **Geneva, 8 October 2009** — 19 CTOs from key ICT players called upon ITU to provide a lead in an overhaul of the global ICT standardization landscape.
- **Paris, France, 29 October 2010**

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Work in Focus Groups

- Works on a **well-defined topic**
- Work in a scheduled **time-frame**
- Esthablish **its own working methods**
- **Non-ITU Members** can participate

- **Output → "ITU-T Specification"**
  (not Recommendations!)
  - However, output of FG can be input to a study group to make it an ITU-T Recommendation

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Current Focus Groups

- Focus Group on Car Communication (FG CarCOM)
- Focus Group on Future Networks (FG FN)
- Focus Group on Smart Grid (FG Smart)
- Focus Group on Cloud Computing (FG Cloud)

- More info: http://itu.int/ITU-T/focusgroups

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Joint Coordination Activities

- Currently **nine** JCAs (www.itu.int/ITU-T/jca)

- **Management tool** when subject spans more than one study group

- **For coordination** and planning,
  - Technical work done by the study groups

- **External organizations** can join a JCA

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Current Joint Coordination Activities

- ICT and climate change (JCA-ICT&CC)
- Telecom Management (JCA-Mgt)
- Accessibility and Human factors (JCA-AHF)
- Identity Management (JCA-IdM)
- Network Aspects of Identification Systems (including RFID) (JCA-NID)
- IPTV (JCA-IPTV)
- Conformance and Interoperability Testing (JCA-CIT)
- Home Networking (JCA-HN)
- Next Generation Networks (JCA-NGN)

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