Joint ITU - AICTO Workshop on "Interoperability of IPTV in the Arab region"

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ITU-T IPTV Standardization for Interoperability

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Introduction

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 organizations 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

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

ITU Standardization (ITU-T)

- A long history of standardization for telecommunications
- Has moved beyond its roots in pure telecommunications
- Has become a strong player in the multimedia field for many years
- ITU-T H.264 (joint work of SG16 with MPEG), Emmy award winning video codec, is a good example.

ITU-T Standardization Process

- Unlike some impressions that it is slow, closed, and rigid, ITU-T standardization process is fast, open, and flexible
- technical standards are developed, primarily by industry members, by consensus.
- It has an open (accessible from website), transparent, consensus based, fast working standards process.
- Final approval given by 191 governments around the globe (after consensus is made, it takes 4 weeks until the approval is given).
- Some groups (“Questions”) meet every month.
- Tele-conf facility is provided, and conf-calls are promoted

ITU Standards: Clear IPR Policies

- Clear Patent and Licensing policy
  - http://www.itu.int/ITU-T/ipr/
- This policy is Common to ITU, IEC and ISO
  - http://www.itu.int/ITU-T/dbase/patent/patent-policy.html.
- According to the policy, request is made for IPR declaration at each meeting.

Accessible to Many Regions

- ITU standards are translated and published in 6 languages:
  - Arabic, Chinese, English, French, Russian, Spanish
- Easily Accessible from different regions and cultures of the world
- Gapping digital divide
- Truly global provision

IPTV standardization in ITU

ITU-T's Work on IPTV

- ITU-T has been spearheading the standardization in IPTV
- Focus Group on IPTV (2006-2007)
  - Responding to market demands for standard
  - First set of draft on Architecture, QoS, Security, End-Systems and Multimedia Application
- IPTV Global Standardization Initiative (GSI) (2008-)
  - Building on the work of Focus Group, Coordinating all ITU-T's IPTV related activities
  - Comprising ITU-T Recommendations approved by six Study Groups (SGs 9,11, 12,13,16,17)
  - Every two to three months

IPTV and Next Generation Networks

- IPTV: highly visible, emerging services for Next Generation Networks
- Accelerating the deployment of NGN:
  - business case
  - principal driver
- IPTV subscriptions around the world reached 45.4 million at the end of 2010 (Point Topic, *IPTV Q4 2010 Short Report*)

Need for global standards
– *ITU: Recommendations* –

ITU-T IPTV standards

- Enable a marketplace where service providers control their platforms & offerings
  - whether traditional broadcasters, ISPs or telecoms service providers
- Lower cost of entry
- Encourage innovation
- Help mask the complexity of services
- Guarantee QoS
- Ensure interoperability
- **Ultimately:** help players remain competitive

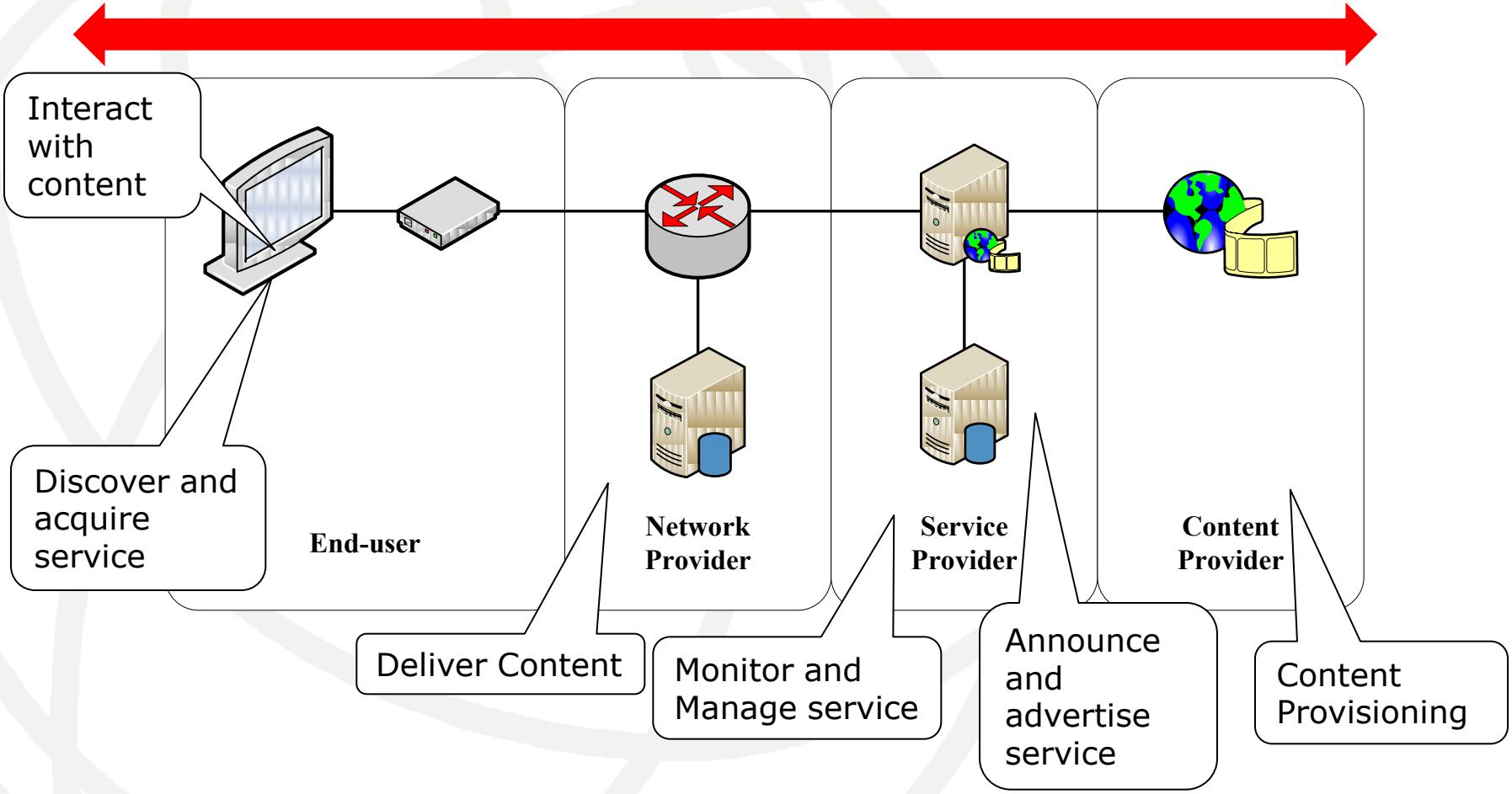
IPTV at ITU

- Defined as "multimedia services, such as Television; Video; Audio; Text; Graphics; Data, delivered over IP based networks ***managed*** *to* provide the required level of QoS/QoE, security, interactivity and reliability".
- Three IPTV Architecture Models (Y.1910):
  - Non-NGN IPTV
  - NGN without IMS IPTV
  - NGN with IMS IPTV
- Enables a progressive migration
- Promotes competition and innovation

IPTV Value Chain

ITU-T IPTV standards cover all IPTV value chain

End-to-end solution



Characteristics of ITU-T IPTV

- End-to-End Solution
- Not to "reinvent the wheels" – Use existing standards as much as possible
- Practical approach for faster deployment and for meeting industry demands
- Close collaboration with key IPTV ecosystem players:
  - Other SDOs
  - Broadcasters
  - CE manufacturers
- **Conformance and Interoperability** an Important issue testing events
- Truly **interoperable** global standard

Status

Current Status

- "Basic IPTV Service" Recommendations are ready
  - TV services, VoD & interactivity
- Advanced features actively discussed
  - **Audience measurement**
  - Digital signage
  - **3D**
  - **Internet-sourced** contents
  - Service over multiple devices, such as **Mobile**
  - Harmonization with **digital broadcasting**
- Conformance and Interoperability
  - Agenda of interoperability events (2010, 2011, …)
    - IPTV conformance and interoperability tested
  - Conformance specifications ready, more to come
  - Implementation Guidelines – ongoing work

IPTV Services discussed in ITU-T

- Linear (Channel Service) Broadcast TV
- Video On Demand (VoD)
- Accessibility: captioning, descriptive audio
- Audio services
- Karaoke, gaming
- Public Services
  - Billboards, disaster alerts, traffic news, etc
- E-*
  - E-government
  - E-publishing (e-Books, Newspaper)
  - E-commerce (banking, etc.)
  - E-learning (distance learning)
  - E-health (telemedicine, tele-healthcare)
- Private and Community Broadcasting (sharing videos)
- Photo albums (sharing photos with your friends)
- TV yellow pages
- … and much more

Adoption and deployment

- **UK**'s DTG (Digital TV Group) has adopted ITU-T Y.1910 as its Connected TV Architecture
- ITU-T **H.264** widely adopted and used as IPTV video content format
- **Singapore** recommends ITU-T IPTV for its Next Generation Nationwide Broadband Network (NGNBN)
- ITU-T IPTV Recommendations implemented, sold in the open market & deployed over **12 million terminals** (set-top boxes, TVs, PCs):
  - H.721 (terminal device), H.770 (service discovery)
  - H.761 (Ginga-NCL: Middleware), H.762 (LIME)
  - and more…
- Market deployment in **Japan** with **1.5 mil**. Subs.
- Testbeds conducted in **Singapore**, **Thailand**, etc.

Examples

T-Commerce with IPTV

Ginga-NCL (ITU-T H.761) enabling a product purchase

Purchasing Products on IPTV

LIME (ITU-T H.762) enabling wine purchase in VoD using interactivity

Fixed/Mobile Converged IPTV

Ginga-NCL (ITU-T H.761) using mobile terminal to display content metadata without affecting main content display

Public Info Board on IPTV (Bus traffic Info)

Widget implemented with LIME (ITU-T H.762) for traffic information

- Check the route on the map
- Traffic condition of the bus routes
- Length of the Waiting queues (how long you would have to wait.)
- Signals your bus is arriving just 5 min. before the bus comes

Traffic Info Board on IPTV

Normal programme

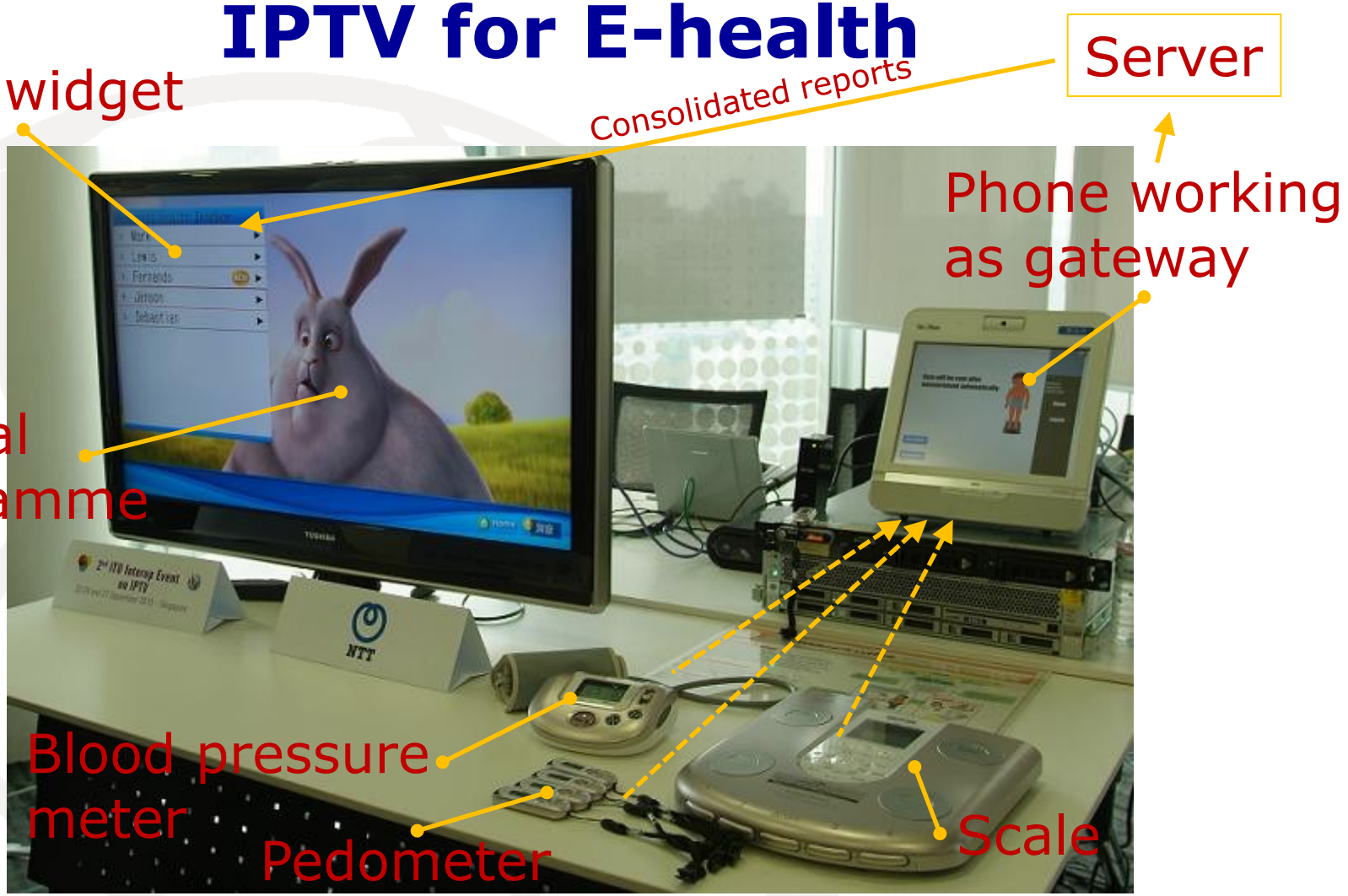
Street names

Road Map

Widget implemented with LIME (ITU-T H.762) for traffic information

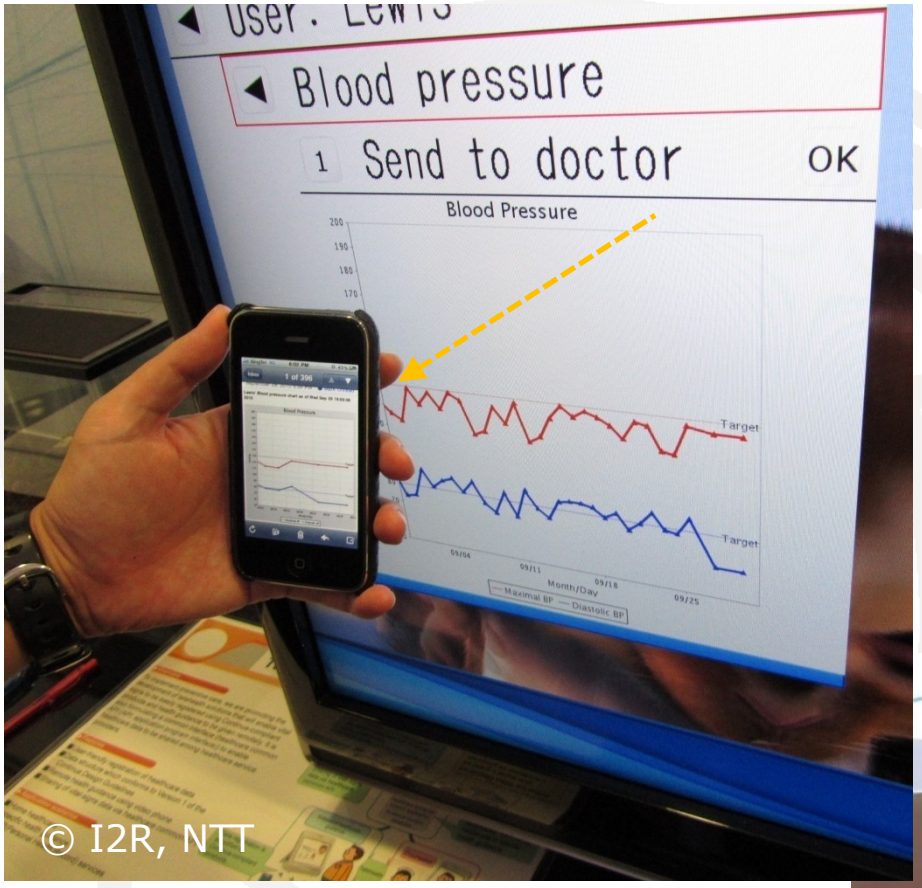
- Check the route on the map
- Traffic condition of the bus routes
- Signals your bus is arriving just 5 min. before the bus comes

IPTV for E-health



Widget implemented with LIME (ITU-T H.762) for e-health information collected from the user site, consolidated in the server backend and displayed on users' IPTV terminal device as a widget.

E-Health



LIME app does:

- Obtain health data and shows it on TV
- Allows the user to send data to the doctor via e-mail
- TV screen displays reply from the doctor with his professional advice

Private and "SOHO" Broadcasting

- Local community broadcasting and VoD service can be very easily provided with IPTV

Widget implemented with LIME (ITU-T H.762) for local aquarium information in Sendai, Japan

Standard Terminals for IPTV

ITU-T Standard IPTV Terminals

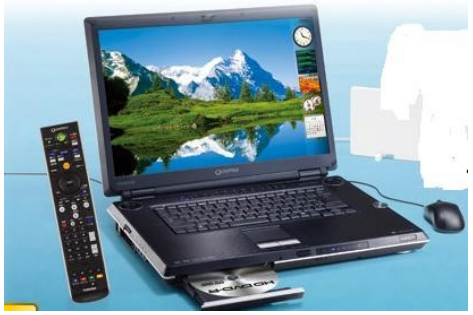
- Terminals based on ITU-T H.721 are available in the retail market
- Customer can buy a TV or PC at a shop, connect to NW, and receive an IPTV service -> guaranteed open market
- Conformance Tests ongoing to ensure conformance and interoperability

STB

Connected TV sets (also 3D!)

TV-PC

PVR



Standard Managed “Connected TV”

- ITU-T H.721 terminals support ***managed*** “connected TV”.
- Supports service discovery and IPTV portal (Interactive pages)
- requires no difficult configuration – just plug and watch

Integration of IPTV with mobile devices

Mobile Phones

Tablet PCs (i-Pad,etc.) and Smart Phone

Portable Game consoles

Laptops

Car Navigators

Portable DVD Players

Portable Dictionary

ITU –T for Interoperability

- ITU Study Groups are actively developing standards for conformity and interoperability testing – e.g. test suites for IPTV – which can be used by external certifiers.
- a publicly available database of products and services meeting ITU standards has recently been launched
- interoperability events are being held to prove interoperability of different vendors equipment including, in particular, IPTV.

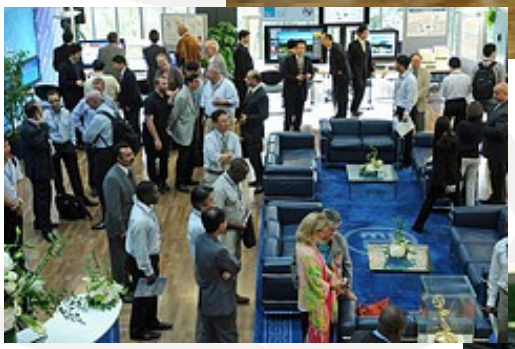
Interop Events

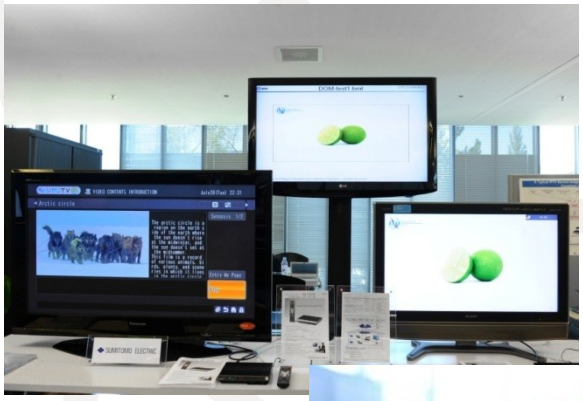
- Geneva, July 2010
- Singapore, September 2010
- Pune, India, December 2010
- Rio de Janeiro, Brazil, 18-22 July 2011
- **Dubai, UAE, 21-22 September 2011**
  - **Showcasing ITU-T IPTV Implementations in the Arab region for the first time**

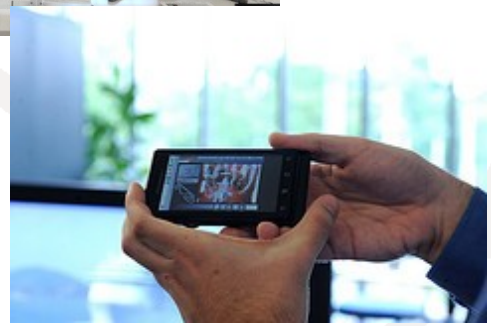
Interop Events

- Companies like Cisco, Mitsubishi, NEC, NTT, OKI, Panasonic, Sumitomo, TVStorm
  - Tested products conforming to ITU-T Recommendations
  - Showcased their solutions
- Attracting numerous participants from many countries from Africa, Asia, Europe, and Americas
- The events called the attention of various international organizations – e.g. EBU, WHO, WIPO

Interop event for IPTV in Geneva







IPTV App challenge

- Open call: promote original and creative IPTV applications compliant to ITU's suite of IPTV standards
  - ITU-T H.761 (Ginga-NCL) and H.762 (LIME) platforms
  - Criteria: Degree of innovation, level of engagement, ease of use, value to society
- Award ceremony and demo during ITU Telecom World event (Geneva, October 2011)
- Sponsorship opportunities
  - http://itu.int/en/ITU-T/challenges

ITU-T IPTV for Arab Region

- ITU-T IPTV standards are ready to be deployed in the Arab region
- It provides a smooth migration path, harmonizing and interoperate with digital broadcasting and mobile
- It is a superb way to bridge the digital divide

Conclusions

- ITU IPTV Recommendations will encourage innovation, ensure interoperability and –ultimately– help players remain competitive
- They are enablers of innovation on broadband and Next Generation Networks
- ITU IPTV (e.g. H.721) are already implemented and deployed
  - Turnkey solutions
- Interoperability events in 2010 and in 2011 and more beyond
- Open architecture of ITU IPTV standards are truly global & open standards that can be deployed across a wide range of applications

Thank you!

- For more information
  - http://itu.int/ITU-T/iptv
  - http://itu.int/interop
  - http://itu.int/en/ITU-T/challenges