ITU-T IPTV for Accessibility
-- IPTV as an Inclusive Technology--

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Topics

- IPTV as a bridge for Digital Divide
- Accessibility vs. Vulnerability
- Examples of Accessible UI on IPTV
- Conclusion
IPTV as a bridge for Digital Divide

- Human Interface is the Key for Accessibility
- Human Interface Persists
  - E.g: Keyboard
- TV as a Universal Human Interface that helps people acceptable to Information and Opportunity
Human Interface Persists

- Typewriter Keyboard is the ancestor of the present-day Windows PC and Blackberry
- For a new technology to be accepted, Human Interface should be modeled after accepted models
- Human-friendly interface is necessary for Acceptable device
TV set as Universal Interface

- Since its introduction, familiar to both Young and Old
- Accessible to a wide range of population, without special training
- It is the universal user interface for various services
IPTV as Accessible UI for all

- IPTV, with full bi-directionalitity and the UI of a TV, can become a good vehicle for Accessibility.

- But any “IPTV” cannot be as dependable.
Accessibility vs. Vulnerability

- As things become more accessible, people become more vulnerable
- Security and control becomes an important issue
- This is true especially for the elderly and people with difficulties
Accessibility vs. Vulnerability

- Consumer frauds often target the elderly or disabled
  
  http://www.chicagobusinesslitigationlawyerblog.com/2010/01/consumer_fraud_increasingly_t_a.html

- Accessible consumer devices, such as connected TV, can make certain classes of people more vulnerable
Danger of Internet-based On-line service

- **April 2011**, Sony’s PlayStation Network was attacked by computer hackers. **Sony Online Entertainment** was also breached.
- the number of hacked accounts having now been increased to 101.6 million.
- The hacked personal data included customer names, addresses, e-mail addresses, gender, birth dates, phone numbers, log-in names, and hashed passwords.
- Cost to Sony is estimated up to **$32 billion** in terms of total costs involved in dealing with the consequences of losing control of customer data.
Managed IPTV for Accessible Services

Importance of Managed Service
Accessibility in ITU-T IPTV

- ITU-T F.790 (Telecommunications accessibility guidelines for older persons and persons with disabilities) provides the framework for accessibility.
- ITU-T FSTP-TACL (Telecommunications Accessibility Checklist) provides the check-list for Accessibility features.
- ITU-T Y.1901 (IPTV Requirements) specifies detailed requirements on accessibility features and universal design.
- ITU-T H.750 (Metadata for IPTV) also has “Public Interest metadata” which includes accessibility related features.
- ITU-T H.721 (IPTV Terminal Devices) recommends “Public services” such as closed-captioning, subtitles, audio description and sign language interpretation according to the above checklist.
Examples of Accessible UI on IPTV -- IPTV as an Inclusive Technology--
IPTV Interactive Shopping

- **Japanet Takata**, 3rd largest TV shopping channel in Japan, has an interactive shopping channel on Hikari TV Platform.
Enhanced e-book on IPTV

- Many publications are already being made with Digital technology.
- Automatically converting data made by DTP (Desk-Top Publishing) Software can make “Enhanced e-book” on IPTV

LIME content from a picture book:
- Easy way to make an interactive content for e-learning
Clinics Watch: Monitor App on LIME

Widget showing the monitored picture of various Clinics, with updates a few minutes.
IPTV with a camera

IPTV with the help of external devices such as camera, weight scale, etc., can provide a wide range of services with Accessible UI.
Person Recognition on IPTV
Recommendation using Person Detection
IPTV for E-health

IPTV widget

Server

Consolidated reports

Phone working as gateway

Normal programme

Blood pressure meter

Pedometer

Scale

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.
Accessible 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

Such an application is extremely useful for patients with chronic ailments, such as diabetes.
Remote Power Control on IPTV (1)
Remote Power Control on IPTV (2)
Surveillance on IPTV -- fall-detection --
Surveillance on IPTV
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Conclusion

- IPTV can be a UI that bridges digital divide
- Standardized, Managed IPTV is important for Accessible UI
- There are already many ITU-T IPTV Applications and Use cases that provide Accessible UI to individuals.