ITU Workshop
Future of Cable TV

Innovative, Multi-platform TV Viewing Experiences

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Motivation

Innovative viewing experiences? Why Cable TV Network Operators would be interested?

Cable TV Network Operators are privileged

- They securely know details about the end user (Personal information, History…)
- They know details about all the packaged content (Linear/VoD/Apps metadata)
- They usually own the consumer equipment (Add as much value as desired)
- They manage the network

With that amount of data and manageability…

- New business models can arise with the incorporation of trending ICT to existing and new Cable TV services

1) Multi-sourced content

Connected, Hybrid Terminal Devices (Cable, FTA, Web, IPTV…)

- Multi-sourced content, multiple services (Linear TV, VoD, Apps…)

Technology: Integrated Broadcast-Broadband (IBB)

- Rep. ITU-R BT.2267, Rec. ITU-R BT.2075
- HbbTV - ETSI TS 102 796 V1.4.1
- HybridCast - ARIB STD-B62 V1.0
- TOPSmedia - TTAK.KO-07.0111/R1
- Ginga – ABNT NBR15606, ITU-T H.761

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2) Seamless experience

Switching between services, contents, must be smooth for the end user

- All-IP service can improve smoothness. IPTV is an option (ITU-T H.700 series)

What about recommending content to the end user?

- Portals can recommend Linear TV/VoD content, based on algorithms and contextual data
- Recommendations also in real time, as notifications
- End user may loose the perception of content sources

Technologies:

- Recommender systems
- Artificial Intelligence, deep learning

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3) Companion Devices

User interaction can be transferred to secondary devices

- Portals, notifications, content selection, additional content, device switching
- Part of IBB requirements
- May add different levels of immersive content

Technologies:

- Augmented Reality
- Virtual Reality
- Device synchronization

4) UHDTV

Video enrichment layers may be provided from different sources

UHDTV resolutions may not be only better video quality

- Interactive, immersive content based on UHDTV delivery are possible

Technologies:

- 360º video
- Free Viewpoint video
- Scalable video coding (SVC)
- ITU-T H.265

5) Enhanced user interface

Remote controller, voice, gestures may not be enough if used separately

- Advanced and Immersive applications will require new forms of user interaction

Technology: Multimodal interaction

- Interaction based on the combination of inputs of different kinds
- e.g: Pointing to a product on the video and saying “Buy that!”

6) E-THINGS

Cable TV terminal devices can be connected sensors and actuators

- It may become the home automation control system as a value-added service

It enables e-health applications

- Blood pressure, heart, glucose monitor devices etc.

May be used for more immersive experiences

- Lights, Thermostats, Wind, Smells etc, may be syncronized with the content

Technology: Internet of (media) things

Conclusion

These innovative TV experiences have something in common:

- They must be supported by the **software components** in a Cable TV service architecture

Some mentioned ICT are becoming mature...

- But currently there is no application framework for TV that addresses all the discussed features

Some IBB systems are consistently evolving

- Follow IRG-IBB work and its recommended systems:
- HbbTV - ETSI TS 102 796 V1.4.1
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Thank you!

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