IPTV - Technology and regulation

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Overview

- Definition
- IPTV Technology
- Convergence
- Development of broadband and IPTV
- Media market
- Challenges for development of IPTV
- Regulation of broadcasting
- IPTV regulatory issues
- Conclusion

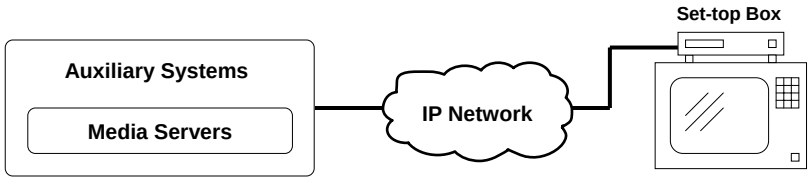
Center for Information and Communication Technologies Technical University of Denmark

Definition

- **IPTV is a disruptive technology, which is a perfect example of materialisation of convergence with huge implications for the regulatory framework. IPTV is a broad concept which includes the following service:**
  - **IPTV over managed networks (IPTV):** IPTV provided over managed networks
    - Linear/Nonlinear, live TV/on demand
    - Mostly professional made but room for User Generated Content
    - Same or even better quality than traditional TV
  - **Internet TV:** IPTV provided over the Internet
    - Mostly nonlinear and on demand.
    - Increasingly User Generated Content, but also professional made content
    - Reduced quality
  - **Mobile TV**: IPTV provided over mobile or broadcast networks
    - Linear/Nonlinear, live TV/on demand
    - Mostly professional made but room for User Generated Content
    - Can be a version of IPTV: like DVB-H IPDC or DAB-IP. Other standards: DMB and MediaFLO
    - Reduced quality but mobile consumption

IPTV Technology (I)

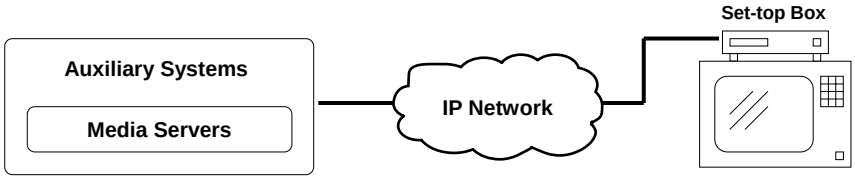
- Major characteristics



- Moving from several dedicated networks (silos) to converged multipurpose networks
- IP networks have different technical characteristics than old Broadcast networks (e.g. two-way interactive)
- The resulting IPTV services are extensions to TV but also a competitor
- New distribution methods affect market situation and TV value-chain
- Regulation affects all of the above

IPTV Technology (II)

- Main components



IPTV Systems

- Coding
- Media Servers
- Auxiliary Systems
- Standardisation

IPTV Networks

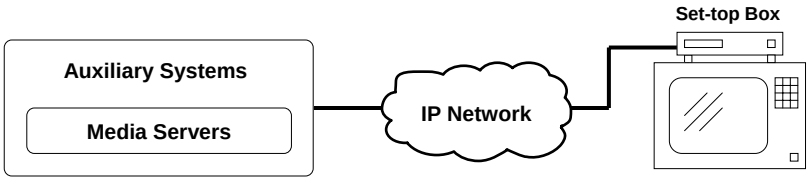
- Broadband Development
- Types of infrastructures
- Managed Platforms vs. Internet

Set-top Box

- Decoding
- Representation
- Interactivity

IPTV Technology (III)

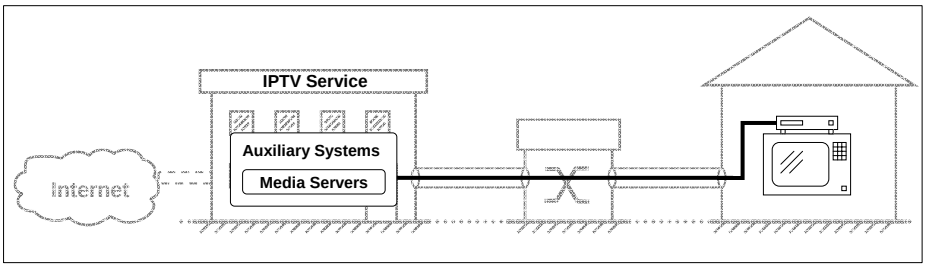
-Standardisation



- Elements of IPTV, such as coding, are standardised, however standardisation is a major problem
- Standardisation bodies such as IETF and ITU-T are working on IPTV standardisation
- Most current implementations are based on proprietary solutions

IPTV Technology (IV)

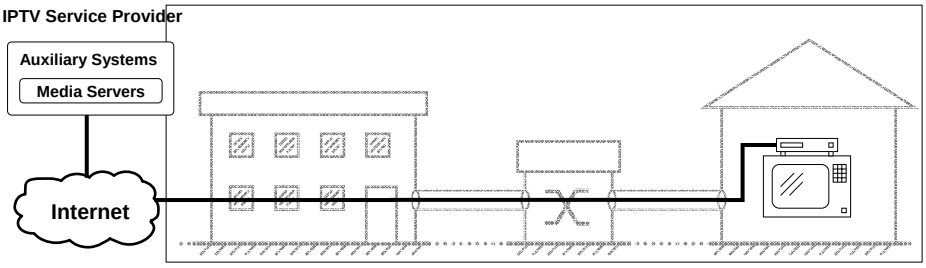
-Managed IPTV



- Managed IPTV uses dedicated IP infrastructures
- Local reach
- QoS, Security, Multicast
- Open or closed

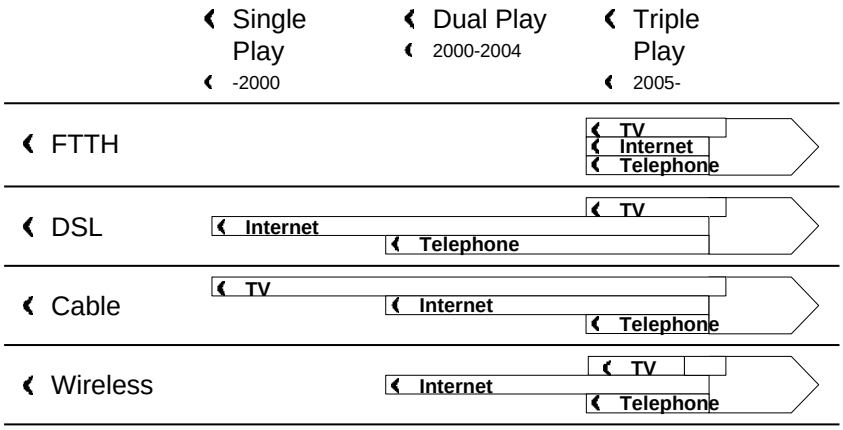
IPTV Technology (V)

- Internet IPTV



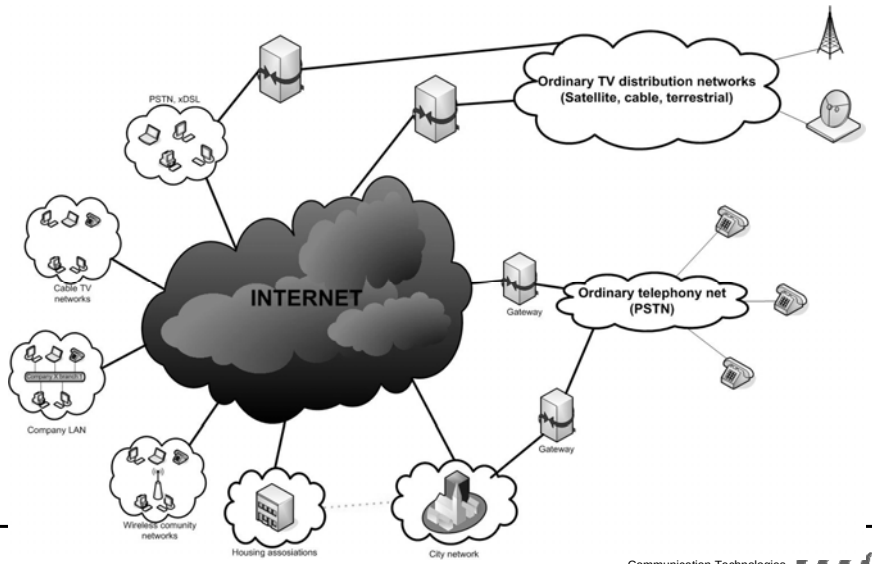
- Internet IPTV Uses the Internet as a platform for delivery of services
- Business model is mainly based on different 'Internet models'
- Global reach
- Best effort
- Open: Huge potentials for service innovation

Convergence (I)

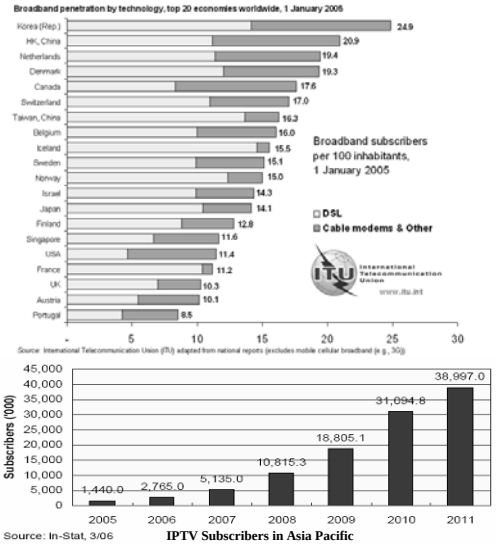


Based on Henrik Clausen, IDC Telecom Conference 2006

Convergence (II)

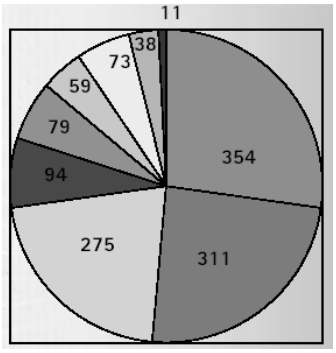


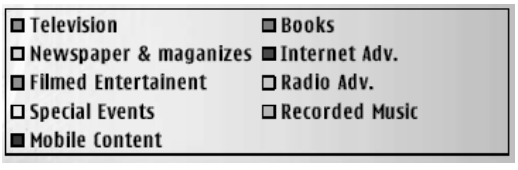
Development of broadband and IPTV



- Broadband is developing rapidly, both in terms of penetration and bandwidth
- Huge potentials for telcos and other broadband providers to include services beyond voice and Internet access.
- IPTV gives the telcos access to the E- media market (app. $8 bn in 2011 in Asia/pacific (Source Ins-stat))

Media market





- World Media Market 2006, €1300 bn
- TV - the largest Segment
- IPTV - more than TV, will include other parts of E-media market

Source: Price Water house

Challenges to development of IPTV

- Technological
  - Minimum bandwidth of 20 Mbps
  - End-to-End QoS provision
- Economic
  - Cost
  - Business model
  - Complementarity versus competitiveness
- Regulatory/policy
  - Several parameters, which are the subject of the rest of presentation

Regulation of broadcasting (I)

- Technological parameters
  - Resource scarcity
  - Interference.
- Economic parameters (Mainly market failures)
  - Public goods: *non-exclusivity* (once a good is produced nobody can be excluded from using it) and *non-rival consumption* (additional consumers can use the good / service at zero marginal cost)
  - Externality
  - Natural monopoly: Economy of scale / scope
  - Asymmetrical information
  - Vertical Integration & Horizontal concentration

Regulation of broadcasting (II)

- Content specific (political) parameters
  - Decency, ban on offensive content, regulation of commercials, protection of minors, consumer protection, plurality, cultural development, ….
  - The media can be used by children and people unable to read, therefore it is:
    - Optimal media for education (and propaganda /thought control)
    - Optimal media for development of cultural and language-related issues as well as handling security specific tasks
    - Optimal media to develop democracy and overall political goals.
- Historical parameters
  - Emergence from telegraphy.

Regulatory issues of IPTV (I)

- **Convergence:** Institutional barriers and the fragmented regulatory situation. The institutional setting is identified as one of the main barriers for the creation of an efficient framework for the development of IPTV services.
- **Licensing, authorisation, registration**. Different countries use different approaches creating varying levels of barriers.
- **Organisation of services and bundling**. Because cable TV has been treated as a local monopoly, there have been strict rules on the organisation of services. This may change and we may see a development from tiers/packages to 'à la carte'. This depends on the attitude for content providers and regulators.

Regulatory issues of IPTV (II)

- **Standardisation and interoperability**. A number of different standards are available for IPTV. Here, there is a huge challenge for the industry and regulation to create **open standards** as well as creating **interoperability** between different standards.
- **Rights issues and DRM (Digital Rights Management)**. The rights issues become increasingly important when we move to the IP platforms. This is definitely a barrier for development, but can be turned into a driver.
- **Retransmission of terrestrial signals**. The success of IPTV depends on the content. Here, retransmission of terrestrial content will play a major role.

Regulatory issues of IPTV (III)

- **Must carry**. Cable operators will require a level regulatory playing field.
- **Set-Top-Boxes**. By developing multi platform set-top-boxes, the industry can contribute to the creation of more choices and better utilisation of resources.
- **QoS**. QoS is mainly a parameter that will be handled in the managed IP network. QoS may become a regulatory parameter
- **Content:** related issues. Issues like culture, language, and industry protection are as important in the IPTV world as in other technology areas.

Regulatory issues of IPTV (III)

- **Industry protection**.
  - Evidence shows that IPTV development is not a priority because governments seek to protect cable TV operators and their investments.
  - We see also that governments protect their investment plans for DTT (Digital Terrestrial Television)
  - In this respect IPTV may be seen as a disruptive technology
  - **However**, IPTV is future-oriented and has huge potential. Also from an industry development view. Regulators and policy makers can allow room for healthy development of the IPTV market.

Conclusions

- Market potential for IPTV is high
- The demand side has shown a huge interest
- Telcos and broadband providers see this as an important chance to expand their market
- IPTV is more than just another platform for broadcast TV
- IPTV is not only part of the TV market. IPTV will take part in the E-media market and expand it.
- To reap the potentials there is need for an efficient regulatory framework for converged services like IPTV. The case studies show that there is, a.o., need for:
  - Common definitions and a common regulatory framework regardless of technologies
  - Convergence of institutions
  - Resolving content rights issues
  - Putting standardisation and interoperability on the agenda
- However its is also important to have cultural, consumer protection and societal goals and utilise the capabilities of the technology to promote local content, etc.