New Flavours in IPTV service provisioning

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Presentation Outline

- Who we are
- Why IPTV?
- What is an IPTV solution?
- What (network) requirements IPTV has?
- Evaluating an IPTV solution
- Scenarios of an IPTV service offering
- What OTE is doing towards IPTV
- Conclusions

OTE Access Networks Lab

- Study and Evaluate (maturity, compatibility, manageability etc) of new Access Networking Technologies and Services (ADSL2/2+, IPTV, VDSL2, etc.)
- Study, Design and Evaluate implementations of new Access Network Architectures and Services
- Initiate Pilot implementations of new technologies
- Perform evaluation and interoperability tests of equipment and solutions before they are deployed

Why IPTV?

- Hollywood studios consider it as a secure solution
- Providers wish to offer more advanced services and enrich their clientele and reduce the churn
- New technologies are able to support demanding multimedia services

IPTV is here!

Almost every Telco invests in IPTV:
282 trials / services today worldwide[1]
35 out of 40 bigger Telcos are already in a Trial phase[2] ...

Sources: 1. Multimedia Research Group, Sept 05; 2. Accenture

What is IPTV?

- ***IPTV*** (Internet Protocol Television) is the delivery of digital TV and other video services over a broadband IP network
- Additionally, many other services can be offered via the same infrastructure
- Combined with VoIP and Internet it constitutes what we call a ***Triple Play*** service.
- Triple Play services are considered as the most promising product for the near future.
- Currently, practically all the fixed line operators are involved in IPTV projects (most of them in a pilot phase).
- The question is whether the technology is mature enough for a successful service offering.

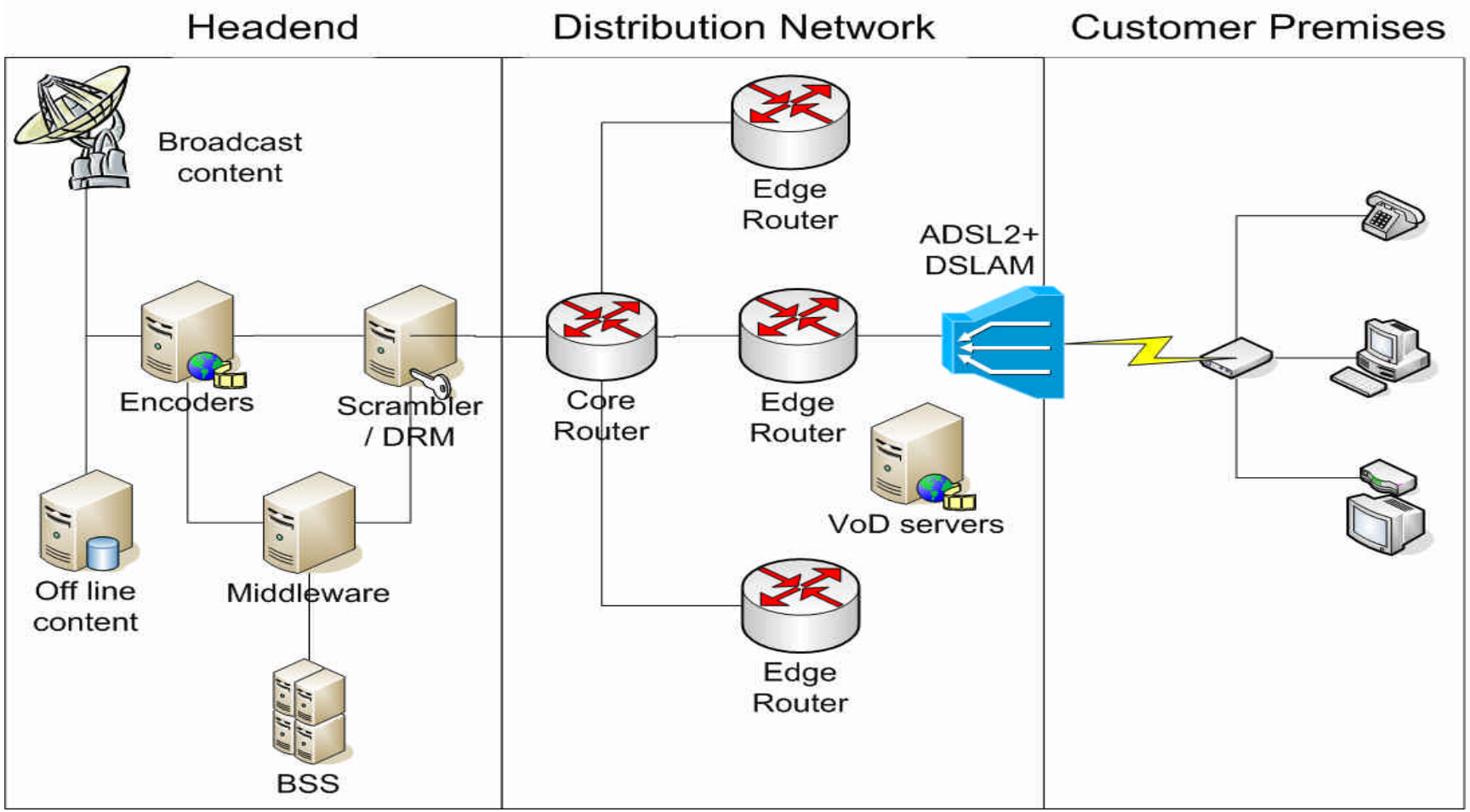
What IPTV offers

- Time-Shifted TV
- EPG with live video
- Picture in Picture (PiP)
- Mosaic
- Targeted Advertising
- Personalized Channel selection
- Accurate customer data and preferences
- Parental controls
- Multilingual interfaces
- Content Security
- Internet browsing
- Walled garden services
- Gaming
- Betting
- Music
- Content sharing (music, photos etc)
- VoIP
- Caller ID display
- Call forward
- Video conference
- Email

What is an IPTV platform?

- An IPTV service requires the necessary network infrastructure and the operation of an *IPTV Platform*
- An IPTV Platform is a heterogeneous solution, consisting of many elements covering the end-to-end production and management of content.
- Typically, it consists of:
  - IPTV Head End
  - VoD Production
  - CA/DRM
  - Streamers
  - VoD Servers
  - Provisioning Systems
  - Billing (or mediation)
  - STBs

Abstract IPTV Architecture



Evaluating IPTV

- The following IPTV features need to be evaluated individually (and as a whole):
  - Head-End (MPEG-2, MPEG-4, H.264 or WM9?). What about HDTV?
  - CA/DRM/Digital Watermarking (Which One? Impact on Content Agreements)
  - Middleware (perhaps the most critical decision)
  - Time-Shifting/N-PVR/VoD (scalability, resilience, load balancing, content management, etc.)
  - STBs and CPEs (QoS support, Upgrades, Cost, Decoding capabilities, Hybrid boxes, SIP, Local Storage, PC connectivity, etc.)
  - Zapping Time (Standard IGMP? Proprietary mechanisms?)
  - Value-Added Services (current and future)
  - Licensing scheme (serious impact to the total cost)
  - Customization (SDK provided? Can be done in-house?)
  - Integration with existing systems (Billing, CRM, SLA, Inventory, Activation, etc)
  - Access and Aggregation Network Requirements (PPP vs. DHCP, Multicasting, QoS, Bandwidth vs. Distance, etc.)
  - Home Networking Requirements (Wireless? Over power cables?)
  - Scalability (most of the existing solutions have relatively small deployments)

IPTV challenges

- Rich Content
- Security
- Customization
- Time to Market for new services
- Integration with existing systems (e.g. IT)
- Migration of legacy systems (e.g. ATM DSLAMs)
- Network QoS
- Zapping Time
- Home Networking
- STBs
- Network and Systems Management
- Successful Business Models
- Tarrifs
- Regulation
- IPTV is both a Technological and Commercial Challenge!

Some IPTV Scenarios

- Telco vs. Content Aggregator
- Services offered
- Broadcast TV vs. Pay TV
- VoD and nVoD
- Pay-Per-View
- PVR vs. N-PVR
- Time-Shifted TV
- Retail vs. Wholesale
- PPP vs. DHCP
- Wireless vs. Ethernet over Power

What we do

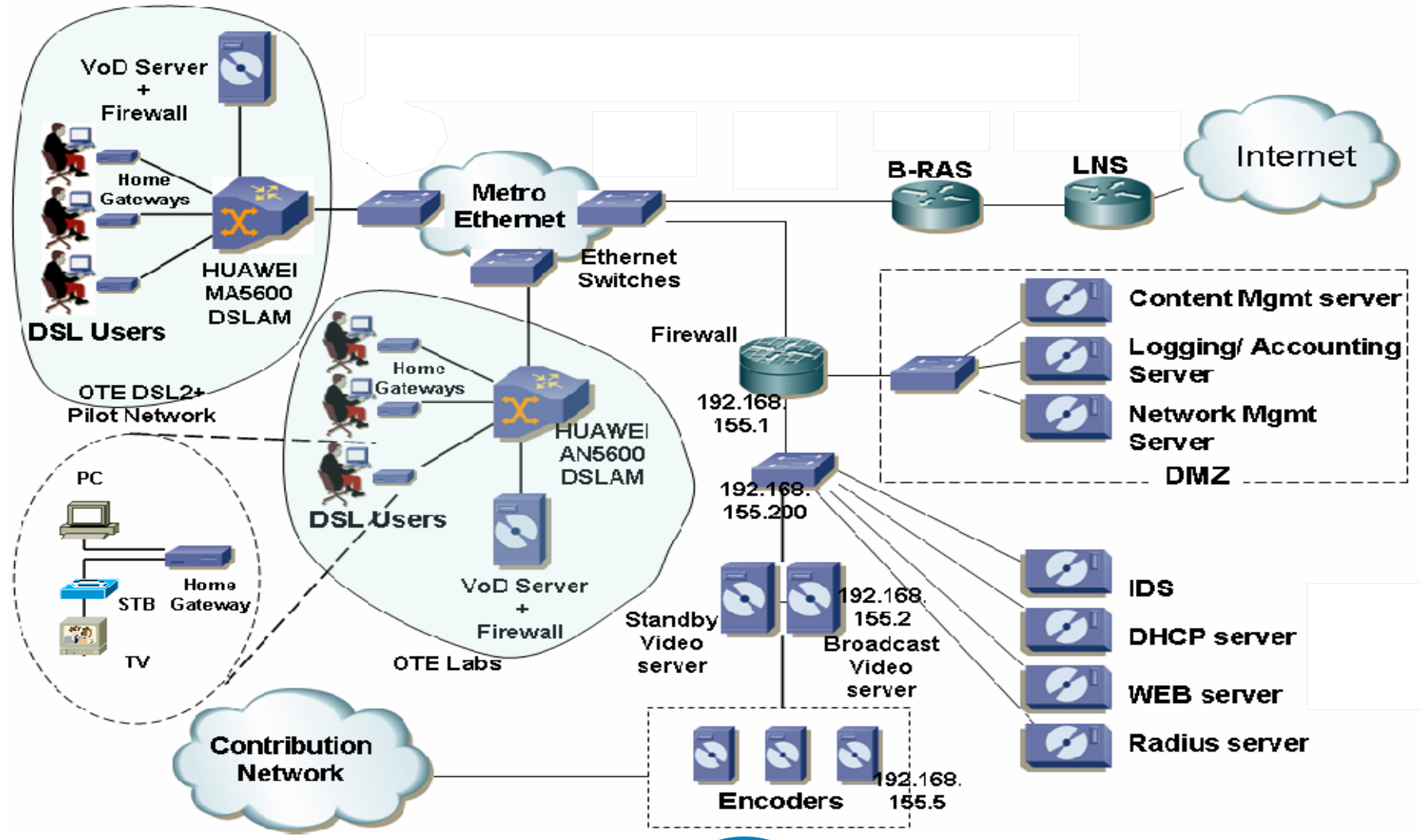
- OTE is investigating IPTV technologies for about a year
- In the meantime we are working towards a content agreement
- We plan to run a **Lab Trial** in order to evaluate the most prominent IPTV platforms.
- In that respect we have installed a Lab miniature of the Network and IPTV infrastructure which allow us to evaluate the network characteristics and configurations but also potential IPTV platforms.
- Then we will run a short-term **IPTV Pilot** in order to investigate issues related both to technology and to customer experience
- Currently OTE is in the process of deploying the necessary network infrastructure for Triple Play services (Metro-Ethernet networks and IP-DSLAMs).
- Also OTE participate in the *EU IST project* ***DESEREC*** which investigates the Dependability, Resilience and Security aspects of Critical Infrastructure (IPTV is the use-case) and aims to build a framework and tools to protect such systems.

DESEREC Consortium

DESEREC

Dependable Security by Enhanced Reconfigurability

OTE IPTV Testbed

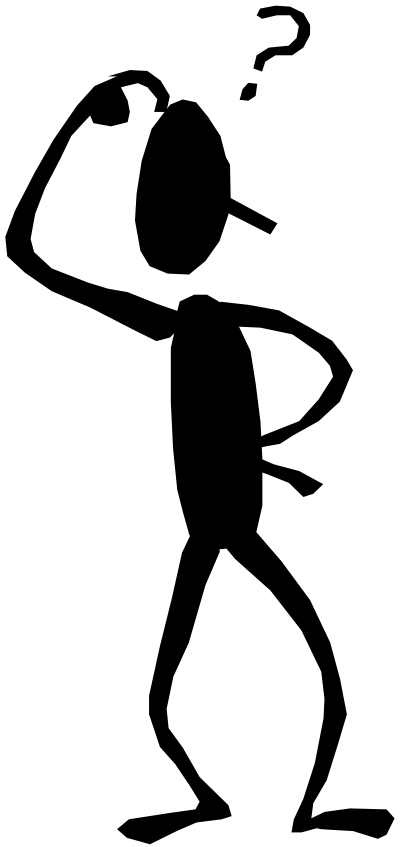


Current Work

- IP DSLAMs Testing (Configuration and Performance)
- Metro Ethernet Testing
- BRAS testing
- Video Quality Testing
- L2 & L3 QoS
- IP Multicasting (Mcast Routing, VPNs etc.)
- Security
- Dependability / Resilience scenarios & tools
- Provisioning
- CPE testing
- Integration with IT infrastructure (Network Inventory, Service Activation, Billing, etc)

Conclusions

- IPTV is perhaps the most promising new service for Telcos (fixed line and perhaps wireless)
- IPTV incorporates many heterogeneous technologies
- Relevant platforms are not very mature but they evolve very quickly
- Broadband Networks are stressed in terms of bandwidth, quality and scalability
- The Evaluation of IPTV is a complicated and demanding process, involving expertise from many disciplines
- A successful service may require major re-engineering within a Telco



Thank you!

Questions?