IPTV Technologies
and
Deployment Challenges

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Outline

- What is IPTV?
- Market Drivers
- Triple Play/IPTV – A Quick Introduction
- Technology Enablers
- Network Transport Architectures
- Challenges
- Competitive Threat
- IPTV Vendors and Service Provider Strategies
- Conclusion

IPTV Market Drivers

Declining Voice Business

Voice revenues are the Telco cash cow

However, steady erosion from VoIP and wireless

Forecasts show year-over-year revenue drop for North America (Yankee Group, 2004)

Year	Consumer ($ B)	Business ($ B)
2003	74.4	62.2
2004	69.8	59.9
2005	65.4	57.9
...		
2007	57.2	54.0

VoIP Attack!

- Cable Multiple System Operators (MSOs) and Independent VoIP providers *(e.g. Vonage)* offering residential and enterprise voice services
  - Attractive w/ *Call-waiting, Caller-Id* etc. for < $30
- VoIP subscriber growth predictions (Yankee group):

Year	US (Thousands)	Global (Thousands)
2004	565	997
2005	1791	2992
....		
2009	17091	31404

Higher ARPU in Video Business

Customers also willing to pay more for video

Surveys show compared to voice spending alone (~$50/month), ARPU for:

- Voice + Data: 2x Voice
- Voice + Data + TV/Video: 4x Voice

By offering Pay-per-view and Video-on-Demand, TV providers also expecting to grab share of the video rental market (e.g., Blockbuster)

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Bundling Offer:
Triple Play – Voice, Video & Data

Bundling of services enables lower package price

- Translates to reduced cost for customers
- Drives higher ARPU on the customer base by selling multiple services

Lowers customer churn

- *Cox Communications* reported reduction *50%* reduction in customer churn (Instat/MDR 2003)

Allows operational efficiencies from the integration of OSS systems

Reselling partnerships with Satellite a stop-gap triple-play offer

So, Why Now?

- Telcos have to defend their territory
  - Survival, no longer a matter *choice*
- FCC's unbundling relief to ILECs for Fiber to the curb deployments
  - Clears the regulatory uncertainty holding the fiber deployment by RBOCs
- DSL advances *(ADSL, ADSL2+, VDSL)*
  - Higher bit rate, better reach
- Mature video standards *(MPEG-4 H.264)*
  - Halved bandwidth requirements

Telco Fight Back..

Bell South CTO Bill Smith (Lightreading.com, 7/15/2005):

"From a competitive perspective, voice over IP has been a very good vehicle for cable companies to come in and attack our core business. I think IPTV may be an equally good opportunity for us to go in and attack their core business."

But, no illusions about the rocky road:

- VoIP: 8 Kbps, 3min (avg call), IPTV: 6+Mbps, 24x7
- Consumer VoIP entry as 2nd line
  - *Only one TV service* into the home (i.e., quality is key!)

IPTV: Challenges and Opportunities Galore!