Session 2:
Latest developments in Home Network Transport Technologies

Stephen Palm Ph.D.
Principal Engineer
Broadcom
p a l m @ broadcom . com

Home Networking and home services

Session 2 Presentations

- Wireless and Coax Transport
  Mr S. Palm, Broadcom, USA
- Home Phoneline Transport
  Mr K. Minami, E-Connections Ltd., Japan
- Optical and other Transport
  Mr M. Shikada, NEC, Japan
- This road is a road once we have come in sometime
  Mr K. Yamamoto, Matsushita Electric, Japan

Home Networking and home services

Highlights from Presentation 1 "Wireless and Coax Transport"

- Wireless and Coax deliver high throughput with quality
- No new wires
- Multiple use
  - Digital Video to multiple TVs
  - Data to PCs , PDAs
- Quality of Service
  - Prioritized delivery

Home Networking and home services

Highlights from Presentation 2 "Home Phoneline Transport"

- HomePNA 3: Third generation copper based transport technology
- Master-controlled, peer-to-peer communication
- Synchronous and Asynchronous MAC Protocol
- 82% of paths >= 96 Mbps

Highlights from Presentation 3 "Optical and other Transport"

- Home network transport migration scenario
  - Stage 1 : No network interconnection between broadcast and internet
  - Stage 2 : Home server works to interconnect broadcast (IEEE1394 base) and internet (Ethernet)
  - Stage 3 : Broadcast and internet are integrated with the same protocol
- Observations from Field Trial
  - Merits of home networking - Easy access to TV and video from any place in home
  - Issues of home networking - Easy setup, easy operation, plug and play, easy maintenance
  - Summary of interview - Require easy operation more than multi-function

Home Networking and home services

Highlights from Presentation 4
"This road is a road once we have come in sometime"

- We have traveled this road before
- First Generation home network – 1980's – HBS
- Second Generation home network – 2000's – Multimedia
- Third home network boom - 2010's - Hyper (or Seamless) media boom.
- Five keys for the success of home network
  - Strong necessity
  - One stop shop or home information pre-wiring
  - Connected to outside of the house, open home network protocols
  - "zero" cost up for interface
  - Interoperability

Home Networking and home services

Overview of issues in the session

- Common Issues
  - Service and Application Driven (Killer Applications)
  - Easy
  - Quality of Service
- Diverging Opinions
  - Which PHY(s)?
  - Which Standards Bodies?

Home Networking and home services

Recommendations

- Solve the business and technical issues for whole home video distribution
  - Business:
    - What business model?
  - Technical:
    - Strive for one (or none) connector
    - Reduce the number of PHYs

Home Networking and home services

Follow-up actions

- Create “standards” body police
  - Reduce the proliferation of standards
- Create the business model for video distribution in the home
  - Broadcast TV went from advertisement based to subscription based
  - What is the in-home business model?

Home Networking and home services

Conclusion

- Home Networking is about the Services not the Technology
  - What do users want? Good Quality Applications
    - Look and sound good.
    - They don't care about the specific home networking technology
    - They don't want to be an IT network manager
- The Transport Technology must be transparent – both cost and connectivity
  - What must engineers do? Solve the two applications that need special treatment
    - Video – large throughput
    - Voice (Telephony) – low latency and jitter

Home Networking and home services