

SCTE

Professional Development

HFC: A Winning Access Technology

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HFC: A Winning Access Technology

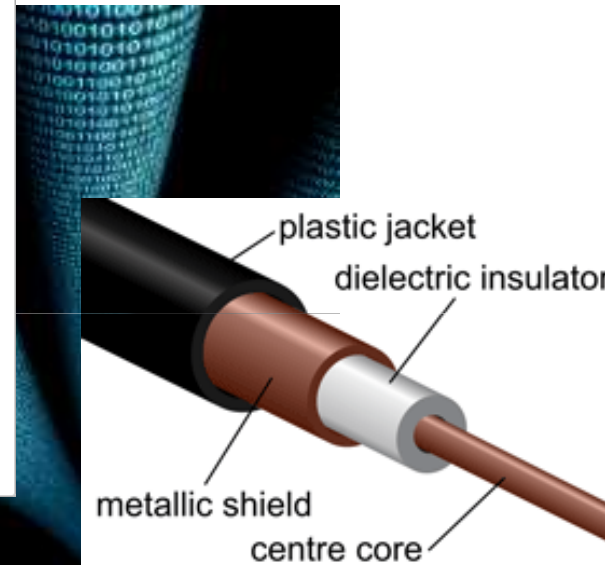
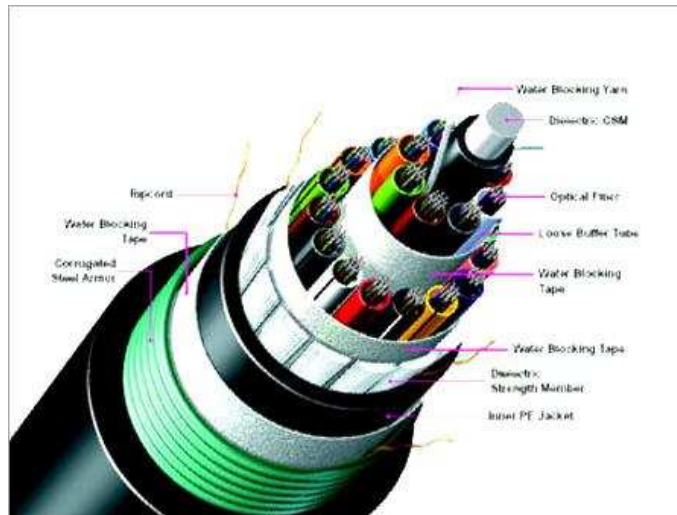
Agenda



- Introduction
- Capacity Demands
- High Speed Data Utilization
- HFC Capacity Possibilities
- Proactive Management
- Reliability Engineering

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Introduction



Coax Cable

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Capacity Demands

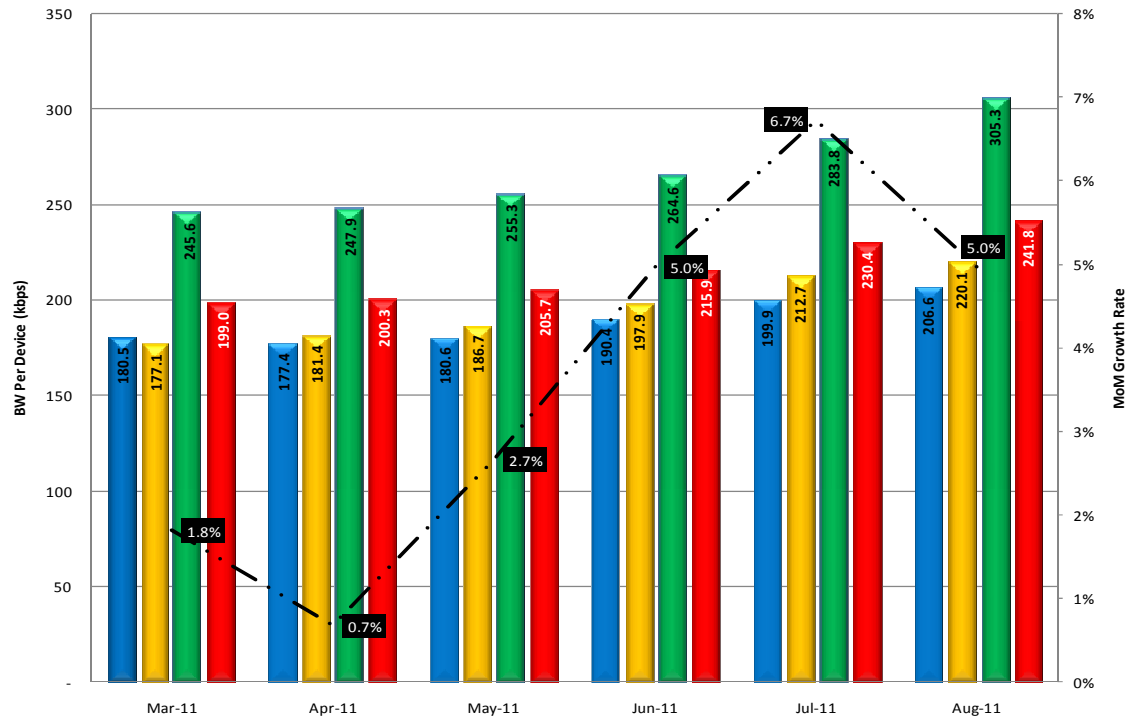


- HD to 4k HD to UHDTV
- Linear Video & SDV
- Content, Content, Content
- WiFi & Wireless
- VOD & Network DVR
- Over The Top
- EBIF
- VOD & CDN
- Speed, Speed & More Speed
- Small Business
- Energy
- Machine to Machine



Capacity Management

High Speed Data Utilization



HFC: A Winning Access Technology *HFC Capacity Enablement*



- Switched Digital Video
- 1 GHz Upgrades
- Analog to Digital Conversions
- Spectrum Reclamation

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HFC Capacity Possibilities



- Areas of Focus
 - Bandwidth Efficiency
 - Upstream Bandwidth
- Capacity Possibilities
 - QAM Build Out
 - Node Segmentation
 - Upstream Channelization
 - Advanced Modulation
 - Channel Bonding
 - Fiber Deeper
 - CCAP

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HFC Additional Benefits



- Unit Cost Reductions
- Operational Efficiencies
- Power & Space Savings
- Speed to Market
- Future Architecture Flexibility
 - QAM in Node
 - Fiber Based Parity

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Customer Demands



- HD to 4k HD to UHD TV
- Linear Video & SDV
- Content, Content, Content
- WiFi & Wireless
- VOD & Network DVR
- Over The Top
- EBIF
- VOD & CDN
- Speed, Speed & More Speed
- Small Business
- Medium – Large Business
- Cellular Backhaul
- Social Media
- Apps
- Security
- Health / Medical
- Energy
- Machine to Machine

HFC Proactive Management



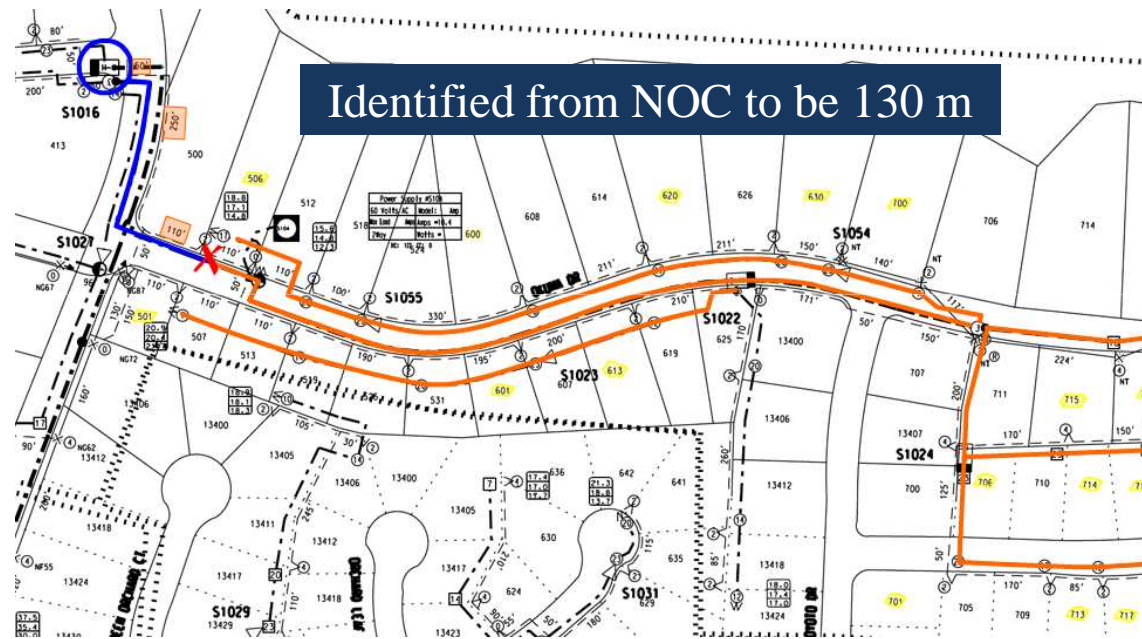
Pre-Impairment

Pre-Customer
Impact

Too Late

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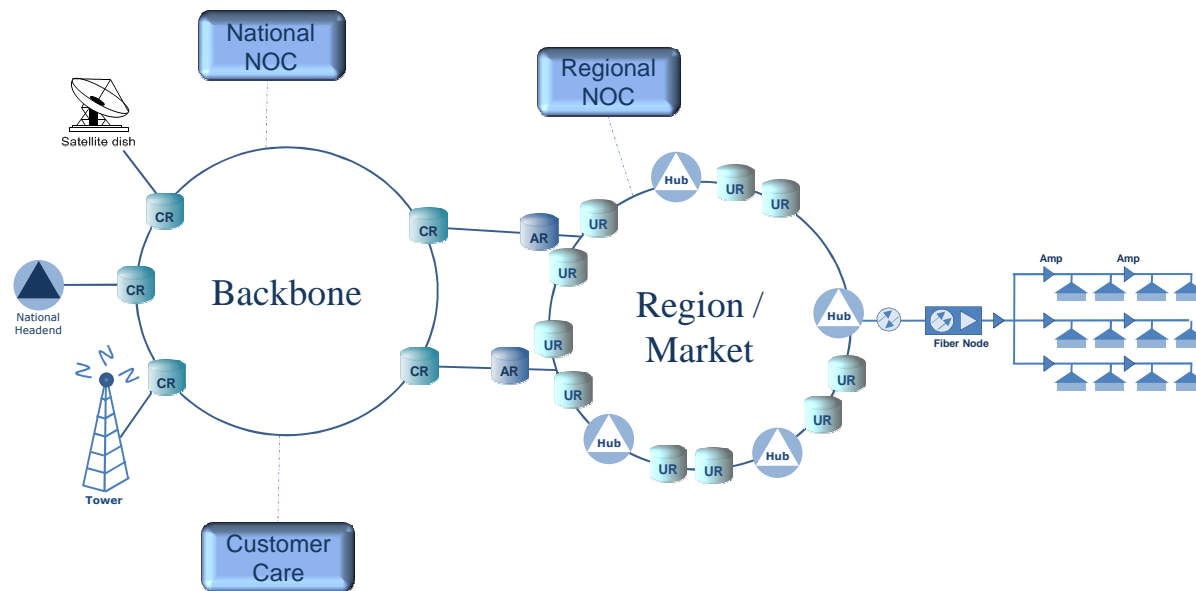
HFC Proactive Management





**Problem
Identified
to 2
meters!**

- Where Can Proactive Actions Be Made?
- Who Can Make Proactive Actions?



- Availability vs. Reliability – What's The Difference?
- Why Should I Care?
- What Factors Should Be Considered?
- What Data Should I Share?
- Advantages

Availability

99%

99.9%

99.99%

99.999%

Reliability