Joint ITU-T/IEEE Workshop on Next Generation Optical Access Systems

Verizon FiOS FTTP Deployment and NG PON Perspectives

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FTTP: Future Proofing



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Why FTTP?

FTTP is the only infrastructure that gives Verizon the necessary headroom for the future



- Bandwidth demand increasing
- Simultaneous usage
- Full multimedia experience
- Internet primary entertainment delivery
- Gaming and interactive applications on the rise
- User created content and sharing increase upstream demand
- Network of the future must be robust and flexible
- Future proof physical infrastructure

Choosing the Right Architecture

Unparalleled Fully standardized customer experience ITU-T GPON-based Surpass the Multi-vendor competition interoperability Cost effective Application and services rich Manageable Home networking Scalable integration

FTTP BPON: First Step



FTTP GPON: Seamless Transition



RF Overlay Adds Value

- FiOS TV is hybrid RF & IP
 - Broadcast video over RF
 - IP-based Video on Demand (VoD)
 - All digital in 2008
- 1550nm wavelength
 - 860 MHz (~810 MHz useable) provides up to 135 QAMs
 - One (6 MHz) QAM can carry ~38 Mbps, mpeg2
 - 10 SD channels
 - 2 HDTV channels
- Sized for 150 HD & 400 SD channels (≈ 125 QAMs)



FiOS FTTP Coverage



Advancements

- MoCA (No new wires)
- Just inside ONT (Integrated battery)
- Bend insensitive fiber (MDU Applications)
- Connectorization (Drops, terminals, splitters)

Status

- \$21 billion committed to FiOS through 2010
- Deployed in 17 states
- Passes 10.4M homes & businesses, 18M in 2010

FiOS Internet

- Launched June 2004
- 1.8M Customers (1Q08)

FiOS Video/TV

- Launched Sept 2005
- 1.2M Customers (1Q08)

FTTP Deployment



FiOS Internet



FiOS TV



More Choices. Right Before Your Eyes.

Great Value for the Consumer...

- 100% Digital
- ~400 Channels, incl. music
- 25 HD Channels and growing
- 100% IP-based VOD Capable
- 10,000 VOD Titles, incl. HD
- Interactive IPTV
- 80 Hour DVR
- Simple, Compelling Packaging
- Genre-Based Channel Line-up
- Adding 4K new customers daily

... and it'll Keep Getting Better!

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FTTP Enabled Home Networking



Beyond GPON: NG PON



Migration Considerations

Possible architectural models

- Co-existence with GPON
- Utilize existing wavelengths without GPON co-existence
- New equipment, utilize any wavelength
- Continue 1550nm RF Overlay
- OLT, ONT, Splitter impacts
- Use of existing fiber and link budgets
- Service interruption to customers
- Truck role, customer placement

Equipment Targets

- Reduce equipment size, footprint
- Integrate equipment and functionality
- Simplify installation



ONT



Battery Module

- Maximize power conservation
- Improve battery back-up duration

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Thank You!



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verizon