

Reinventing the
NETWORK

The only constant is change.

Gigabit Services overview

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Shift to the Cloud



Internet of Things



Community Development



Mobile Broadband Expansion

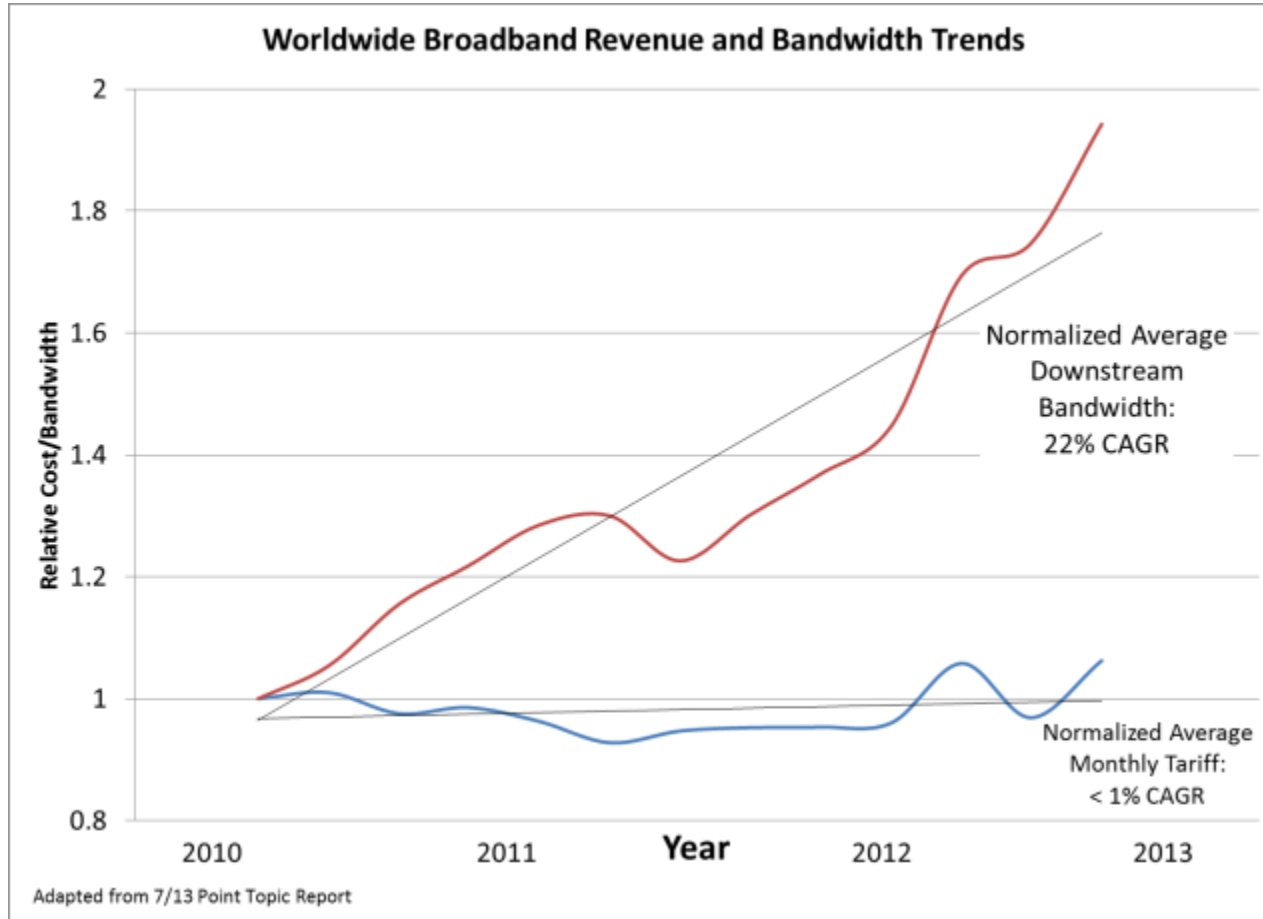


*So the analyst say I need to worry about more bandwidth...
but who really cares about a gig?*

*If 1 gig was an option for the same price,
would you take it?*

Think big with a gig.



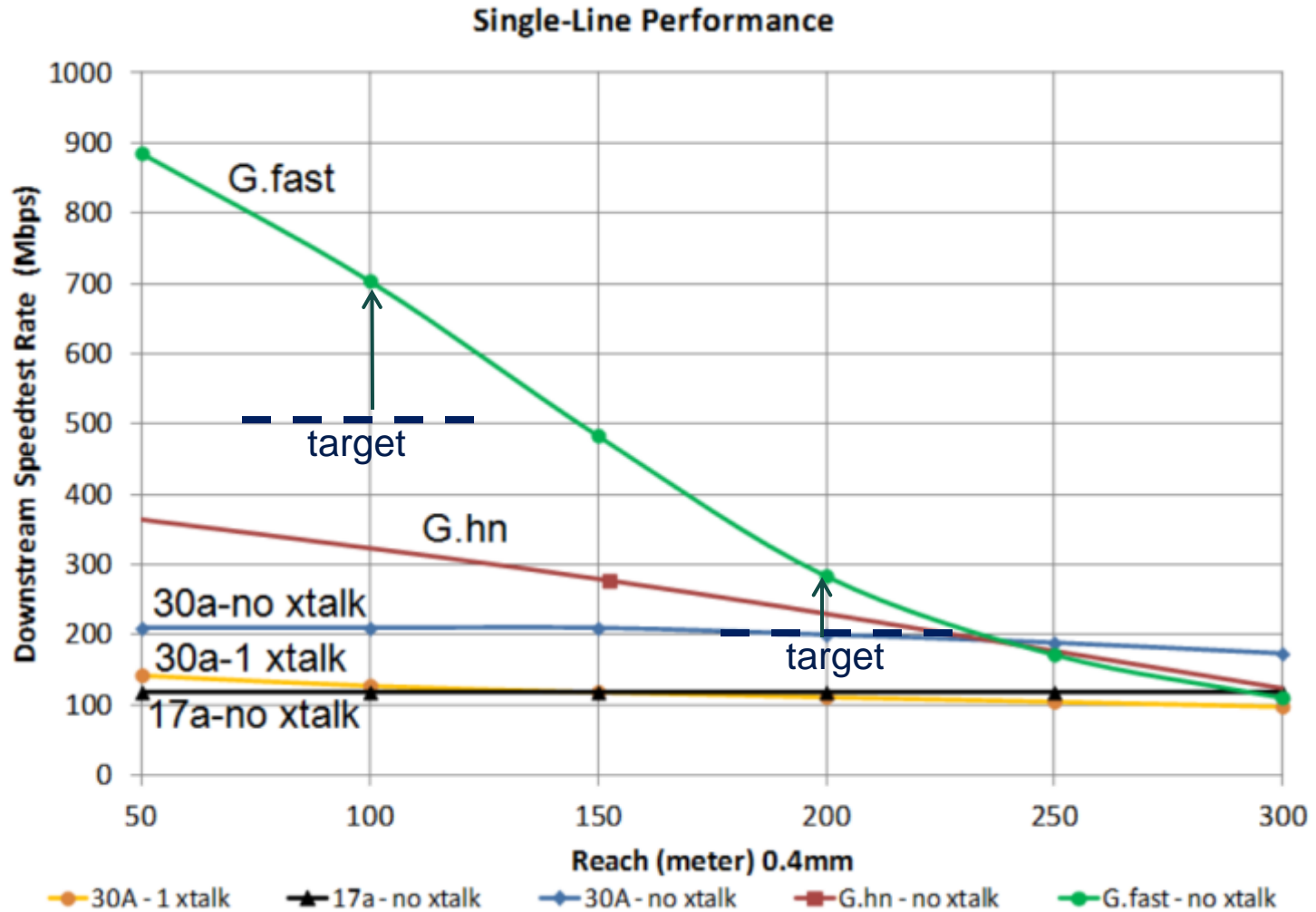


- Revenue is not scaling with Bandwidth growth

- Gigabit service over Phone line
 - Provisionable (a)symmetric rates
- The G.fast standard outlines these rate/reach targets:
 - Gigabit @ $\ll 100\text{m}$ (FTTB)
 - 500Mbps @ 100m
- VDSL2 (17a) with vectoring:
 - 100Mbps @ 550m (FTTN)
 - 150Mbps @ $< 200\text{m}$



FTTB is part of an operators Gigabit services tool kit



ADTRAN® G.fast Product Portfolio

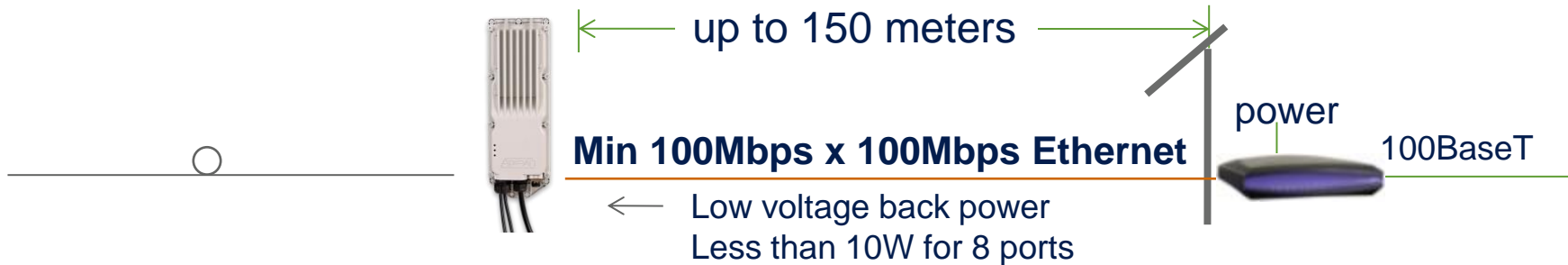
- ✓ 12 port dual mode G.Fast / VDSL2 DPU
- ✓ Sealed IP68 housing
- ✓ GPON and P2P uplink
- ✓ Variants with Remote and Reverse powering
- ✓ Internal bypass Relays



- ✓ 4 port dual mode G.Fast / VDSL2 DPU
- ✓ Sealed IP68 / IP54 housing
- ✓ GPON and P2P uplink
- ✓ Variants with Remote and Reverse powering
- ✓ Management: Leveraging IETF NetConf PMA mode

ADTRAN® Reverse Powering Options

ADTRAN demonstrated industry first Reverse powering in 2010
Ultra Broadband Ethernet (UBE) short range 100 Mbps symmetric
and reverse powered, sealed Node



We investigate currently three options:

- Solution based on **Microsemi PD8200 Power over Ethernet Product**
- Cooperation with **Aethra**
- Own Development based on Reverse Powering **Specification ATTM TM6**

Applications and Content

What is Needed:
High Bandwidth, Low Latency Cloud Access

Subscribers and Devices



The Cloud

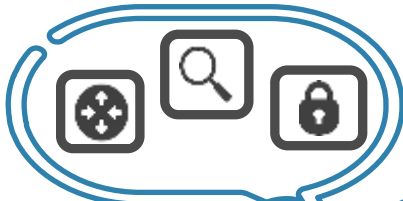
Cloud Access

ADTRAN's Specialty
Cloud access for residential, enterprise and mobile backhaul services



Service Orchestration

Virtual Functions



The Cloud



Metro Transport

Access Nodes

High bandwidth copper or fiber access

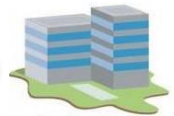
Residential Broadband



Macro and Small Cell Backhaul



Enterprise Connectivity



Metro Transport

Nx10G → Nx100G

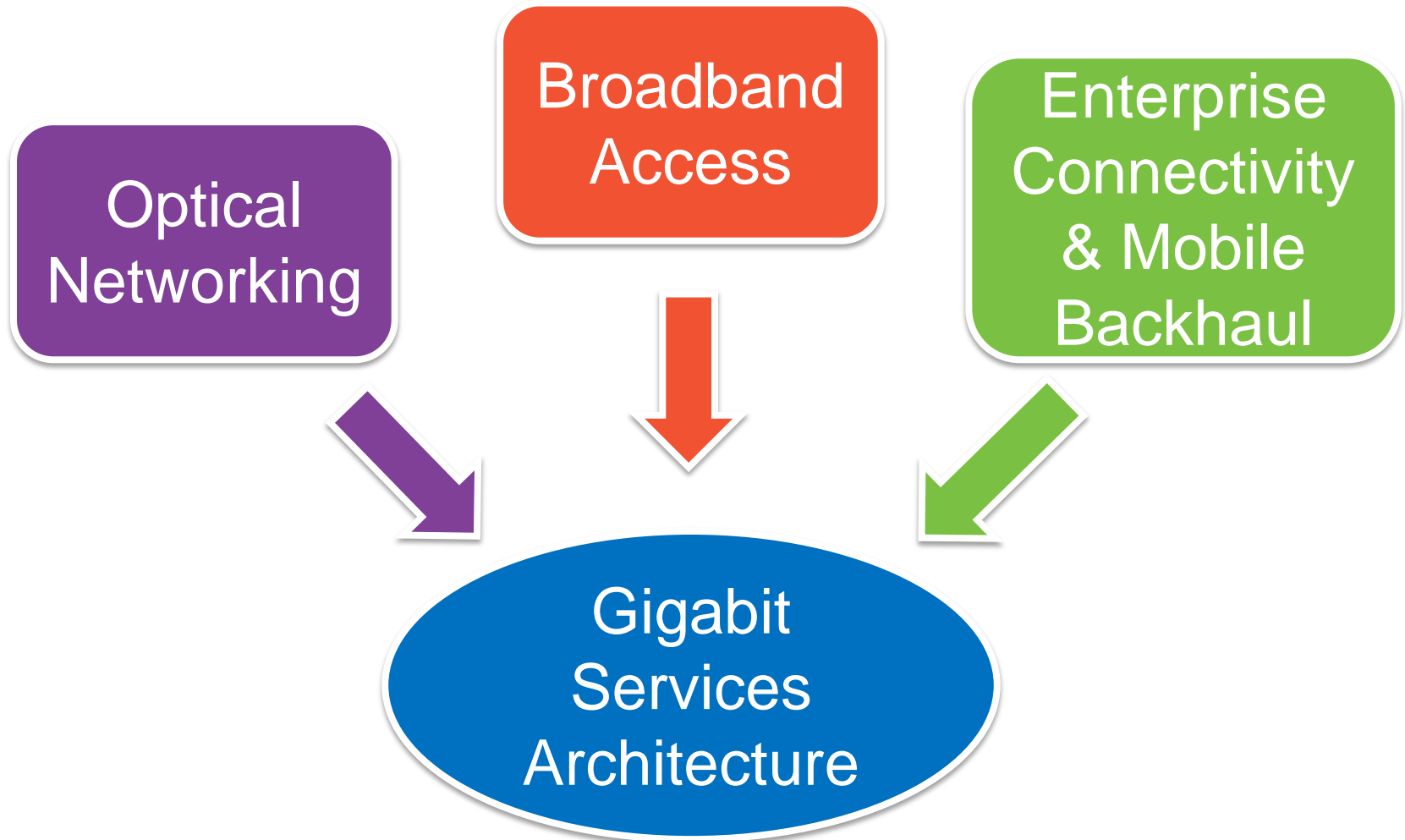
Broadband Access

GPON, NGPON2, GE/10GE, VDSL2, G.fast, FDV

Cloud Connectivity

Enterprise and small cell gateways, vWLAN

ADTRAN's Core Competencies



ADURAN

Thank You!

