Comparative Economics of HFC and EPoC Networks

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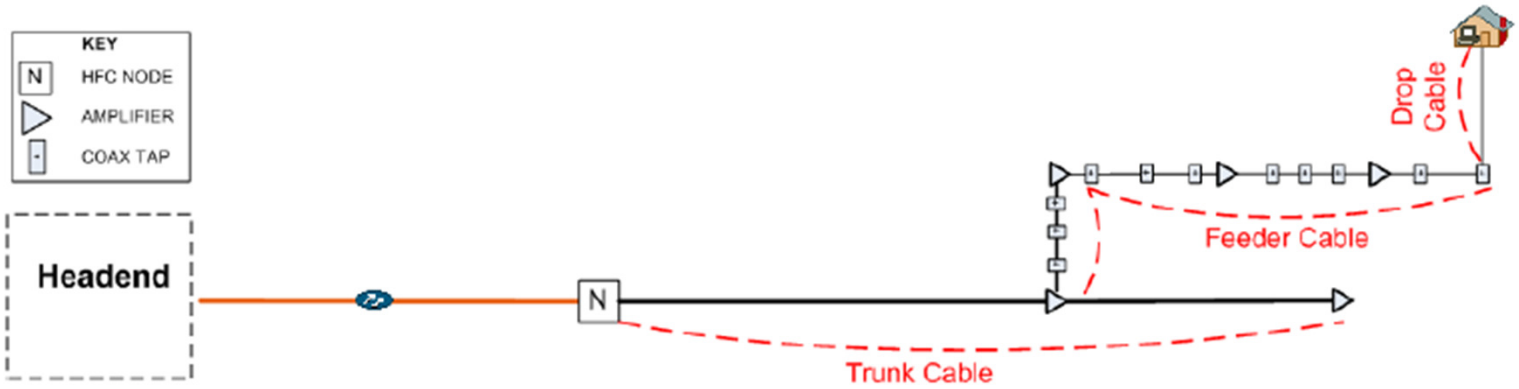
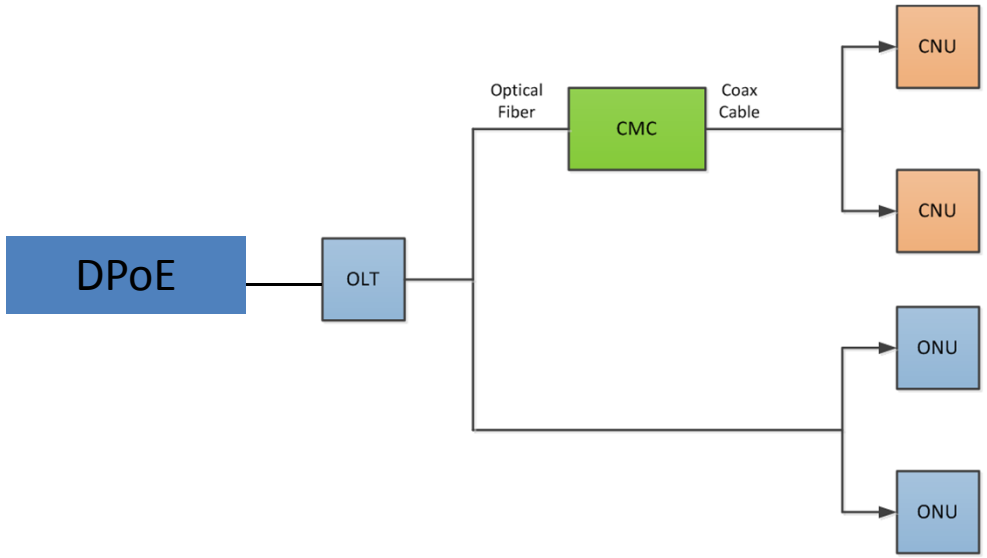
Assumptions

- A comparison of a clean-slate build of an HFC network and an EPoC network, with both delivering roughly comparable capability
- Not valid for N. America, where an overlay is required, but useful for illustration purposes
- CMOS scaling economics applies to RF/analog components roughly 3-5x more effectively than to optical components (neither compare well to digital scaling)

Topologies



Control Case (today's HFC – from BHN)



Comparison Case (N+0 EPoC)

Comparative Scalability

	HFC	N+0 EPoC	EPoC/HFC Ratio
Service Group Size	2,000	128	0.064
Peak Aggregate US/DS Data Rate	1.4 Gbps	Up to 10 Gbps	Up to 7.14
Fiber run length	Tens of miles	Tens of km	1
Coax run length	Tens of miles	Hundreds of meters	0.05

Comparative Costs

HFC Component	Comparable N+0 EPoC Component	EPoC/HFC Cost Ratio
CMTS	1G OLT	0.01
CM	1G CNU	1.0
CM	1G ONU	1.5
Node	CMC	1.0

Summary and Prognosis

- To serve the same number of subscribers with ~1 Gbps aggregate capacity, a clean-slate EPoC approach would cost ~1/6 the (non-labor) capex of HFC
- EPON (and hopefully be extension, EPoC) is proven to be scalable to 10 Gbps; HFC not so
- EPoC should track CMOS economics closer than EPON because RF scales, optics don’t