Coherent vs Direct-Detect
For 800G Client Connections

HGTECH
HG Genuine

IEEE 802.3 NEA Ad Hoc
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Jim Theodoras

Coherent vs Direct-Detect

Cost

Crossover Point?

Power

Crossover Point?
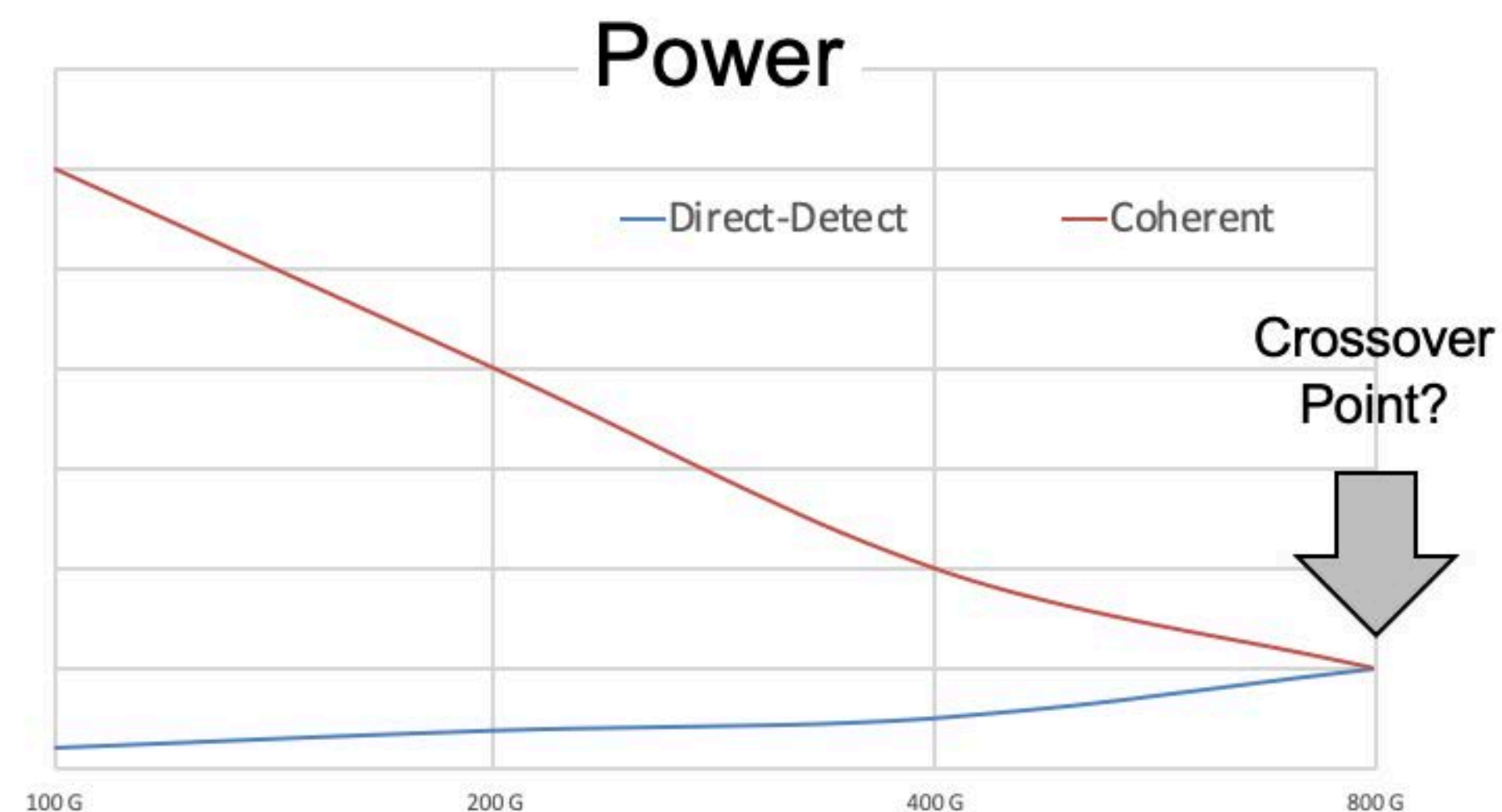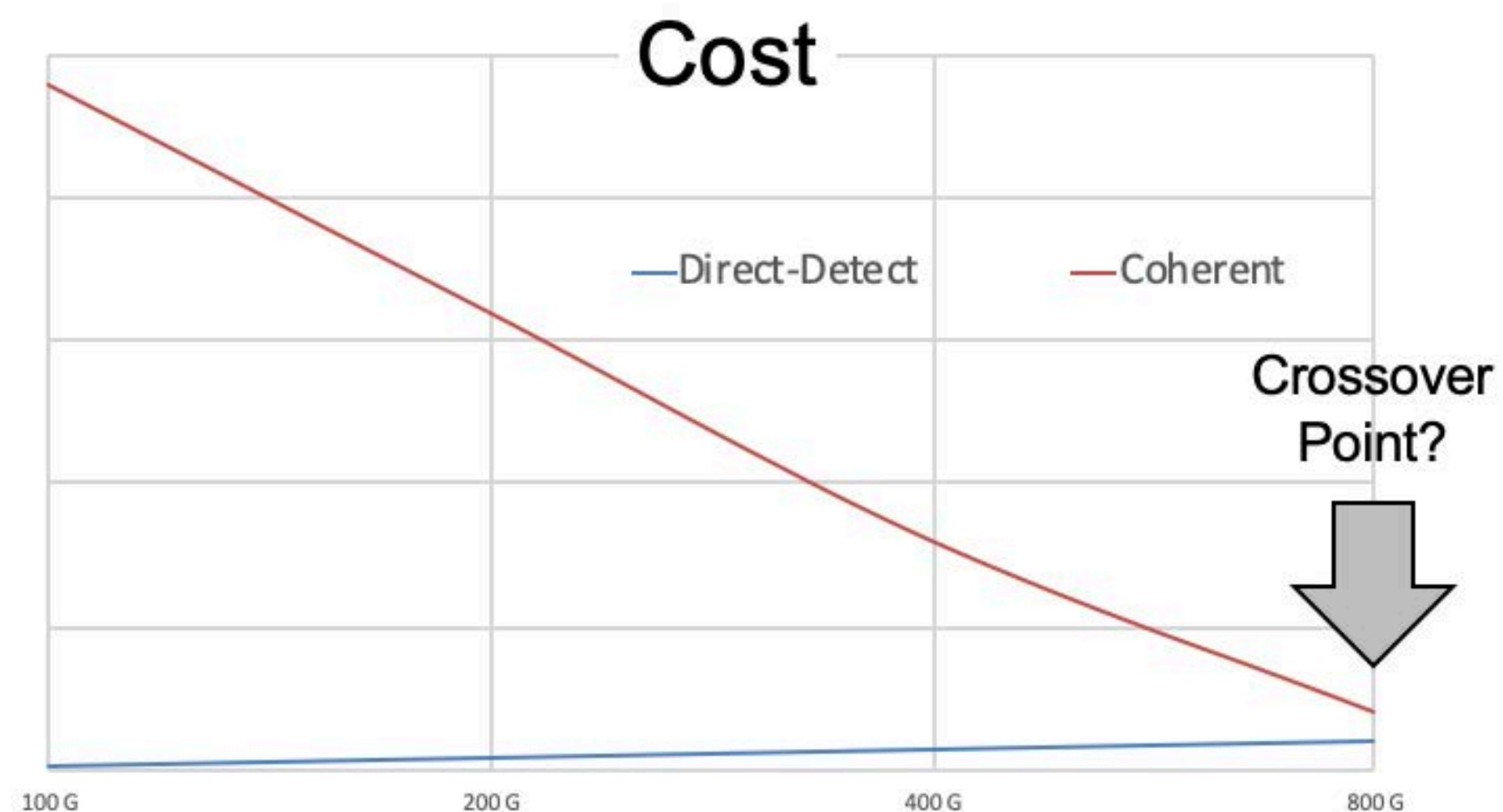
Item	8 x 100G DD	4 x 200G DD	1 x 800G Coh
Transmitter			
Laser	8	4	1
Modulator	8	4	4
Mod Driver	8	4	4
DAC	8	4	4
Combiner	8:1	4:1	2:1
DSP Core	1	1	1
Receiver			
Laser	0	0	1
Photodiode	8	4	8
TIA	8	4	4
ADC	8	4	4
Splitter	1:8	1:4	2x1:4
DSP Core	1	1	1
Amount of Stuff	*74*	*38*	*42*

Where Does Coherent Fit?

Coherent Today

DCI
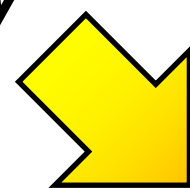
Coherent Tomorrow?

Duplex
100G-LR4, ER4, ZR4
400G-FR4, LR4

Router   Router

N-By
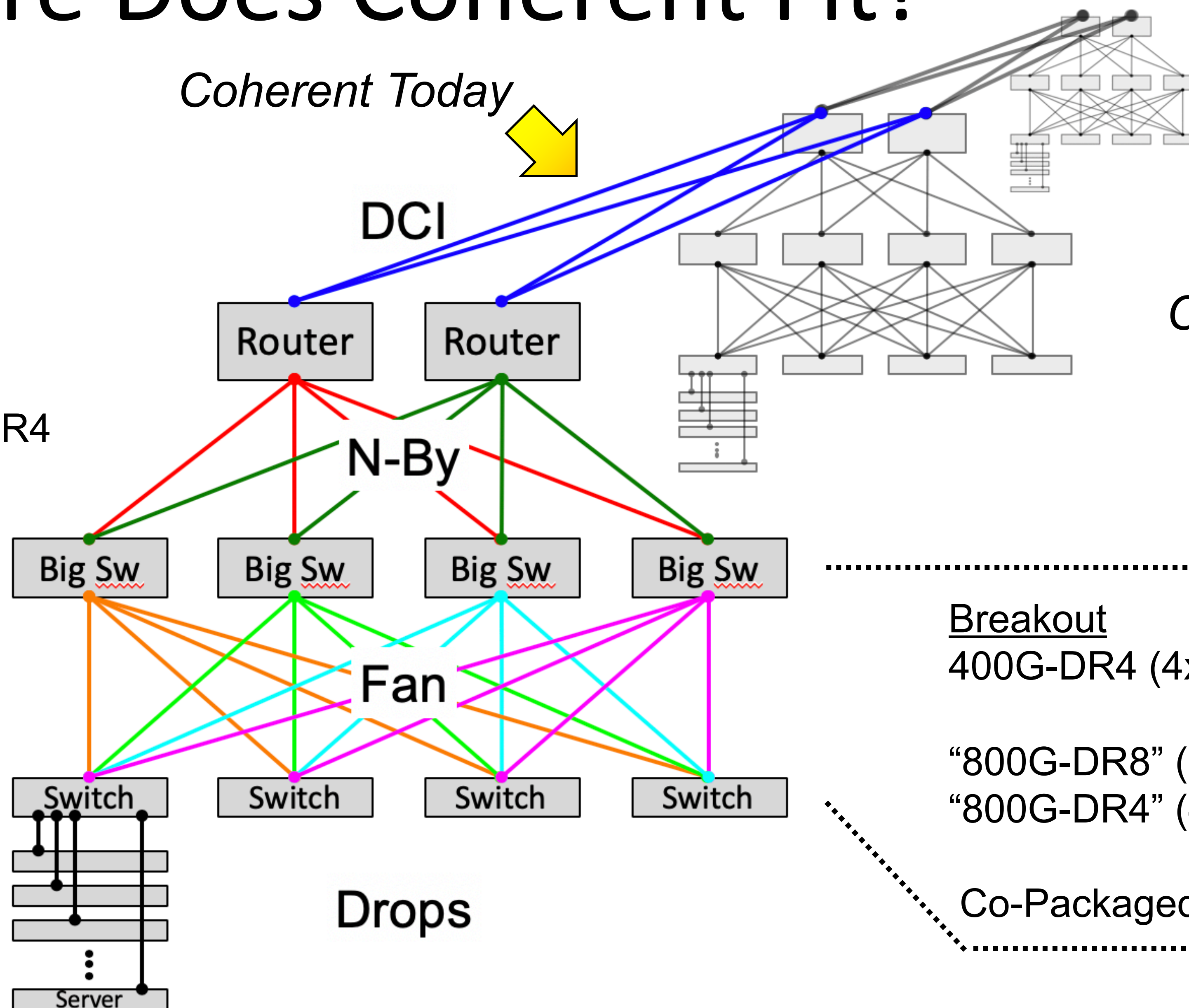
Big Sw   Big Sw   Big Sw   Big Sw

Breakout
400G-DR4 (4x100G) to DR1 Breakout

Fan

"800G-DR8" (8x100G) to DR1 Breakout?
"800G-DR4" (4x200G) to DRx Breakout?

Switch   Switch   Switch   Switch

Co-Packaged Optics

Drops

Server