



Lightning Talk - 10Gbps Efficiency

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- New Fibre Networks in NZ
- Exists here and now
- Datalight is building Telephone + Data Centres Fully Meshed Juniper Network Innovative Services on Fibre Low Power Usage (Green!)



10Gbps

- Current Experience for Customers
 - Lan 100Mbps or 1Gbps (or/+ wireless)
 - WAN 2-10Mbps (DSL/Frame/Ethernet)
 - example One Office, via Layer 3.
- New Experience for Customers
 - Lan 100Mbps or 1Gbps (or/+ wireless)
 - WAN 200Mbps -1Gbps private network
 - Internet via same channel



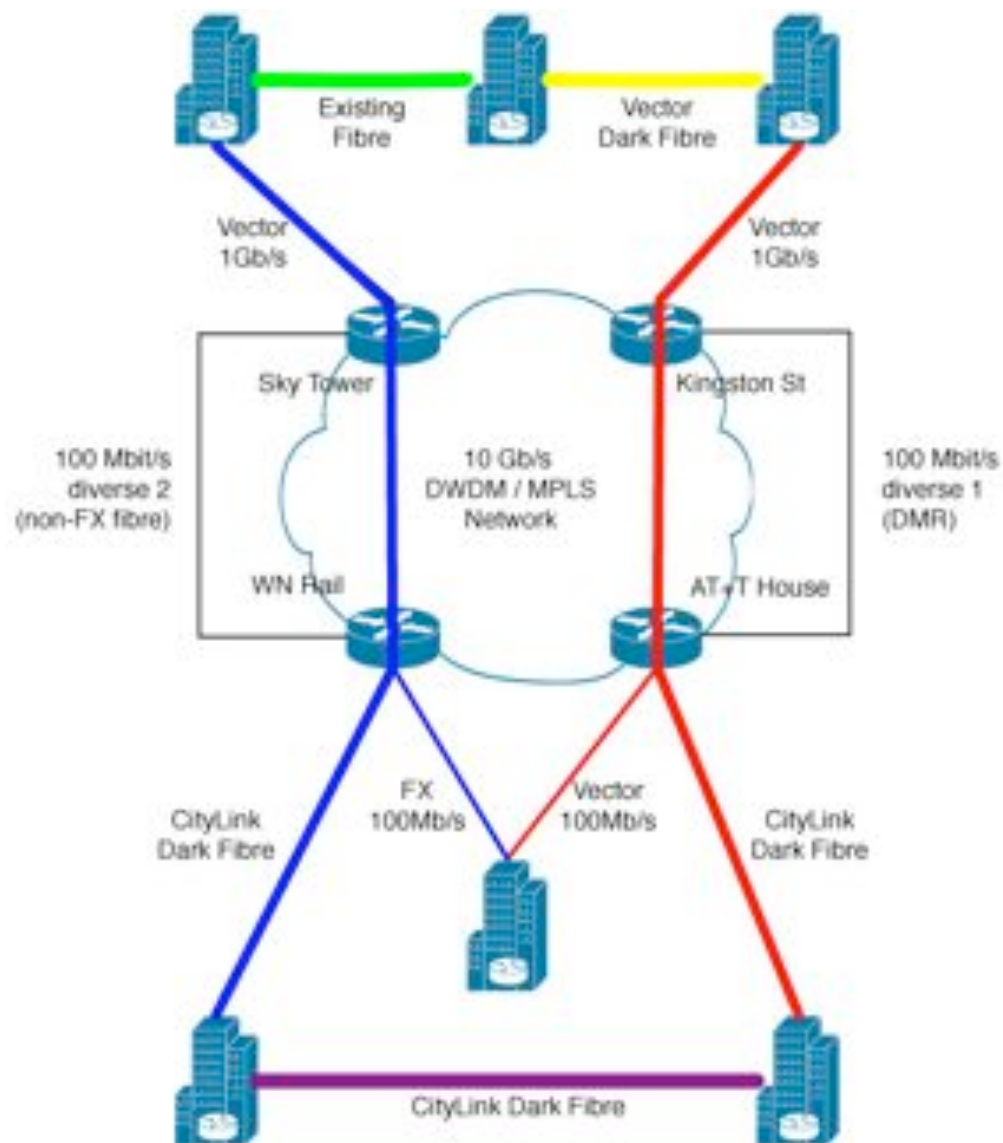
Problem - Vendor oversell

- If you say to an equipment vendor, customer plans to implement 10Gbps Wavelength backbone, then
 - “Mr customer - you need big boxes.....”
- However:-
 - Large space and power is not available.
 - DWDM - 48VDC at 40A
 - Core Router 2 x 2000W PSU
 - Edge Router 2 x 1300W PSU
 - Or you can implement 48V Battery infrastructure!



WAN Example

- Dual 10Gbps x N
- Dual Diversity
- Metro Gbps



There is a better way

- 100Gbps (10 x 10Gbps)
 - Longhaul DWDM 90W
- 24 x 10Gb Switch XFP option
 - 5 x Northbound, 5 x Southbound
 - No MPLS code (PE or CE)
- 2 x 10Gbps, 4 x SFP, 48x 1GbT
- MPLS, VPLS, 4 x 10G,
6 x 1Gbps



Summary

- Careful use of power and space
- The Virtuous Circle
 - Less space = Less Power
 - Less power = less Cost
 - less power = longer battery life
 - less power = less diesel
 - less power = smaller aircon
 - etc etc



450W vs 5KW-7KW



Next steps

- 30W 2 x 1000 Mbps routers
Mini ITX form factor



- You may think what has this got to do with Network Engineering?
- If you can't control, and actively reduce your costs then you may not have a network to play with!

IP price pressure

