Dig deeper

Prepared by Richard Wang

April 12, 2011
Future bandwidth demand favors TDM PON, not WDM PON

Next-generation Components for Optical Access Networks

Universal Gigabit Optical Access

ROADM Switching Technologies (tutorial)

Optical Switch Architectures for Emerging CDC ROADM Networks
NTuB7 Future bandwidth demand favors TDM PON, not WDM PON – Alcatel Lucent

- Premise
  - TDM PON as shared bandwidth system
  - WDM PON as dedicated bandwidth system
  - TDM PON bandwidth doubles every two years
Future bandwidth demand favors TDM PON, not WDM PON

- Streaming video bandwidth demand growth
NTuB7 Future bandwidth demand favors TDM PON, not WDM PON

- Other arguments
  - TDM is more efficient to carry bursty traffic
  - Upstream bandwidth demand can be well met by current TDM PON system

In conclusion, there is no bandwidth-based argument for an operator to pay a premium for WDM PON.
OWK1 Universal Gigabit Optical Access -- Google

- Dedicated fibers
  - Shared PON is not future-proof
  - Privacy and security

- Gigabit symmetric access
  - Will enable new forms of web content caching
Ascendancy of wireless devices

- Primary method of accessing warehouse computing resources
- Radio spectrum scarcity
- Mobile devices should be able to take advantage of FTTH networks
OWK1 Universal Gigabit Optical Access

- In service self diagnosis
  - Live monitoring and fault localization
- High density and low power consumption
- Fiber to the Home project
OTuD1, OThR3 CDC ROADM