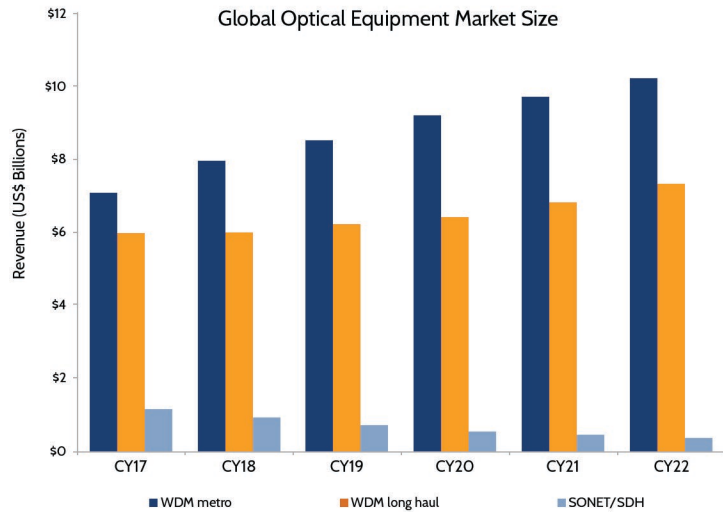


DWDM in Telecommunication Applications

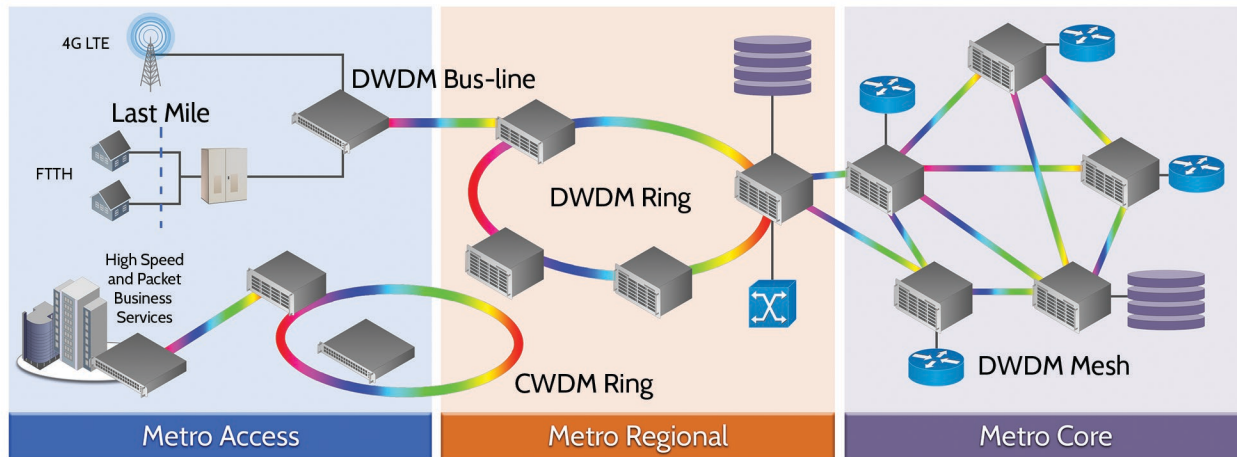


Source: IHS Markit, 2018

Key Market Insights

- Datacom is a big driver; data centers are becoming more prevalent in metro areas to reduce the burden of nationwide transport.
- DWDM networks will continue to ramp up as they provide maximum flexibility and high bandwidth to support the densification of micro cell towers for 4G LTE and eventually 5G.
- DWDM will be the major benefactor for WDM long-haul due to amplification ability and extra channel capacity.
- Tunables are now being viewed as a viable alternative to 10G single-channel wavelength as cost compression continues.

Example of WDM Applications



- CWDM / DWDM
- PON/BiDi to FTTH
- 1G/2.5G/10G/100G
- Fixed OADM / ROADM
- 20km - 40km
- End-users / Broadband Carriers

- Ring or Mesh
- 10G/40G/100G
- CWDM / DWDM / Tunable
- <600km
- Internet Service Providers

- Mesh
- DWDM / Tunable
- 100G/400G
- High power amps
- <1000km
- Content Service Providers

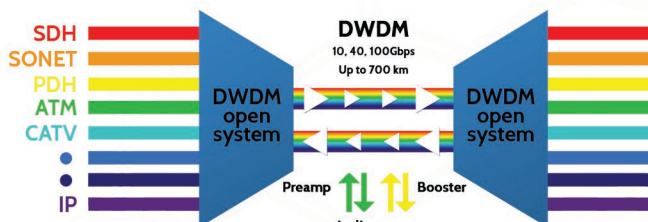
When to Use a DWDM (Single-channel)

- DWDM networks can handle **various network traffic** (SONET, ATM, IP, Ethernet) **at different speeds** (1G, 2.5G, 10G, 40G) over an optical link.
- **Expanding the capacity of the network** - Ability to mux up to 80 channels utilizing existing fiber.
- **Long distances** - DWDM can be amplified with an EDFA (Erbium-Doped Fiber Amplifier).
- **Maximum flexibility** - Allows operators 'pay-as-you-grow' flexibility due to the availability of channels to support future growth.

When to Use a Tunable (Multi-channel)

- **Spare part management** - If you're running a large DWDM network with a lot of nodes, it's hard to keep a couple spare transceivers for each channel at multiple locations.
- **Remotely tune** - Ability to change frequency in the field with remote tunable device.

✓ (Lower maintenance cost + time + materials)



New Introductory Price Special on DWDM / Tunable Optics



10GBASE SFP+ 102 Ch. Tunable

SFP+-TUNE-10G-80KM-LC-SM-DOM-NORM

Compatible Brands:

Cisco ONS | Juniper | Ciena | Arista | Huawei | ADTRAN
Brocade | Extreme | Calix | Alcatel-Lucent

[Contact Your DHD Rep](#)



10GBASE SFP+ 96 Ch. Tunable

SFP+-TUNE-10G-80KM-LC-SM-DOM-NORM

Compatible Brands:

Cisco (note: *any non-ONS system)

[Contact Your DHD Rep](#)



10GBASE SFP+ DWDM I-Temp

SFP+-DWDM-10G-80KM-LC-SM-DOM-IND

Compatible Brands:

Cisco ONS | Juniper | Ciena | Arista | Huawei | ADTRAN
Brocade | Extreme | Calix | Alcatel-Lucent

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10GBASE XFP 102 Ch. Tunable

XFP-ZR-10G-80KM-TUNE-LC-SM-DOM-NORM

Compatible Brands:

Cisco ONS | Juniper | Ciena | Huawei | Tellabs

[Contact Your DHD Rep](#)

In addition to XFP and SFP+ Tunable optics, DHD **stocks every channel** for 10GBASE DWDM SFP+, all ready for **same day ship**. All optics are MSA compliant. Please reach out to your sales representative for any WDM / Tunable inquiries.