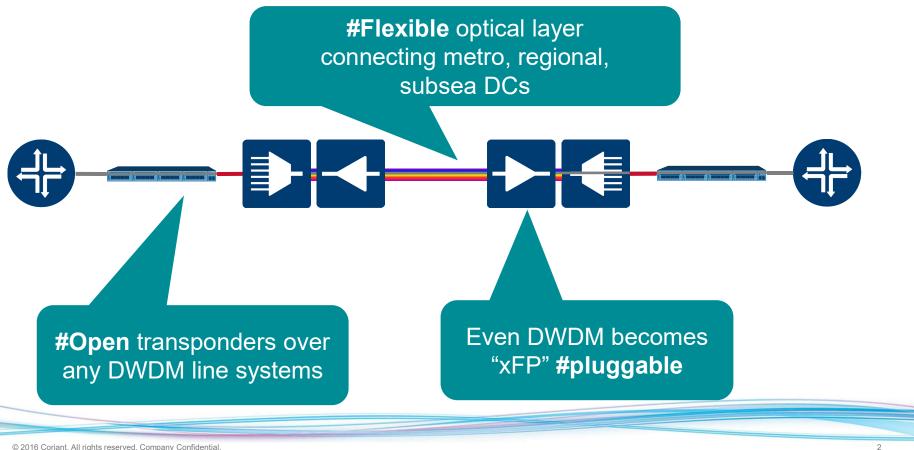
Emerging Technologies for Data Center Interconnection (DCI)

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Dion Leung, Ph.D., VP Business Development Hong Kong, Sept 9, 2016

Trends for #DCI?

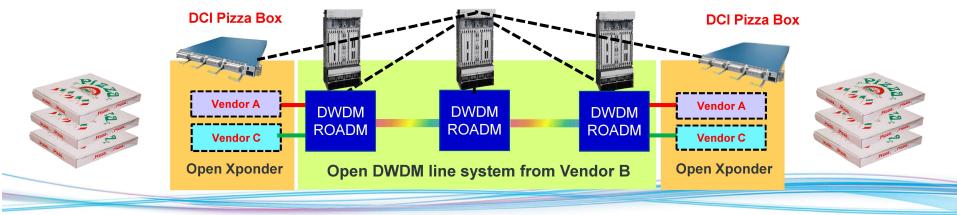
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Open Line System Concept – To embrace it or not, this is not a question (anymore)...

Open Line System (OLS) Model

- Open network decouples "optical layer" from "wavelength service layer"
- Open software interfaces make network management simpler
- SDN applications or customized web portals make automation at the transport layer possible
- A transponder is simply managed as a L2 switch...



NMS, CLI, NetConf, API

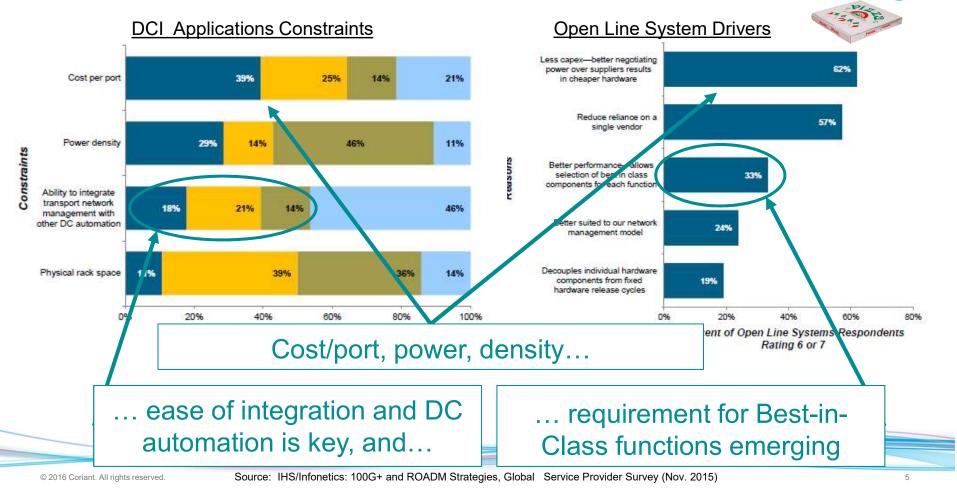
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Simple Netconf Example - Setting a Wavelength

<rpc message-id="101" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"> 5-50FT NetCont Browser Profes File Edit Module Tools Window Help x 🗐 🖳 🕱 🗳 🍯 🖷 🐔 🦷 Э <edit-config xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"> H tz-optical-power ×. and XML rx-optical-power-lanet <target> (ii) Trx-optical-power-laned edit-config omines"unneietfoperamscomlinsinetconfibase:1.0 🗉 🚺 rx-optical-power-lane3 (target) <running/> 🛞 👔 rx-optical-power-lane4 crunning/> E tx-optical-power-lane1 «/target» </target> 🗉 🧊 tx-optical-power-lane2 (config) ene smins-"unnsconiantsossne"> 🕀 👔 tx-optical-power-lane3 tx-optical-power-lane4 <shelf> <config> 🗉 🚺 subport cshelf-id>id>id>id>id>id>id> e sluggable (slot) <ne xmlns="urn:coriant:os:ne"> cslot-id>1c/slot-id> port-type ccards. <shelf> port-mode
demin-status <port> sport-id>1</port-id> <shelf-id>1</shelf-id> 🗉 🚺 oper-status (och-os) (i) aval-status <frequency>192200000</frequency> ETY4 <slot> claser-enablexenabled</laser-enablex</pre> ETIS </och-ds> ETV6 (/port> <slot-id>1</slot-id> a when " ... /port-mode ~ '10008E" c/card> @ presence "When client port is 100G8 (/slot) <card> description "Represents the ETV6 (1) </shelfs napping-mode </ne> <port> 🖲 🛐 admin-status </config poper-status edit-config> <port-id>1</port-id> aval-status eth-fec-type <och-os> eth-fec-type-state Cont-shutdown <frequency>192200000</frequency> dient-shubdown-holdolf-timer Send near-end-als C transmit-interpacketoap Output Man Output Tree | Capabilities | <laser-enable>enabled</laser-enable> icopbacio-enable S loopback-type com1 version="1.8" encoding="utf-8"?) </och-os> test-signal-type test-signal-enable </port> 1 Ido-status-f Signature and an and a second and </card> test-signal-facility-status Log NetFications (Sway Scasson restory - 1 odb urn istf parame and no yang istf-netcoaf-with-defaults?revision=2010-06-00&module=istf E inventory-data </slot> Uniferring and and international and yang tetf-yang types?revision#2013-07-158module=ietf-yang type E | leds a presence "Always existing" </shelf> @ description "Sinple container for the led lat." 11/14/12 IE 30 10 Holder not advertised by the server are now disabled Ican be charged in pror </ne> ٠ſ </config> </edit-config> </rpc>

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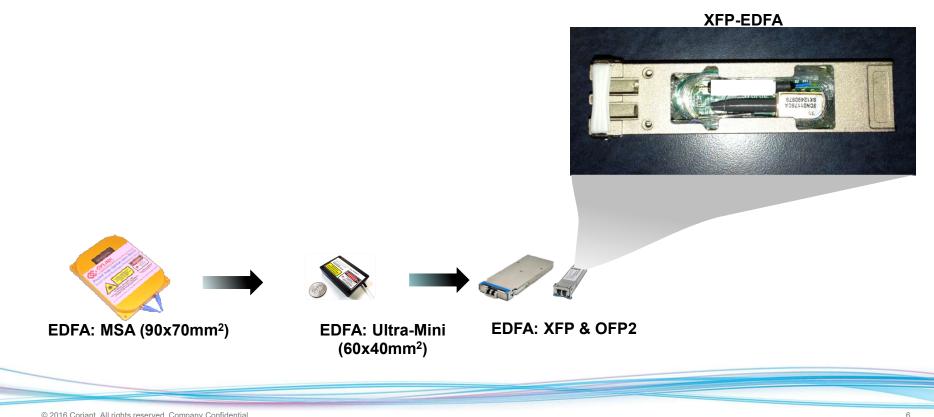
Drivers for Open Line Systems (OLS)?



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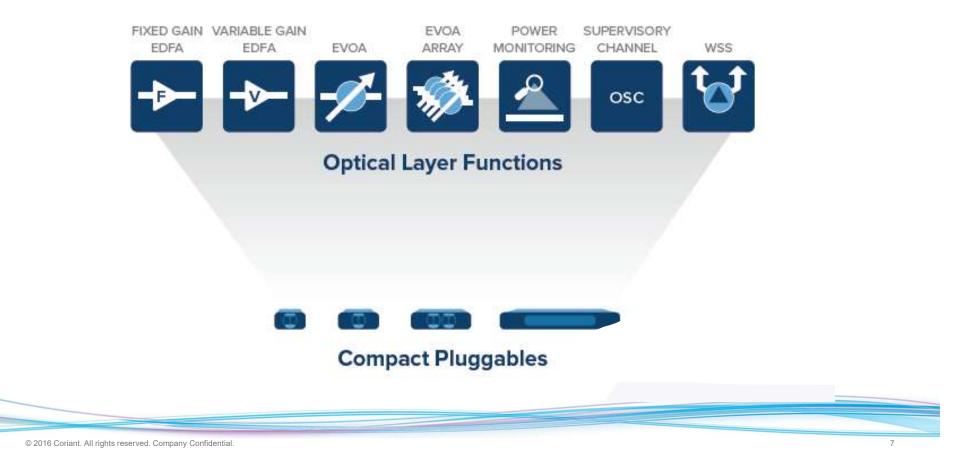
Miniaturization: EDFA Technology Example MSA / Module Based \rightarrow XFP / Pluggable Based



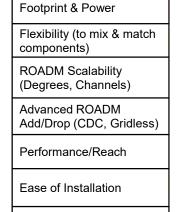


Additional Optical Layer Functions to be "Pluggable"

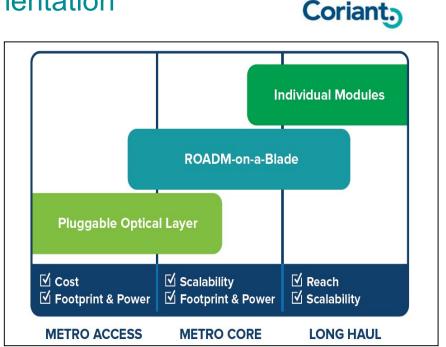
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Various Kinds of Open ROADM Implementation



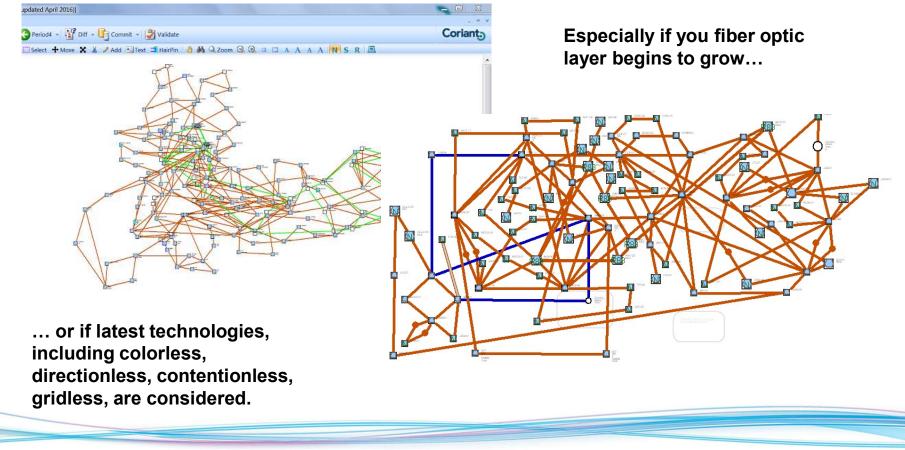
Cost of Replacing Failed Hardware/Sparing



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What types of ROADM architecture is right for you? It depends on your application and design objectives.

A Good Optical Planning Tool "Always" Helps... Corianto



Thank You. Coriant

