

Enterprise Datacenter Interconnect



Smartoptics in brief

Global technology company with main offices in Norway, Sweden and the USA



R&D located in Scandinavia



Founded in 2006



+150 business partners and strategic collaborators



150+ employees in seven countries



Partnering with leading technology providers



In-house support by our own engineers



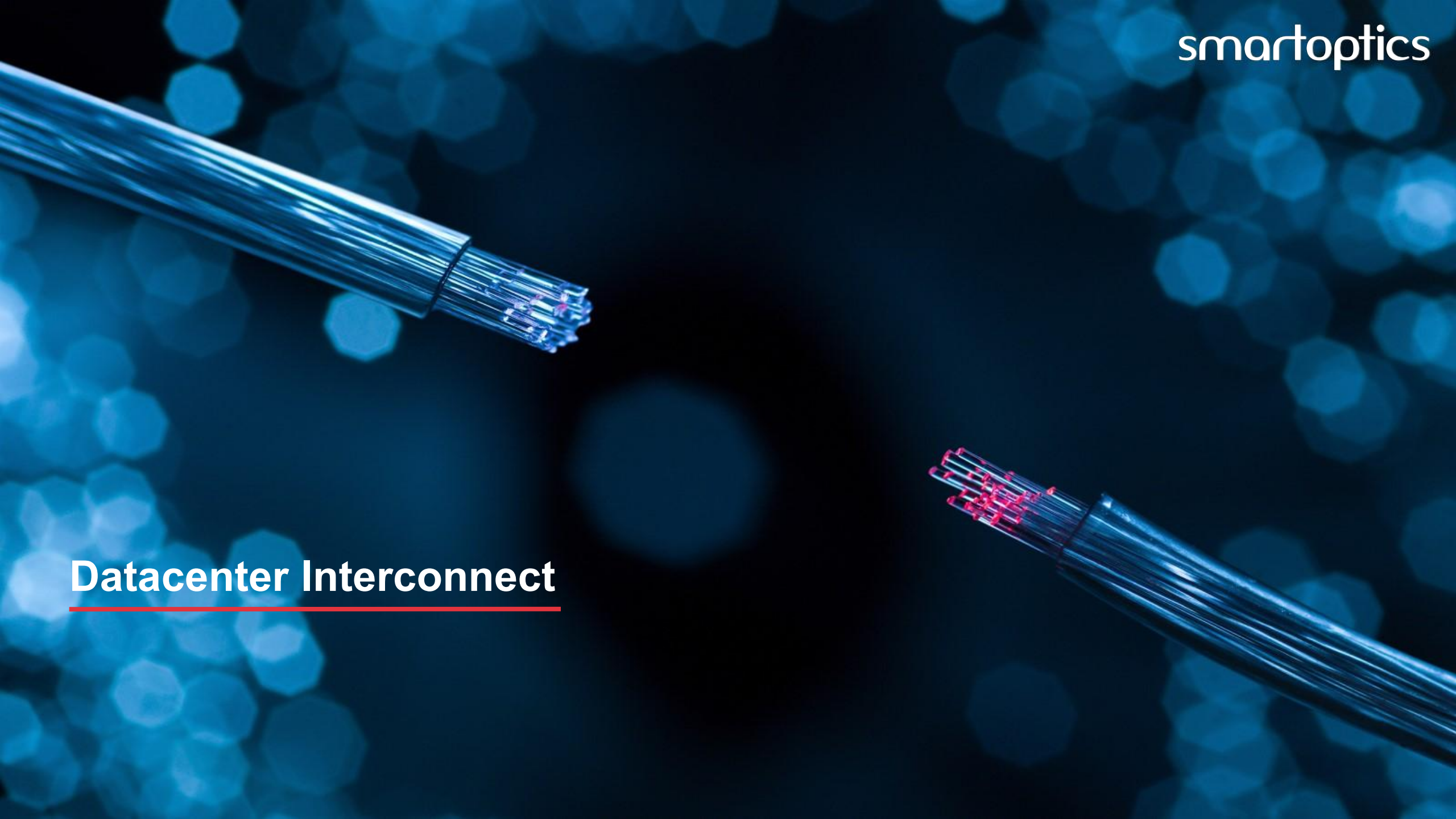
21% average annual growth past five years



Listed on Euronext Growth Oslo in 2021



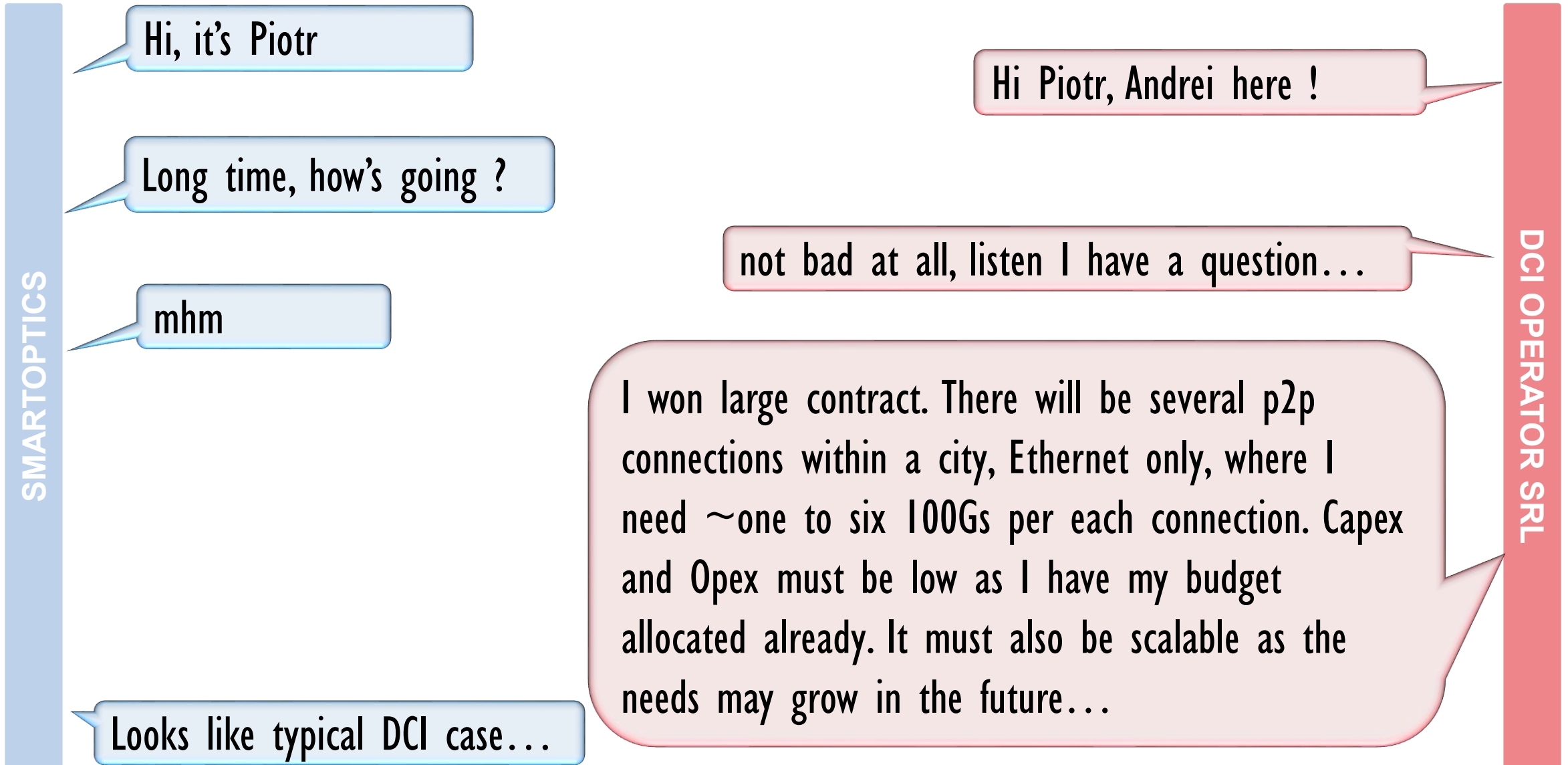
Datacenter Interconnect



Based on a true story



DCI call...



DCI call...

SMARTOPTICS

You need WDM technology.
WDM allows...

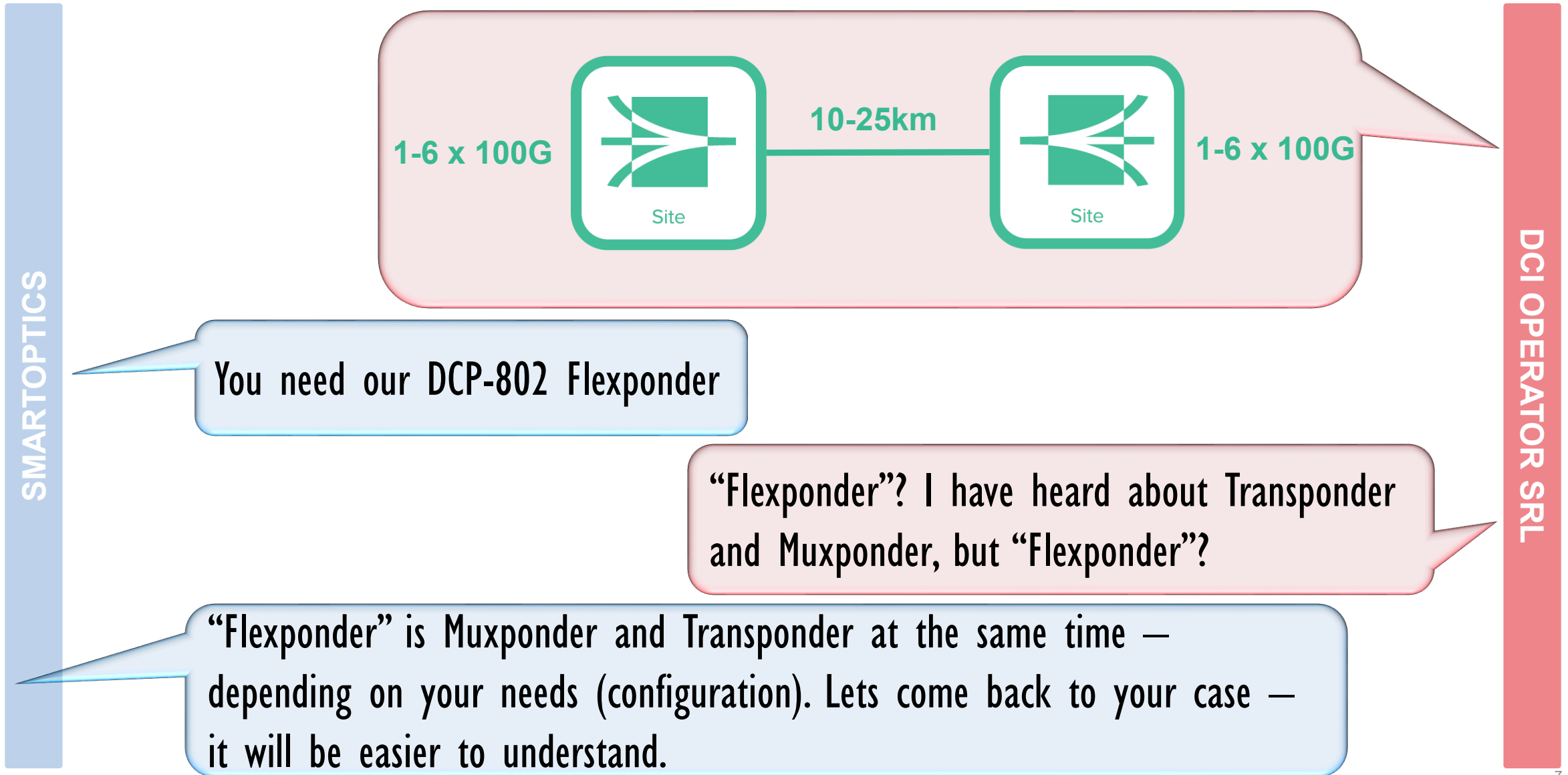
Don't be afraid — its easier than you think. Show me your typical case and I will help you to design the solution.

The initial plan was to use grey transceivers over dark fibers, but I need more than one service per pair, and all systems must be scalable too...

"Exactly! I have heard about WDM technology, but I'm not an expert in this area.

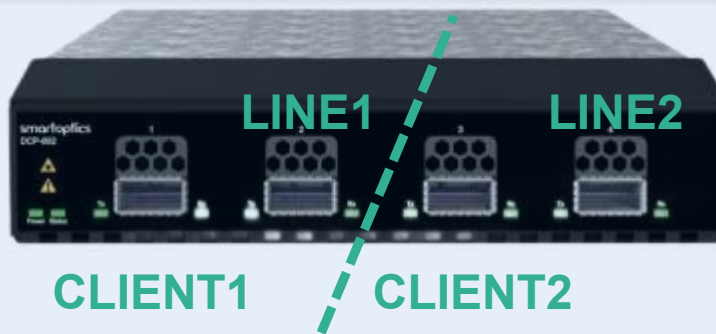
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DCI call...



DCI call...

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The DCP-802 unit has two independent Flexponders available. Client and Line port supports 800G speed.

It fits into one RU DCP-2 chassis.



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On the client side you can use transceiver with dual 400GBASE-DR4 / FR4 or LR4 ports, keep it as 400G or split it into 4 x 100G

You can use 2 x MPO or 2 x LC option

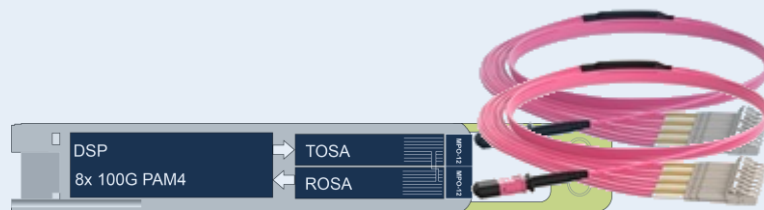
Dual-MPO-12



Optical connector
(Dual Duplex LC)



The 2 x MPO/LC split into 8 x 100G will look like this:



$$2 \times 4 = 8 \times 100\text{G}$$

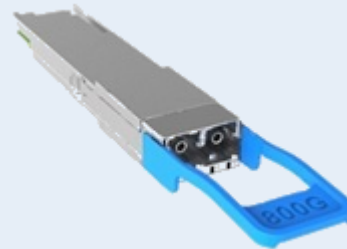
DCI call...

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Interesting...

Client side is clear now. How about line side?

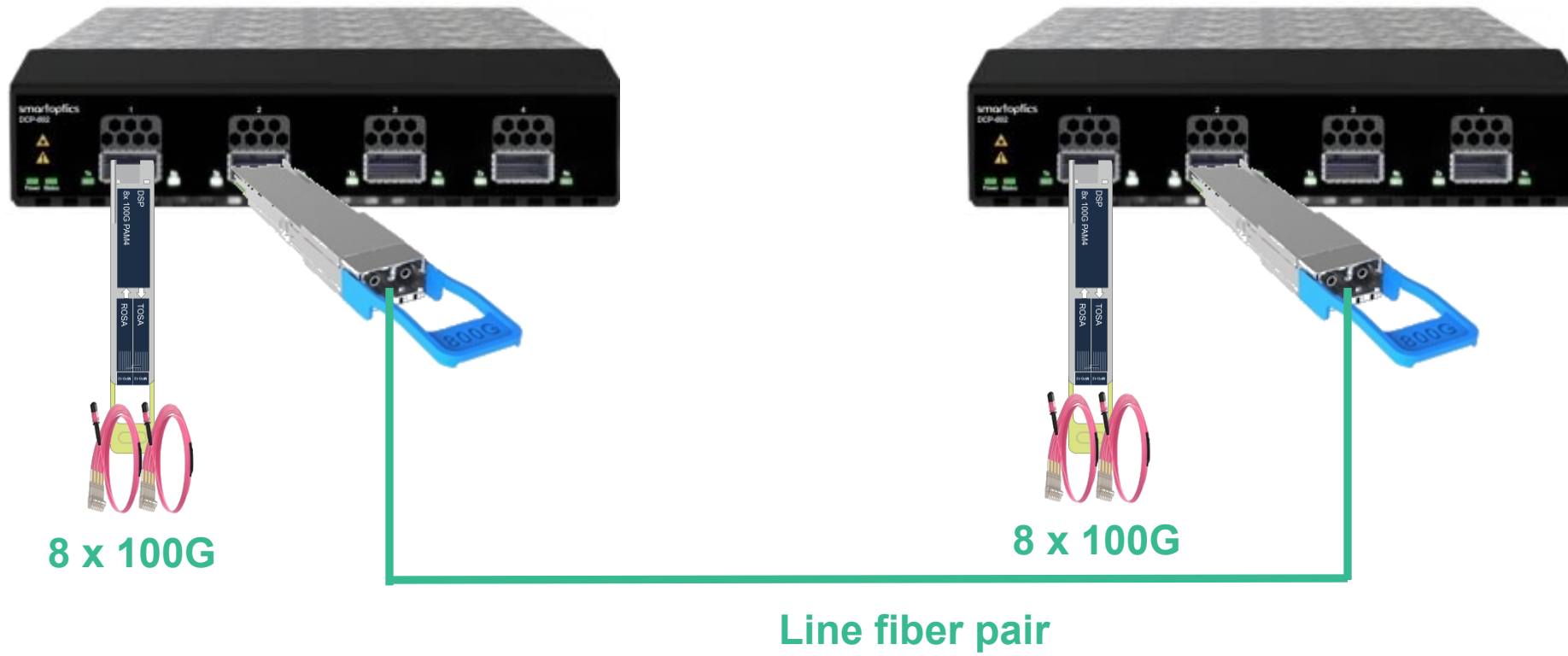
The line port will be equipped with coherent 800G QSFP-DD DWDM transceiver



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DCI call...

Complete picture looks like this:



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DCI call...

Its clear now, but wait — how to use the second port?

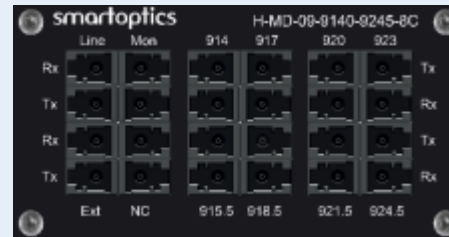
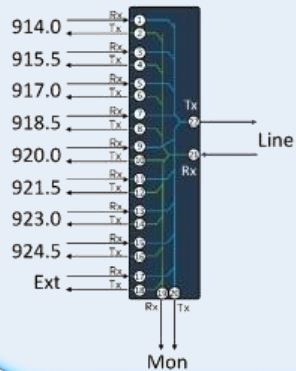
You can use second Flexponder to serve another connection or equip the solution with passive multiplexer

Passive / active DWDM — what it is all about?

We refer to a DWDM system as "passive" when multiplexer (line system) does not require any electrical power to operate. This device works similarly to an optical prism: individual optical channels enter the prism and are combined into a single stream of light, which is then transmitted through the line port. Conversely, an optical demultiplexer separates the combined light back into individual channels.

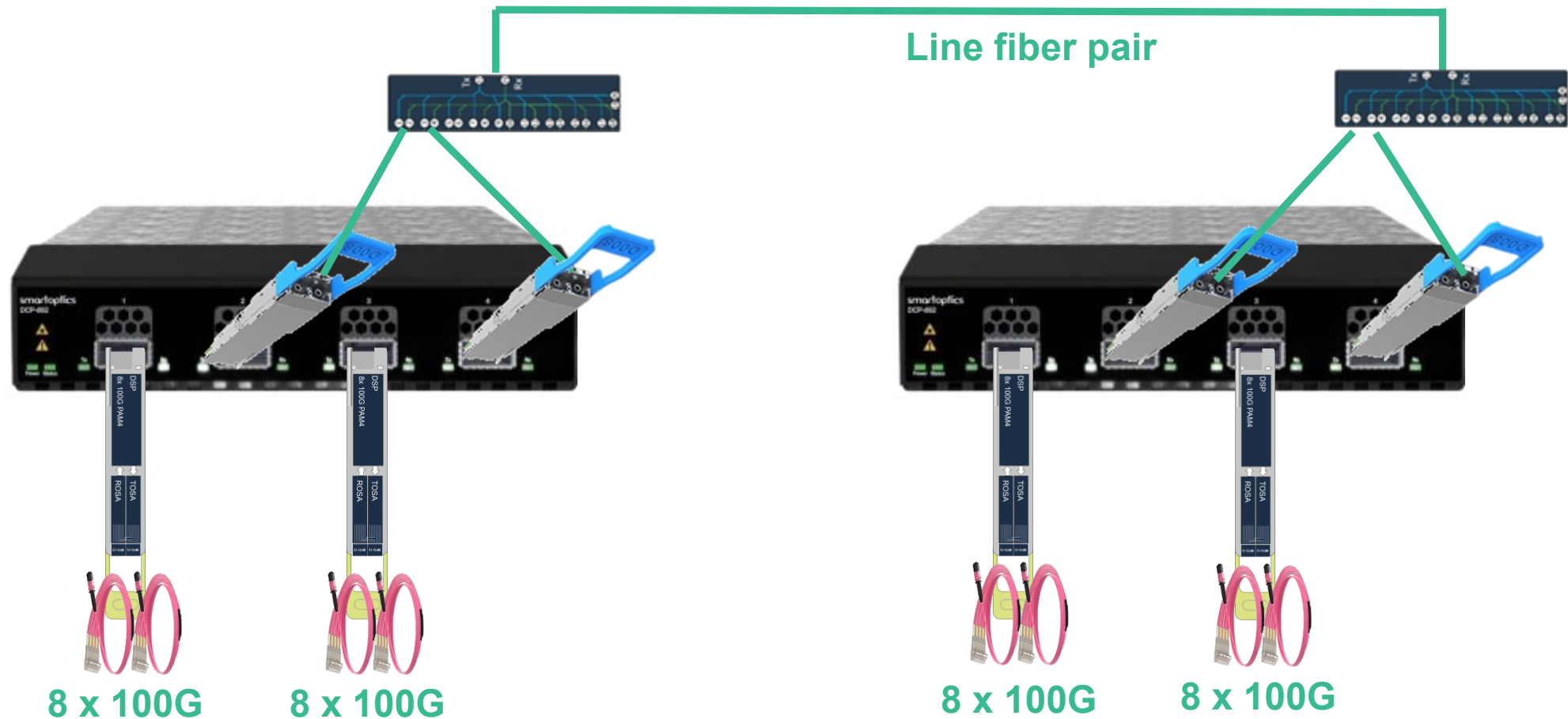
DCI call...

Passive multiplexer has eight 800G capable ports where you can connect signals from DCP-802s, it has “Ext” port for hitless upgrade by another 8 x 800G and “Mon” port where you can plug your OSA for easy troubleshooting



DCI call...

This is the setup where you use both ports over same fiber pair connection using passive muxponder:

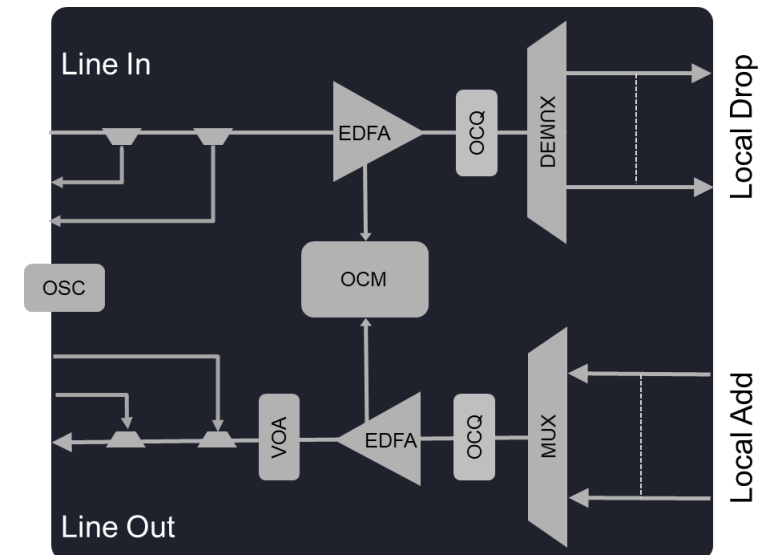


DCI call...

But wait, I have on link that is ~100km long.
Passive line system will not work, correct?

Correct! You need active line system — DCP-M32 is the way to go.

- Support for 100G-800G DWDM coherent wavelengths.
- Complete zero-touch automatic optical setup, just like using a passive multiplexer
- With OTDR filter 1600-1670nm
- Filter selection:
 - $32 \times 150\text{GHz} \Rightarrow 32 \times 800\text{Gb/s} = 25.6\text{Tb/s}$
- Optical performance based on 800G ZR+:
 - 400G QPSK: Not dispersion limited, 0-~36 dB
 - 800G ZR+ 16QAM: 0-120 km, 0-28 dB

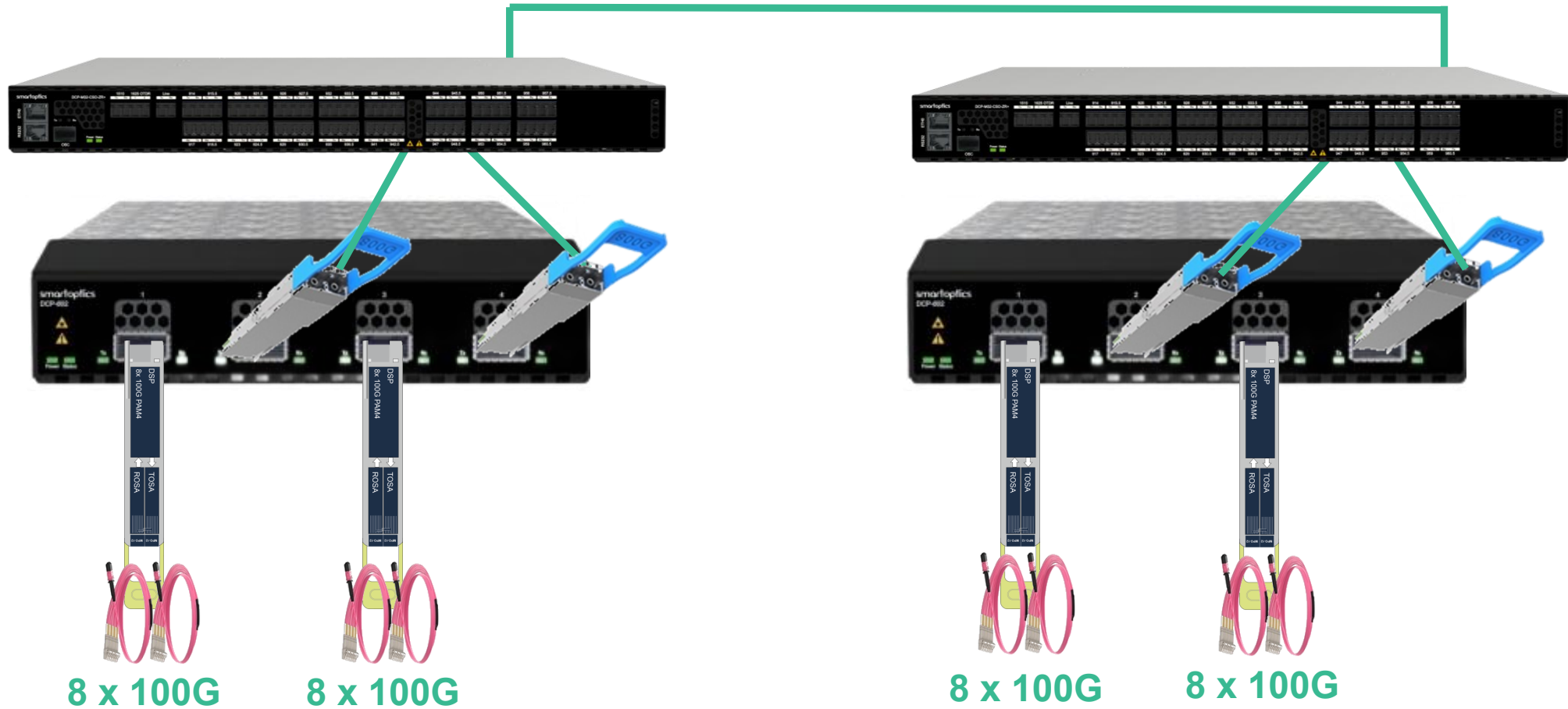


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DCI call...

This is the setup where you use both ports over same fiber pair connection:

Long line fiber pair



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Correct. Please remember that ports on the multiplexer can be connected to other type of muxponders/transponder — not only DCP-802

Simple and scalable solution — I like it!

Could you send me the quote?

a few days later...

Hi Andrei, how about our project? Did you like it?

It looks nice, but I am still hesitant about the new technology, especially since this infrastructure will carry important government traffic

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DCI call...

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Let's add our CompleteCare service:

- TAC24/7
- Direct email/phone access to Smartoptics support engineer
- APR service

Let me apply for a special project discount

one week later...

Hey Andrei, did the customer like our latest offer?

It also seems that it might be slightly out of budget...

Piotr, I was just about to call you.
Yes, the PO is coming !

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Thank you

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