



Enabling Next-Gen Residential and Enterprise Broadband Access

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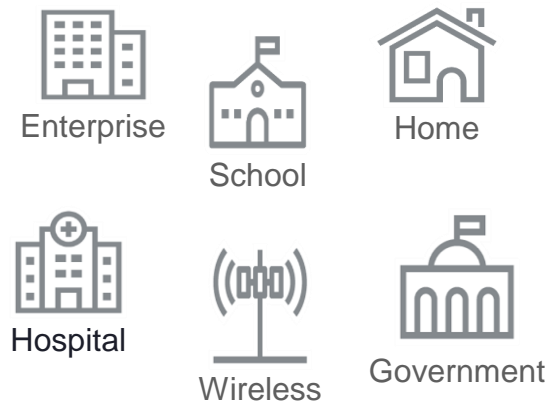
Business Development Director, EMEA

KBC Forum

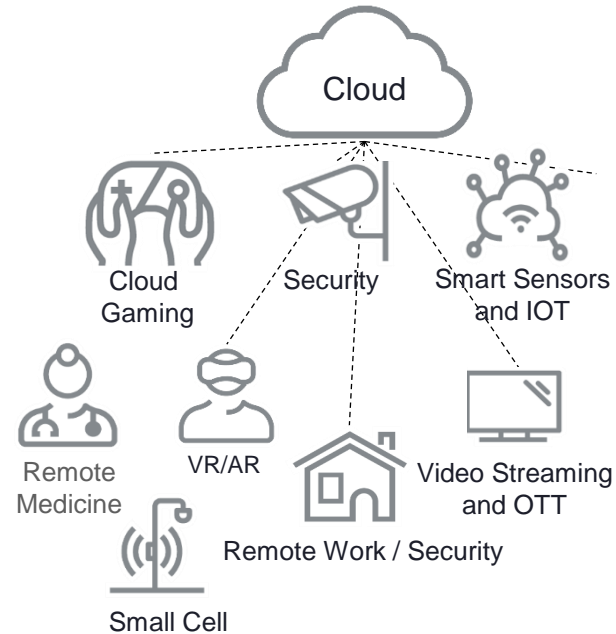
November 8th, 2023

Applications and environmental sustainability are putting pressure on the network

Increasing Reliance on Broadband



Different Applications Require Different Performance



Environmental Aspirations



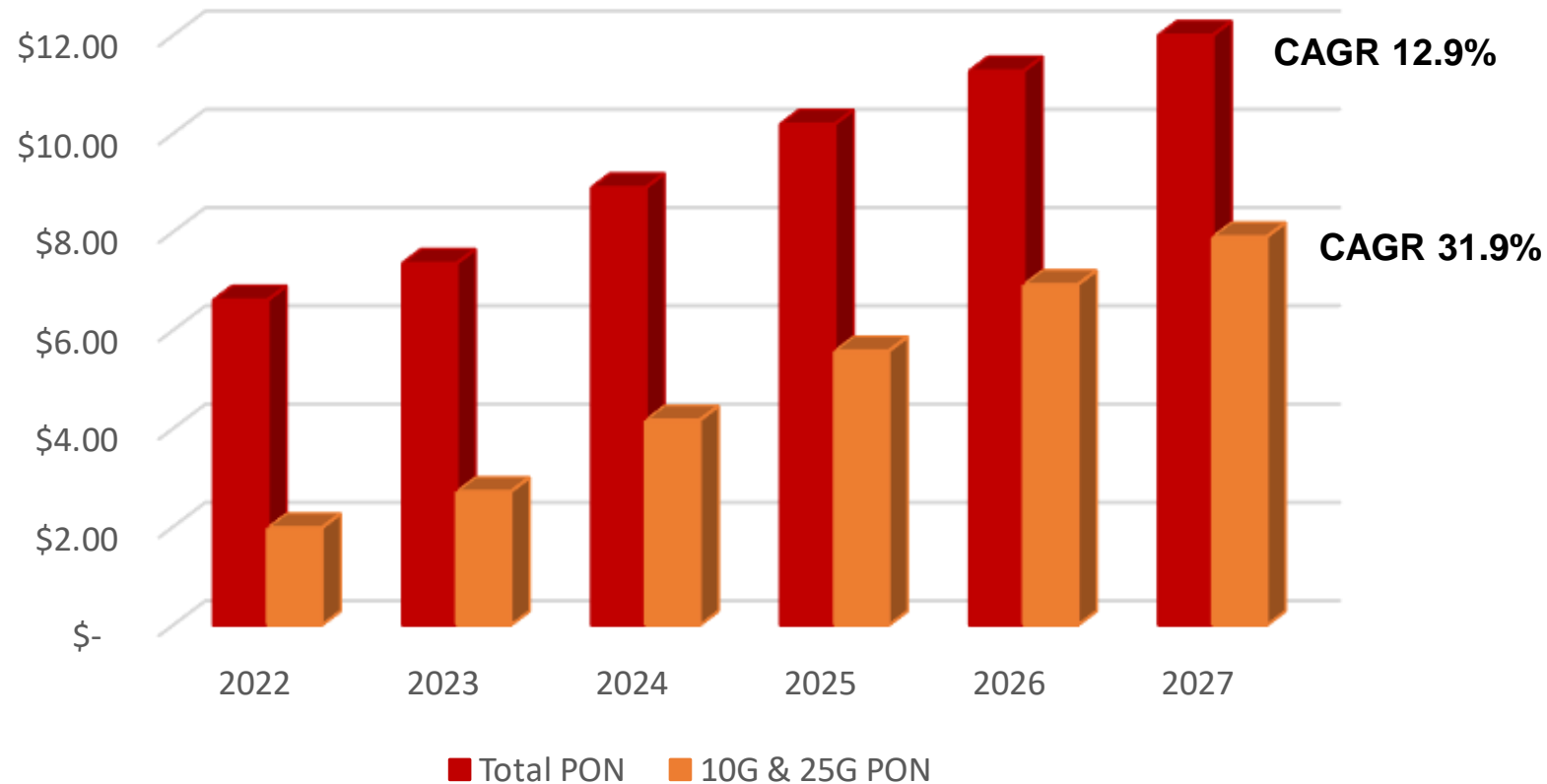
Bandwidth Hungry

Latency Sensitive

QoS and QoE

Broadband Access Technology Step

A growing market moving from GPON to 10GPON and beyond in only 5 years

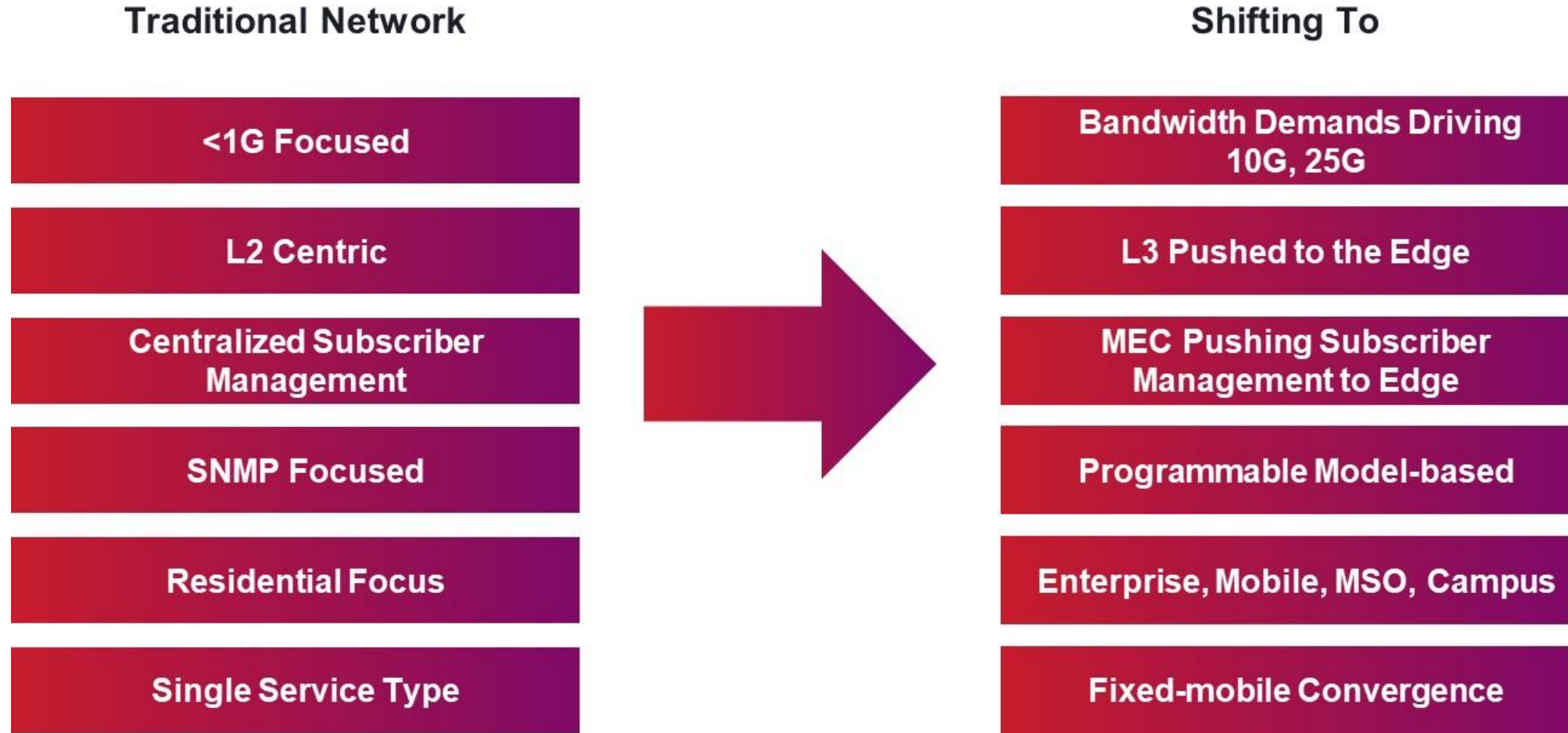


Source: Ciena Market Intelligence 2023
Global Market ex-China

Source: Ciena Market Intelligence

ciena

Access Network Characteristics are Shifting



From Hardware-Software to Functional Disaggregation

Disaggregation and Virtualisation leading to new Architectures

Initially it was about separating hardware from software

Value of disaggregation increases when applied more broadly

Increase flexibility



Mix & match

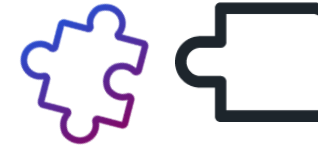
CAPEX / OPEX savings



Vendor choice



Leverage technical advancements



Break up logical components



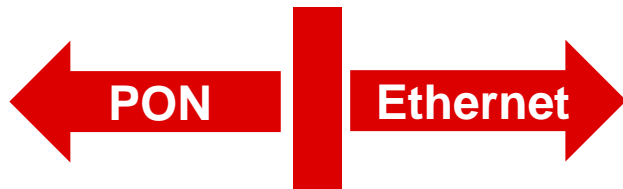
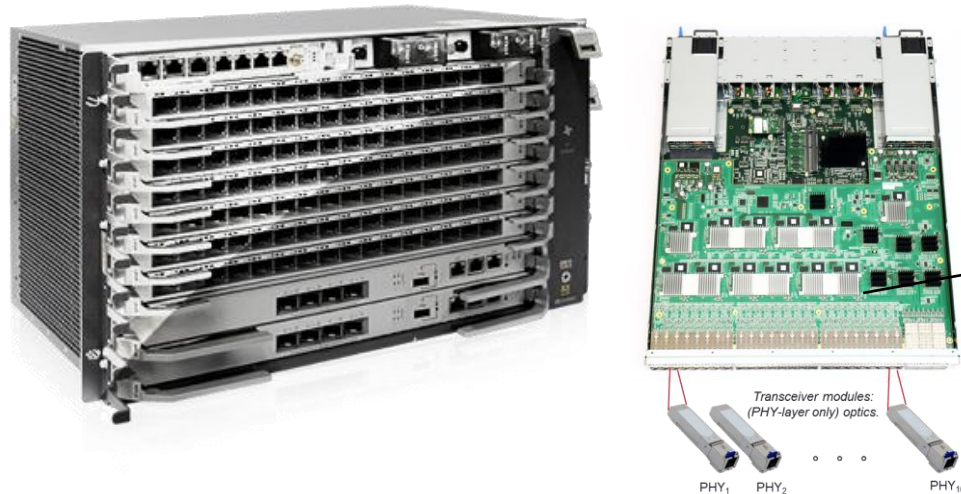
Re-combine in alternate formats

Disaggregation, Decomposition, Recomposition

Example 1: OLT-Plugs for Disaggregation of the Access-OLT

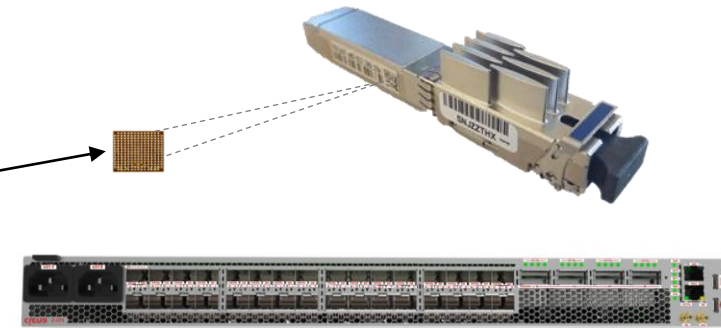
Energy-efficient, scalable (up and down), future-proof architecture

Traditional PON OLT chassis



Legacy “big iron” proprietary xPON access

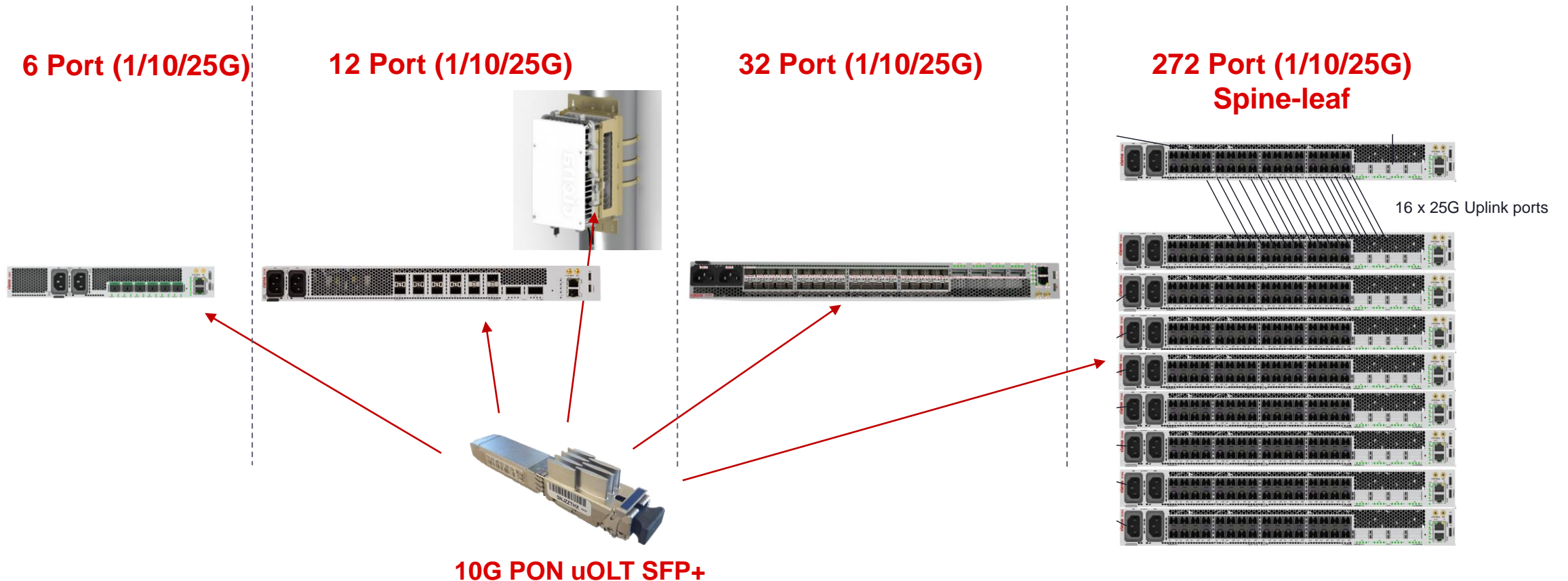
Disaggregated μ OLT solutions



Open, disaggregated, scalable xPON access

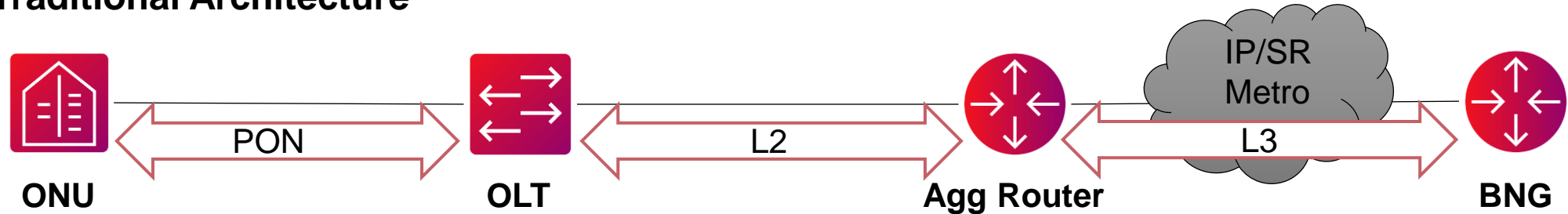
Scalability through Recomposition of disaggregated OLT

Scales using host router sizes from 6 ports and up to 256 and beyond

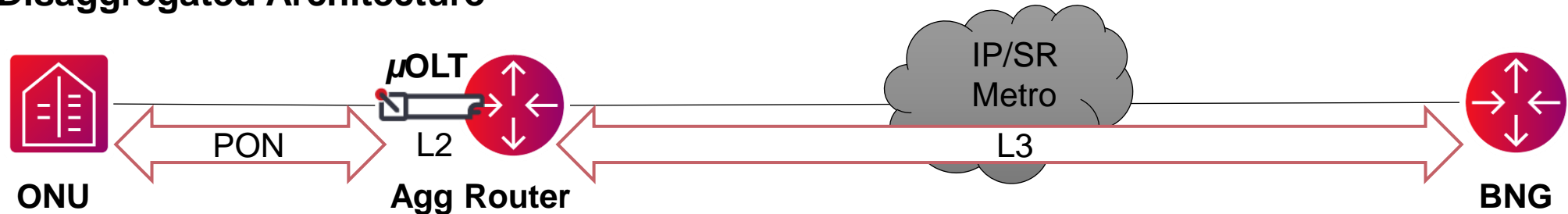


Architectural Benefits through OLT De-Composition & Re-Imagining

Traditional Architecture



Disaggregated Architecture



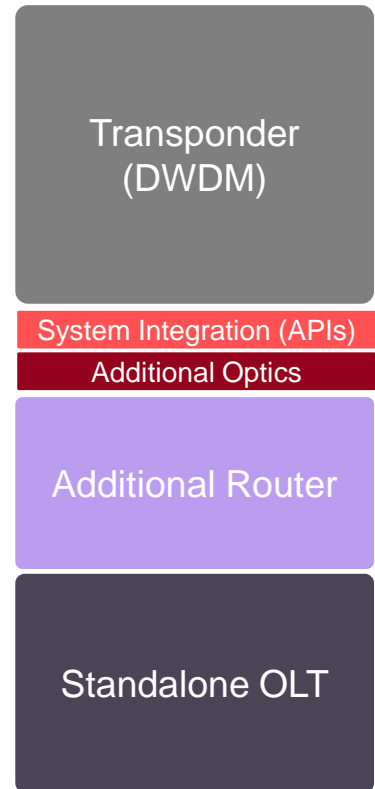
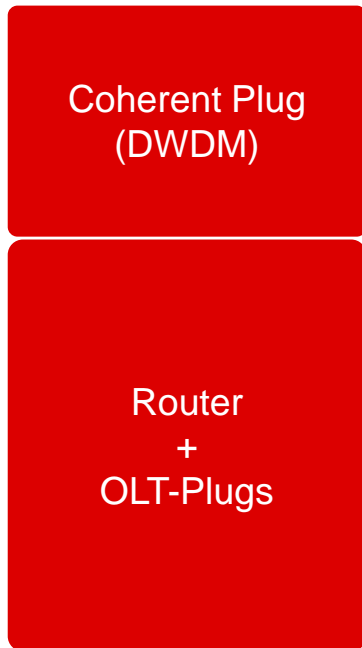
Flexible and lower-cost architecture
Simpler PON upgrade path
Extend routing to the access edge

Study results: TCO Savings through OLT Disaggregation

Comparing the disaggregated OLT solution against traditional OLT + Router + Metro-DWDM

Disaggregated
uOLT-Solution

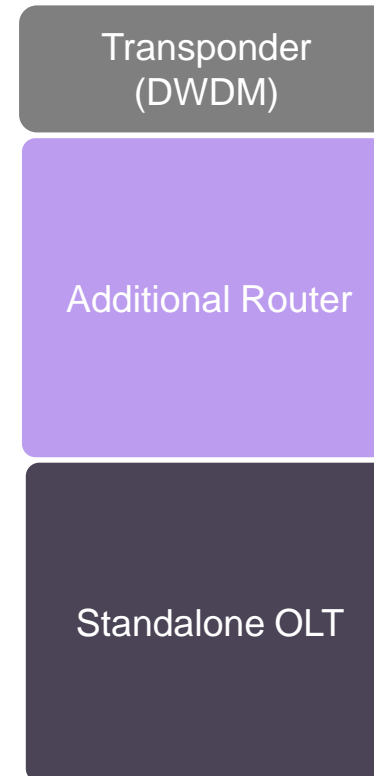
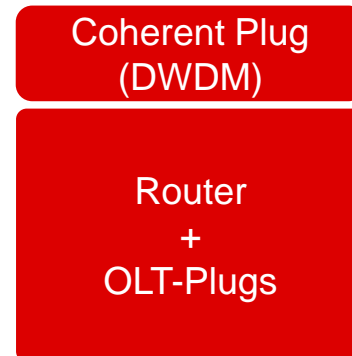
Traditional Chassis
OLT+Router+DWDM



Capex ~20% Savings

Disaggregated
uOLT-Solution

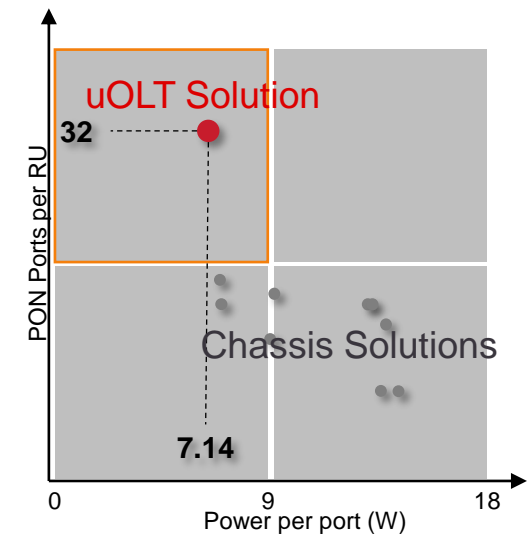
Traditional Chassis
OLT+Router+DWDM



OPEX
Savings
~ 50%

Opex (Space/Power) ~50% Savings

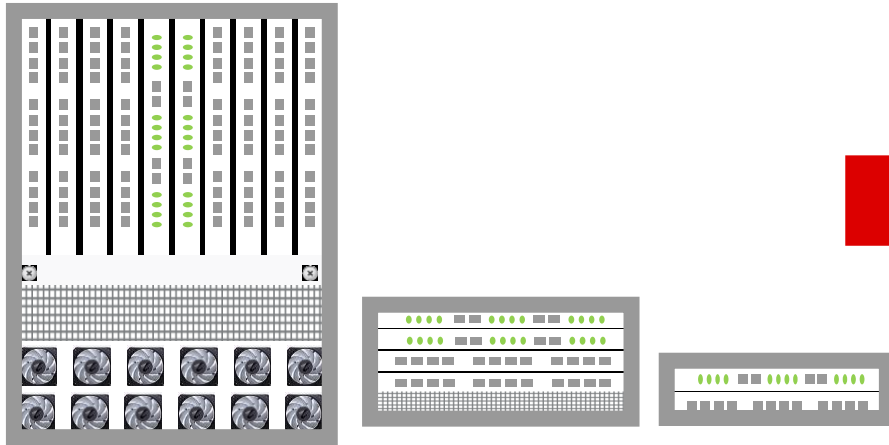
Footprint and power



Disaggregation of the Broadband Network Gateway (BNG)

Disaggregated, distributed and virtualized Subscriber Management

Traditional hardware-based BNG solution



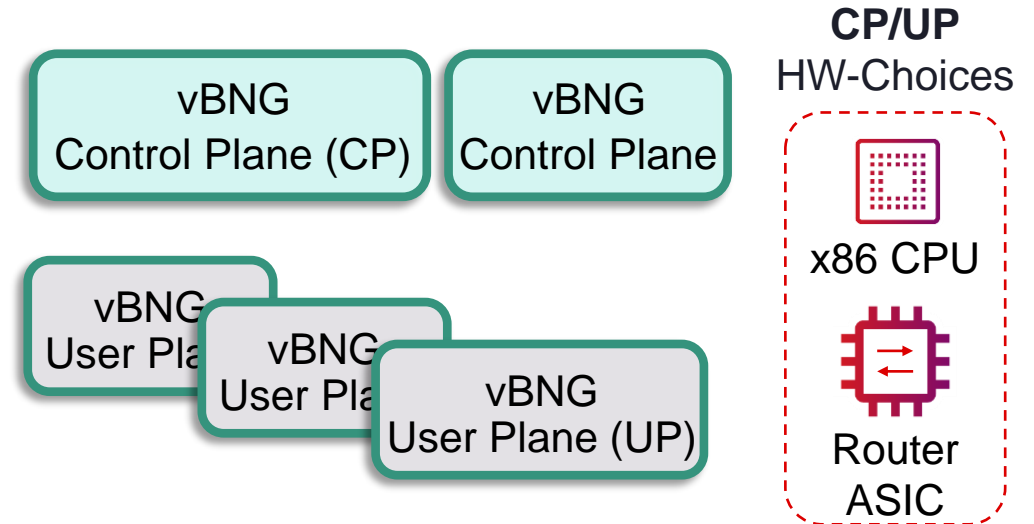
Closed architecture

In-line control and data plane

Limited scaling, localized resiliency

Inefficient resource management

Disaggregated, SW-defined BNG



Open flexible architecture

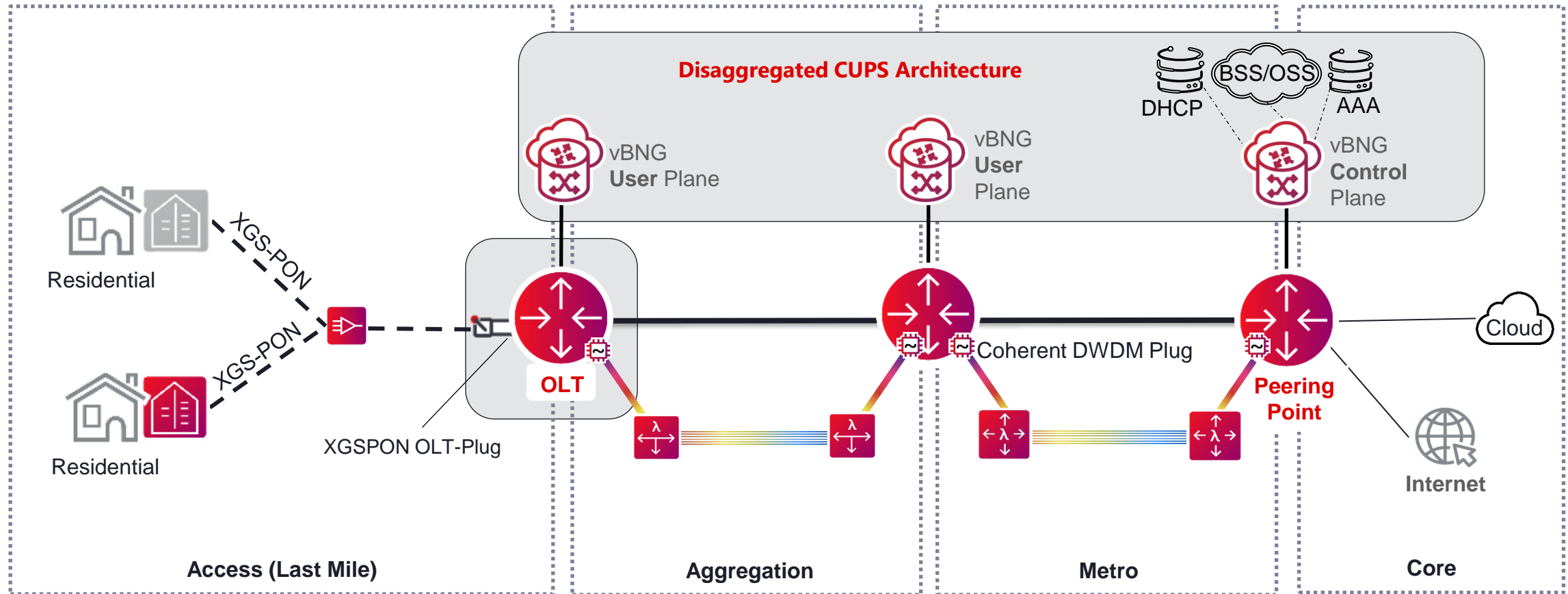
Separate control plane and user plane

Independent scaling and resiliency

Flexible resource management

The new Residential Broadband Solution

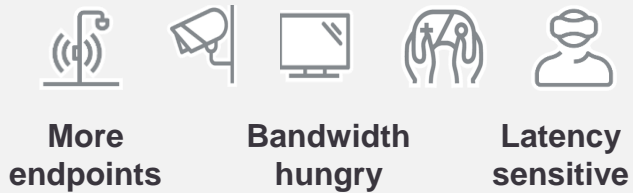
Combining disaggregated OLT, virtualised BNG and coherent DWDM



Key Takeaways

New Requirements and Technologies sometimes require a more Disruptive Evolution

Application Demands



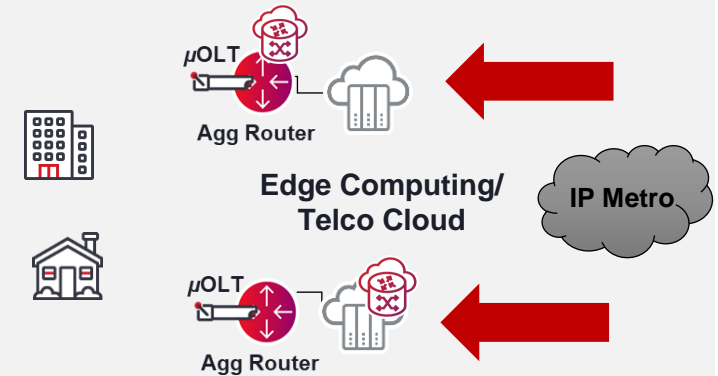
Pressure on the Network

Disaggregation, De/Re-Composition

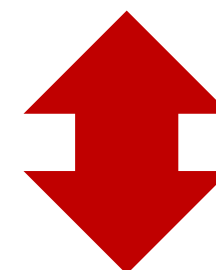
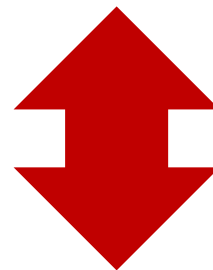
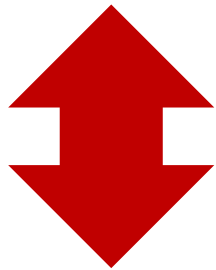


Disruptive Technologies

Architectural Evolution



The new Service Edge



Guided Migration towards an efficient, scalable and future-proof Platform



Thank You