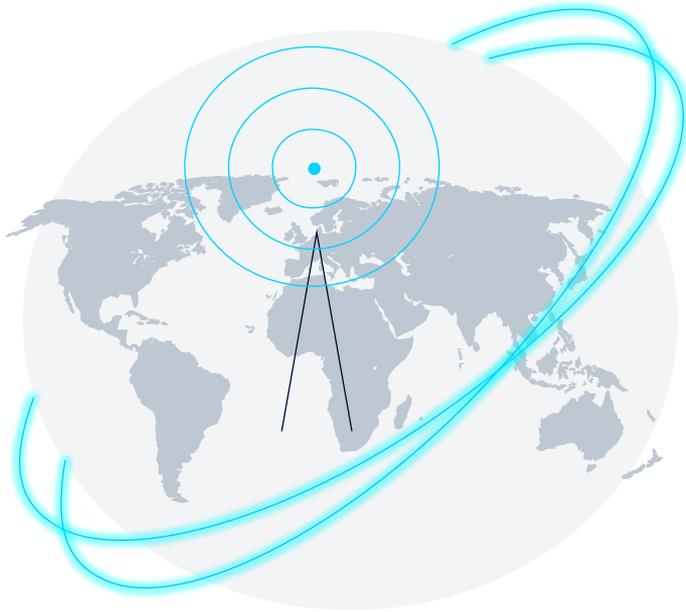


Let there be light

An aerial photograph of a traditional Japanese village, likely Gassho-mura, with its characteristic steeply pitched thatched roofs. The village is nestled in a valley surrounded by forested mountains. A network of glowing blue lines is overlaid on the image, tracing paths through the streets and fields, suggesting a digital infrastructure or data network. The lighting is soft, indicating either dawn or dusk.

Nigel Abraham
Customer CTO

Massive opportunities for Fixed Networks



Trend #1

Gigabit broadband is a reality

- >450 Gigabit networks
- >90 multi-Gigabit networks

Trend #2

The world is going 5G but 5G is going fixed

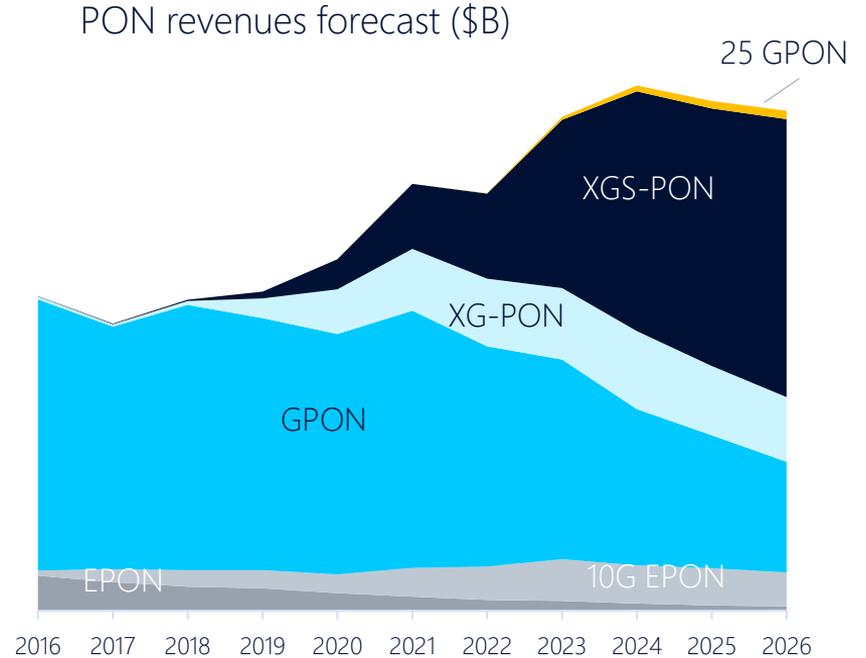
- Enhance coverage
- Decrease 5G deployment cost

Trend #3

New digital behaviour during pandemic

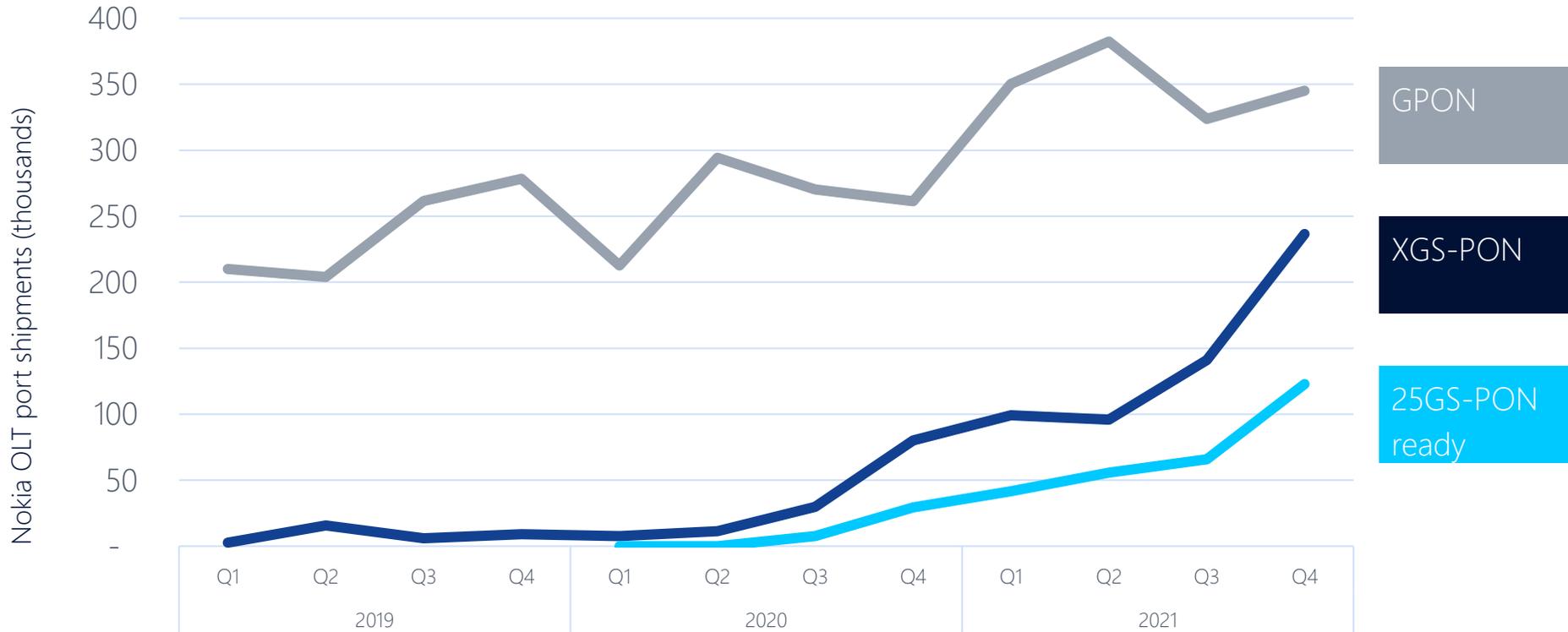
- 60% overall Fixed Network traffic increase
- Next generation Fiber upgrades will happen 3 years sooner than expected

XGS-PON upgrades are accelerating



Source: Dell'Oro 2022

Next Gen PON has taken off



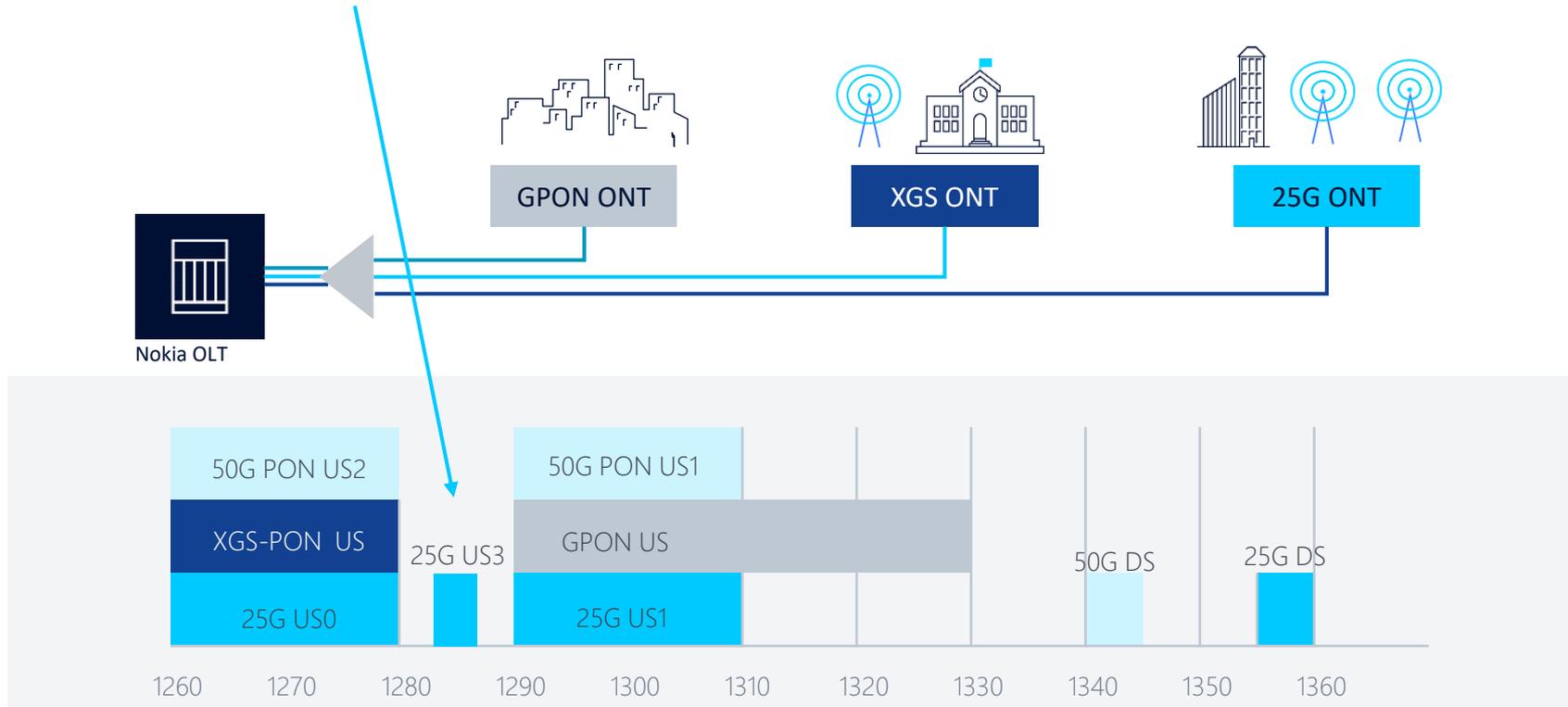
25G is gaining traction across the globe

25GS-PON MSA represents the full eco-system



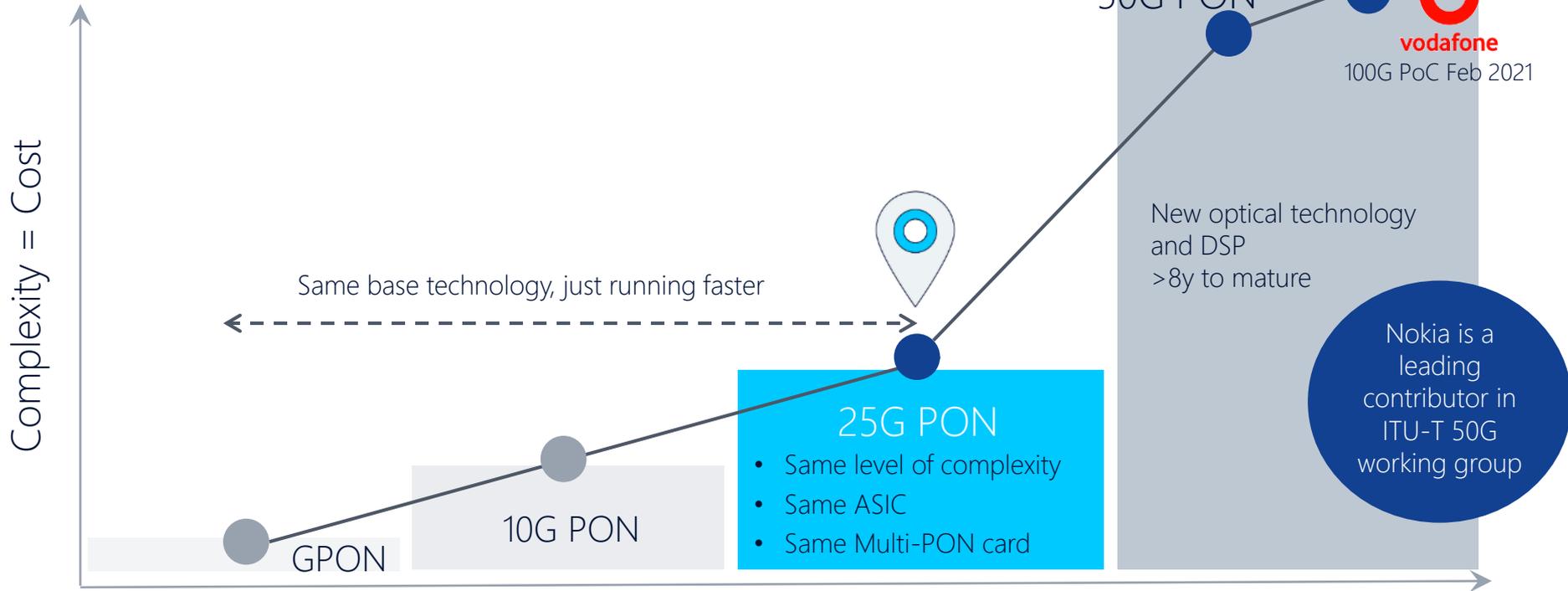
25G PON requires no changes in the outside plant

25G can co-exist with GPON, XGS-PON and GPON & XGS-PON

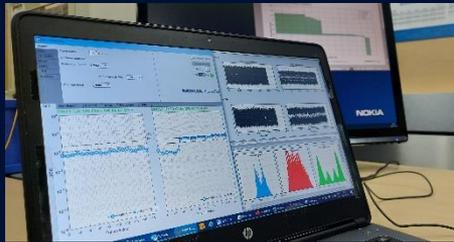


25G PON is a straight-forward evolution

50G will be a quantum leap in complexity... and cost



Nokia shows the industry first 100G PON in Vodafone Germany lab



1st 100Gb/s on a single lambda

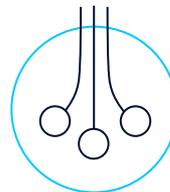
State-of-the-art DSP

Existing, cost-efficient optical technology



1st Flexible data rate on a PON

Grouping PON users with similar physical characteristics for more efficient data transmission



Unified fibre access

Trial demonstrates the potential of fibre to serve as unified infrastructure to connect everything: consumers, businesses, 5G, smart cities and more

Innovation by
NOKIA Bell Labs

NOKIA

Monetizing broadband with new use cases



10G/25G PON for more enterprise customers on a PON

Increase of enterprise users/PON from 5% -> 10% results in <1Y payback



Use big pipe for open access and diversified revenues

Adding 5% subscribers on a network reduces CAPEX/user by 15%



Leverage PON for efficient 5G transport

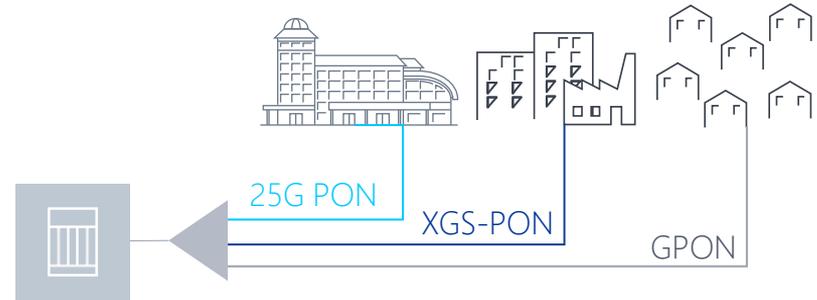
Save 50% on transport TCO and accelerate time-to-market for 5G

Enterprise connectivity over FTTH/PON is growing

Number of business fixed broadband connections worldwide
 Source: Analyses Mason, 2020



Accelerating return on investments with XGS and 25G PON on a converged network



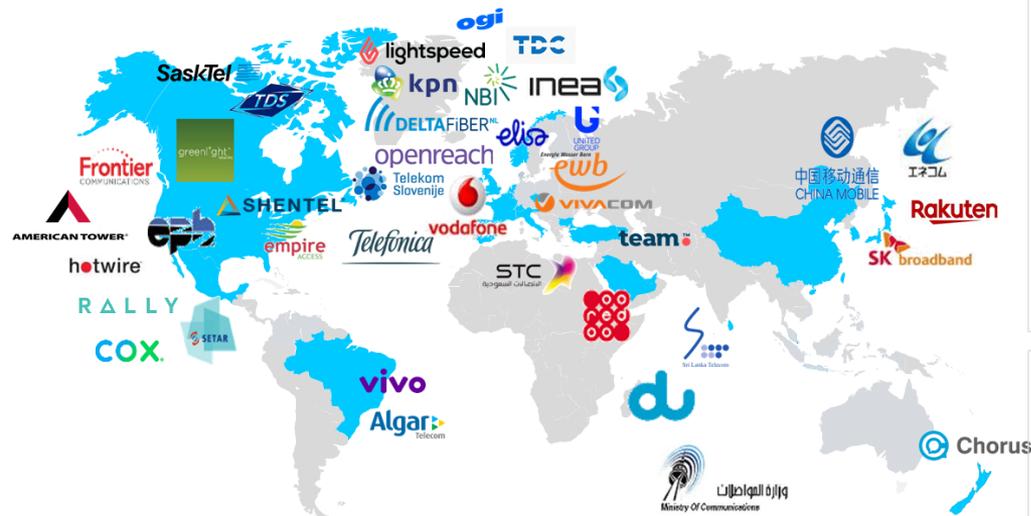
One network to deploy, operate and maintain

Meets bandwidth demands for all tiers

Separation per services for dedicated QoS

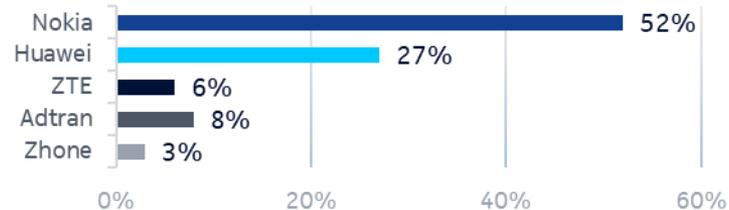
Next Generation PON in full speed and Nokia is leading the market

Source: Dell'Oro 4Q2021

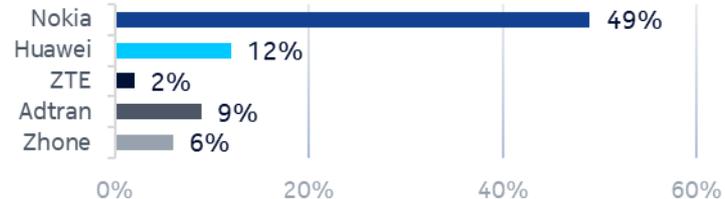


>80 Deployments worldwide

XGS-PON OLT market share (rolling 4Q)



XGS-PON ONT market share (rolling 4Q)



Quillion powers next-generation massive scale access networks



>150 customers

>1M lines shipped

Fully integrated OLT on-a-chip

Reduced footprint and power

High density, non-blocking Multi-PON

High-availability and low latency for 5G transport

Supports: GPON, XGS-PON, TWDM-PON, 25G PON



Thank you