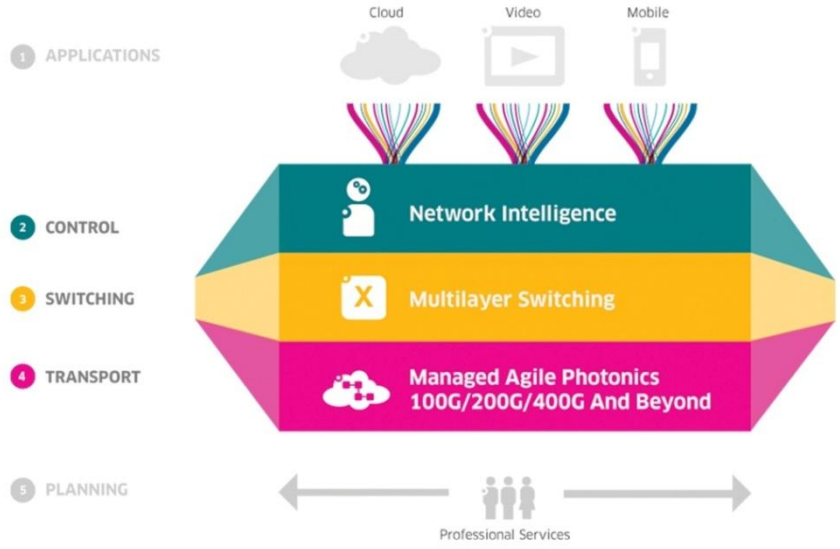
AGILE OPTICAL NETWORKING

SOLUTION BRIEF

Optical networking isn't just about pushing traffic any more. The insatiable demand for mobile, video and cloud-based services is placing enormous pressure on networks - and it's no longer enough to simply increase capacity. What's required is a scalable, versatile and dynamic networking solution that can adapt to the ever-changing needs of users - in short, Agile Optical Networking.

To earn the "Agile" label, the optical network must be able to remotely program client interfaces in support of an ever-increasing variety of protocols, and dynamically configure end-to-end service routes through the network. Additionally, the network needs to become more automated: self-monitoring, self-diagnosing, self-healing, self-restoring, and self-optimizing - essentially, more self-aware. Enhanced automation, achieved by adding more intelligence, is a key enabler for the increased agility required for next-generation services delivery.



Alcatel-Lucent's 1830 PSS family of optical transport systems achieves the scalability, versatility and dynamic capability required by today's networks by providing unique value in three key areas:

Managed Agile Photonics: at the heart of our photonics strategy is the 400G Photonic Service Engine, the world's first-ever commercially available electro-optics chip capable of driving traffic up to 400 Gb/s per channel. Our Wavelength Tracker enables complete photonic service management anywhere in the network — without terminating wavelengths. And our advanced Remote Optical Add/Drop Multiplexer (ROADM) capability can switch any wavelength in any direction, without contention.

Multilayer switching: the 1830 PSS combines high capacity packet, OTN and photonic switching in a single platform, enabling grooming and aggregation at the most economical layer. Non-blocking switching ensures capacity can scale, resources aren't stranded and new service demands can be met.

Network Intelligence: the 1830 PSS's multilevel-aware optical control plane supports true multi-region and multilayer networking — unlocking the full potential of the network by jointly optimising and controlling packet, electrical and photonic switching layers. A comprehensive suite of management tools simplifies complete lifecycle planning for optical services, including advanced scenario planning. Comprehensive measurements of network parameters such as power, signal noise and latency enable advance notification of potential issues and ensure predictable performance.

Together, these unique qualities enable network operators to save up to 60% TCO(*) while also realising the untapped potential of their optical network — not just as a resource to transport bits, but as an integral ingredient of the data infrastructure connecting end users to their content and applications.

(*) Bell Labs modelling shows 70% OPEX and 40% CAPEX saving compared with alternative solutions; 60% overall.

AGILE OPTICAL NETWORK CHARACTERISTICS

- **Scalability** to deliver speeds from 100G to 400G.
- **Versatility** to deftly manoeuvrer a wavelength in any direction, in any colour, in real time.
- **Dynamic capability** to manage service changes automatically and pro-actively fix issues before they become service-impacting.

ALCATEL-LUCENT 1830 PSS FOR AGILE OPTICAL NETWORKS

- 8.8 Tb/s capacity at 100G or 17.6 Tb/s at 400G
- 88 channels per optical pair
- 100G coherent DP-QPSK, SD-FEC; 400G DC 16QAM
- Up to 3,200 km reach at 100G
- T-ROADM up to 10 degrees, CDCF
- Protection switching
- Terabit OTN switching
- Photonics OAM&P
- Power <2 W per Gb/s
- Integrated wavelength and power management
- Dynamic GMPLS control plane
- L1 encryption hardware with key management
- Full L2 Ethernet
- Ethernet, FC and InfiniBand support

For more information

www.alcatel-lucent.com/solutions/agile-optical-networking

www.alcatel-lucent.com/1830

www.alcatel-lucent.com/100G

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