



State of the Art IP and
Optical Networking

5G Solutions for Wholesalers

Unlocking Growth Potential for Wholesalers



5G Solutions for Wholesalers

5G represents a huge growth opportunity for businesses that are able to provide Mobile Network Operators (MNOs) with the advanced transport solutions required for 5G mobile backhaul (MBH). This can be existing Mobile BackHaul (MBH) wholesalers evolving their current 3G and 4G MBH portfolio. It can also be alternative network operators, who seek to monetize the capacity and reach of their fiber infrastructure.

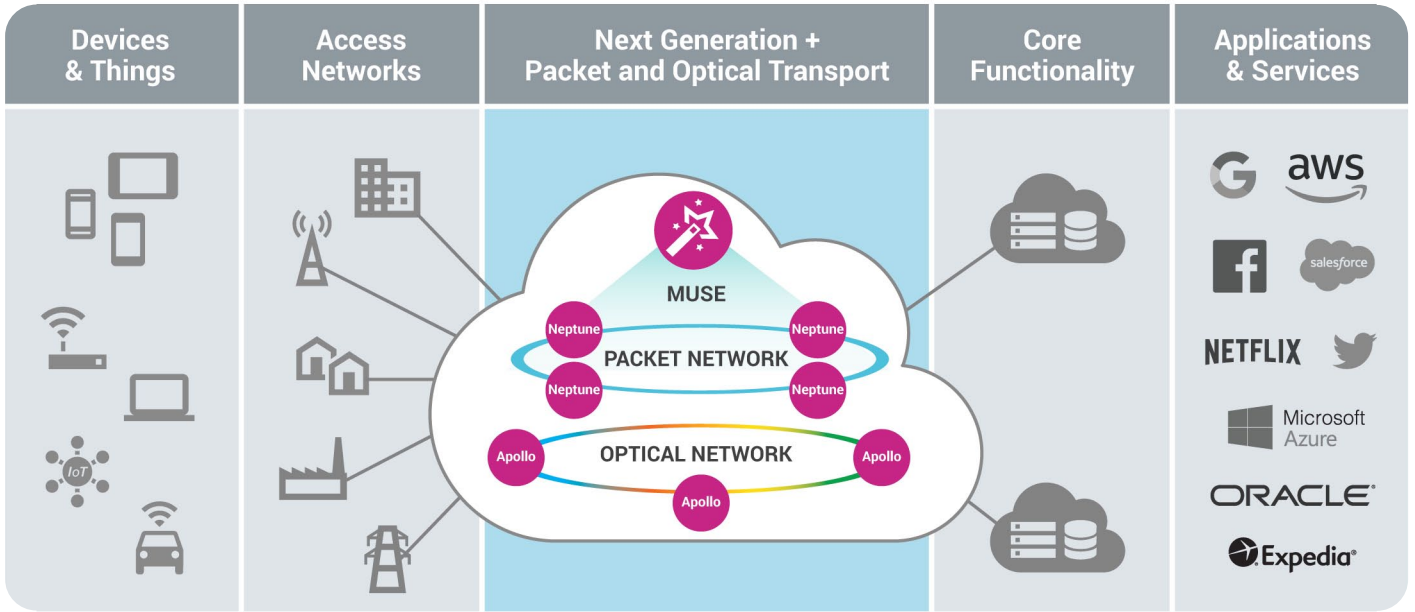
As a packet and optical transport specialist, Ribbon is able to provide a network optimized for wholesalers. The programmable agility of Ribbon's transport solution allows wholesalers to provide MNOs with the leased connectivity, which they need to mass-launch enhanced mobile broadband services. As the MNOs introduce more complex services, such as AR/VR, mission-critical applications, and IoT, the wholesaler can lease connectivity with the determinism, ultra-low latency, ultra-high reliability, and highly-accurate timing required by such services.

Multiservice

Simplified Operation

Cost Efficient

Flexible Deployment



Programmable, Sliced, Multilayer Transport

Your Challenges

Our Solutions

Multiservice

Ribbon's advanced transport technologies allow multiple virtual networks to be created on a single transport infrastructure. This is known as network slicing.

Our hybrid network slicing approach allows the wholesaler to configure the isolation between slices. This allows the wholesaler to offer the MNO network slices that best meet the services they are delivering:

- **Total isolation enabled by wavelength and OTN slicing**
Ideal for supporting mission-critical services, where connectivity must always be deterministic and is always unaffected by the rest of the network.
- **Hard isolation enabled by FlexE and dedicated queues**
Ideal for business-critical services.
- **Soft isolation enabled by Segment Routing and Enhanced VPN**
Ideal for best-effort mobile broadband services where statistical multiplexing can be applied.

Total isolation allows the wholesaler to support multiple MNOs on the same transport network.

Simplified Operations

Ribbon's Muse software suite provides a comprehensive set of tools for the lifecycle management of the 5G transport network and the services that wholesalers are leasing to the MNOs:

- Slice management from slice planning and design to fulfillment, assurance, and maintenance.
- Multilayer optimization techniques ensure the wholesaler's network is maintained at optimal utilization and performance levels.
- Open, standard-based interfaces on a modern PaaS infrastructure allows Muse to be easily integrated into the operator's OSS/BSS ecosystem.

Cost Efficient

Ribbon's solution is designed with cost efficiency built in:

- Pay-as-you-grow design is at the heart of Ribbon's product architectures. Pluggable optics and tributary cards offer cost-effective scaling, with extension shelves that allow easy, cost-efficient addition of functionality and capacity.
- Elastic MPLS gives the network architect the flexibility to choose the packet transport technology needed for optimal design of their network.
- Packet aggregation provides cost-efficient transport for packet services.
- Software-enabled 5G features mean 5G capabilities are only instantiated when required.

Flexible Deployment

Ribbon's solution is designed to be equally effective in the street cabinet, small equipment room, or the central office:

- Compact architecture with high-density pluggable cards means maximum use of central office rack space.
- Low power consumption reduces operation expenses.
- The solution is ideal for deployment in street cabinets, thanks to:
 - Compact low-power architecture.
 - Hardened design, which supports a wide temperature range.
 - All-front access.

Contact Us

Contact us to learn more about Ribbon solutions.

About Ribbon

Ribbon Communications (Nasdaq: RBBN) delivers communications software, IP and optical networking solutions to service providers, enterprises and critical infrastructure sectors globally. We engage deeply with our customers, helping them modernize their networks for improved competitive positioning and business outcomes in today's smart, always-on and data-hungry world. Our innovative, end-to-end solutions portfolio delivers unparalleled scale, performance, and agility, including core to edge software-centric solutions, cloud-native offers, leading-edge security and analytics tools, along with IP and optical networking solutions for 5G. We maintain a keen focus on our commitments to Environmental, Social and Governance (ESG) matters, offering an annual Sustainability Report to our stakeholders. To learn more about Ribbon visit rbbn.com.