Scaling, Converging and Automating transport networks for the Terabit Era

Infinera’s mission is to build the world’s most innovative network solutions to help our customers win, and we do that by delivering on our founding vision of “an infinite pool of intelligent bandwidth.” The Infinera Intelligent Transport Network is an evolution from the Digital Optical Network architecture that was introduced in 2005. Today Infinera is well-recognized in the technology segments of optical WDM transport and digital OTN switching. The architecture is being enhanced with automation, convergence and scalability for the next decade.
Why the Infinera Intelligent Transport Network?
The Infinera Intelligent Transport Network delivers unparalleled scalability, convergence and automation for service providers to begin their journey to the Terabit Era while addressing growing bandwidth demands, increasing complexity and competitive pressures.

Dramatic shift in traffic
Long form video. High bandwidth flows.

Growing complexity
Racks, fibers, power, space.
Planning, operations, teams.

Intensifying competition
Instant demand fulfillment.
Customer visibility.
Programmable control.
A Clean-slate Design
Infinera pioneered a new approach for networks with photonic integration. This provides massive WDM capacity in small power and space footprints to handle growing bandwidth needs. It also allows the transport system to scale in other dimensions—adding multi-layer switching including MPLS and OTN without any performance compromise while injecting software intelligence. This clean-slate design differs from competitive solutions that are tactical as they use 10G/40G platforms that may need to be retrofitted for scale or performance or completely refreshed within a couple of years. We believe that the Infinera Intelligent Transport Network offers strategic business value to customers and protects investments for the next decade.

1. Photonic IC, PIC
   Massive DWDM in small footprint
   FlexCoherent, Flexible Grid
   Allows scaling in multiple dimensions

2. Converge Digital, Optical, Packet
   Room to integrate multi-layer switching
   10 special-purpose ASICs (Electronics Scaling)

3. Inject Intelligence
   GMPLS, World’s largest
   Single OS, Reliable
   Transport SDN / OTS
**Taking Transport Networks to the Next Level**

**Scalability:** Today, the Infinera Intelligent Transport Network delivers 500G FlexCoherent™ super-channels and is designed to support 1T in the future, powered by large scale Photonic Integrated Circuits (PICs). Using the small space and power footprint of the PICs, the architecture has the potential to support hundreds of terabits per second of switching capacity and thousands of services, including future services such as terabit Ethernet.

**Convergence:** The Infinera Intelligent Transport Network architecture will converge packet, OTN and ROADM switching functions into a single platform without any performance compromise. Not only does the convergence itself lower capex and opex by dramatically simplifying the network; multilayer optimization can now be employed to carry and protect traffic at the more cost effective layer reducing spend on higher costs network elements.

**Automation:** The Infinera Intelligent Transport Network will offer programmability and automated multi-layer provisioning via software control that works in conjunction with Transport SDN. It allows end-users control and insight into their own network slice and closely matches customer revenues to network growth via capabilities such as the Instant Bandwidth solution.
Helping Transform Service Provider Business
The Infinera Intelligent Transport Network helps service providers to monetize their infrastructure by helping to win new customers with differentiated services that can be rapidly delivered. Infinera Instant Bandwidth enables operators to use time as a weapon and turn up 100 Gb/s capacity in just a day. Infinera FastSMP™ helps operators provide multiple levels of protection within 50ms to create new revenue streams. Finally the technology is highly reliable with millions of hours of failure-free operation reducing customer churn.

Monetize Networks
Win new customers
Retain existing customers

Differentiated, new services

Use time as a weapon

Quality, reliability of offerings
The Infinera Intelligent Transport Network lowers expenses while protecting investments in provider networks. Integrating WDM with OTN switching maximizes WDM capacity by reducing the number of wavelengths for transport which in turn potentially reduces the number of chassis and modules needed to run a traditional network. This has a multiplier effect on power, cooling, rack space and operational resource consumption for the lifecycle of the network. The integration also maximizes capacity usage in other layers of the network like routers, boosting overall efficiency.