Infinera®

Powering Innovation with Deep Vertical Integration and Open Networking Solutions

Telecommunications networks are becoming an increasingly important part of everyone's lives, from mobility to broadband to social media to gaming. As capacity demand continues to grow, as it has 30% year over year for the past 10 years with no slowdown in sight, service providers need to maximize the performance and scale of existing network architectures while reimagining new ones. With capacity demand growing even more rapidly at the edge of the network, optical transmission solutions are also becoming more important to even more parts of the network.

Infinera's mission is to lead in the era of open optical networking by leveraging our deep vertical integration to provide the most efficient and scalable optical connectivity solutions to help network operators cope with this deluge of capacity and offer the new, innovative, differentiated services that their customers demand.

Our solutions are powered by the world's best embedded and pluggable optical engines that are application-optimized for the edge, metro, long-haul, and submarine networks. Our agile, open, compact, and modular networking platforms enable network operators to rapidly, operationally, and easily take advantage of best-in-class technology. Our software automation solutions optimize traffic flows and automate workloads to enable network operators to cost-effectively deliver bandwidth to their customers where and when needed. The goal is to create a connected world with unlimited bandwidth for everyone – everywhere, always, and instantly.

Infinera's solutions power networks and services for leading network operators around the world, including Verizon, AT&T, Telstra, Telefónica, Telia Carrier, Liberty Global, Lumen, Facebook, and Netflix. We also serve leading enterprises, utility operators, and government agencies.

FIXED AND MOBILE SERVICE PROVIDERS   INTERNET CONTENT PROVIDERS   SUBMARINE OPERATORS   ENTERPRISE VERTICALS

Figure 1: Powering high performance from the metro edge to the optical core

TRANSFORMATIVE INNOVATION THROUGH VERTICAL INTEGRATION

Optical innovation depends on several key ingredients, including coherent ASIC/DSP design, photonic integrated circuit (PIC) design and manufacturing, analog ASIC design, advanced packaging design and manufacturing, and holistic co-design, including the RF interconnect. By developing all these component technologies in-house, as part of our Optical Innovation Center (OIC), as well as packaging them into the final module in-house, we can ensure that industry-leading performance and capabilities can be delivered in the final products.

INFINERA AT A GLANCE

- **Headquartered in Silicon Valley** (San Jose, CA), with more than 3,000 employees worldwide and local operations in more than 45 countries

- **Publicly traded** and listed on Nasdaq (INFN)

- **Proven supplier to fixed and mobile service providers**, including nine of the top 10 global Tier 1 service providers and seven of the top nine internet content providers

- **More than 500 customers worldwide** across six continents and more than 100 countries

- **Comprehensive solutions portfolio** spanning access, metro switching and aggregation, DCI, long-haul, and submarine optical transport

- **Industry-leading economics and lowest total cost of ownership** enabled by innovation in vertically integrated optical engines and a "pay-as-you-win" Instant Bandwidth operational model

- **Optical, packet optical, IP, and SDN/NFV expertise** empowering multi-layer, multi-domain, and multi-vendor solutions

- **Open network solutions** optimized for evolving network architectures and disaggregated transport environments

- **40+ years of experience** delivering carrier-class networking products and services

- **Distinguished heritage** of game-changing networking innovation with over 2,000 patents

- **High-value service solutions** covering all phases of the network lifecycle – transform and migrate, optimize, deploy and maintain, and learn

The result is a consistent history of game-changing innovations in optical networking, including:

- The first photonic integrated circuit

- The first instant capacity activation solution, Instant Bandwidth

- The first Nyquist subcarrier-based transmission solution

- The first implementation of long-codeword probabilistic constellation shaping (LC-PCS)

- The first point-to-multipoint coherent optical solution, XR optics

These innovations exemplify our relentless drive to satisfy what matters most to our customers: the highest capacity per fiber with a superior operational model, all at the lowest cost per bit per kilometer.

With all the major functions of our OIC located in North America, we have improved control over our supply chain, enabling us to be a more reliable partner for our customers.
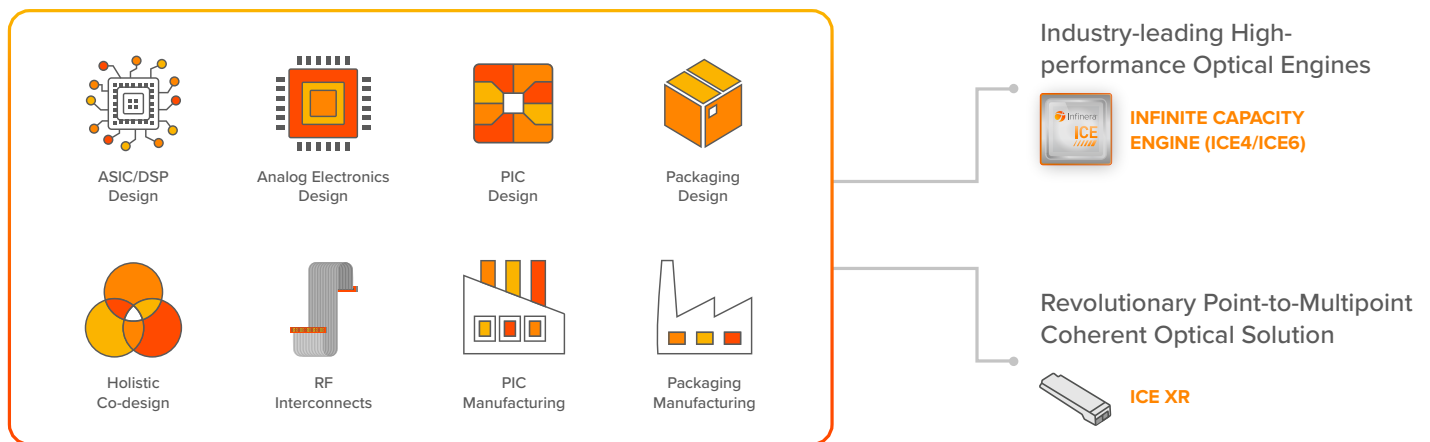

Figure 2: Complete innovation and production of advanced optical engines

AN OBSESSIVE FOCUS ON CUSTOMER SUCCESS

The Infinera Experience is our promise to customers for a truly differentiated business relationship – from groundbreaking technology and networking innovation that solves real customer challenges to an obsessive focus on ensuring customer success.

We fulfill this promise by continuing to challenge conventional thinking and having the courage to pave new trails and create new classes of solutions. We have the fundamental capabilities to bring never-before-seen technologies and solutions to life, and we focus on ensuring our innovations solve real network challenges. Our customer-centric solutions and business model are designed to ensure that our customers can meet their business needs and maintain a competitive advantage in the market.

The Infinera Experience

Our promise to our customers for a truly differentiated business relationship – from groundbreaking technology and networking innovations to a relentless focus on customer experience and an obsession to ensure our customers' success.

Continually challenge conventional thinking

We will never stop thinking of new ways to bring value to our customers.

Groundbreaking innovation with purpose

We will always be willing to pave new ground and create new classes of solutions.

Dedication to our customers' success

We will always create customer-centric solutions designed to ensure our customers win over their competitors.

Figure 3: The Infinera Experience

LEADING THE INDUSTRY INTO THE ERA OF OPEN OPTICAL NETWORKING

Infinera is committed to leading in the delivery of open optical networking solutions that provide substantial benefit over traditional solutions and are proving to increasingly be the solutions of choice for network operators. Infinera's open optical networking solutions enable network operators to break vendor lock-in to unlock and unleash their optical networks in three notable ways:

- **Accelerate innovation**: Separating network functions enables each one to innovate at its own pace, expanding the innovation ecosystem and simplifying new technology integration with open APIs, standardized YANG data models, and compact modular platforms.

- **Optimize and differentiate**: Select the ideal products and technologies for each network layer and domain independently from a broad array of vendors, avoiding the constraints of a single vendor and one-size-fits-all solutions that provide limited scope for competitive advantage.

- **Transform network economics**: Minimized vendor lock-in enables innovations that reduce cost per bit to be quickly deployed throughout the network lifecycle, with customized multi-vendor network designs providing additional scope for cost optimization.

To capitalize on these benefits of open optical networking, Infinera is committed to delivering a portfolio of open, modular, agile network elements that can be easily configured to support a variety of applications with an operationally simplified approach.

Thanks to unique operational models such as our Instant Bandwidth software-activated bandwidth delivery solution, our networking solutions offer the lowest total cost of ownership and a rich end-user experience. Our products feature industry-leading optical performance for capacity-reach, high service port density, a low power profile, and multi-layer, application-aware software that allows fast and simple provisioning of network services. Infinera's application-optimized solution set spans from edge to core and is powered by advanced automation capabilities.
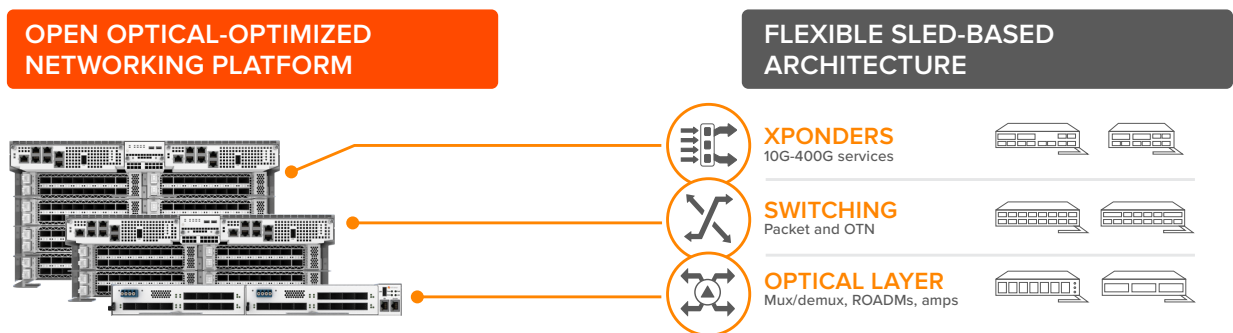
OPEN OPTICAL-OPTIMIZED NETWORKING PLATFORM

FLEXIBLE SLED-BASED ARCHITECTURE

XPONDERS
10G-400G services

SWITCHING
Packet and OTN

OPTICAL LAYER
Mux/demux, ROADMs, amps

Figure 4: Networking platforms optimized for open optical

GLOBAL SERVICES AND SUPPORT

Infinera's support and professional services combine the powerful capabilities of our technology with an unparalleled level of knowledge and service, empowering our customers to rapidly add capacity, expand to new markets, and integrate new technology. Our high-value service solutions cover all phases of the network lifecycle – transform and migrate, optimize, deploy and maintain, and learn. We provide the global scale and proven expertise our customers require, along with speed, personal service, and peace of mind.