

# Powering Innovation with Deep Vertical Integration and Open Networking Solutions

As demand for bandwidth continues to grow more than 40% per year, network operators and service providers need to maximize the performance and scale of their existing network architectures while reimagining new, innovative, and cost-effective ways to deliver the services their customers demand. Advanced optical transmission solutions have consistently been a powerful way for network operators to scale their core networks. With new services like enhanced broadband and 5G driving bandwidth at the edge of the network to unprecedented levels, these same solutions are becoming instrumental all the way to the network edge.

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

Our solutions are powered by the world's best embedded and pluggable optical engines, which are designed, developed, and manufactured in Infinera's optical semiconductor fabrication center and are application-optimized for edge, metro, long-haul, and submarine networks. Our agile, open, compact, and modular networking platforms enable network operators to take advantage of best-in-class technology rapidly, operationally, and easily. Our software automation solutions optimize traffic flows and automate workloads to enable network operators to cost-effectively deliver secure 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 including the U.S. Department of Defense.



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

## 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
- **Innovator in optical semiconductors**, including the industry's first photonic integrated circuit (PIC)
- **Owner and operator of high-volume optical compound semiconductor fab in California** to develop and manufacture industry-leading indium phosphide (InP)-based solutions
- **Advanced optical engine integration and manufacturing center in Pennsylvania**
- **Comprehensive solutions portfolio** spanning access, metro switching and aggregation, data center interconnect, 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
- **Open network solutions** optimized for evolving network architectures and disaggregated transport environments
- **40+ years of experience** delivering secure, carrier-class networking products and services
- **Distinguished heritage** of game-changing networking innovation with over 2,000 patents

# Innovation in Optical Semiconductor Technology

Optical innovation depends on several key ingredients, including compound semiconductor technology, PIC design and manufacturing, coherent ASIC/DSP design, analog ASIC design, advanced packaging design and manufacturing, and holistic co-design, including the radio frequency interconnect. As a leader in advanced optical semiconductors and the operator of the most advanced U.S.-based InP fab and optical engine integration facility for this technology, our solutions are designed to deliver the highest levels of optical performance while improving supply chain security and resiliency.

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

- The first commercialized 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 optical engine technology located in North America, we have much greater control over our supply chain, enabling us to be a more reliable partner for our customers.

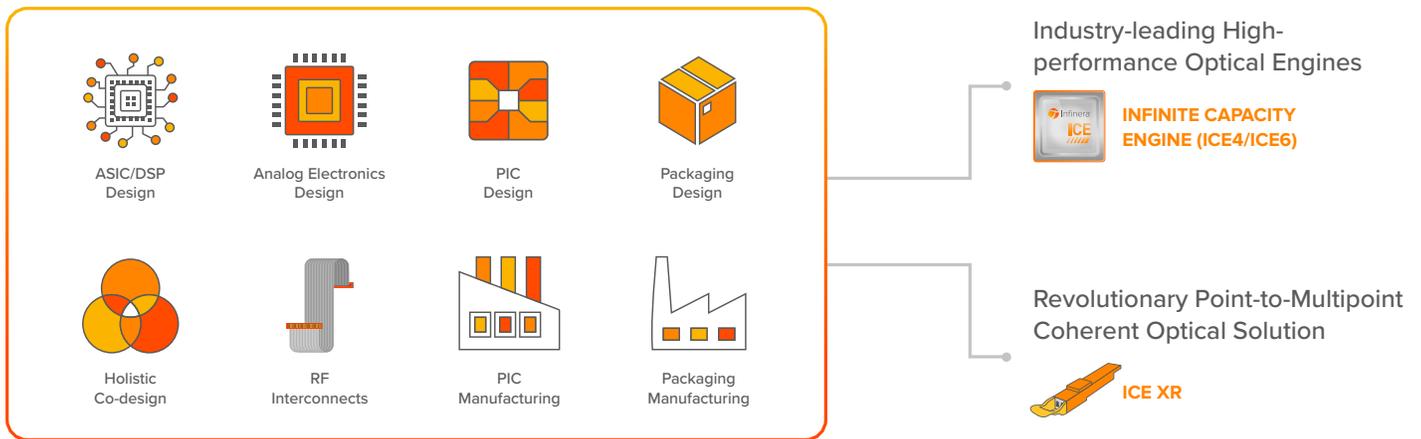


Figure 2: Complete innovation and production of advanced optical engines

## An Unwavering 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.

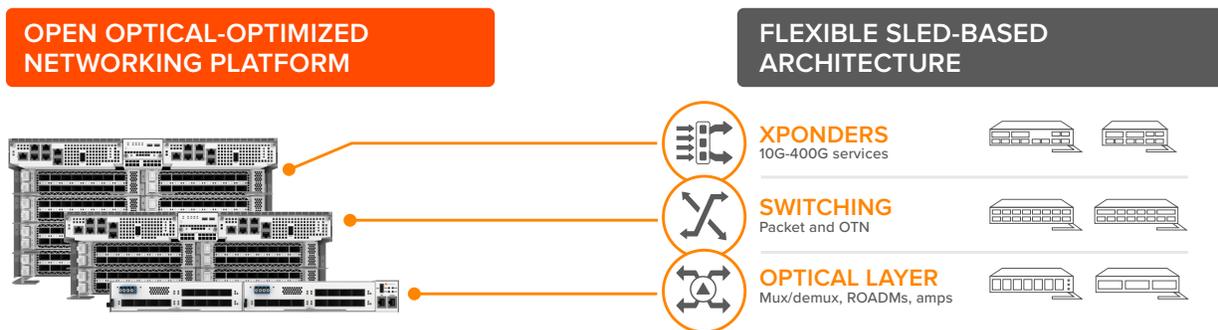


Figure 4: Networking platforms optimized for open optical

## 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.

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