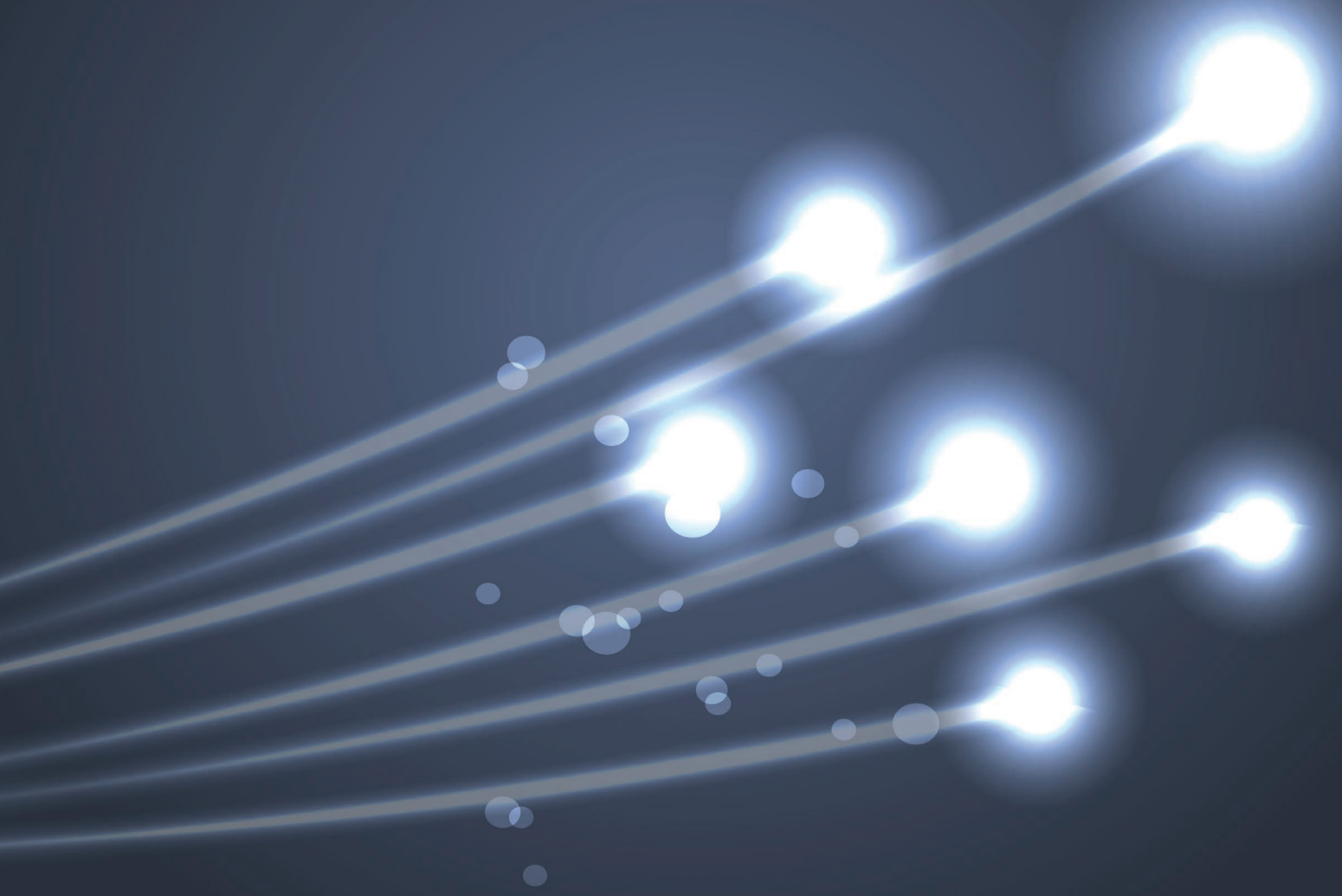


INFINERA:  
REDEFINING  
OPTICAL  
NETWORKING



## CORPORATE BACKGROUNDER

**INFINERA EMPOWERS NETWORK OPERATORS** to scale network bandwidth, accelerate service innovation and automate optical network operations. Service providers, cloud operators, governments and enterprises across the globe rely on Infinera Intelligent Transport Networks to enable services that create rich end-user experiences based on efficient, high-bandwidth optical networking.

### Industry Background

Optical networking equipment carries vast amounts of information using light waves over fiber optic cables.

With wavelength-division multiplexing (WDM) systems, data is transmitted by using multiple wavelengths of light over a single optical fiber. Network operators deploy WDM systems to carry information between continents, across countries, between cities and within metropolitan areas, and in a growing number of cases WDM goes all the way to the end-user. Streaming high-definition videos, the proliferation of mobile broadband and the growth of cloud-based services are driving the need for increased bandwidth. Networks are transforming. In addition to WDM operations, network operators need to manipulate packet flows and control with software-defined networking (SDN). Infinera delivers highly scalable optical networking solutions to support the growing demand for high bandwidth across various network locations from the core to the access.

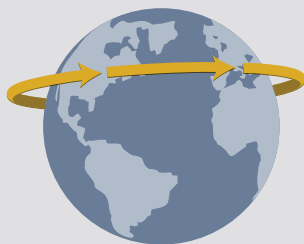
### Infinera Intelligent Transport Networks

Infinera was founded with the vision of enabling an infinite pool of intelligent bandwidth that the next communications infrastructure is built upon. Intelligent Transport Networks from Infinera deliver

on this founding vision by enabling network operators to offer new services that address the increasing demand for bandwidth. Infinera provides an end-to-end portfolio of packet-optical solutions for the long-haul, metro and cloud. Infinera Intelligent Transport Networks:

- **Accelerate service innovation** Solutions such as Instant Network, Xceed Software Suite and others enable Infinera to provide network operators with an unparalleled level of transport agility, flexibility and SDN-based control. Instant Network enables service providers to analyze capacity needs and deploy optical wavelengths in minutes with Infinera's Instant Bandwidth offering and Automated Capacity Engineering application. Optimized and integrated packet, Optical Transport Network (OTN) and WDM platforms carry and protect traffic at the most cost-effective layer while delivering highly flexible services like 5G-ready mobile fronthaul and backhaul, business Ethernet and broadband aggregation closer to the user
- **Automate optical network operations** Infinera enables network operators to scale bandwidth without the need to scale operations. Infinera leads the industry with its Infinite Capacity Engine, the first multi-terabit opto-electronic subsystem, delivering the next step function in transport networking performance. The Infinera Infinite Capacity Engine is powered by the advanced electronics in the next-generation FlexCoherent® Processor and cutting-edge photonics of Infinera's advanced photonic integrated circuit (PIC). The PIC in the Infinite Capacity Engine integrates several hundred optical functions and is designed to support multiple parallel channels, modulation, multiplexing and in-chip amplification functions
- **Scale** Infinera Intelligent Transport Networks deliver unparalleled scalability, radically surpassing 100 gigabit per second (100G) with 500G and multi-terabit super-channels. Infinera

## NETWORKS BUILT FOR TOMORROW RUN INFINERA



### Long-haul/Subsea

Solutions that link cities, countries and continents



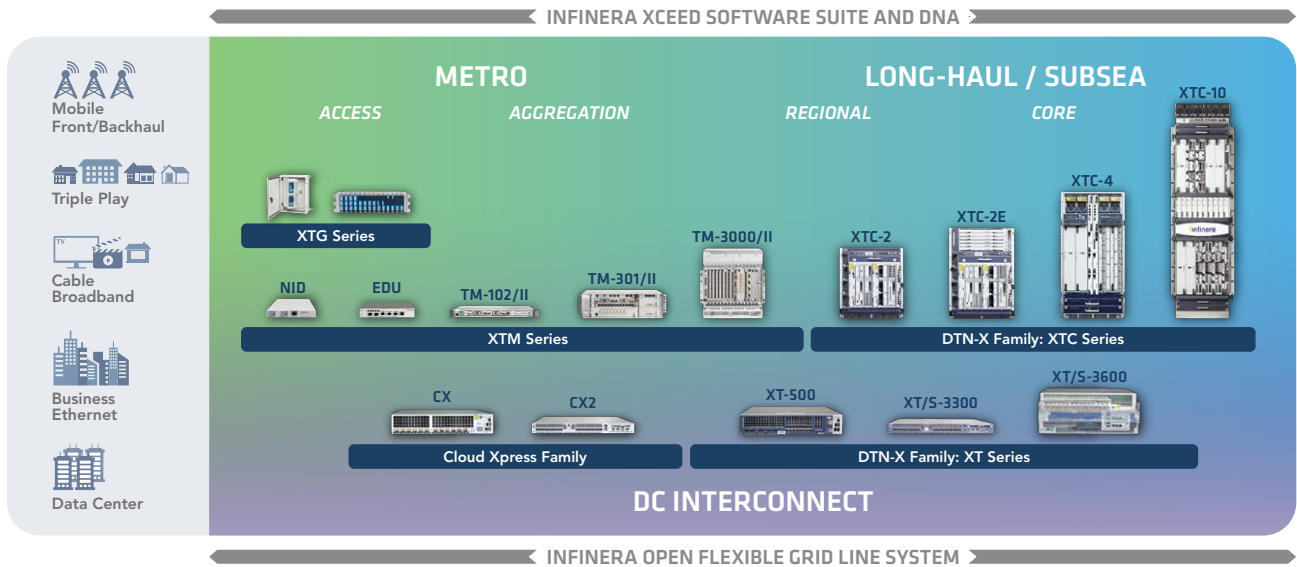
### Metro

Application-aware, right-sized solutions for cities and local regions



### Cloud

Terabit-scale solutions for low-power data center interconnection



Infinera's Intelligent Transport Network portfolio

Instant Bandwidth enables network operators to rapidly deploy bandwidth in various increments including 100G without having to deploy and install additional line cards or ports in the system. It offers network operators the ability to rapidly provision additional capacity with a success-based business model. The Infinera Infinite Capacity Engine is the first in the industry to offer network operators the combined benefits of optical super-channel capacity of up to 2.4 terabits per second (2.4T) and reach up to 12,000 kilometers (km) in one of the world's smallest optical subsystems with very low power consumption

**Infinera Solutions**

**Long-haul and Subsea**

- **Infinera DTN-X Family:** The Infinera DTN-X Family, powered by Infinera's Infinite Capacity Engine, is the world's only 2.4T commercial super-channel system leveraging large-scale PIC technology. The DTN-X Family now includes the industry's first small-form-factor, server-like meshponder WDM platforms, which blend sliceable photonics and muxponder functionality to deliver hyperscalable WDM along with fine-grained granularity. The DTN-X XT Series and subsea transport-optimized XTS Series meshponder platforms seamlessly interoperate with the DTN-X XTC Series chassis-based platforms, which include up to 12T of integrated OTN switching. With a diverse range of form factors and capacities, the DTN-X Family covers subsea, long-haul, metro core and regional applications

- **Infinera DTN platform:** The Infinera DTN platform allows reconfigurable add/drop of multiple services up to 800G per chassis with the ability to virtualize bandwidth for efficient operations, enabling signals to travel long distances and amplifying those signals
- **Infinera FlexILS:** FlexILS is Infinera's open optical line system that enhances the scalability, flexibility and programmability of Intelligent Transport Networks. FlexILS uses the ITU-T flexible grid channel plan with granularity of 12.5 gigahertz (GHz), allowing efficient packing of any combination of optical carriers, modulations, and data rate on the same optical fiber, and enabling over 50T capacity over optical fiber with terabit super-channels. FlexILS includes the MTC-9 and the compact MTC-6 chassis with amplifiers, multiplexers, and four-port, nine-port and 20-port super-channel FlexROADMs (reconfigurable optical add-drop multiplexers). FlexILS is fully open and interoperable with Infinera and third-party terminals

**Cloud Networks and Metro Data Center Interconnection**

- **Infinera Cloud Xpress 2:** The Infinera Cloud Xpress 2, based on the Infinite Capacity Engine, extends the Cloud Xpress Family with multi-terabit scalability, simplicity, efficiency and security

## CORPORATE BACKGROUNDER

- **Infinera Cloud Xpress:** The Infinera Cloud Xpress is a server-like rack-and-stack platform optimized for point-to-point hyperscale data center interconnect applications across regional, metro and campus environments
- **Infinera XTM Series:** The Infinera XTM Series is a packet-optical platform that provides the transport of services between 10 megabits per second (10M) and 100G in metro access, metro aggregation and metro core networks. In addition to the flexible and service-rich standard XTM Series, Infinera now offers the XTM II, a next-generation packet-optical platform delivering rich Layer 0, Layer 1 and Layer 2 services with high density, low latency and low power consumption. XTM II is optimized for bandwidth-intensive cloud scale applications, such as Remote PHY, 5G transport and data center interconnect (DCI), and is ideal in facilities with restricted space and power

### Metro

- **Infinera XTM Series:** The Infinera XTM Series is a packet-optical platform that provides the transport of a wide range of services between 10M and 100G in metro access, metro aggregation and metro core networks. Designed for the low power and small footprint requirements that metro networks demand, the platform is optimized for metro applications such as mobile backhaul and fronthaul, MSO backhaul, Business Ethernet and enterprise networks. The XTM II, a next-generation packet-optical platform, delivers rich Layer 0, Layer 1 and Layer 2 services with high density, low latency and low power consumption
- **Infinera DTN-X Family:** The Infinera DTN-X Family of packet-optical platforms provides right-sized WDM bandwidth with integrated packet OTN switching capability and a software-defined control plane. The DTN-X XTC platforms for mesh-based switched networks are optimized for metro applications

- **Infinera XTG Series:** The Infinera XTG Series is a family of cost-effective, passive optical WDM products. Designed for access applications, the XTG Series provides one of the most compact WDM access solutions on the market

### Software

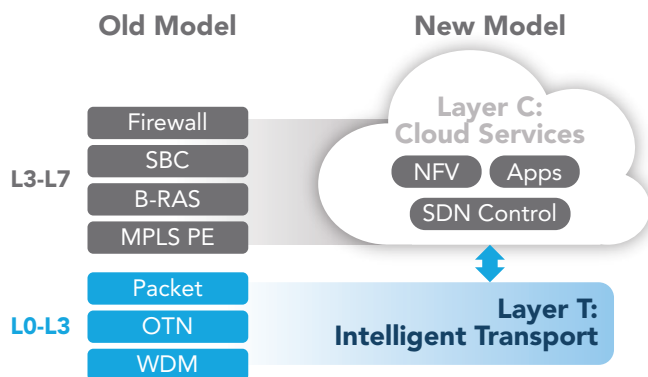
- **Infinera Xceed Software Suite (Xceed):** Infinera Xceed is a portfolio of integrated, open and modular software components for SDN automation of Infinera Intelligent Transport Networks. The Xceed Software Suite, which includes the Xceed Multi-layer SDN Platform and Xceed Applications, enables new revenue streams and automates optical network operations
- **Infinera Management Suite:** The Infinera Management Suite is a combination of tools for end-to-end control with integrated functions—such as network planning, point-and-click service provisioning, and operations—along with support for third-party umbrella management systems

### Support Services

- **Infinera Support Services:** Infinera provides a comprehensive range of support services for all hardware and software products. Support services cover all phases of network ownership, from the initial design through day-to-day maintenance activities and professional services. Infinera's support services are designed to efficiently manage and maintain customer network operations in the face of today's demands for minimized downtime

### Innovation at Layer T

The networking world is undergoing a transformation of its existing infrastructure. Proprietary hardware and software appliances that perform network functions focused on the upper layers of the Open Systems Interconnection (OSI) model are being transformed into software instances running on standardized x86 servers in cloud data centers through network function virtualization (NFV). This transformation to an on-demand delivery model and from specialized, proprietary platforms to open, software-enabled cloud services, is referred to as Layer C. The data centers supporting these cloud services need to be connected to each other as well as to end-users. Today this connectivity is provided by a plethora of proprietary devices operating at the lower layers of the OSI stack. This layer is also transforming to a highly scalable, space- and power-efficient packet-optical intelligent transport network referred to as Layer T.



Network Transformation

## CORPORATE BACKGROUND

The increasing demands of the cloud services layer (Layer C) is driving the need for scalability, flexibility and programmability in the underlying intelligent transport (Layer T).

Scale and virtualization are giving rise to a simplified network model of Layer C and Layer T. Layer C is growing at an unprecedented rate with bandwidth demands increasing every second. To cater to the growing Layer C, an intelligent Layer T is needed. The transformation in Layer C often reduces the requirements for the hardware that supports these services. Because of this network transformation, Layer T is increasingly strategic.

New cloud network architectures and new traffic patterns are driving increasing bandwidth requirements. Taking an example of a Facebook request, a single web search from a personal computer or mobile device, initiates a series of cascading interactions including server-to-server interactions, generating nearly 1000 times the traffic of the initial request between data centers. This "magnification effect" is associated with a distributed computing model resulting from new cloud network architectures.

Infinera enables this network transformation by providing Intelligent Transport Networks that deliver unparalleled scalability, accelerate service innovation and automate optical network operations. Massive optical scale is the foundation of Layer T and can be achieved through optical super-channels that leverage PICs. Packet-optical capabilities further simplify Layer T to support this evolution. The strategic importance of Layer T has never been higher and as a consequence it is vital to build Layer T with the right attributes: scalable optics, flexibility with granular control and programmability.

### Our Customers

Meeting customers' specific deployment needs and providing industry-leading customer support is in our DNA. Our commitment is to develop innovative Intelligent Transport Networks and to provide the Infinera Experience to all of our customers.

The Infinera Experience is made up of four pillars:



- **Technology Leadership:** Our Intelligent Transport Networks provide network operators with unparalleled scale, flexibility and performance
- **World-class Quality:** Our commitment to quality enables network operators to deploy highly reliable networks
- **Customer-centric Focus:** Our team is here to do whatever it takes to help operators solve network challenges and win in their markets
- **Time as a Weapon:** With our Intelligent Transport Networks, operators deploy networks faster, scale bandwidth faster and accelerate time to revenue

### Vision—Enabling an Infinite Pool of Intelligent Bandwidth

Infinera is redefining optical networking. Infinera Intelligent Transport Networks help network operators exploit the increasing demand for cloud-based services and data center connectivity. Infinera was founded with the vision of enabling an infinite pool of intelligent bandwidth that the next communications infrastructure is built upon. Based on that vision, Infinera is solving our customers' networking challenges as the optical networking market continues its once-in-a-decade transition from 10G to 100G and beyond.

For more information on Infinera, please [contact us](#).

## CORPORATE BACKGROUNDER

### INFINERA AT-A-GLANCE:

<b>Our business</b>	<p>Infinera empowers network operators to scale network bandwidth, accelerate service innovation and automate optical network operations. Network operators across the globe rely on Infinera Intelligent Transport Networks to create rich end-user experiences based on efficient, high-bandwidth optical networking.</p> <p>Infinera is a vertically integrated company. Infinera designs and manufactures in-house a variety of solutions, from PIC and application-specific integrated circuit (ASIC) chips to complete hardware and software systems.</p>
<b>Industry Recognitions</b>	<p>2016: Established Long-haul 100G Leader - Infinera has 20% of all 100G LH wavelengths ever sold since 1Q-10, excluding China - Dell'Oro - 3Q16</p> <p>2016: #3 Global Metro 100G Ports - Dell'Oro 2Q16</p> <p>2015: #1 Worldwide ICP/CNP (Internet Content Providers /Carrier-neutral Providers) - Ovum 2Q16</p> <p>2015: Leading Lights Company of the Year (Public) – For the Second Consecutive Year</p> <p>2015: IHS Names Infinera Leader in Optical Networking and Datacenter Interconnect Market</p> <p>2015: Long-Haul Market Leader - Infinera has 24% of all 100G Long-Haul ports ever sold since 1Q-10 - Dell'Oro</p> <p>2015: Infinera Named Fastest Growing Optical Company in the West (North America and EMEA Combined) - Infonetics</p> <p>2015: Ovum Ranked No. 1 DCI Equipment Supplier to ICPs &amp; CNDs Worldwide in 2014 (Plus Fastest Growing DCI Supplier in 2014)</p> <p>2014: Infinera [Transmode] named as “#1” market leader for metro packet-optical in EMEA - Infonetics</p>
<b>Customers</b>	<p>Customers include service providers, cloud operators, governments and enterprises. To learn more, visit: <a href="http://www.infinera.com/company/customers/">http://www.infinera.com/company/customers/</a></p>
<b>Customer Benefits</b>	<p>End-to-end product portfolio to fully address the optical networking market</p> <p>Accelerate service innovation</p> <p>Automate optical network operations</p> <p>Scale network bandwidth</p>

### Company At-A-Glance

<b>Type</b>	Public—NASDAQ: INFN
<b>Industry</b>	Telecommunications
<b>Products</b>	Packet-optical networking systems and software
<b>Financial performance</b>	History of strong growth, strong balance sheet, vertical integration drives strong profitability
<b>Headquarters</b>	Sunnyvale, CA, USA
<b>Global presence</b>	Offices worldwide with engineering centers of excellence in California, USA, Canada, China, India, Maryland, USA, Pennsylvania, USA, and Sweden
<b>Management</b>	Tom Fallon (CEO), Dr. David F. Welch (President and Co-Founder)
<b>Employees</b>	~2000
<b>Website</b>	<a href="http://www.infinera.com">www.infinera.com</a>

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