

INFINERA CORP
Form 10-K
March 05, 2013
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 29, 2012

OR

.. TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to

Commission file number: 001-33486

Infinera Corporation

(Exact name of registrant as specified in its charter)

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Delaware
(State or other jurisdiction of
incorporation or organization)

77-0560433
(IRS Employer

Identification No.)

140 Caspian Court

Sunnyvale, CA 94089

(Address of principal executive offices, including zip code)

(408) 572-5200

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, \$0.001 Par Value	The NASDAQ Global Select Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definitions of large accelerated filer, accelerated filer, and smaller reporting company in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company
(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the registrant's common stock, \$0.001 par value per share, held by non-affiliates of the registrant on June 29, 2012, the last business day of the registrant's most recently completed second fiscal quarter, was approximately \$509,611,108 (based on the closing sales price of the registrant's common stock on that date). Shares of the registrant's common stock held by each officer and director and each person who owns more than 5% or more of the outstanding common stock of the registrant have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a

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conclusive determination for other purposes. As of February 25, 2013, 115,393,300 shares of the registrant's common stock, \$0.001 par value per share, were issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

- (1) Portions of the registrant's Proxy Statement for its 2013 Annual Meeting of Stockholders to be filed pursuant to Regulation 14A are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated.

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INFINERA CORPORATION
ANNUAL REPORT ON FORM 10-K

For the Fiscal Year Ended December 29, 2012

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Part I

ITEM 1. BUSINESS

Overview

Infinera Corporation (we or Infinera) provides optical networking equipment, software and services to communications service providers, internet content providers, cable operators and subsea network operators (collectively, Service Providers) across the globe. Optical networks are deployed by Service Providers facing significant demands for transmission capacity prompted by increased use of high-speed Internet access, 3G/4G mobile broadband, business Ethernet services, cloud-based services and wholesale bandwidth services. We first introduced the Infinera Digital Optical Network architecture to Service Providers in 2004. This architecture is based on optical network platforms built with Infinera s unique photonic integrated circuits (PICs). As of December 29, 2012, 111 Service Providers have selected Infinera s optical architecture platform to efficiently grow and manage their optical networks.

Infinera manufactures what we believe to be the world s only commercially-deployed, large-scale PICs, which are used as a key differentiating component inside our optical transport platforms. Our first generation PICs transmit and receive 100 Gigabits per second (Gbps) of optical transmission capacity and incorporate the functionality of over 60 discrete optical functions into a pair of indium phosphide chips approximately the size of a fingernail. Our next-generation PICs, now commercially available, transmit and receive 500 Gbps, incorporating over 600 discrete optical functions into a pair of indium phosphide chips. Our PICs are combined with high-performance Optical Transport Network (OTN) switching capabilities in our Digital Optical Network architecture to offer Service Providers a unique combination of highly-scalable transmission capacity and bandwidth management tools to efficiently and simply utilize such capacity across platforms.

Many Service Providers are looking for new network architectures to respond to continued demand for bandwidth across their networks. These architectural changes include scaling optical transmission capacities from 10 Gbps and 40 Gbps to 100 Gbps and integrating OTN switching capabilities within the optical transport platform. Infinera s DTN platform currently supports 10 Gbps and 40 Gbps transmission capacity combined with integrated switching capabilities. Infinera s DTN-X platform supports 100 Gbps transmission capacity with 500 Gbps super-channels and also integrates our 5 terabits per second (Tbps) OTN switch in a single bay. The DTN-X platform leverages the unique capabilities of our 500 Gbps PICs to deliver high-capacity transmission while optimizing power, cooling, space and operational simplicity.

Similar to how silicon integrated circuits changed the dynamics of the computing industry by increasing computing performance and reliability while reducing physical size, power consumption and heat dissipation, we believe Infinera s PICs change the dynamics of the optical network industry by increasing optical performance and reliability while reducing physical size, power consumption and heat dissipation. We fabricate PICs and develop the software and hardware that together comprise the optical network platforms at the foundation of our Digital Optical Network architecture. We sell these optical network platforms to Service Providers along with a comprehensive suite of installation, management and support services. We believe that Service Providers facing increasing demand for greater optical network transmission capacity and the need for more favorable network economics will adopt our DTN-X platform.

Infinera, Infinera DTN, Infinera DTN-X, ATN, Infinera Digital Optical Network, FlexCoherent, Infinera Instant Bandwidth, and other trademarks or service marks of Infinera Corporation appearing in this report are the property of Infinera Corporation. This report contains additional trade names, trademarks and service marks of other companies. We do not intend our use or display of other companies trade names, trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, these other companies.

Infinera was founded in December 2000, originally operated under the name Zepton Networks, and is headquartered in Sunnyvale, California. We are incorporated in the State of Delaware. Our principal executive offices are located at 140 Caspian Court, Sunnyvale, CA 94089. Our telephone number is (408) 572-5200.

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Industry Background

Optical networking equipment carries digital information using light waves over fiber optic networks. The advent of wavelength division multiplexing (WDM) systems has enabled the transmission of larger amounts of data by using multiple wavelengths over a single optical fiber. Service Providers often use WDM systems to carry communications traffic between cities, referred to as long-haul networks, and within large metropolitan areas, referred to as metro networks. Fiber optic networks are generally capable of carrying most types of communications traffic, from conventional long-distance telephone calls, to e-mails, web sessions and to high-definition video streaming. As service traffic grows, Service Providers add transmission capacity to existing optical networks or purchase and deploy additional systems to keep pace with bandwidth demands and service expansion.

We believe that a number of trends in the communications industry are increasing demand for network capacity and ultimately will increase demand for optical networking systems. These trends include growth in bandwidth-intensive services like video, the proliferation of 4G and WiFi mobile broadband due to the availability of smartphones and tablets, the emergence of cloud services and the continued expansion of online business and information services.

We believe that Service Providers seek the following solutions that will allow them to increase their profit margins and/or expand their service offerings:

high-capacity solutions that scale transmission capacity to meet increasing bandwidth demand;

efficient solutions that optimize performance and increase reliability while reducing physical space, power consumption and heat dissipation;

easy to use solutions that reduce the time to deploy new transmission capacity while lowering operational expenses; and

improved integration between Internet Protocol equipment such as routers and optical networking equipment.

We believe that Infinera's Digital Optical Network architecture is uniquely enabled to deliver improvements in these areas compared to competitive WDM systems that still rely on discrete optical components. We believe that our Digital Optical Network architecture enables Service Providers to deploy reliable, high-capacity, efficient optical network solutions that are easy to use and improve the integration between the layers of Service Provider networks with the lowest Total Cost of Ownership.

The Infinera Strategy

Our goal is to be a preeminent provider of optical networking systems to Service Providers around the world. Key aspects of our strategy to achieve this goal are as follows:

Increasing our customer base. We continue to diversify our customer base across multiple customer segments including, long-haul network operators, regional and metro network operators, Tier 1 telecommunications service providers, bandwidth wholesalers, subsea network operators, cable multiple systems operators (MSOs) and internet content providers. In 2013 and beyond, we intend to increase our penetration with existing customers while leveraging our new DTN-X platform to target, in particular, Tier 1 U.S. and international telecommunications service providers, including U.S. regional Bell operating companies, international postal, telephone and telegraph companies, and other operators of fiber optic networks around the world. In 2012, we increased our presence outside of the United States, with the addition of new customers in Europe and Asia Pacific (APAC), as well as deployments in the Other Americas. We also had continued success in the submarine market, as subsea network operators deployed Infinera systems over existing subsea networks to increase capacity and utilize the efficiencies of our Digital Optical Network.

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Penetrating adjacent markets. We believe that our Digital Optical Network architecture can further benefit submarine network operators and operators with networks that extend to the metro edge. We intend to increase our addressable markets by continually adding functionality to our products and by developing the service and support infrastructure needed to address these markets.

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Maintaining and extending our technology lead. We intend to continue to incorporate the functionality of additional discrete functions into our PICs in order to continue to increase our technology lead. In addition, we will pursue the expansion of our digital switching and bandwidth management capabilities in order to enhance the performance, scalability and economic advantages of our products.

Continuing investment in PIC manufacturing activities. We believe that our vertical integration and manufacturing capabilities serve as a competitive advantage and intend to continue to invest in the manufacturing capabilities needed to produce new generations of PICs.

Products

Infinera DTN Platform

The Infinera DTN platform utilizes our PIC technology to enable digital processing and management of data with the capability to generate WDM wavelengths and to add, drop, switch, manage, protect and restore network traffic digitally using integrated OTN switching. The DTN platform can automate the connection of circuits and provisioning of new services without costly and cumbersome manual intervention.

Our DTN platform is modular in design to provide Service Providers with the ability to add capacity in a cost-efficient manner. The initial deployment of our DTN platform at a customer site involves the installation of a line system (including common equipment, such as a chassis, amplifiers, management controllers and related equipment). Service Providers can increase the capacity of the DTN platform by purchasing our Digital Line Modules, Tributary Adapter Modules and Tributary Optical Modules. We believe that the density and the modular architecture of the DTN platform enable significant flexibility and scalability for Service Providers. Our current DTN platform delivers 10 Gbps and 40 Gbps wavelengths enabling fiber capacity from 1.6 Tbps to 6.4 Tbps.

Our DTN platform is carrier-class, which means that it complies with applicable Telcordia and equivalent major international standards for central office-based network elements. Our DTN platform supports a broad range of optical service interfaces including Ethernet (1 Gigabit Ethernet (GbE), 10 GbE, 40 GbE and 100GbE) and separate synchronous optical network/synchronous digital hierarchy.

Infinera DTN Platform for Submarine Network Applications

For submarine transport applications, the DTN platform can be used as a Submarine Line Terminating Equipment (SLTE) node, doubling the total optical capacity of many traditional submarine systems to a maximum of up to 6.4 Tbps and distances of up to 8,000 km. The DTN platform also provides dispersion compensation that is significantly simpler and cheaper than the per-channel dispersion management of many existing SLTE systems. Our DTN platform leverages its digital operations and software automation to allow Infinera s SLTE solution to significantly reduce engineering complexity for submarine cable upgrades and to enable lower cost, faster deployment of additional capacity on existing systems.

Infinera Line System

Infinera s Digital Optical Network platforms are built upon and connected to one another using an optical line system. The Infinera Line System (ILS) provides optical amplification and enables the management communication channels between network nodes. ILS currently supports up to 6.4 Tbps of optical capacity on a single fiber using the DTN platform and up to 8 Tbps of capacity using the DTN-X platform. ILS is fully integrated into Infinera s management and control software and can be managed seamlessly across platforms. Infinera s bandwidth management capabilities allow our customers to manage and utilize the available capacity as a single pool of bandwidth to satisfy customer requirements, including services at speeds from 1 Gbps up to 100 Gbps.

Infinera DTN-X Platform

Commercial shipments of the Infinera DTN-X platform began in the second quarter of 2012 and we recognized significant revenue from the platform in the second half of the year. The DTN-X platform is based on our third generation 500 Gbps PICs that integrate more than 600 discrete optical functions delivering the world s first 500 Gbps FlexCoherent super-channels, based on 100 Gbps per channel. The DTN-X platform delivers a step function improvement in network economics to help Service Providers more efficiently manage the explosive

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growth of traffic brought on by video, mobile and cloud-based services. The DTN-X platform is a next-generation multi-terabit packet optical transport platform that is fundamentally three products in one:

a dense WDM (DWDM) transmission system based on the world's first 500 Gbps super-channels, unleashing cost-effective DWDM transmission capacity;

an integrated OTN switching system that will scale from 5 Tbps in its first release and up to 100 Tbps in the future and will enable operators to efficiently manage larger data transmission with grooming of traffic down to 1 Gbps granularity; and

a system that is designed to be upgradeable to Multi-Protocol Label Switching (MPLS) switching in the future which will help further enable convergence of the network for improved efficiency, reducing the number interconnections between network layers.

We believe that the convergence of network layers can only be achieved when the best in class performance of each individual layer is realized in a single platform. In most competitive solutions, a Service Provider must make a choice between maximizing either the system's transmission capacity or its OTN switching capability. The DTN-X platform, unlike other competitive offerings, was designed to converge switching with DWDM transport without compromising overall system functionality. The purpose-built design centers around three unique technology building blocks: PICs paired with a FlexCoherent Processor, custom switching application-specific integrated circuits (ASICs) and intelligent Generalized MPLS (GMPLS) software. We believe that it is the only platform available in the market that will allow all components, including the optical functions based on our PIC technology, to scale in a manner consistent with Moore's Law-like semiconductor manufacturing economics and, therefore, deliver simultaneously best-of-breed switching, integrated with best-of-breed DWDM.

Infinera ATN Platform

The Infinera ATN platform is a state-of-the-art coarse WDM and DWDM aggregation and transport solution designed with 400 Gbps of total capacity. The ATN platform can be used to extend the Digital Optical Network architecture benefits of the DTN and DTN-X platforms, and can also be used as a standalone WDM access system.

Implementing numerous features in support of simplicity of use and operation, the ATN platform is a cost-effective, efficient multiservice aggregation and transport platform. The ATN platform supports direct wavelength connectivity to DTN and DTN-X nodes, reducing equipment costs and providing unique network management capabilities across our integrated Digital Optical Networks.

Infinera IQ Network Operating System

The Infinera IQ Network Operating System is our embedded software operating system, which enables our Service Providers to simplify and speed up the tasks they perform to deliver, differentiate, and manage services and to optimize the utilization of their networks. The IQ Network Operating System for the DTN and DTN-X platforms utilize GMPLS for end-to-end provisioning, protection and restoration services, and a host of performance monitoring and software-definable testing capabilities. The ATN platform supports end-to-end provisioning through software features similar to the DTN and DTN-X platforms.

Infinera Management Suite

The Infinera Management Suite is a broad set of standards-based network and element management tools and operations support system integration interfaces that are used by Service Providers to manage their DTN, DTN-X and ATN platforms. Our management suite software includes our Digital Network Administrator, a scalable, robust, feature-rich element management system, and our Graphical Node Manager, an easy-to-use web-based management interface. Our hardware products, the DTN, DTN-X and ATN platforms, are managed in an integrated fashion by the Infinera Management Suite.

Technology

Digital Optical Network Architecture

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Infinera was founded with a vision of increasing the functionality and improving the economics of optical transport systems. To that end, our core engineering team consists of optical component and systems experts who

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have collaborated to create an innovative optical networking architecture that combines the delivery of large amounts of low-cost bandwidth with distributed switching and the embedded software intelligence of bandwidth management to manage larger networks and deliver high-capacity services quickly and cost-effectively. We have focused our efforts, time and capital on developing our Digital Optical Network architecture and our system products.

Our Digital Optical Network architecture is designed to allow our customers to expand service reach, expedite service provisioning, ensure reliability and more effectively manage, monitor and scale their networks by processing data digitally rather than in analog format. We believe that the key to delivering this capability in a cost-effective manner is integrating the functionality of multiple discrete devices into a single set of semiconductor chips. This integration allows us to eliminate separate optical packages for each discrete optical device, which we believe is the largest cost challenge facing traditional systems. This integration has further enabled us to provide additional functionality and intelligence to our optical networking systems.

Infinera PICs

We believe that our proprietary PICs are a key source of our value proposition and competitive advantage. We manufacture and package our PICs at our own facilities for use exclusively with our DTN and DTN-X platforms. We began the design and manufacture of our PICs shortly after we were founded in December 2000. We employ a multi-disciplinary approach towards the development and manufacture of our PICs, with significant interaction between our manufacturing, system engineering and advanced technology groups. As a leader in the development of photonic integration, we have protected the intellectual property associated with our PIC manufacturing through a combination of trade secrets, patents and contractual protections. We believe that as a result of the combination of the multiple disciplines that were required to develop our PIC, together with the intellectual property protections that we have established, it will be difficult for others to duplicate the technology we have developed.

Our DTN and DTN-X platforms transmit optical capacity, in increments of 100 Gbps and 500 Gbps, respectively, utilizing a pair of PICs. Our 100 Gbps PICs integrate the functionality of 60 optical functions onto a pair of chips, and our 500 Gbps PICs have increased this integration to over 600 discrete functions per pair of chips. We believe that large-scale photonic integration enables significantly improved manufacturing economics to optical networking, allowing future optical transport cost reductions to be viably sustained on a cost curve defined by volume manufacturing efficiencies, greater functional integration, increased device density, and manufacturing yield enhancements.

Infinera FlexCoherent Processor

The term coherent transmission generally implies the combination of a number of technologies used to transmit data over optical networks. These optical transmission methodologies are based on varying optical technologies, namely: phase modulation, polarization multiplexing, coherent detection and advanced digital signal processing. These coherent technologies are used by Service Providers to enable higher data capacities to be transmitted over their existing optical fiber infrastructure, typically using the same or better design rules than those used for 10 Gbps transmission. Typically, a coherent transmitter uses a more complex optical circuit and requires a significantly greater number of optical components than more traditional non-coherent transmission methodologies. Infinera has integrated proprietary coherent technologies onto our FlexCoherent Processor, which works in conjunction with our 500 Gbps PICs to construct a single module. This module incorporates our long-haul FlexCoherent 500 Gbps WDM super-channels with software selectable modulation formats and exceptional optical performance.

Super-Channels

Infinera's DTN-X platform supports five channels of 100 Gbps capacity in a single line card. This 500 Gbps pool of bandwidth is managed as a super-channel that can be deployed in a single operational motion. Competitive solutions would require the installation of five discrete line modules, each turned up with its own operational motion, in order to achieve the same system capacity. This results in competitive advantages not only in the areas of space, power consumption and long-term system reliability, but also a significant reduction in time to service and operational costs.

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In November of 2012, we introduced the Infinera Instant Bandwidth program, which enables Service Providers to license the 500 Gbps super-channel pool of bandwidth in 100 Gbps increments. With the Infinera Instant Bandwidth program, Service Providers can instantly provision an additional 100G of transmission capacity on demand without the deployment of any incremental equipment. The Instant Bandwidth program is uniquely enabled by Infinera's super-channel capability.

Integrated OTN Switching

OTN offers a highly-structured approach to service multiplexing and switching and enables customers to reduce operational costs and more efficiently utilize higher-capacity bandwidth in their long-haul networks. Historically, the OTN switching and DWDM transport functions have been deployed by Service Providers in separate systems. Our unique PIC technology allows our DTN-X platform to fully integrate DWDM transport and OTN switching capabilities in a single platform, without compromising overall system functionality or capacity. This is achieved by reducing the number of elements and fiber connections in the network, as well as lowering space and power requirements. This results in an improved total cost of ownership for the customer.

Customers

As of December 29, 2012, we have sold our Digital Optical Networks for deployment to 111 customers worldwide, including customers in each of the following segments:

Tier-1 domestic carrier;

Tier-1 international carrier;

MSO/cable;

internet content provider;

incumbent carrier;

research and education/government; and

bandwidth wholesaler.

Some of our announced customers include CenturyLink, Telefonica, Cable&Wireless Worldwide, TeliaSonera International Carrier, Colt, Cox Communications, Deutsche Telekom, Equinix, Inc., Interoute, KVH, Level 3 Communications (Level 3), NTT, OTE, Pacnet and XO Communications. In addition, we currently have 41 customer deployments where customers have purchased our ATN platform to extend the Digital Optical Network experience to their metro edge deployments. We do not have long-term sales commitments from our customers. We had no customer that represented over 10% of our revenue for 2012 and 2011 and one customer that represented over 10% of our revenue for 2010.

Support and Services

We offer our customers a range of product offerings, including 24/7/365 technical support for all hardware and software products, a full range of deployment and installation services, spares management, first line maintenance services, on-site technical services, professional services, product technical training and extended product warranties. In 2012, we expanded all services to cover over 60 countries. We continue to increase our outsourced network monitoring and management services, provided from our two Technical Assistance Centers—one in Annapolis Junction, Maryland, and the other in the United Kingdom. We also expanded our technical support capabilities in APAC to include a facility in Hong Kong, providing a local environment for product demonstrations, training and support. Our customer support services are provided by our

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employees and augmented where necessary by strategic support partners. We believe that providing ongoing customer and technical support is critical to successful long-term relationships with, and follow-on sales to, our customers. We are committed to providing our customers with the highest levels of technical support and service on a global scale.

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Sales and Marketing

We market and sell our products and related support services primarily through our direct sales force, supported by marketing and product management personnel. We may also use distribution or support partners to enter new markets or when requested by a potential customer. Our sales team has significant previous experience with the buying process and sales cycles typical of high-value telecommunications products. We expect to continue to add sales and support employees as we grow our business.

The sales process for our products entails discussions with prospective customers, analyzing their existing networks and identifying how they can utilize our systems capabilities within their networks. This process requires developing strong customer relationships, and we expect to leverage our sales force and customer support capabilities to establish relationships with both domestic and international Service Providers.

Over the course of the sales cycle, Service Providers often test our products before buying. Prior to commercial deployment, the Service Provider will generally perform a field trial of our products. Upon successful completion, the Service Provider generally accepts the products installed in its network and may continue with commercial deployment of additional products. We anticipate that our sales cycle, from initial contact with a Service Provider through the signing of a purchase agreement, may, in some cases, take several quarters.

Direct Sales Force. Our sales team sells directly to Service Providers worldwide. We maintain sales presences throughout the United States, as well as in a number of international locations, including Argentina, China, France, Germany, Hong Kong, Italy, Japan, Netherlands, Singapore, South Africa, Spain, Russia, and the United Kingdom. We expanded our sales force during 2012 as we prepared to address new geographical markets and to support the sales of our expanded portfolio of products. We expect any incremental sales headcount additions in the near-term to be limited to areas where sales achievements are ahead of planned amounts.

Indirect Sales Force. We have and will continue to employ business consultants, resale partners and sales agents to assist in our sales efforts and to accelerate and strengthen our customer relationships. We expect to work with business partners to assist our customers in the sale, deployment and maintenance of our systems and have entered into distribution and resale agreements to facilitate the sale of our products.

Marketing and Product Management. Our product management team is responsible for defining the product features and development plan required to maximize our success in the marketplace. Product management supports our sales efforts with product and application expertise. Our marketing team works to create demand for our products by communicating our value proposition and differentiation through direct customer interaction, public relations, attendance at tradeshow and other events, and via the Internet and other marketing channels.

Research and Development

Continued investment in research and development is critical to our business. To this end, we have assembled a team of engineers with expertise in various fields, including systems, sub-systems and components. Our research and development efforts are currently focused in Sunnyvale, California; Allentown, Pennsylvania; Beijing, China; Bangalore, India; and Kanata, Canada. We have invested significant time and financial resources into the development of our Digital Optical Network architecture, and our DTN-X, DTN and ATN platforms, including the IQ Network Operating System and Management Suite software. We will continue to expand our product offerings and capabilities in the future and plan to dedicate significant resources to these continued research and development efforts. We are continually increasing the scalability and software features of our current platforms. We are also working to develop new generations of PICs, and we intend to enable further integration in our Digital Optical Network architecture through continued research and development.

Our research and development expenses were \$117.2 million, \$127.1 million and \$118.5 million in 2012, 2011 and 2010, respectively.

Employees

As of December 29, 2012, we had 1,242 employees. A total of 431 of those employees were located outside of the United States. None of our U.S. employees are subject to a collective bargaining agreement. Employees in

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certain foreign jurisdictions may be represented by local workers' councils and/or collective bargaining agreements, as may be customary or required in those jurisdictions. We have not experienced any work stoppages, and we consider our employee relationships to be good.

Manufacturing

We have invested significant time and capital to develop and improve the manufacturing process that we use to produce and package our PICs. This includes significant investments in personnel, equipment and the facilities needed to manufacture and package our PICs in Sunnyvale, California and Allentown, Pennsylvania. We also have invested in automating our manufacturing process and in training and maintaining the quality of our manufacturing workforce. As a leader in the development of photonic integration, our manufacturing processes have been developed over several years and are protected by a significant number of trade secrets. We believe that the trade secrets associated with the manufacturing and packaging of our PICs provide us with a significant competitive advantage.

We use both domestic and international manufacturing partners to manufacture certain components of our products. Our contract manufacturers manufacture our products based on our specifications and bill of materials. In addition, the lead times associated with certain components are lengthy and preclude rapid changes in product specifications or delivery schedules. Although we experienced some delays in late 2011 in connection with the floods in Thailand, to date, we have not experienced any significant delays or material unanticipated costs resulting from the use of these contract manufacturers; however, such a strategy involves certain risks, including the potential absence of adequate capacity, the unavailability of or interruptions in access to certain process technologies, and reduced control over delivery schedules, manufacturing yields, quality and costs. Despite outsourcing manufacturing operations for cost-effective scale and flexibility, we perform rigorous in-house quality control testing to ensure the reliability of our products. Our supply chain risk mitigation strategies are continuous and are institutionalized in our supply chain design for external manufacturing and for procurement of components. By design, we have three contract manufacturers in three different countries, in a low cost region (one in China), as well as the capability to redirect manufacturing to U.S. qualified factories of two electronic manufacturing services partners.

Shortages in components that we use in our products are possible and our ability to predict the availability of such components may be limited. Some of these components are available only from single or limited sources of supply. Our products include some components that are proprietary in nature and only available from a single source, as well as some components that are generally available from a number of suppliers. We have increased our reliance on third parties to develop and manufacture components for our products. In some cases, significant time would be required to establish relationships with alternate suppliers or providers of proprietary components. We do not have any long-term contracts with any component providers that guarantee supply of components or their manufacturing services. If we encounter difficulty continuing our relationship with a supplier, or if a supplier is unable to meet our needs, we may encounter manufacturing delays that could adversely affect our business. Our ability to timely deliver products to our customers would be materially adversely impacted if we needed to qualify replacements for any of a number of the components used in our products.

In 2011, we expanded our PIC fabrication (PIC FAB) manufacturing facility in Sunnyvale, California in preparation for volume shipments of our 500 Gbps PICs, which commenced in the second quarter of 2012.

We believe that our current manufacturing facilities can accommodate an increase in capacity for PIC production sufficient for our current product offerings.

Backlog

As of December 29, 2012, our backlog was \$58.4 million. These orders are subject to future events that could cause the amount or timing of the related revenue to change, and, in certain cases, may be cancelled without penalty. We do not believe that backlog should be viewed as an indicator of future performance. A backlogged order may not result in revenue in a particular period, and the actual revenue may not be equal to our backlog amounts. Our presentation of backlog may not be comparable with that of other companies in our industry.

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Competition

The optical communications network equipment market is highly competitive. Competition in this market is based on any one or a combination of the following factors:

price and other commercial terms;

functionality;

existing business and customer relationships;

the ability of products and services to meet customers' immediate and future network requirements;

installation capability;

services;

scalability; and

manufacturing capability.

Competition in the optical networking market is dominated by a number of very large, multi-national companies. Many of our competitors have substantially greater name recognition and technical, financial, and marketing resources, and greater manufacturing capacity, as well as better established relationships with the incumbent carriers, than we do. Many of our competitors have more resources to develop or acquire, and more experience in developing or acquiring, new products and technologies and in creating market awareness for these products and technologies. In addition, many of our competitors have the financial resources to offer competitive products at below market pricing levels that could prevent us from competing effectively. Further, many of our competitors have built long-standing relationships with some of our prospective customers and a number of competitors have the ability to provide financing to customers and could, therefore, have an inherent advantage in selling products to those customers.

Our competitors include current WDM suppliers, such as Alcatel-Lucent, Ciena Corporation, Cisco Systems, Ericsson, Fujitsu Limited, Huawei Technologies Co. Ltd., NEC Corporation, Tellabs and ZTE Corporation. These companies have historically set the competitive benchmarks for price and functionality. There are also smaller companies, including startups, that have announced plans or developed products that would compete for long-haul and metro optical transport business. We also face additional competition in certain market segments from companies which offer one or more products that compete directly or indirectly with our products. In addition, we may compete with other companies as we expand into new markets or as other companies develop products that are competitive with us.

Intellectual Property

Our success as a company depends upon our ability to protect our core technology and intellectual property. To accomplish this, we rely on a combination of intellectual property rights, including patents, trade secrets, copyrights and trademarks, as well as customary contractual protections.

We rely primarily on trade secret protection for our PIC and PIC manufacturing processes, including design, fabrication and testing of our PICs. However, there can be no assurances that trade secrets will be sufficient to provide us with a competitive advantage or that others have not or will not reverse engineer our designs or discover, develop or disclose the same or similar designs and manufacturing processes.

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As of December 29, 2012, we held 212 U.S. patents and 35 international patents expiring between 2021 and 2031, and held 168 U.S. and 74 foreign pending patent applications. We do not know whether any of our pending patent applications will result in the issuance of patents or whether the examination process will require us to narrow our claims.

We may not receive competitive advantages from the rights granted under our patents and other intellectual property. Any patents granted to us may be contested, circumvented or invalidated over the course of our business, and we may not be able to prevent third parties from infringing these patents. Therefore, the exact effect of the protection of these patents cannot be predicted with certainty.

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We believe that the frequency of assertions of patent infringement is increasing as patent holders, including entities that are not in our industry and who purchase patents as an investment or to monetize such rights by obtaining royalties, use such actions as a competitive tactic as well as a source of additional revenue. We have been sued by Cheetah Omni LLC (Cheetah) and Cambrian Science Corporation (Cambrian) for alleged infringement of their patents. See the section set forth in Item 3. Legal Proceedings for additional information regarding these lawsuits. Any claim of infringement from a third party, even those without merit, could cause us to incur substantial costs defending against such claims, and could distract our management from running our business. Furthermore, a party making such a claim, if successful, could secure a judgment that requires us to pay substantial damages. A judgment could also include an injunction or other court order that could prevent us from selling our products. In addition, we might be required to seek a license for the use of such intellectual property, which may not be available on commercially reasonable terms or at all. Alternatively, we may be required to develop non-infringing technology, which would require significant effort and expense and may ultimately not be successful.

In addition to trade secret and patent protections, we generally control access to and the use of our proprietary software and other confidential information. This protection is accomplished through a combination of internal and external controls, including contractual protections with employees, contractors, customers, and partners, and through a combination of U.S. and international copyright laws. We incorporate a number of third-party software programs into our products pursuant to license agreements.

We license some of our software pursuant to agreements that impose restrictions on our customers' ability to use such software, such as prohibiting reverse engineering and limiting the use of copies. We also seek to avoid disclosure of our intellectual property by relying on non-disclosure and assignment of intellectual property agreements with our employees and consultants that acknowledge our exclusive ownership of all intellectual property developed by the individual during the course of his or her work with us. The agreements also require that each person maintain the confidentiality of all proprietary information disclosed to them. Other parties may not comply with the terms of their agreements with us, and we may not be able to enforce our rights adequately against these parties. We also rely on contractual rights to establish and protect our proprietary rights in our products.

We incorporate open source software into our products. Although we monitor our use of open source software closely, the terms of many open source licenses have not been interpreted by U.S. courts, and there is a risk that such licenses could be construed in a manner that could impose unanticipated conditions or restrictions on our ability to commercialize our products. In such event, we could be required to seek licenses from third parties in order to continue offering our products, to re-engineer our products or to discontinue the sale of our products in the event re-engineering cannot be accomplished on a timely basis, any of which could adversely affect our business, operating results and financial condition.

Environmental Matters

Our business and operations are subject to environmental laws in various jurisdictions around the world including the Waste Electrical and Electronic Equipment and Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment regulations adopted by the European Union. We seek to operate our business in compliance with such laws. We are currently subject to laws relating to the materials and content of our products and certain requirements relating to product take back and recycling. Environmental regulation is increasing, particularly outside of the United States, and we expect that our international operations will be subject to additional environmental compliance requirements, which may expose us to additional costs. To date, our compliance costs relating to environmental regulations have not resulted in a material adverse effect on our business, results of operations or financial condition.

Business Segment Data and Our Foreign Operations

We operate in the single industry segment of optical networking systems. Information concerning revenues, results of operations and revenues by geographic area is set forth in Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations and in Note 15, Segment Information, of Notes to Consolidated Financial Statements, both of which are incorporated herein by reference. Information concerning identifiable assets is also set forth in Note 15, Segment Information, of Notes to Consolidated Financial Statements. Information on risks attendant to our foreign operations is set forth below in Item 1A. Risk Factors.

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Our executive officers and directors, and their ages and positions as of December 29, 2012, are set forth below:

Name	Age	Position
Thomas J. Fallon	51	President, Chief Executive Officer and Director
David F. Welch, Ph.D. ⁽³⁾	52	Co-founder, Executive Vice President, Chief Strategy Officer and Director
Ita M. Brennan	45	Chief Financial Officer
Ronald D. Martin	64	Senior Vice President, Worldwide Sales (effective January 31, 2013, Mr. Martin was no longer employed by the Company)
Michael O. McCarthy III	47	Chief Legal and Administrative Officer
Kambiz Y. Hooshmand ⁽³⁾	51	Chairman of the Board
Kenneth A. Goldman ⁽²⁾⁽⁴⁾	63	Director
Philip J. Koen ⁽³⁾⁽⁴⁾	60	Director
Dan Maydan, Ph.D. ⁽¹⁾⁽²⁾	77	Director
Paul J. Milbury ⁽²⁾⁽⁴⁾	64	Director
Carl Redfield ⁽¹⁾⁽²⁾	65	Director
Mark A. Wegleitner ⁽¹⁾⁽³⁾	62	Director

(1) Member of Nominating and Governance Committee

(2) Member of Compensation Committee

(3) Member of Technology and Acquisition Committee

(4) Member of Audit Committee

Thomas J. Fallon has served as our President and Chief Executive Officer since January 2010 and as a member of our board of directors since July 2009. Mr. Fallon served as our Chief Operating Officer from October 2006 to December 2009 and as our Vice President of Engineering and Operations from April 2004 to September 2006. From August 2003 to March 2004, Mr. Fallon was Vice President, Corporate Quality and Development Operations of Cisco Systems, Inc., a networking and telecommunications company. From May 2001 to August 2003, Mr. Fallon served as Cisco's General Manager of the Optical Transport Business Unit. Mr. Fallon is currently a member of the Engineering Advisory Board of the University of Texas at Austin. Mr. Fallon holds a B.S.M.E. and M.B.A. from the University of Texas at Austin.

David F. Welch, Ph.D. co-founded our company and has served as our Executive Vice President, Chief Strategy Officer since January 2004 and as a member of our board of directors since October 2010. Dr. Welch previously served as our Chief Development Officer/Chief Technology Officer from May 2001 to January 2005, as our Chief Marketing Officer from January 2005 to January 2009, as a member of our board of directors from May 2001 to November 2006. From February 2001 to April 2001, Dr. Welch served as Chief Technology Officer of the Transmission Products Group of JDS Uniphase Corporation, an optical component company. From January 1985 to February 2001, Dr. Welch served in various executive roles, including Chief Technology Officer and Vice President of Corporate Development of SDL Inc., an optical component company. Dr. Welch is the Founder and President of Students Matter, a non-profit organization focused on improving K-12 public education in California. Dr. Welch holds a B.S. in Electrical Engineering from the University of Delaware and a Ph.D. in Electrical Engineering from Cornell University. Dr. Welch holds over 130 patents, and has been awarded the Adolph Lomb Medal, Joseph Fraunhofer Award and the John Tyndall Award in recognition of his technical contributions to the optical industry. He is a Fellow of the Optical Society of America (OSA) and the Institute of Electrical and Electronics Engineers (IEEE).

Ita M. Brennan has served as our Chief Financial Officer since July 2010. Prior to becoming our Chief Financial Officer, Ms. Brennan served as our Vice President of Finance and Corporate Controller since July 2006. From September 1997 to July 2006, Ms. Brennan held various roles at Maxtor Corporation, an information storage solutions company, including Vice President of Finance of Worldwide Operations. Ms. Brennan is a chartered accountant and public accounting alumna of Deloitte and Touche, having worked at the firm in Ireland and the U.S.

Ronald D. Martin served as our Senior Vice President of Worldwide Sales from August 2009 to January 2013. From November 2007 to June 2009, Mr. Martin served as Chief Marketing and Strategy Officer and

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President of ADVA Optical Networking's North American subsidiary, an optical networking company. From May 2001 to November 2007, Mr. Martin served as Vice President and General Manager of the optical business unit of Cisco Systems, Inc., a networking and telecommunications company. From May 1987 to May 2001, Mr. Martin served as Chief Operating Officer at Fujitsu Network Communications, a networking and telecommunications company. Mr. Martin holds an A.A. from Iowa Lakes College.

Michael O. McCarthy III has served as our Chief Legal and Administrative Officer since March 2010. From January 2008 to March 2010, Mr. McCarthy served as our Chief Legal Officer. From May 2003 to January 2008, Mr. McCarthy served as our Vice President and General Counsel. Prior to joining our Company, Mr. McCarthy served in various executive roles, including Senior Vice President of Worldwide Sales and Support and Senior Vice President and General Counsel, at Ciena Corporation, a communications equipment company. Prior to working at Ciena, Mr. McCarthy worked in the legal department at MCI Communications Corporation and practiced law at the law firms of Hogan and Lovells and Baker & McKenzie where he concentrated his practice in the areas of technology law and corporate and securities law. Mr. McCarthy holds a B.A. in Mathematical Economics from Colgate University and a J.D. from Vanderbilt University's School of Law.

Kambiz Y. Hooshmand has been a member of our board of directors since December 2009 and has served as Chairman of our board of directors since October 2010. From March 2005 to May 2009, Mr. Hooshmand served as President and Chief Executive Officer of Applied Micro Circuits Corporation, a communications solutions company. From March 2000 to February 2002, Mr. Hooshmand served as Vice President and Division General Manager of the DSL Business Unit of Cisco. From February 2002 to March 2005, Mr. Hooshmand also served as Group Vice President and General Manager of Cisco. From June 1997 to February 2000, Mr. Hooshmand served as Cisco's Vice President of Engineering. From January 1992 to June 1997, Mr. Hooshmand served as Director of Engineering of StrataCom, Inc., a networking solutions company. Mr. Hooshmand holds a B.S. in Electrical Engineering and Computer Science from California State University, Chico and an M.S. in Engineering from Stanford University.

Kenneth A. Goldman has been a member of our board of directors since February 2005. Mr. Goldman is Chief Financial Officer of Yahoo!, responsible for Yahoo!'s global finance functions including financial planning and analysis, controllership, tax, treasury, and investor relations since October 2012. Mr. Goldman served as Senior Vice President, Finance and Administration, and Chief Financial Officer of Fortinet Inc., a provider of unified threat management solutions, from September 2007 to September 2012. From November 2006 to August 2007, Mr. Goldman served as Executive Vice President and Chief Financial Officer of Dexterra, Inc. From August 2000 until March 2006, Mr. Goldman served as Senior Vice President, Finance and Administration, and Chief Financial Officer of Siebel Systems, Inc., a supplier of customer software solutions and services. From December 1999 to December 2003, Mr. Goldman served as an advisory council member of the Financial Accounting Standards Board Advisory Council. Mr. Goldman serves on the board of directors of NXP Semiconductor N.V., a mixed signal and standards product semiconductor company. Mr. Goldman is currently on the board of trustees of Cornell University and was formerly a member of the Treasury Advisory Committee on the Auditing Profession, a public committee that made recommendations in September 2008 to encourage a more sustainable auditing profession. Mr. Goldman holds a B.S. in Electrical Engineering from Cornell University and an M.B.A. from the Harvard Business School.

Philip J. Koen has been a member of our board of directors since February 2010. Mr. Koen has been Chairman of the Board of Directors and Chief Executive Officer of Intermedia.net, Inc., a cloud-based provider of hosted Microsoft Exchange, collaboration and content management services since June 2011. Since October 2010, Mr. Koen has served as a member of the board of directors for Proofpoint, a cloud-based email security company. From February 2010 to May 2011, Mr. Koen served as the Chief Executive Officer of Montero Partners, an advisory services company. From March 2006 to January 2010, Mr. Koen served as Chief Executive Officer and Director of SAVVIS, Inc., a cloud infrastructure and hosted IT solutions provider. From July 1999 until February 2006, Mr. Koen was employed by Equinix, Inc., a provider of network neutral data centers and Internet exchange services, as President and Chief Operating Officer and as Chief Financial Officer. Mr. Koen is currently on the board of trustees of Webster University. Mr. Koen holds a B.A. in Economics from Claremont McKenna College and an M.B.A. from the University of Virginia.

Dan Maydan, Ph.D. has been a member of our board of directors since September 2001. From December 1993 to April 2003, Dr. Maydan served as President of Applied Materials Inc., a semiconductor equipment manufacturing company, and was appointed President Emeritus of Applied Materials from April 2003 to December

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2012. Dr. Maydan was a member of the board of directors of Applied Materials from June 1992 until March 2006. Since 1996, Dr. Maydan has served on the board of directors of Electronics for Imaging, Inc., a digital imaging and print management solutions company. Dr. Maydan holds a B.S. and M.S. in Electrical Engineering from the Israel Institute of Technology and a Ph.D. in Physics from Edinburgh University of Scotland.

Paul J. Milbury has been a member of our board of directors since July 2010. Mr. Milbury served as Vice President of Operations and Chief Financial Officer of Starent Networks Corp., a provider of