

C I E N A 1 0 - K

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended October 31, 1999

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 0-21969

CIENA CORPORATION

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

23-2725311

(I.R.S. Employer
Identification No.)

1201 Winterson Road, Linthicum, MD

(Address of principal executive offices)

21090

(Zip Code)

(410) 865-8500

(Registrant's telephone number, including area code)

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

Securities registered pursuant to Section 12(g) of the Act: **Common Stock**

Indicate by check mark whether the Registrant (1) has filed all reports 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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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.

The aggregate market value of the 138,187,356 shares of Common Stock of the Registrant issued and outstanding as of October 31, 1999, excluding 3,362,959 shares of Common Stock held by affiliates of the Registrant was \$4,659,531,160. This amount is based on the average bid and asked price of the Common Stock on the Nasdaq Stock Market of \$34.56 per share on October 29, 1999.

DOCUMENTS INCORPORATED BY REFERENCE

Part III of the Form 10-K incorporates by reference certain portions of the Registrant's proxy statement for its 2000 annual meeting of stockholders to be filed with the Commission not later than 120 days after the end of the fiscal year covered by this report.

Part I

NOTE: Page numbers referenced in this document refer to CIENA's Form 10-K originally filed with the SEC on December 10, 1999 and may not concur with page numbers in this presentation.

The information in this Form 10-K and in the Annual Report contains certain forward-looking statements, including statements related to markets for the Company's products and trends in its business that involve risks and uncertainties. The Company's actual results may differ materially from the results discussed in the forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in "Management's Discussion and Analysis of Financial Condition and Results of Operations-Risk Factors" and "Business" as well as those discussed elsewhere in this Form 10-K and in the Annual Report.

ITEM 1. BUSINESS

Company

CIENA Corporation (the "Company" or "CIENA") was incorporated in Delaware in November 1992. The Company completed its initial public offering on February 7, 1997 and a secondary offering on July 2, 1997.

The Company's principal executive offices are located at 1201 Winterson Road, Linthicum, Maryland 21090. Its telephone number is (410) 865-8500.

General

Overview

CIENA is a leader in the rapidly emerging optical networking equipment market. The Company offers a comprehensive portfolio of products for tele- and data-communications service providers worldwide. CIENA's customers include long-distance carriers, competitive local exchange carriers, Internet service providers and wholesale carriers. CIENA offers optical transport, intelligent switching and multi-service delivery systems that enable service providers to provision, manage and deliver high-bandwidth services to their customers. The Company has pursued a strategy to develop and leverage the power of disruptive technologies to change the fundamental economics of building carrier-class tele- and data-communications networks, thereby providing its customers with a competitive advantage.

During its fiscal year 1999 CIENA significantly broadened its product offerings and believes it has increased its addressable market opportunity through internal developments, and through the acquisitions of Lightera Networks, Inc. ("Lightera") of Cupertino, California and Omnia Communications, Inc. ("Omnia") of Marlborough, Massachusetts. CIENA announced the acquisitions of Omnia and Lightera simultaneously on March 15, 1999, in conjunction with announcing its "LightWorks™ Initiative."

The acquisition of Lightera was completed on March 31, 1999 and was valued at approximately \$459 million. The acquisition of Omnia was completed on July 1, 1999, with a value of approximately \$483 million. Since the acquisitions, the Company has been working to bring Omnia's service delivery product, MultiWave EdgeDirector™ and Lightera's optical core switch, MultiWave CoreDirector™, to market.

The Company's research and development efforts and potential future acquisition and partnership activities are targeted at capitalizing on its installed base of carrier customers and leveraging its position as a leader in the rapidly emerging optical networking market.

Historically, the significant majority of CIENA's revenues have come from the sale of several products in a single product category: long-distance optical transport equipment. CIENA believes it is one of the worldwide market leaders in field deployment of open-architecture optical transport equipment with more than 7 million optical channel kilometers installed. For the fiscal year ended October 31, 1999, the Company recorded revenue from sales of optical transport equipment to a total of 27 customers, nearly double 1998's customer base of 14. Three customers each represented more than 10% of CIENA's revenues for fiscal 1999. The majority of the Company's fiscal 1999 revenue was derived from sales of its MultiWave Sentry 4000™ long-distance optical transport equipment. The Company also recognized significant revenue from the sale of its next generation long-distance optical transport system, MultiWave CoreStream™.

The Company's results for fiscal 1999, show total revenues of \$482.1 million. Though a slight decrease from 1998's total revenue of \$508.1 million, the Company believes its 1999 results represent a considerable achievement following the challenges that surrounded the end of its fiscal year 1998. Since its fourth fiscal quarter 1998, the Company has shown sequential quarterly improvement in both sales and gross margins. Sales increased from \$91.2 million in fiscal fourth quarter 1998 to the \$141.4 million reported in the fiscal fourth quarter 1999. Gross margins improved from 31.2% of total revenue during fiscal fourth quarter 1998 to 41.0% of total revenue during fiscal fourth quarter 1999.

Industry Background

The Telecommunications Market

Service providers both domestically and internationally have widely deployed fiber optic cable forming the backbone of their communication networks. During the last several years carriers have faced several challenges resulting from a combination of factors, including:

- Unprecedented traffic growth
- Changing traffic demands
- Growing competition
- Increased demand for reliability
- Network scalability challenges
- Escalating operational costs

Unprecedented Traffic Growth

Service providers have seen dramatic network traffic growth caused by factors such as:

- the escalating use of the Internet, as well as increased use of electronic commerce, distributed computing, electronic mail, facsimile transmission, electronic transaction processing, video conferencing, remote access telecommuting and local and wide area networking;
- growing capacity and processing speed of data communications equipment such as Asynchronous Transfer Mode (ATM) switches and Internet Protocol (IP) routers; and
- development of high-bandwidth network access technologies, such as cable modems, hybrid fiber coaxial architectures and digital subscriber lines, that permit commercial and consumer users to transmit and receive high volumes of information.

This increased network utilization can create transmission bottlenecks on heavily used routes that were originally designed to handle significantly less traffic. Although exact statistics are not available, the Company believes that this volume increase has caused some telecommunications carriers to handle traffic over certain long-distance routes at or near the maximum capacity of the existing installed fiber and electronic-based transmission systems currently in use.

Changing Traffic Demands

In addition to more traffic, telecommunication carriers are seeing a shift in the kind of traffic they are handling. Networks today are no longer carrying purely telephone or voice traffic, but instead are carrying an ever increasing volume of data traffic—traffic generated by computers that process and send information far more quickly and in much larger quantities than voice-centric networks were designed for. Carriers and equipment suppliers both have sought more efficient ways to handle this traffic, adopting cell and packet based protocols such as Frame Relay, ATM and IP. These protocols more efficiently handle data traffic by organizing it either in packets, as is the case with Frame Relay and IP, or in cells for ATM. Each packet or cell contains a header with the destination information the network needs to efficiently route or switch the packet/cell.

Recently advances by data communications equipment suppliers have made it possible for ATM switches and IP routers to operate at port speeds of OC-48/STM-16, or 2.5 gigabits per second (“Gb/s”). Several suppliers have announced their intention to provide equipment that operates at port speeds of OC-192/STM-64 or 10 Gb/s, during the year 2000. An industry analyst has estimated that the volume of data-centric traffic traveling in packets or cells will reach 99% of all network traffic by 2004. Whether or not the estimate is precisely accurate, the Company believes the trend of increasing cell and packet based traffic is unmistakable and, as a result, carriers will increasingly look for alternatives to the use of traditional voice-based or synchronous optical network/synchronous digital hierarchy (“SONET/SDH”) telecommunications equipment in their network architecture. The Company expects that carriers will begin to move toward a simpler, more cost effective network where data traffic from an ATM switch or an IP router is directly fed to an optical transport device. The Company believes its ability to connect directly to ATM switches and IP routers through its DirectConnect™ feature positions it to benefit from this shift.

Growing Competition

Widespread deregulation of the United States telecommunications industry has resulted in increased competition among service providers both in the long-distance and local markets. In addition to heightened price competition, carriers are increasingly looking for new ways to differentiate their services from those offered by their competitors. Several new carriers have attempted to leverage leading edge, high capacity technology as a market differentiator for their networks. The Company believes this competition is itself a driver for broader deployment of high capacity such as that enabled by the Company's products throughout the network.

Increased Demand for Reliability

End-users are becoming more dependent on around-the-clock network availability, not only for voice, but also for data traffic. The Company believes these end-users are becoming less tolerant of service interruptions, which can be caused by factors such as equipment failure, fiber cuts or high traffic volume. Consequently, network service providers are faced with a multi-pronged challenge: additional traffic, a different type of traffic, and a growing demand for increased network reliability.

In many cases, this demand for greater reliability has led long-distance carriers to adopt a “ring architecture” in which long-distance routes are linked in a ring configuration so that in the event of a fiber optic cable cut or other equipment failure between two points of the ring, the signal can be immediately redirected through the reverse “protection path” of the ring. However, ring architectures typically demand twice as much fiber capacity as non-ring based architectures due to the need to maintain a redundant alternative path to serve as a protection path for each fiber in use. Most, if not all, of the major carriers have either already implemented or announced an intention to implement ring architecture for their networks, which will place greater bandwidth demand on their existing fiber optic networks.

Network Scalability Challenges

The bandwidth availability that dense wavelength division multiplexing (“DWDM”) brought to the core of the network has created another network challenge as carriers attempt to scale the rest of their networks at the same pace at which they can now scale core bandwidth. DWDM replaces the single beam of light that traverses fiberoptic cable with multiple colors of light, each of which is capable of carrying tens of thousands of voice conversations or data transmissions. Conventional network ring architectures can no longer efficiently scale to match the bandwidth made possible by the application of DWDM.

Several years ago, network capacity—bandwidth—was the main bottleneck in long-distance networks due to fiber exhaust. The widespread acceptance of DWDM offered carriers an efficient and economical solution that relieved acute fiber exhaustion. With the advent of DWDM, carriers could turn up additional channels of bandwidth and gigabits of capacity as traffic dictated. With the Company’s equipment, this typically involves no more than the insertion of additional channel cards into the existing MultiWave® optical transport system.

For the past several years DWDM has been implemented by carriers as a point-to-point solution in long-distance networks. To construct a network using DWDM equipment, a carrier must interconnect the point-to-point high-capacity links and manage all traffic flowing through them. A critical component enabling this interconnection in traditional architectures has been the SONET/SDH add/drop multiplexers (“ADMs”).

In most network architectures, a SONET ADM transmits and receives each DWDM optical channel. This means that as optical channel counts escalate, the corresponding number of SONET ADMs also grows. For instance, in order to receive the traffic from an optical transport system running just 20 channels of DWDM, a network operator would require a total of 40 SONET ADMs, one for each channel at each end of the route. Every time an additional channel is turned up, two additional SONET ADMs must be purchased and installed.

Historically this has been the only way to scale a network. Unfortunately, this approach creates upwardly spiraling costs. In addition to the capital equipment costs, each SONET ADM uses valuable central office space and power. Furthermore, as the number of DWDM channels and links increases, the carrier’s management of the network grows more complex, making service provisioning and network operation more difficult and cumbersome.

Escalating Operational Costs

In addition to the problems inherent in scaling traditional network architectures, carriers are challenged to scale their operating staff as quickly as they can grow their networks. According to information filed in United States Securities and Exchange Commission reports by carriers, many service providers are spending more on operating, growing, and managing their networks than they are on capital expenditures. In some cases, service providers are spending two to four dollars on network operations and support expenses for every dollar spent on capital equipment. In addition, in

many cases, network operations and support expenses are growing faster than revenues. In one case, a carrier saw its network expenses grow 72% since 1996, while its revenue only grew 18%. In another, network expenses grew 806% since 1996, while revenue increased 126%.

CIENA *LightWorks™*

CIENA's LightWorks™ is an optical networking architecture designed to change the fundamental economics of building service provider networks. LightWorks focuses on the three critical areas of optical networking: optical transport, core switching and service delivery. The products in CIENA's LightWorks combine the functionality of several current network elements into a single network element, thereby lowering the capital equipment requirements of a service provider and simplifying the network, in order to reduce a carrier's network operating costs. The components of CIENA's LightWorks architecture can be sold together as a complete network solution or separately as best-of-breed solutions.

Optical Transport

CIENA's optical transport solutions are designed to alleviate capacity, or bandwidth, constraints in high traffic, fiber optic routes without requiring the installation of new fiber. CIENA's MultiWave® open architecture optical transport systems enhance the transmission capacity of a single optical fiber through systems that utilize DWDM, without requiring significant modification or upgrade to existing transmission equipment.

All MultiWave optical transport systems are installed along segments of fiber optic routes; the beginning and end of which are defined by the presence of the customers' transmission equipment. CIENA's MultiWave optical transport systems are designed with an open architecture that allows them to interoperate with carriers' existing fiber optic transmission systems having a broad range of transmission speeds and signal formats.

Long-Distance Applications

CIENA has introduced four generations of its long-distance optical transport product. In chronological order of introduction they are: *MultiWave 1600™*, *MultiWave Sentry 1600™*, *MultiWave Sentry 4000™* and *MultiWave CoreStream™*. Each subsequent generation builds on the feature sets and capabilities of the previous generation and previous generations are scalable to the latest generation's capacity.

MultiWave CoreStream is an advanced DWDM optical transport system with a future capacity of up to 2 Terabits per second (2,000 Gb/s) over a single fiber. The first release of the MultiWave CoreStream system enables simultaneous transmission of up to 96 optical channels on a single fiber at rates of up to 2.5 Gb/s per channel or up to 48 optical channels at rates of up to 10 Gb/s per channel, without opto-electronic regeneration.

MultiWave CoreStream's open architecture and DirectConnect short reach interfaces provide flexible connectivity enabling carriers to transport all types of traffic including voice, video and data. MultiWave CoreStream has a modular DWDM architecture which allows incremental, in-service capacity upgrades. Each optical channel can be any mix of 622 megabits per second ("Mb/s") (OC-12/STM-4), 2.5Gb/s (OC-48/STM-16) or 10Gb/s (OC-192/STM-64) traffic.

The MultiWave CoreStream product family consists of optical terminals, amplifiers and add/drop multiplexers. MultiWave CoreStream incorporates a new generation of broadband optical amplifiers that enable flexible bandwidth commissioning and long-distance span designs. MultiWave CoreStream optical add/drop multiplexers ("OADMs") enable flexible channel access in the middle of optical transport spans. The OADMs can drop up to eight channels of OC-12/STM-4, eight channels of OC-48/STM-16 or four channels of OC-192/STM-64 traffic.

CIENA's SmartSpan™ software automates system operations and ensures carrier-class reliability and performance by embedding software intelligence within each MultiWave CoreStream element. Each optical channel in a MultiWave CoreStream system is equipped with intelligent digital performance monitoring to help carriers troubleshoot and provide service level agreements. MultiWave CoreStream is managed by CIENA's WaveWatcher® element management system which has an easy-to-use graphical interface and allows carriers to monitor and maintain their operations from a single console.

In November 1999, the Company announced it was pursuing enhancements to its MultiWave CoreStream product that enable the system to offer the optimal combination of ultra long-distance transport functionality and, channel count to further lower network costs for service providers. Using forward error correction (FEC), nonlinearity management, and dispersion mapping technologies, plus embedded software intelligence, MultiWave CoreStream will be able to support optical spans longer than 5,000 kilometers without additional optical-to-electrical signal regeneration. The Company expects to begin beta trails of the ultra long-distance feature of this product in the first half of calendar 2000. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Factors."

Short-Distance Applications

CIENA's *MultiWave Firefly™* is an optical transport system developed specifically for use by carriers in short-distance, point-to-point applications. This system multiplexes up to 24 channels at 2.5 Gb/s, over a single fiber pair, allowing a carrier to transport up to 60 Gb/s. MultiWave Firefly allows carriers to mix SONET/SDH, ATM & Fast IP traffic on a common optical network. The product also enables overbuilds to the network for applications such as new high speed data services that can be readily implemented on a separate channel over the current fiber plant. This kind of application allows the network to be partitioned by type of service offered, for simpler network management structure. MultiWave Firefly utilizes a standards-based, open system architecture, enabling it to interface inexpensively with a wide variety of SONET/SDH, ATM & Fast IP fiber optic transmission equipment and most embedded networks.

Ring-Based Applications

The *MultiWave Metro™* is an optical transport system designed for use in metropolitan ring applications. The MultiWave Metro system consists of optical add/drop multiplexer nodes connected together on a two fiber ring. It provides up to 24 duplex channels over a single fiber pair, enabling a service provider to transport up to 60 Gb/s.

MultiWave Metro is extremely flexible, supporting various topologies, protocols and protection arrangements on the same fiber pair and in the same node. MultiWave Metro can simultaneously support point-to-point, star, ring, or mesh network configurations. Its standards-based, open architecture allows it to interface easily with a wide variety of SONET/SDH, ATM, and Fast IP equipment and most embedded network management systems. MultiWave Metro provides protection switching on signals where external protection, such as SONET/SDH protection, is not provided. Furthermore, MultiWave Metro allows various protection types to be supported simultaneously on the same fiber pair. This flexibility removes uncertainty for incumbent and emerging carriers by allowing them to rapidly support new services.

MultiWave Metro is specifically designed for short-distance ring applications. It provides a cost effective alternative to time division multiplexed (TDM) rings when the total aggregate ring capacity is OC-12 or greater. Traditionally, carriers designate the transmission speed for a metropolitan ring, i.e., OC-48, and transport all traffic on the ring at the transmission speed. Once the ring capacity is fully utilized, the carrier is forced to utilize another ring. As with point-to-point segments, this significantly increases the complexity, deployment timing and cost of a carrier's network. MultiWave Metro is an excellent alternative to new fiber builds in access rings where fiber exhaust is a problem

because it allows carriers to utilize one fiber pair to create virtual rings of varying capacity. In addition, MultiWave Metro allows new services such as “virtual private SONET rings” to be offered using the existing fiber plant. A PC-based network design tool, which helps automate the design of the DWDM ring, is available with the system.

WaveWatcher Network Management System

WaveWatcher[®] is the MultiWave system's integrated network management software package. The Company's commitment to providing standards-compliant network management interfaces at all levels, from individual network elements to the element management system, affords rapid integration into existing telecommunication management operations.

WaveWatcher operates on a UNIX platform and has been designed to adhere to both existing and evolving open system network management standards such as SNMP, TCP/IP and the ITU TMN standards.

WaveWatcher's network element manager uses a separate out-of-band optical service channel to communicate network management information and provides a single view of multiple CIENA systems through graphical user interfaces and supported operating system interfaces. It provides customers with early warnings of network problems and allows them to manage and monitor network performance. WaveWatcher provides fault, performance, security and configuration management of optical networking systems. When used with MultiWave Sentry systems, WaveWatcher provides additional monitoring capabilities for channel identification and transmission quality throughout a customer's MultiWave network.

The Company believes its software development effort provides an important differentiator for its optical networking systems.

Core Switching

MultiWave CoreDirector[™] is an intelligent optical core switch, designed to deliver a wide range of optical capacities with a variety of protection options. MultiWave CoreDirector features the networking intelligence of CIENA's LightWorks OS[™], which enables network-wide optical provisioning and management. With its scalability, flexibility, and advanced networking capabilities, MultiWave CoreDirector dramatically reduces the cost of deploying, operating, and scaling optical networks. MultiWave CoreDirector is currently in the customer trial phase of development. CIENA expects field deployable units will be available at the end of the first calendar quarter of 2000, with general availability to follow. See Item 7. “Management's Discussion and Analysis of Financial Condition and Results of Operations—Risk Factors.”

MultiWave CoreDirector provides up to 640 Gb/s of full duplex switching in a single 7-foot bay. It supports up to 256 OC-48/STM-16 or 64 OC-192/STM-64 interfaces, with the ability to support OC-768/STM-256 in the future. MultiWave CoreDirector also supports OC-12/STM-4 and OC-3/STM-1 optical interfaces to accommodate legacy switches and routers without requiring standalone SONET/SDH multiplexers. Any optical interface may be software-configured as concatenated for “wavelength” switching or channelized down to STS-1 granularity. Because of its scalability, range of optical interfaces, and software-definable switching granularity, MultiWave CoreDirector eliminates the need for SONET/SDH Add/Drop Multiplexers, Digital Cross-Connects, and Optical Cross-Connects.

LightWorks OS is CIENA's feature-rich operating system engineered specifically for intelligent optical networking. With LightWorks OS, carriers can automatically provision circuits with a wide range of capacities, flexible protection options, and rapid restoration from a single management console as opposed to individually configuring each network element as was necessary in legacy architectures. At the heart of LightWorks OS is Optical Signaling and Routing Protocol (OSRP[™]), which enables distributed, dynamic information exchange between MultiWave CoreDirectors, allowing carriers to provision new services automatically and in real-time. LightWorks OS allows carriers to decouple the growth of operations tasks from the growth of network traffic.

To get the most from their diverse service offerings and varied physical plant, carriers are looking beyond “one-size-fits-all” transport protection options. Some applications call for ring protection, others for linear line protection, while some broadband data applications are best served by path-level fast mesh protection. MultiWave CoreDirector supports all these applications, allowing multiple concurrent protection mechanisms. These include software-defined rings (VLSR™), standards-compliant linear APS protection, and FastMesh™ path-level restoration.

Service Delivery

The *MultiWave EdgeDirector 500™* is a multi-service transport platform designed for the high capacity requirements of public carrier networks. The MultiWave EdgeDirector 500 enables public carriers to efficiently transport voice and data services such as Transparent LAN (“local area network”), Router IP, VPN (“Virtual Private Networks”), Voice, and Private Line Services over a single integrated fiber optic access and interoffice network. Previously, in order to offer its customers ATM, IP and voice services a carrier would have to purchase and deploy service-specific network elements such as ATM switches, IP routers and SONET ADMs. MultiWave EdgeDirector is designed to lower network equipment costs by enabling a carrier to deliver ATM, IP and voice services from a single network element. The initial release of MultiWave EdgeDirector is commercially available. We expect to release additional versions of the MultiWave EdgeDirector over the next year to expand upon the functionality of the initial release to address specific customer and market requirements.

MultiWave EdgeDirector is designed to integrate support of a wide range of traditional and new services onto a single platform. It also integrates the functions of DLCs, SONET/SDH ADMs, DCSs, access concentrators and access routers into one network element, including the TDM 3/1/0 grooming functions. In addition, the MultiWave EdgeDirector supports up to 280 DS1s, 20 DS3s or 10/100Base-T interfaces.

When deployed, the MultiWave EdgeDirector 500:

- Frees up bandwidth wasted by SONET/SDH transport;
- Leverages the existing switching, routing, and fiber access infrastructure;
- Accelerates service turn-up;
- Reduces operational expenses and net management overhead; and
- Reduces space, power, and cabling requirements.

Product Development

The Company believes the overall growth in utilization of fiber optic telecommunications networks will lead to transmission bottlenecks in other segments of the networks where the application of optical networking technologies may provide solutions. The Company also believes there may be opportunities for it to develop products and technologies complementary to existing optical networking technologies which may broaden the Company's ability to provide, facilitate and/or interconnect with high bandwidth solutions offered throughout fiber optic networks. The Company intends to focus its product development efforts and possibly pursue strategic alliances or acquisitions to address expected opportunities in these areas.

Customers

CIENA has announced relationships with the following 26 customers:

Domestically:

Alltel, Bell Atlantic, Bell South, Cable & Wireless USA, Digital Teleport, Inc., Enron Communications, Inc., GST Telecommunications, Inc., Intermedia Communications, Inc., IXC Communications, Inc., MCI WorldCom, Inc., RCN Corporation, Sprint Corporation, Williams Communications, Inc.

Internationally:

Cable & Wireless Communications, UK; Completel, France; Crosswave Communications, Inc., Japan; Daini Deuden Inc., Japan; GTS Network (Ireland) Ltd. (formerly Hermes Europe Railtel), UK; iaxis, Ltd., UK; Japan Telecom Co., Ltd., Japan; KDD/Teleway Japan Corporation, Japan; Racal Telecom, UK; TANet, UK; Telecom Developpement, France; Telia AB, Sweden, MobilCom AG, Germany.

In addition CIENA has several unannounced customer relationships.

Prospective Customers by Category

Interexchange Carriers (IXCs)

The initial deployments of CIENA's bandwidth enhancing optical transport equipment occurred in the core of the U.S. long-distance network with the interexchange carriers or IXCs. IXCs provide connections between local exchanges in different geographic areas. In recent years, incumbent IXCs such as Sprint, MCI WorldCom and AT&T have seen increased competition from emerging long-distance carriers such as Qwest Communications ("Qwest"), Global Crossing, IXC Communications Inc. ("IXC") and Level 3 Communications ("Level 3"). Consolidation in this space is happening at a rapid pace. Most recently MCI WorldCom and Sprint have announced their intention to merge. We expect that continued competition in long-distance call rates, as well as the carriers' desire for market and service differentiation, will continue to drive demand for the increased capacity and features offered by CIENA's optical networking equipment.

Competitive Local Exchange Carriers (CLECs)

Deregulation has fueled the growth of U.S. competitive local exchange carriers or CLECs. The Company believes that in the short-term, CLECs could benefit from the hesitancy of incumbent local exchange carriers, such as the Regional Bell Operation Companies ("RBOCs"), to open their local markets to competitors, and that these CLECs are likely to move aggressively to capitalize on opportunities in the local area. CIENA recognized revenues from CLEC customers in fiscal 1999 and expects that tactical CLEC applications for its long-haul products, as well as the short-distance products, will be well-suited to CLEC network applications.

International Competitive Carriers

New competitive carriers are emerging as a result of deregulation in the international telecommunications markets as well. CIENA has concentrated its sales efforts on these emerging carriers as opposed to the traditional carriers or PTTs. During Fiscal 1999, CIENA increased its international customer base from nine to fourteen customers. In many cases, these new competitive carriers do not have the installed fiber base of the larger carriers and therefore are in need of the scalable bandwidth CIENA's optical transport systems offer. In addition, because of the economies and flexibility

afforded by the application of DWDM technology, CIENA's equipment is being used on several new builds where the service provider is physically constructing the network. The Company expects that in the near-term, the majority of its international revenue will come from these smaller, more aggressive competitive carriers, and will continue to concentrate its sales efforts accordingly.

Non-Traditional Telecommunication Service Providers

The growth of the Internet has produced traffic growth substantial enough to attract new, non-traditional telecommunication service providers to compete in this market as well. Both domestically and internationally, companies with rights-of-way, such as utility companies, cable TV providers, and railroads are capitalizing on their "network" (whether a pipeline, a railroad, or a highway), and in some cases, are laying optical fiber and constructing telecommunications networks along those rights-of-way. The transmission capabilities of CIENA's optical networking equipment enables these new carriers to provide competitive services while purchasing and laying a minimal amount of fiber optic cable.

Incumbent Local Exchange Carriers

Incumbent local exchange carriers, such as the RBOCs, are very active in interoffice and local exchange markets and, under the Telecommunications Act of 1996, RBOCs are eligible to enter the long-distance market once they have met certain requirements for opening their local markets to competition. The Company anticipates that one or more of the RBOCs will move aggressively to offer long-distance services, although the timing of that move is uncertain, and the question of how such a move will be implemented is unclear—e.g., through the establishment of owned network facilities, through the purchase of long-distance capacity from other long-distance carriers, or through some combination of the two.

Regardless of the timing of any such move, the Company believes there may be limited opportunities for in-region deployment of the Company's long-distance optical transport products in certain RBOCs. RBOC mergers currently under consideration could greatly expand the geographic reach of the combined companies, such that opportunities for in-region deployment of the Company's products could be enhanced.

Marketing and Distribution

The Company's systems require a relatively large investment, and the Company's target customers in the fiber optic telecommunications market—where network capacity and reliability are critical—are highly demanding and technically sophisticated. There are only a small number of such customers in any country or geographic market. Also, every network operator has unique configuration requirements, which impact the integration of optical networking systems with existing transmission equipment. The convergence of these factors leads to a very long sales cycle for optical networking equipment, often more than a year between initial introduction to the Company and commitment to purchase, and has further led CIENA to pursue sales efforts on a focused, customer-by-customer basis. See Item 7. "Management's Discussion and Analysis of Financial Conditions and Results of Operations—Risk Factors."

The Company has organized its resources for the separate but coordinated approach to United States and international customers. In the United States market, a sales team, comprised of an account manager, systems engineers and technical support and training personnel, is assigned responsibility for each customer account, and for the coordination and pursuit of sales contacts. In the international market, the Company currently pursues prospective customers through direct sales efforts, as well as through distributors, independent marketing representatives and independent

sales consultants. The Company has established CIENA Communications, Inc. as a wholly-owned subsidiary to coordinate worldwide sales, marketing, customer service and installation support functions. CIENA Communications Japan, Ltd. is a wholly-owned subsidiary established to coordinate sales, marketing and customer service efforts in Japan, the Pacific Rim and other Asian areas. The Company has established CIENA Limited as a wholly-owned subsidiary in the U.K. to facilitate European, and Middle Eastern sales. Through its subsidiaries, the Company has established offices in the U.S., Europe and Latin America, including offices in the U.K., Germany, France, Spain, Mexico and Brazil. The Company has distributor or marketing representative arrangements, including agreements with agents in Italy, the Republic of Korea, Japan, Venezuela, Columbia and Chile.

In support of its worldwide selling efforts, the Company conducts marketing communications programs intended to position and promote its products within the telecommunications industry. Marketing personnel also coordinate the Company's participation in trade shows and conduct media relations activities with trade and general business publications.

Manufacturing

The Company conducts most of the optical assembly, final assembly and final component, module and system test functions for its optical transport products at its manufacturing facilities in Maryland. It also manufactures the in-fiber Bragg gratings and Erbium-doped fiber amplifiers used in its optical transport product lines. The Company expects the majority of the manufacturing associated with its MultiWave CoreDirector and MultiWave EdgeDirector products will be performed by third-party manufacturers, with only final system test and assembly performed at its offices in Cupertino, California and Marlborough, Massachusetts. However, the Company continues to evaluate whether a portion of the manufacturing of modules for its optical transport products can be done on a reliable and cost-effective basis by third party manufacturers.

The Company believes that portions of its manufacturing technologies and processes represent a key competitive advantage and has accordingly invested significantly in automated production capabilities and manufacturing process improvements and expects to further enhance its manufacturing process with additional production process control systems. Certain critical manufacturing functions require a highly skilled work force, and the Company puts significant efforts into training and maintaining the quality of its manufacturing personnel.

The Company's optical transport product lines utilize in excess of 1,400 parts, many of which are customized for the Company. Component suppliers in the specialized, high technology end of the optical communications industry are generally not as plentiful or, in some cases, as reliable, as component suppliers in more mature industries. The Company regularly turns to component suppliers that may not have had an opportunity to demonstrate the ability to increase their production to keep pace with the Company's needs. Certain key optical and electronic components used in the Company's optical transport systems are currently available only from sole sources. The Company has from time to time experienced minor delays in the receipt of these components, variations in the quality of the components, and a lengthening of the lead times for some components. Any future difficulty in obtaining sufficient and timely delivery of components could result in delays or reductions in product shipments which, in turn, could have a material adverse effect on the Company's business, financial condition and results of operations. While alternative suppliers have been identified for certain other key optical and electronic components, those alternative sources have not been qualified. The time and expense involved in qualifying each additional source are significant. Accordingly, the Company will for the near term continue to be dependent on sole and single source suppliers of certain key components. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations-Risk Factors."

Competition

Competition in the telecommunications equipment industry is intense, particularly in that portion of the industry devoted to delivering higher bandwidth and more cost effective services throughout the telecommunications network. The Company believes that its position as a leading supplier of open architecture optical networking equipment and the field-tested design and performance of its optical transport products give it a current competitive advantage and expects to leverage that advantage in bringing its core switching and service delivery products to market. However, intensifying competition is a material risk factor facing the Company in fiscal 2000. See Item 7. "Management's Discussion and Analysis of Financial Conditions and Results of Operations-Risk Factors."

The competition faced by the Company is dominated by a small number of very large, usually multinational, vertically integrated companies, each of which has substantially greater financial, technical and marketing resources, and greater manufacturing capacity as well as more established customer relationships with long-distance carriers than the Company. Included among the Company's competitors are Lucent Technologies Inc., ("Lucent"), Northern Telecom Inc. ("Nortel"), Alcatel Alsthom Group ("Alcatel"), NEC Corporation ("NEC"), Pirelli SpA, Siemens AG ("Siemens"), Fujitsu Group ("Fujitsu"), Hitachi Ltd. ("Hitachi") and Telefon AB LM Ericsson ("Ericsson"). The Company also believes that several new companies will attempt to break into the rapidly emerging optical networking market. Each of the Company's major competitors is believed to be in various stages of development, introduction or deployment of products directly competitive with the Company's optical transport, core switching and service delivery systems.

In addition to optical networking equipment suppliers, traditional TDM-based transmission equipment suppliers compete with the Company in the market for transmission capacity. Lucent, Alcatel, Nortel, Fujitsu, Hitachi and NEC are already providers of a full complement of such equipment. These and other competitors have introduced or are expected to introduce equipment which will offer 10 Gb/s transmission capability.

Competition in the optical networking market is broadly based on varying combinations of price, manufacturing capacity, timely delivery, system reliability, service commitment and installed customer base, as well as on the comprehensiveness of the system solution in meeting immediate network needs and foreseeable scalability requirements. The Company's customers are under increasing competitive pressure to deliver their services at the lowest possible cost. This pressure may result in pricing for optical networking systems becoming a more important factor in customer decisions, which may favor larger competitors that can spread the effect of price discounts in their optical networking product lines across an array of products and services, and across a customer base which are larger than the Company's.

New competitors may also emerge to compete with our existing products as well as our future products. There has been an increase in funding of new companies intending to develop new products for the optical networking market. These companies have time to market advantages due to the narrow and exclusive focus of their efforts. In particular, a number of companies, including several start-ups, have announced products that compete with our MultiWave CoreStream, MultiWave Metro, MultiWave CoreDirector and MultiWave EdgeDirector products.

Patents and Other Intellectual Property Rights

The Company has licensed certain key enabling technologies with respect to the production of in-fiber Bragg gratings, utilized publicly available technology associated with Erbium-doped fiber amplifiers, and applied its design, engineering and manufacturing skills to develop its optical transport systems. These licenses expire when the last of the licensed patents expires or is abandoned. The Company also licenses from third parties certain software components for its

network management software. These software licenses are perpetual but will generally terminate after an uncured breach of the agreement by the Company. The Company has registered trademarks for CIENA, WaveWatcher, MODULE SCOPE and CIENA Optical Communications. The Company also relies on contractual rights, trade secrets and copyrights to establish and protect its proprietary rights in its products.

The Company intends to enforce vigorously its intellectual property rights if infringement or misappropriation occurs.

The Company's practice is to require its employees and consultants to execute non-disclosure and proprietary rights agreements upon commencement of employment or consulting arrangements with the Company. These agreements acknowledge the Company's exclusive ownership of all intellectual property developed by the individual during the course of his work with the Company and require that all proprietary information disclosed to the individual will remain confidential. The Company's employees generally also sign agreements not to compete with the Company for a period of twelve months following any termination of employment.

As of October 1999, the Company had received twenty-nine United States patents, and had one hundred twenty-three pending patent applications. Of the United States patents that have been issued to the Company, the earliest any will expire is 2012. Pursuant to an agreement between the Company and General Instrument Corporation dated March 10, 1997, the Company is a co-owner with General Instrument Corporation of a portfolio of 27 United States and foreign patents relating to optical communications, primarily for video-on-demand applications. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations-Risk Factors." The Company has also acquired from Tyco Submarine Systems, Ltd. (TSSL), U.S. Patent No. 5,173,957 and eight corresponding foreign patents based thereon as well as a license to a portfolio of seven U.S. patents owned by TSSL.

Strategy

CIENA's strategy has been and will continue to be to maintain and build upon its market leadership in the deployment of optical networking systems and to leverage the Company's high-bandwidth technologies in order to provide solutions for both voice and data communications-based network architectures. Important elements of CIENA's strategy include:

- **Maintain Leadership in Deployment of Optical Networking Solutions.** The Company believes that the technological, operational and cost benefits of the Company's optical networking solutions create competitive advantages for telecommunications carriers worldwide, which are being pressed by their customers to deliver services to address the dramatic growth in Internet and other data communications traffic. The Company also believes that achieving early widespread operational deployment of its systems in a particular carrier's network will provide CIENA significant competitive advantages with respect to additional optical networking deployments and will enhance its marketing to other carriers as a field proven supplier. The Company therefore intends to continue aggressively serving its existing customers while actively pursuing additional optical networking deployment opportunities among fiber optic carriers in domestic and foreign long-distance, interoffice and local exchange markets. The Company intends to emphasize its global service and support excellence as a differentiating factor in its efforts to maintain and enhance its market position.

- ***Continue to Emphasize Technical Support and Customer Service.*** The Company markets technically advanced systems to sophisticated customers. The nature of the Company's systems and market require a high level of technical support and customer service, including installation assistance. The Company's efforts to develop substantial customer service and installation support organization were significantly enhanced with the acquisition of ATI Telecom International, Ltd. ("Alta") in February of 1998. Through the combination of its existing technical support and customer service operations and Alta, CIENA offers complete engineering, furnishing and installation services in addition to full-time customer support from selected locations worldwide where it develops significant customer relationships.
- ***Continue to Enhance World Class Manufacturing Capability.*** The Company's MultiWave systems serve a mission critical role in its customers' networks. Quality assurance and manufacturing excellence are necessary for the Company to achieve success. CIENA believes it has developed a world class manufacturing capability and that this capability provides the Company with a significant competitive advantage. The Company achieved ISO 9001 certification in July 1997 in further support of this element of its strategy. The Company expects to continue to invest in both the capital and the human resources necessary to maintain and leverage this advantage.
- ***Expand Sales and Marketing Efforts.*** The nature of the target customer base for all MultiWave product lines requires a focused sales effort on a customer-by-customer basis. The Company will continue to increase its sales and marketing efforts by focusing on the worldwide market of fiber optic carriers. The Company increased the number of optical transport customers from fourteen in 1998 to twenty-seven during 1999. In addition, CIENA significantly increased its international presence, particularly in Europe, growing the number of international customers from nine to fourteen and the percentage of revenues from international customers from approximately 23% of total revenue in 1998 to approximately 44% of revenue in 1999. The Company will continue to strengthen its marketing programs and to increase its international presence through both direct sales and international distributor relationships.
- ***Leverage the Company's High Bandwidth Technologies and Know-How.*** The Company believes the overall growth in demand for bandwidth and the need for high bandwidth services in telecommunications networks will lead to transmission bottlenecks in other segments of the networks where the application of optical technologies and other high bandwidth enabling technologies may provide solutions, either within existing network architectures, or as part of the design and development of alternative data communications-based network architectures. The Company expects to leverage the core competencies it has developed in the design, development and manufacturing of the MultiWave product lines by pursuing new product development efforts, and strategic alliances or acquisitions, to address these expected opportunities. The Company intends to move aggressively to maintain leadership in the design and development of communications equipment and software which will both respond to customer needs and help the customers move toward newer, higher capacity, more cost-efficient network designs for the future.

Employees

As of October 31, 1999, the Company and its subsidiaries employed 1,928 persons, of whom 416 were primarily engaged in research and development activities, 682 in manufacturing, 404 in installation services, 251 in sales, marketing, customer support and related activities and 175 in administration. None of the Company's employees are currently represented by a labor union. The Company considers its relations with its employees to be good.

Directors and Executive Officers

The table below sets forth certain information concerning each of the directors and executive officers of the Company:

Name	Age	Position
Patrick H. Nettles, Ph.D. ⁽¹⁾	56	President, Chief Executive Officer and Director
Gary B. Smith	39	Senior Vice President, Chief Operating Officer
Joseph R. Chinnici	45	Senior Vice President, Finance and Chief Financial Officer
Steve W. Chaddick	48	President, Core Switching Division
Michael A. Champa	48	President, Access Systems Division
Mark Cummings	48	Senior Vice President, Operations
Jesús León	55	Senior Vice President, Products and Technology
Rebecca K. Seidman	53	Senior Vice President, Human Resources Development
Stephen B. Alexander	40	Vice President, Chief Technology Officer
Charles Chi	33	Vice President, Marketing
Michael O. McCarthy	34	Vice President, General Counsel and Secretary
Andrew C. Petrik	36	Vice President, Controller and Treasurer
Michael J. Zak ⁽¹⁾⁽²⁾⁽³⁾	46	Director
Harvey B. Cash ⁽¹⁾⁽²⁾	61	Director
Billy B. Oliver ⁽¹⁾⁽²⁾	74	Director
Stephen P. Bradley, Ph.D. ⁽¹⁾⁽³⁾	58	Director
John R. Dillon ⁽¹⁾⁽³⁾	58	Director

(1) The Company's Directors hold staggered terms of office, expiring as follows: Messrs Bradley and Oliver in 2000; Messrs Dillon and Nettles in 2001; and Messrs Cash and Zak in 2002

(2) Member of the Human Resources Committee

(3) Member of the Audit Committee

Patrick H. Nettles, Ph.D., has served as Chief Executive Officer and Director of the Company since February 1994, and as Director, President and Chief Executive Officer since April 1994. Dr. Nettles serves as a Trustee for the California Institute of Technology and also serves on the Advisory Board to the President at Georgia Institute of Technology. From 1992 until 1994, Dr. Nettles served as Executive Vice President and Chief Operating Officer of Blyth Holdings Inc., a publicly-held supplier of client/server software. From late 1990 through 1992, Dr. Nettles was President and Chief Executive Officer of Protocol Engines Inc., a development stage enterprise, formed as an outgrowth of Silicon Graphics Inc., and targeted toward very large scale integration based solutions for high-performance computer networking. From 1989 to 1990, Dr. Nettles was Chief Financial Officer of Optilink, a venture start-up which was acquired by DSC Communications. Dr. Nettles received his B.S. degree from the Georgia Institute of Technology and his Ph.D. from the California Institute of Technology.

Gary B. Smith has served as Senior Vice President, Chief Operating Officer since August 1999 and from September 1998 to August 1999, served as Senior Vice President, Worldwide Sales and was previously Vice President of International Sales since joining the Company in November 1997. From June 1995 to October 1997, Mr. Smith served as Vice President, Sales and Marketing for Intelsat and from August 1991 to May 1995, Mr. Smith served as Vice President of Sales and Marketing for Cray Communications, Inc. Mr. Smith received an M.B.A. from Ashridge Management College, U.K.

Joseph R. Chinnici joined the Company in September 1994 as Controller, and became Vice President, Finance and Chief Financial Officer in May 1995. He was promoted to Senior Vice President, Finance and Chief Financial Officer in August 1997. From 1993 through 1994, Mr. Chinnici served as a financial consultant for Halston Borghese Inc. From 1977 to 1993, Mr. Chinnici held a variety of accounting and finance assignments for Platex Apparel, Inc. (now a division of Sara Lee Corporation), ending this period as Director of Operations Accounting and Financial Analysis. From 1977 to 1993, Mr. Chinnici held a variety of accounting and finance assignments for Accounting and Financial Analysis. Mr. Chinnici currently serves on the board of directors for Online Technologies Group, Inc. Mr. Chinnici holds a B.S. in accounting from Villanova University and an M.B.A. from Southern Illinois University.

Steve W. Chaddick has served as President, Core Switching Division since September 1999 and from September 1998 to August 1999, served as Senior Vice President, Strategy and Corporate Development. From September 1996 to August 1998, he served as Senior Vice President, Products and Technologies, and was previously Vice President of Product Development for the Company since joining it in 1994. Prior to joining the Company, Mr. Chaddick was Vice President of Engineering at AT&T Tridom, a company he co-founded in 1983 and which was acquired by AT&T in 1988. Mr. Chaddick holds several patents in the area of WDM systems and techniques, and serves on the Advisory Board of the School of Electrical and Computer Engineering at Georgia Institute of Technology. Mr. Chaddick received both his B.S. and M.S. degrees in electrical engineering from the Georgia Institute of Technology.

Michael A. Champa has served as President, Access Systems Division since joining the Company in July 1999. From June 1997 to June 1999, Mr. Champa was President and CEO of Omnia Communications, Inc., and a co-founder of that company. From April 1992 to May 1997, Mr. Champa served as Vice President, Worldwide Sales and Service at Cascade Communications. Mr. Champa has a B.A. degree from the University of Massachusetts at Amherst as well as M.B.A. and M.P.A. degrees from Suffolk University.

Mark Cummings joined the Company in May 1996 as Vice President, Manufacturing and was promoted to Senior Vice President, Operations in August 1997. From 1985 to 1996, Mr. Cummings was Vice President, Operations for Cray Communications, Inc., an international manufacturer of communications equipment. Mr. Cummings holds a B.S. in electronic technology from the State University of New York at Buffalo, and is currently in the Masters program in advanced manufacturing systems at the University of Maryland.

Jesús León has served as Senior Vice President, Products and Technology since September 1998 and Vice President, Access Products since joining the Company in November 1996. From December 1995 to October 1996, Mr. León served as Vice President, Engineering, for the Access Systems Division of Alcatel ("Alcatel"). Prior to December 1996, Mr. León served in various positions with Alcatel with responsibility for over 1,200 engineers in Europe, Australia and South Africa. Mr. León holds a B.S.E.E. and M.E. from the University of Florida, an A.B.D. (all but doctoral dissertation) from the Georgia Institute of Technology and an M.B.A. from Georgia State University.

Rebecca K. Seidman joined the Company in April 1996 as Director of Human Resources Development, and was promoted to Vice President, Human Resources Development in June 1996. She was promoted to Senior Vice President, Human Resources Development in August 1999. From 1984 until joining the Company, Ms. Seidman served consecutively as Director of Marketing, Vice President, Administration, and Principal of Walpert, Smullian & Blumenthal, P.A., a regional accounting and consulting firm. Ms. Seidman holds a B.A. degree in economics and political science from Goucher College and is the co-author of *Total Quality Distribution*, a book discussing practical applications of Total Quality in the wholesale distribution industry.

Stephen B. Alexander has served as Vice President, Chief Technology Officer since September 1998, and Vice President, Transport Products from September 1996 to August 1998. He was previously Director of Lightwave Systems at the Company since joining it in 1994. From 1982 until joining the Company, he was employed at MIT Lincoln Laboratory, where he last held the position of Assistant Leader of the Optical Communications Technology Group. Mr. Alexander is an Associate Editor for the Journal of Lightwave Technology and was a General Chair of the conference on Optical Fiber Communication (OFC) for 1997. Mr. Alexander received both his B.S. and M.S. degrees in electrical engineering from the Georgia Institute of Technology.

Charles Chi has served as the Company's Vice President, Marketing since April 1999. From March 1998 to March 1999 Mr. Chi served as Vice President of Marketing and co-founder of Lightera Networks, Inc. From November 1997 to March 1998 Mr. Chi was Director of Partnership and Alliance Marketing with the Company. From May 1995 to November 1997, Mr. Chi was with Cisco Systems in sales and marketing, most recently as the Group Manager for carrier ATM systems. From 1988 to 1995, Mr. Chi held both technical and group management positions with AT&T Canada and Bell Canada in marketing, sales and corporate engineering. Mr. Chi earned his Bachelor of Engineering in Systems and Computer Engineering from Carleton University in Ottawa.

Michael O. McCarthy has served as the Company's Vice President & General Counsel since July 1999 and previously served as the Assistant General Counsel since joining the Company in September 1997. From June 1996 to September 1997, Mr. McCarthy was a Corporate Counsel in MCI Communications Corporation's mergers and acquisitions group. Prior to joining MCI, Mr. McCarthy was an attorney with Hogan & Hartson's corporate and securities group where he served as outside counsel for a variety of emerging companies. Mr. McCarthy holds a B.A. degree in Mathematical Economics from Colgate University and a J.D. degree from Vanderbilt University's School of Law.

Andrew C. Petrik joined the Company in July 1996 as Controller, and became Treasurer in December 1996 and was promoted to Vice President in August 1997. From 1989 to 1996, Mr. Petrik was employed by Microdyne Corporation where he was the Assistant Controller from 1989 to 1994 and Assistant Vice President of Marketing and Product Planning from 1994 to 1996. Mr. Petrik holds a B.S. in Accounting from the University of Maryland and is a Certified Public Accountant.

Michael J. Zak has been a Director of the Company since December 1994. He has been employed by Charles River Ventures of Waltham, Massachusetts since 1991. From 1986 through 1991, he was a founder and corporate officer of Concord Communications, Inc., a developer of network management software. He is a director of four other private companies. Mr. Zak has a B.S. degree in engineering from Cornell University and an M.B.A. from Harvard Business School.

Harvey B. Cash has been a Director of the Company since April 1994. Mr. Cash is a general partner of InterWest Partners, a venture capital firm in Menlo Park, California which he joined in 1985. Mr. Cash serves on the board of directors of Liberté, Inc., PANIA Corporation, and i2 Technologies Inc.. He is also an advisor to Austin Ventures. Mr. Cash received a B.S. in electrical engineering from Texas A&M University and an M.B.A. from Western Michigan University. Mr. Cash served on the board of directors of Benchmarq Microelectronics from 1990 to 1999, and on the board of directors of Aurora Electronics, Inc. from 1991 to 1999.

Billy B. Oliver has been a Director of the Company since June 1996. Since his retirement in 1985 after nearly 40 years of services at AT&T, Mr. Oliver has worked as a self-employed communications consultant. During his last 15 years with AT&T, he held the position of Vice President, Engineering Planning and Design, where he was directly involved in and had significant responsibility for the evolution of AT&T's long-distance network during that period. He was a co-recipient of the Alexander Graham Bell Medal for the conception and implementation of Nonhierarchical Routing in AT&T's network. Mr. Oliver is also a director of Enterprise Network Services Inc. and Communications Network Enhancement Inc. Mr. Oliver earned his B.S.E.E. degree from North Carolina State University.

Stephen P. Bradley, Ph.D., became a Director of the Company in April 1998. Professor Bradley is a William Ziegler Professor of Business Administration and the Chairman of the Program for Management Development at the Harvard Business School. A member of the Harvard faculty since 1968, Professor Bradley is also Chairman of Harvard's Executive Program in Competition and Strategy and teaches in Harvard's Delivering Information Services program. Professor Bradley has written extensively on the telecommunications industry and the impact of technology on competitive strategy. Professor Bradley received his B.E. in Electrical Engineering from Yale University in 1963 and his M.S. and Ph.D. in Operations Research from the University of California, Berkeley, in 1965 and 1968 respectively.

John R. Dillon became a Director of the Company in October 1999. Mr. Dillon's experience includes a variety of positions at such companies as The Coca-Cola Company, Scientific Atlanta and Fuqua National, where he served as President. Mr. Dillon was instrumental in taking Cox Communications private in 1985 and merging it with Cox Newspapers to form Cox Enterprises at which time he was elected Senior Vice President, CFO and a member of the board of directors. At Cox Enterprises, he was responsible for all corporate financial activities as well as planning and development, until his retirement in December 1996. He continued to serve on the Boards of TCG and Cox Communications for two years following his retirement from Cox Enterprises. Mr. Dillon holds an MBA from Harvard Business School and a BEE degree from Georgia Institute of Technology, where he was elected to the Academy of Distinguished Engineering Alumni in 1997. He was a founding director of the Georgia Center for Advanced Telecommunications Technology and currently serves on the Georgia Institute of Technology National Advisory Board.

ITEM 2. PROPERTIES

All of the Company's properties are leased. The Company's principal executive offices, sales and marketing functions are located in Linthicum, Maryland in a 68,000 square foot facility. The Company's product development functions are located in a 96,000 square foot facility in Linthicum, Maryland; a 27,500 square foot facility in Alpharetta, Georgia; and a 8,700 square foot facility in Santa Barbara, California. Combined product development and manufacturing functions are also located in a 43,000 square foot facility in Marlborough, Massachusetts; and in three facilities with a total of approximately 27,000 square feet located in Cupertino, California. The Company has leased an additional facility of approximately 109,000 square feet in Cupertino, California, where it intends to transfer the current Cupertino product development and manufacturing functions in the second quarter of fiscal 2000. The Company intends to sublease the vacated Cupertino facilities. The Company also has manufacturing facilities located in both Savage and Linthicum, Maryland which consist of four facilities with a total of approximately 210,000 square feet that are used for such functions as manufacturing production, systems integration and test, pilot production and customer service and support. The Company's primary engineering, furnishment and installation facility is located in a 26,000 square foot facility located in Duluth, Georgia. The Company has sales, marketing and customer support offices located in Overland Park, Kansas; Richardson, Texas; Tulsa, Oklahoma; Middletown, New Jersey; Boca Raton, Florida; Denver, Colorado; Minneapolis, Minnesota; Portland, Oregon; Bellevue, Washington; Edmonton, Canada; London, England; Paris, France; Brussels, Belgium; Frankfurt, Germany; Tokyo, Japan; Sao Paulo, Brazil; and Mexico City, Mexico.

ITEM 3. LEGAL PROCEEDINGS

Class Action Litigation

A class action complaint was filed on August 26, 1998 in U.S. District Court for the District of Maryland entitled *Witkin et al v. CIENA Corporation et al* (Case No. Y-98-2946). Several other complaints, substantially similar in content were consolidated by court order on November 30, 1998. An amended, consolidated complaint was filed on February 16, 1999. On July 19, 1999 the United States District Court dismissed the suit with leave to amend before any discovery had been taken. On August 20, 1999, plaintiffs filed a second amended class action complaint alleging that CIENA and certain officers and directors violated certain provisions of the federal securities laws, including Section 10(b) and Rule 10b-5 under the Securities Exchange Act of 1934, by making false statements, failing to disclose material information and taking other actions intending to artificially inflate and maintain the market price of CIENA's common stock during the Class Period of May 21, 1998 to September 14, 1998, inclusive. The plaintiffs intend to seek certification of the suit as a class action on behalf of all persons who purchased shares of CIENA's common stock during the Class Period and the awarding of compensatory damages in an amount to have been determined at trial together with attorneys' fees. CIENA has filed, and the parties have fully briefed, a motion to dismiss the second amended complaint. CIENA believes the suit is without merit and CIENA intends to continue to defend the case vigorously.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

No matters were submitted to a vote of security holders during the fourth quarter of fiscal 1999.

Part II

ITEM 5. MARKET FOR REGISTRANT'S COMMON STOCK AND RELATED STOCKHOLDER MATTERS

The Company's Common Stock has been traded on the Nasdaq National Market since the Company's initial public offering on February 7, 1997 under the Nasdaq symbol CIEN. The following table sets forth for the fiscal periods indicated the high and low sales prices of the Common Stock, as reported on the Nasdaq National Market.

	Price Range of Common Stock	
	High	Low
Fiscal Year 1998		
First Quarter ended January 31, 1998	\$63.56	\$47.44
Second Quarter ended April 30, 1998	\$58.25	\$37.25
Third Quarter ended July 31, 1998	\$92.38	\$46.88
Fourth Quarter ended October 31, 1998	\$75.88	\$ 8.13
Fiscal Year 1999		
First Quarter ended January 31, 1999	\$23.00	\$12.44
Second Quarter ended April 30, 1999	\$29.25	\$16.63
Third Quarter ended July 31, 1999	\$37.75	\$22.69
Fourth Quarter ended October 31, 1999	\$42.81	\$29.06

The closing sale price for the Common Stock on October 29, 1999 was \$35.25.

The market price of the Company's Common Stock has fluctuated significantly and may be subject to significant fluctuations in the future. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations-Overview and Risk Factors."

As of October 31, 1999, there were approximately 1,661 holders of record of the Company's Common Stock and 138,187,356 shares of Common Stock outstanding.

The Company has never paid cash dividends on its capital stock. The Company currently intends to retain earnings for use in its business and does not anticipate paying any cash dividends in the foreseeable future.

ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

The following selected consolidated financial data should be read in conjunction with Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and the notes thereto included in Item 8. "Financial Statements and Supplementary Data." The Company has a 52 or 53 week fiscal year which ends on the Saturday nearest to the last day of October in each year. For purposes of financial statement presentation, each fiscal year is described as having ended on October 31. Fiscal 1995, 1997, 1998 and 1999 comprised 52 weeks and fiscal 1996 comprised 53 weeks.

Year Ended October 31,

(in thousands, except per share data)	1995	1996	1997	1998	1999
Statement of Operations Data:					
Revenue	\$21,691	\$88,463	\$413,215	\$508,087	\$482,085
Cost of goods sold	<u>16,185</u>	<u>47,315</u>	<u>166,472</u>	<u>256,014</u>	<u>299,769</u>
Gross profit	<u>5,506</u>	<u>41,148</u>	<u>246,743</u>	<u>252,073</u>	<u>182,316</u>
Operating expenses:					
Research and development	6,361	8,922	23,773	73,756	104,641
Selling and marketing	1,907	5,641	22,627	47,343	61,603
General and administrative	3,034	6,422	11,965	19,274	22,986
Purchased research and development	—	—	—	9,503	—
Pirelli litigation	—	—	7,500	30,579	—
Merger related costs	—	—	—	2,548	13,021
Total operating expenses	<u>11,302</u>	<u>20,985</u>	<u>65,865</u>	<u>183,003</u>	<u>202,251</u>
Income (loss) from operations	(5,796)	20,163	180,878	69,070	(19,935)
Other income (expense), net	<u>172</u>	<u>653</u>	<u>7,178</u>	<u>12,830</u>	<u>13,944</u>
Income (loss) before income taxes	(5,624)	20,816	188,056	81,900	(5,991)
Provision (benefit) for income taxes	<u>824</u>	<u>3,553</u>	<u>72,488</u>	<u>36,200</u>	<u>(2,067)</u>
Net income (loss)	<u>\$ (6,448)</u>	<u>\$17,263</u>	<u>\$115,568</u>	<u>\$ 45,700</u>	<u>\$ (3,924)</u>
Basic net income (loss) per common share	<u>\$ (0.51)</u>	<u>\$ 1.25</u>	<u>\$ 1.52</u>	<u>\$ 0.39</u>	<u>\$ (0.03)</u>
Diluted net income (loss) per common and dilutive potential common share	<u>\$ (0.51)</u>	<u>\$ 0.19</u>	<u>\$ 1.10</u>	<u>\$ 0.36</u>	<u>\$ (0.03)</u>
Weighted average basic common shares outstanding	<u>12,717</u>	<u>13,817</u>	<u>75,964</u>	<u>117,990</u>	<u>133,521</u>
Weighted average basic common and dilutive potential common shares outstanding	<u>12,717</u>	<u>92,407</u>	<u>104,843</u>	<u>127,894</u>	<u>133,521</u>

October 31,

(in thousands)	1995	1996	1997	1998	1999
Balance Sheet Data:					
Cash and cash equivalents	\$ 8,261	\$24,040	\$273,286	\$250,714	\$143,440
Working capital	7,221	42,240	338,078	391,305	427,471
Total assets	17,706	79,676	468,247	602,809	677,835
Long-term obligations, excluding current portion	2,074	3,465	1,900	3,029	4,881
Mandatorily redeemable preferred stock	14,454	40,404	—	—	—
Stockholders' equity (deficit)	(6,662)	10,783	377,278	501,036	530,473

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis should be read in conjunction with "Selected Consolidated Financial Data" and the Company's consolidated financial statements and notes thereto included elsewhere in this report on Form 10-K.

Overview

CIENA is a leader in the rapidly emerging optical networking equipment market. The Company offers a comprehensive portfolio of products for tele- and data-communications service providers worldwide. CIENA's customers include long-distance carriers, competitive local exchange carriers, Internet service providers and wholesale carriers. CIENA offers optical transport, intelligent switching and multi-service delivery systems that enable service providers to provision, manage and deliver high-bandwidth services to their customers. The Company has pursued a strategy to develop and leverage the power of disruptive technologies to change the fundamental economics of building carrier-class tele- and data-communications networks, providing its customers with a competitive advantage.

In conjunction with the agreements to acquire Lightera and Omnia, CIENA announced its LightWorks™ Initiative, CIENA's vision of how to change the fundamental economics of optical telecommunication service provider networks. The eventual addition of Lightera's and Omnia's products to CIENA's product suite will make it possible for CIENA to offer telecommunications service providers a comprehensive next-generation optical network architecture that dramatically reduces the total number of network elements, thereby lowering network costs.

On March 31, 1999 the Company completed a merger with Lightera in a transaction valued at approximately \$459 million. Lightera is a developer of carrier class optical core switches for fiber optic communications networks. Under the terms of the agreement, the Company acquired all of the outstanding shares and assumed outstanding stock options and warrants of Lightera in exchange for approximately 17.5 million shares of CIENA common stock and 2.9 million CIENA shares issuable upon exercise of stock options and warrants. The transaction constituted a tax-free reorganization and has been accounted for as a pooling of interests under Accounting Principles Board Opinion No. 16. Accordingly, all prior period consolidated financial statements presented have been restated to include the combined results of operations, financial position and cash flows of Lightera as though it had been a part of CIENA.

On July 1, 1999 the Company completed a merger with Omnia in a transaction valued at approximately \$483 million. Omnia is a telecommunications equipment supplier which focuses on developing solutions to allow public telephone network operators to offer services cost effectively over integrated metropolitan fiberoptic access and transport networks. Under the terms of the agreement, the Company acquired all of the outstanding shares and assumed the stock options of Omnia in exchange for approximately 15.2 million shares of CIENA common stock and 0.8 million CIENA shares issuable upon exercise of stock options. The transaction constituted a tax-free reorganization and has been accounted for as a pooling of interests under Accounting Principles Board Opinion No. 16. Accordingly, all prior period consolidated financial statements presented have been restated to include the combined results of operations, financial position and cash flows of Omnia as though it had been a part of CIENA.

On August 3, 1999, CIENA announced that the Omnia AXR 500 multi-service transport platform had been integrated into the CIENA LightWorks architecture and that CIENA had renamed the product the MultiWave EdgeDirector™ 500. CIENA's MultiWave EdgeDirector 500 is a next generation multi-service transport platform that combines the functions of traditional transport equipment with advanced data networking. The MultiWave EdgeDirector 500 utilizes packet and cell

technology to enable service providers to cost effectively deliver traditional voice and new high-speed data services over a single optical network. The initial release of the MultiWave EdgeDirector 500 became commercially available during the fourth quarter of fiscal 1999.

During the third quarter of fiscal 1999 both the MultiWave® Metro™, CIENA's system designed for use in metropolitan ring applications, and the MultiWave CoreStream™, CIENA's next generation long-distance optical transport system capable of up to 96 channels of 2.5 Gb/s, became available for commercial shipments. During the fourth quarter of fiscal 1999, 10.0 Gb/s transmission capability of up to 48-channel configuration for its MultiWave CoreStream system became commercially available.

CIENA intends to continue the development of the MultiWave CoreDirector™ product. MultiWave CoreDirector is believed to be the world's first intelligent optical core. The MultiWave CoreDirector allows carriers to deliver a full range of transport services, without costly SONET/SDH multiplexers or inflexible "wavelength only" devices. We expect that field deployable units of the MultiWave CoreDirector will be available at the end of the first calendar quarter 2000. See "Risk Factors."

In November 1999, the Company announced it was pursuing enhancements to its MultiWave CoreStream product that enable the system to offer the optimal combination of ultra long-distance transport functionality and channel count to further lower network costs for service providers. Using forward error correction (FEC), nonlinearity management, and dispersion mapping technologies, plus embedded software intelligence, MultiWave CoreStream will be able to support optical spans longer than 5,000 kilometers without additional optical-to-electrical signal regeneration. The Company expects to begin beta trials of the ultra long-distance feature of this product in the first half of calendar 2000. See "Risk Factors."

CIENA recognizes product revenue in accordance with the shipping terms specified and where collection is probable. For transactions where CIENA has yet to obtain customer acceptance, revenue is deferred until the terms of acceptance are satisfied. Revenue for installation services is recognized as the services are performed unless the terms of the supply contract combine product acceptance with installation, in which case revenues for installation services are recognized when the terms of acceptance are satisfied and installation is completed. Revenues from installation service fixed price contracts are recognized on the percentage-of-completion method, measured by the percentage of costs incurred to date compared to estimated total costs for each contract. Amounts received in excess of revenue recognized are included as deferred revenue in the accompanying balance sheets. For distributor sales where risks of ownership have not transferred, CIENA recognizes revenue when the product is shipped through to the end user.

CIENA increased the number of its revenue generating optical transport equipment customers from a total of 14 during fiscal 1998 to 27 for fiscal 1999. CIENA's gross margin percentage decreased from 49.6% in fiscal 1998 to 37.8% in fiscal 1999. While this gross margin pressure continues, CIENA believes that its product and service quality, manufacturing experience, and proven track record of delivery will enable it to be successful while it concentrates on efforts to reduce product costs and maximize production efficiencies. CIENA's gross margin percentage improved each quarter of fiscal 1999 as a result of its product cost reductions and production efficiencies. Gross margin percentage improved from 31.2% in the fourth quarter fiscal 1998 to 41.0% in the fourth quarter fiscal 1999. CIENA intends to preserve and enhance its market leadership and eventually build on its installed base with new and additional products.

Pursuit of these strategies, in conjunction with increased investments in research and development, selling, marketing, and customer service activities, will likely continue to limit CIENA's operating profitability during the first 6 months of fiscal 2000. CIENA intends to continue to pursue new or complementary technologies either through ongoing internal development or by acquisition in order to further broaden CIENA's product line.

As of October 31, 1999 the Company and its subsidiaries employed approximately 1,928 persons, which was an increase of 452 persons over the approximate 1,476 employed on October 31, 1998.

Results of Operations

Fiscal Years Ended 1997, 1998 and 1999

Revenue

The Company recognized \$482.1 million, \$508.1 million and \$413.2 million in revenue for the fiscal years ended October 31, 1999, 1998 and 1997, respectively. The approximate \$26.0 million or 5.1% decrease in revenue from fiscal 1998 to fiscal 1999 was largely the result of reduced selling prices. The approximate \$94.9 million or 23.0% increase in revenue from fiscal 1997 to fiscal 1998 was primarily due to an increase in product shipments.

CIENA recognized revenues from a total of 27, 14, and 5 optical equipment customers during fiscal 1999, 1998, and 1997, respectively. During fiscal year 1999 Sprint, MCIWorldCom, and GTS Network Ltd. (formerly Hermes Europe Railtel) each accounted for at least 10% or more of CIENA's revenue and all 3 combined accounted for 46.2% of CIENA's fiscal 1999 revenue. This compares to fiscal 1998 in which Sprint was the only 10% customer and in total accounted for 52.5% of CIENA's fiscal 1998 revenue and fiscal 1997 where both MCIWorldCom and Sprint were 10% customers and combined accounted for 88.0% of CIENA's fiscal 1997 revenue. Revenue derived from foreign sales accounted for approximately 44.3%, 23.0%, and 2.8% of the Company's revenues during fiscal 1999, 1998 and 1997, respectively.

For fiscal 1999 CIENA's optical network equipment revenues were derived from sales of the MultiWave Sentry 4000, MultiWave Sentry 1600, MultiWave 1600, MultiWave Metro, MultiWave Firefly, MultiWave EdgeDirector 500 and MultiWave CoreStream systems. During fiscal 1998 the Company recognized revenues from sales of MultiWave Sentry 1600, MultiWave 1600, MultiWave Firefly, and MultiWave Sentry 4000 systems. For fiscal year 1997 all of the Company's optical network equipment revenues were derived from the MultiWave 1600 product. The amount of revenue recognized from MultiWave Sentry 1600 and MultiWave 1600 sales declined in fiscal 1999 as compared to fiscal 1998 and also declined in fiscal 1998 as compared to fiscal 1997. This decline in MultiWave Sentry 1600 sales in fiscal 1999 was offset by the introduction of new revenues from the MultiWave CoreStream, MultiWave EdgeDirector 500 and MultiWave Metro products in fiscal 1999 and in fiscal 1998, the decline was offset by revenue recognized from sales of MultiWave Firefly, and MultiWave Sentry 4000 systems. Fiscal 1999 revenues from MultiWave Sentry 4000 and MultiWave Firefly were comparable to the revenues recognized for these products in fiscal 1998. Revenues derived from engineering, furnishing and installation services as a percentage of total revenue were 12.1%, 9.2% and 7.0% for the fiscal years 1999, 1998, and 1997, respectively.

Based on overall new bid activity, as well as expected network deployment plans of existing customers, the Company believes revenue growth in fiscal 2000 over fiscal 1999 is possible, but will be highly dependent on winning new bids from new and existing customers for shipments of the existing products as well as for the MultiWave CoreDirector and MultiWave EdgeDirector 500 systems. CIENA expects that field deployable units of the MultiWave CoreDirector will be available at the end of the first calendar quarter 2000. CIENA also expects the percentage of fiscal 2000 revenue derived from foreign sales to be comparable to the levels obtained during fiscal 1999. Competition of new bids is intense, and there is no assurance the Company will be successful in winning enough new bids and new customers to achieve year over year sequential growth. See "Risk Factors."

Gross Profit

Cost of goods sold consists of component costs, direct compensation costs, warranty and other contractual obligations, royalties, license fees, inventory obsolescence costs and overhead related to the Company's manufacturing and engineering, furnishing and installation operations. Gross profit was \$182.3 million, \$252.1 million, and \$246.7 million for

fiscal years 1999, 1998, and 1997, respectively. Gross margin was 37.8%, 49.6%, and 59.7% for fiscal 1999, 1998, and 1997, respectively. The decrease in gross profit from fiscal 1998 to fiscal 1999 and from fiscal 1997 to fiscal 1998 was largely attributable to lower selling prices.

CIENA's gross margins may be affected by a number of factors, including continued competitive market pricing, lower manufacturing volumes and efficiencies and fluctuations in component costs. During fiscal 2000, CIENA expects to face continued pressure on gross margins, primarily as a result of substantial price discounting by competitors seeking to acquire market share. CIENA intends to counter this pressure with the addition of new products and continued product cost reduction and production efficiency programs. See "Risk Factors."

Research and Development Expenses

Research and development expenses were \$104.6 million, \$73.8 million, and \$23.8 million for fiscal 1999, 1998, and 1997, respectively. The approximate \$30.9 million or 41.9% increase from fiscal 1998 to 1999 and the approximate \$50.0 million or 210.3% increase from fiscal 1997 to 1998 in research and development expenses related to increased staffing levels, purchases of materials used in development of new or enhanced product prototypes, and outside consulting services in support of certain developments and design efforts. During fiscal 1999, 1998, and 1997 research and development expenses were 21.7%, 14.5%, and 5.8% of revenue, respectively. CIENA expects that its research and development expenditures will continue to increase in absolute dollars and perhaps as a percentage of revenue during fiscal 2000 to support the continued development of the various optical networking products, the exploration of new or complementary technologies, and the pursuit of various cost reduction strategies. CIENA has expensed research and development costs as incurred.

Selling and Marketing Expenses

Selling and marketing expenses were \$61.6 million, \$47.3 million, and \$22.6 million for fiscal 1999, 1998, and 1997, respectively. The approximate \$14.3 million or 30.1% increase from fiscal 1998 to 1999 and the approximate \$24.7 million or 109.2% increase from fiscal 1997 to 1998 in selling and marketing expenses was primarily the result of increased staffing levels in the areas of sales, technical assistance and field support, and increases in commissions earned, trade show participation and promotional costs. During fiscal 1999, 1998, and 1997 selling and marketing expenses were 12.8%, 9.3%, and 5.5% of revenue, respectively. The Company anticipates that its selling and marketing expenses may increase in absolute dollars and perhaps as a percentage of revenue during fiscal 2000 as additional personnel are hired and additional offices are opened to allow the Company to pursue new customers and market opportunities. The Company also expects the portion of selling and marketing expenses attributable to technical assistance and field support, specifically in Europe and Asia, will increase as the Company's installed base of operational MultiWave systems increases.

General and Administrative Expenses

General and administrative expenses were \$23.0 million, \$19.3 million, and \$12.0 million for fiscal 1999, 1998, and 1997, respectively. The approximate \$3.7 million or 19.3% increase from fiscal year 1998 to 1999 and the approximate \$7.3 million or 61.1% increase from fiscal 1997 to 1998 in general and administrative expenses was primarily the result of increased staffing levels and outside consulting services. During fiscal 1999, 1998 and 1997, general and administrative expenses were 4.8%, 3.8%, and 2.9% of revenue, respectively. The Company believes that its general and administrative expenses will increase in absolute dollars and perhaps as a percentage of revenue during fiscal 2000 as a result of the expansion of the Company's administrative staff required to support its expanding operations.

Purchased Research and Development

Purchased research and development costs were \$9.5 million for the fiscal year 1998. These costs were for the purchase of technology and related assets associated with the acquisition of Terabit during the second quarter of fiscal 1998.

Pirelli Litigation

The Pirelli litigation costs of \$30.6 million in fiscal 1998 were attributable to a \$30.0 million payment made to Pirelli during the third quarter of 1998 and to additional other legal and related costs incurred in connection with the settlement of this litigation. The Pirelli litigation expense in fiscal 1997 was primarily the result of a \$7.5 million charge for actual and estimated legal and related costs associated with the litigation.

Merger Related Costs

The merger costs for fiscal 1999 of approximately \$13.0 million were costs related to CIENA's acquisition of Omnia and Lightera. These costs include an \$8.1 million non-cash charge for the acceleration of warrants based upon CIENA's common stock price on June 30, 1999 and \$4.9 million for fees, legal and accounting services and other costs. The warrants were issued to one of Omnia's customers and became exercisable upon the consummation of the merger between CIENA and Omnia. The merger related costs for fiscal 1998 were costs related to the contemplated merger between CIENA and Tellabs. These costs include approximately \$1.2 million in Securities and Exchange Commission filing fees and approximately \$1.3 million in legal, accounting, and other related expenses.

Other Income (Expense), Net

Other income (expense), net, consists of interest income earned on the Company's cash, cash equivalents and marketable debt securities, net of interest expense associated with the Company's debt obligations. Other income (expense), net, was \$13.9 million, \$12.8 million, and \$7.2 million for fiscal 1999, 1998, and 1997, respectively. The year to year increase in other income (expense), net, was primarily the result of the investment of the net proceeds of the Company's stock offerings and net earnings.

Provision (Benefit) For Income Taxes

The Company's benefit for income taxes was \$2.1 million or 34.5% of pre-tax losses for fiscal 1999 and provision was \$36.2 million and \$72.5 million or 44.2% and 38.5% of pre-tax earnings for fiscal 1998 and 1997, respectively. The benefit for fiscal 1999 was less than the expected statutory benefit of 35% due to non-deductible merger costs. The increase in the tax rate from fiscal 1997 to fiscal 1998 was primarily the result of charges for purchased research and development expenses recorded in fiscal 1998 and an adjustment to the estimated prior year state income tax liability associated with Alta operations. Purchased research and development charges are not deductible for tax purposes. Exclusive of the effect of these charges, the Company's provision for income taxes was 38.6% of income before income taxes in fiscal 1998.

Quarterly Results of Operations

The tables below set forth the operating results and percentage of revenue represented by certain items in the Company's statements of operations for each of the eight quarters in the period ended October 31, 1999. This information is unaudited, but in the opinion of the Company reflects all adjustments (consisting only of normal recurring adjustments) that the Company considers necessary for a fair presentation of such information in accordance with generally accepted accounting principles. The results for any quarter are not necessarily indicative of results for any future period.

	Jan. 31, 1998	April 30, 1998	Jul. 31, 1998	Oct. 31, 1998	Jan. 31, 1999	April 30, 1999	Jul. 31, 1999	Oct. 31, 1999
Revenue	\$145,092	\$142,718	\$129,116	\$ 91,161	\$100,417	\$111,490	\$128,826	\$141,352
Cost of goods sold	<u>58,980</u>	<u>63,915</u>	<u>70,431</u>	<u>62,688</u>	<u>65,778</u>	<u>71,238</u>	<u>79,361</u>	<u>83,392</u>
Gross profit	<u>86,112</u>	<u>78,803</u>	<u>58,685</u>	<u>28,473</u>	<u>34,639</u>	<u>40,252</u>	<u>49,465</u>	<u>57,960</u>
Operating expenses:								
Research and development	11,245	17,986	21,965	22,560	22,218	24,094	28,402	29,927
Selling and marketing	9,975	11,107	12,937	13,324	13,608	13,092	16,839	18,064
General and administrative	3,984	4,757	4,186	6,347	5,036	5,849	5,433	6,668
Purchased research and development	—	9,503	—	—	—	—	—	—
Pirelli litigation	—	10,000	20,579	—	—	—	—	—
Merger related costs	—	—	2,017	531	—	2,253	10,768	—
Total operating expenses	<u>25,204</u>	<u>53,353</u>	<u>61,684</u>	<u>42,762</u>	<u>40,862</u>	<u>45,288</u>	<u>61,442</u>	<u>54,659</u>
Income (loss) from operations	60,908	25,450	(2,999)	(14,289)	(6,223)	(5,036)	(11,977)	3,301
Other income (expense), net	<u>3,697</u>	<u>3,350</u>	<u>2,769</u>	<u>3,014</u>	<u>3,301</u>	<u>3,583</u>	<u>3,492</u>	<u>3,568</u>
Income (loss) before income taxes	64,605	28,800	(230)	(11,275)	(2,922)	(1,453)	(8,485)	6,869
Provision (benefit) for income taxes	<u>25,710</u>	<u>14,607</u>	<u>20</u>	<u>(4,137)</u>	<u>(1,041)</u>	<u>(468)</u>	<u>(2,928)</u>	<u>2,370</u>
Net income (loss)	<u>\$ 38,895</u>	<u>\$ 14,193</u>	<u>\$ (250)</u>	<u>\$ (7,138)</u>	<u>\$ (1,881)</u>	<u>\$ (985)</u>	<u>\$ (5,557)</u>	<u>\$ 4,499</u>
Basic net income (loss) per common share	<u>\$ 0.37</u>	<u>\$ 0.13</u>	<u>\$ 0.00</u>	<u>\$ (0.06)</u>	<u>\$ (0.01)</u>	<u>\$ (0.01)</u>	<u>\$ (0.04)</u>	<u>\$ 0.03</u>
Diluted net income (loss) per common share and dilutive potential common share	<u>\$ 0.33</u>	<u>\$ 0.12</u>	<u>\$ 0.00</u>	<u>\$ (0.06)</u>	<u>\$ (0.01)</u>	<u>\$ (0.01)</u>	<u>\$ (0.04)</u>	<u>\$ 0.03</u>
Weighted average basic common share	<u>106,405</u>	<u>112,302</u>	<u>121,820</u>	<u>128,384</u>	<u>131,202</u>	<u>132,530</u>	<u>133,016</u>	<u>133,808</u>
Weighted average basic common and dilutive potential common share	<u>116,875</u>	<u>122,483</u>	<u>121,820</u>	<u>128,384</u>	<u>131,202</u>	<u>132,530</u>	<u>133,016</u>	<u>145,302</u>

	Jan. 31, 1998	Apr. 30, 1998	Jul. 31, 1998	Oct. 31, 1998	Jan. 31, 1999	Apr. 30, 1999	Jul. 31, 1999	Oct. 31, 1999
Revenue	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of goods sold	<u>40.7</u>	<u>44.8</u>	<u>54.5</u>	<u>68.8</u>	<u>65.5</u>	<u>63.9</u>	<u>61.6</u>	<u>59.0</u>
Gross profit	59.3	55.2	45.5	31.2	34.5	36.1	38.4	41.0
Operating expenses:								
Research and development	7.8	12.6	17.0	24.7	22.1	21.6	22.1	21.2
Selling and marketing	6.9	7.8	10.0	14.6	13.6	11.7	13.1	12.8
General and administrative	2.7	3.3	3.3	7.0	5.0	5.3	4.2	4.7
Purchased research & development	—	6.7	—	—	—	—	—	—
Pirelli litigation	—	7.0	15.9	—	—	—	—	—
Merger related costs	<u>—</u>	<u>—</u>	<u>1.6</u>	<u>0.6</u>	<u>—</u>	<u>2.0</u>	<u>8.4</u>	<u>—</u>
Total operating expenses	<u>17.4</u>	<u>37.4</u>	<u>47.8</u>	<u>46.9</u>	<u>40.7</u>	<u>40.6</u>	<u>47.8</u>	<u>38.7</u>
Income (loss) from operations	41.9	17.8	(2.3)	(15.7)	(6.2)	(4.5)	(9.4)	2.3
Other income (expense), net	<u>2.6</u>	<u>2.3</u>	<u>2.1</u>	<u>3.3</u>	<u>3.3</u>	<u>3.2</u>	<u>2.7</u>	<u>2.5</u>
Income (loss) before income taxes	44.5	20.1	(0.2)	(12.4)	(2.9)	(1.3)	(6.7)	4.8
Provision (benefit) for income taxes	<u>17.7</u>	<u>10.2</u>	<u>—</u>	<u>(4.6)</u>	<u>(1.0)</u>	<u>(0.4)</u>	<u>(2.3)</u>	<u>1.7</u>
Net income (loss)	<u>26.8%</u>	<u>9.9%</u>	<u>(0.2)%</u>	<u>(7.8)%</u>	<u>(1.9)%</u>	<u>(0.9)%</u>	<u>(4.4)%</u>	<u>3.1%</u>

CIENA's quarterly operating results have varied and are expected to vary significantly in the future. The Company's detailed discussion of risk factors addresses the many factors that have caused such variation in the past, and may cause similar variations in the future. See "Risk Factors." In addition to those factors, in fiscal 1998, the distraction attendant to the aborted Tellabs merger had a significant, though difficult to quantify impact on CIENA's operations in the third and fourth quarter. But apart from the distraction factor, CIENA believes the single most significant trend affecting CIENA's financial performance is the material effect of very aggressive price discounting by competitors seeking to acquire market share in the market for high-capacity solutions. CIENA chose in the face of this pressure to continue to build market share in fiscal 1998 at the cost of declining margins. CIENA's gross margin percentage improved each quarter of fiscal 1999 as a result of its product cost reductions and production efficiencies. Gross margin percentage improved from 31.2% in the fourth quarter fiscal 1998 to 41.0% in the fourth quarter fiscal 1999. While this gross margin pressure continues, CIENA believes that its product and service quality, manufacturing experience, and proven track record of delivery will enable it to be successful while it concentrates on efforts to reduce product costs and maximize production efficiencies. The Company intends to continue this strategy in order to preserve and enhance its market leadership and eventually build on its installed base with new and additional products. Pursuit of this strategy, in conjunction with increased investments in selling, marketing, and customer service activities, will likely continue to limit the Company's operating profitability over at least the first half of fiscal 2000. See "Risk Factors."

Liquidity and Capital Resources

CIENA completed its initial public offering of Common Stock in February 1997 and realized net proceeds of approximately \$121.8 million with an additional \$0.6 million received from the exercise of certain outstanding warrants. In July 1997, CIENA completed a public offering of Common Stock and realized net proceeds of approximately \$52.2 million. During fiscal 1997, 1998, and 1999 CIENA also realized approximately \$53.1 million, \$22.6 million and \$11.0 million in tax benefits from the exercise of stock options and certain stock warrants, respectively. Also during fiscal 1997 and fiscal 1998 CIENA received approximately \$5.2 million and \$12.8 million, respectively, from issuance of stock associated with the initial capitalization of Omnia. During fiscal 1998 CIENA received approximately \$15.5 million from the issuance of stock associated with the initial capitalization of Lightera. As of October 31, 1999, the Company had \$143.4 million in cash and cash equivalents, and \$119.0 million in corporate debt securities and U.S. Government obligations, with contractual maturities of 6 months or less.

The Company's operating activities provided cash of \$17.7 million, \$26.2 million and \$84.7 million for fiscal 1999, 1998 and 1997, respectively. Cash provided by operations in fiscal 1999 was primarily attributable to a net loss adjusted for the non-cash charges of depreciation amortization, provisions for inventory obsolescence and warranty, a decrease in prepaid income taxes, increases in accounts payable, and accrued expenses; offset by increases in accounts receivable and inventories. Cash provided by operations in fiscal 1997 and 1998 was principally attributable to net income adjusted for the non-cash charges of depreciation, amortization, provisions for inventory obsolescence and warranty, increases in accounts payable, and accrued expenses; offset by increases in accounts receivable and inventories.

Cash used in investing activities in fiscal 1999, 1998 and 1997 was \$149.7 million, \$107.0 million and \$67.0 million, respectively. Included in investment activities were additions to capital equipment and leasehold improvements in fiscal 1999, 1998 and 1997 of \$46.8 million, \$88.9 million and \$67.0 million, respectively. The capital equipment expenditures were primarily for test, manufacturing and computer equipment. The Company expects additional combined capital equipment and leasehold improvement expenditures of approximately \$55.0 million to be made during fiscal 2000 to support selling and marketing, manufacturing and product development activities and the construction of leasehold improvements for its facilities.

The Company believes that its existing cash balance and cash flows expected from future operations will be sufficient to meet the Company's capital requirements for at least the next 18 to 24 months.

Effects of Recent Accounting Pronouncements

In June 1998, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 133 (SFAS No. 133), "Accounting for Derivative Instruments and Hedging Activities." This Statement requires companies to record derivatives on the balance sheet as assets or liabilities, measured at fair value. Gains or losses resulting from changes in the values of those derivatives would be accounted for depending on the use of the derivative and whether it qualifies for hedge accounting. SFAS No. 133 will be effective for the Company's fiscal year ending October 31, 2000. The Company believes the adoption of SFAS No. 133 will not have a material effect on the consolidated financial statements.

Year 2000 Readiness

Many computer systems were not designed to handle any dates beyond the year 1999; accordingly, affected hardware and software will need to be modified prior to the year 2000 in order to remain functional. CIENA's operations make use of a variety of computer equipment and software. If the computer equipment and software used in the operation of CIENA and its products do not correctly recognize date information when the year changes to 2000, there could be an adverse impact on CIENA's operations.

CIENA has taken actions to understand the nature and extent of work required, if any, to make its systems, products and infrastructure Year 2000 compliant. Based on internal testing performed to date and completed by CIENA, CIENA currently believes and warrants to its customers that its products are Year 2000 compliant. However, since all customer situations cannot be anticipated, particularly those involving interaction of CIENA's products with third party products, CIENA may experience warranty and other claims as a result of the Year 2000 transition. The impact of customer claims, if broader than anticipated, could have a material adverse impact on CIENA's results of operations or financial condition.

CIENA has concluded a comprehensive inventory and evaluation of both information technology ("IT") or software systems and non-IT systems used to run its systems. Non-IT systems typically include embedded technology such as microcontrollers. Examples of CIENA's Non-IT systems include certain equipment used for production, research, testing and measurement processes and calibration. CIENA has completed the process of upgrading or replacing those identified non-compliant systems. For the Year 2000 non-compliance systems identified, the cost of remediation was not material to CIENA's financial condition or operating results. However, if significant new noncompliance issues are identified, CIENA's results of operations or financial condition may be materially adversely affected.

CIENA changed its main financial, manufacturing and information system to a company-wide Year 2000 compliant enterprise resource planning ("ERP") computer-based system during the fourth quarter of fiscal 1998. CIENA estimates that it has spent approximately \$4.5 million on its ERP implementation. During fiscal 1999, CIENA spent approximately \$400,000 to address identified Year 2000 issues. CIENA used cash from operations for Year 2000 remediation and replacement costs. Approximately less than 2% of the information technology budget was used for remediation. No other information technology projects have been deferred due to the Year 2000 efforts. CIENA has employed an independent verification consultant to validate CIENA's processes in order to assure the reliability of CIENA's risk estimates. The consultant's findings identify CIENA's processes as sufficient and our risk of negative impact as low.

CIENA has contacted its critical suppliers to determine whether a supplier's operations, products and services are Year 2000 compliant. To date, CIENA's optical suppliers have represented that their products are Year 2000 compliant or have represented that they are in the process of becoming fully compliant by December 31, 1999. If these suppliers fail to adequately address the Year 2000 issue for the products they provide to CIENA, this could have a material adverse impact on CIENA's operations and financial results. Initial contingency plans have been developed in case CIENA or its key suppliers will not be Year 2000 compliant, and such noncompliance is expected to have a material adverse impact on CIENA's operations.

The risks to CIENA resulting from the failure of third parties in the public and private sector to attain Year 2000 readiness are generally similar to those faced by other firms in CIENA's industry or other business enterprises generally. The following are representative of the types of risks that could result in the event of one or more major failures of CIENA's information systems, factories or facilities to be Year 2000 ready, or similar major failures by one or more major third party suppliers to CIENA: (1) *information systems*—could include interruptions or disruptions of business and transaction processing such as customer billing, payroll, accounts payable and other operating and information processes, until systems can be remedied or replaced; (2) *factories and facilities*—could include interruptions or disruptions of manufacturing

processes and facilities with delays in delivery of products, until non-compliant conditions or components can be remedied or replaced; and (3) *major suppliers to CIENA*—could include interruptions or disruptions of the supply of raw materials, supplies and Year 2000 ready components which could cause interruptions or disruptions of manufacturing and delays in delivery of products, until the third party supplier remedied the problem or contingency measures were implemented. Risks of major failures of CIENA's principal products could include adverse functional impacts experienced by customers, the costs and resources for CIENA to remedy problems or replace products where CIENA is obligated or undertakes to take such action, and delays in delivery of new products.

Risk Factors

Our Results Can Be Unpredictable

Our near term results may be break-even or may involve losses. In general, sequential revenue and operating results over the next 12 months are likely to fluctuate and may continue to fluctuate in the future due to factors including:

- timing and size of orders from customers
- the introduction of new products
- satisfaction of contractual customer acceptance criteria
- manufacturing and shipment delays and deferrals

Our products require a relatively large investment and our target customers are highly demanding and technically sophisticated. There are only a small number of customers in each geographic market and each customer has unique needs. As a result, the sales cycles for our products are long—often more than a year between our initial introduction to the customer and their commitment to purchase.

We budget expense levels on our expectations of long-term future revenue. These levels reflect our substantial investment in financial, engineering, manufacturing and logistics support resources we think we may need for large potential customers, even though we do not know the volume, duration or timing of any purchases from them. As a result, we may continue to experience increased inventory levels, operating expenses and general overhead.

Additionally, our Core Switching Division and Access Systems Division have ongoing development and operating expenses but are not expected to contribute materially to revenues until calendar 2000.

Changes in Technology or the Delays in the Deployment of New Products Could Hurt Our Near Term Prospects

The market for optical networking equipment is changing at a rapid pace. The accelerated pace of deregulation in the telecommunications industry likely will intensify the competition for improved technology. Our ability to successfully develop and introduce new and enhanced products will depend upon our ability to successfully anticipate changes in technology, industry standards and customer requirements. If we fail to deploy new and improved products in a timely manner, our competitive position and financial condition would be materially and adversely affected. The complexity of the technology involved with several of our new products including the MultiWave CoreDirector and the MultiWave CoreStream products using 10 Gb/s transmission capability or ultra long-distance transport functionality could result in unanticipated delays in development and manufacturing. In addition, the complexity of technology associated with support equipment for these products could result in unanticipated delays in the deployment of these products. These delays could adversely affect our competitive and financial condition.

The introduction of new products embodying new technologies or the emergence of new industry standards could render our existing products uncompetitive from a pricing standpoint, obsolete or unmarketable. Any of these outcomes would have a material adverse effect on our business, financial condition and results of operations. The certification process for new telecommunications equipment used in RBOC networks, which is a process traditionally conducted by Telcordia Technologies, has in the past resulted in and may continue to result in unanticipated delays which may affect the deployment of our products for the RBOC market.

Any delays in component availability could result in delays in deployment of these products and in recognizing revenues. These delays could adversely affect our customer relationships.

We Face Intense Competition Which Could Hurt Our Sales and Profitability

The market for optical networking equipment is extremely competitive. Competition in the optical networking market is broadly based on varying combinations of price, manufacturing capability, comprehensiveness of the system solution meeting immediate network needs and foreseeable scalability requirements. A small number of very large companies have historically dominated the telecommunications equipment industry including Lucent, Alcatel, Nortel, NEC, Pirelli, Siemens, Ericsson, Fujitsu, and Hitachi. These companies have substantial financial, marketing, manufacturing and intellectual property resources. In addition, these companies have substantially greater resources to develop or acquire new technologies. We sell systems which compete directly with product offerings of these companies and in some cases displace their legacy equipment. As such, we represent a specific threat to these companies. The continued expansion of our product offerings with products such as the MultiWave CoreDirector and MultiWave EdgeDirector likely will increase this perceived threat. We expect continued aggressive tactics from many of these competitors, including:

- substantial price discounting
- early announcements of competing products
- “one-stop shopping” appeals
- customer financing assistance
- intellectual property disputes

These tactics can be particularly effective in a highly concentrated customer base such as ours. Our customers are under increasing competitive pressure to deliver their services at the lowest possible cost. This pressure may result in pricing for optical networking systems becoming a more important factor in customer decisions, which may favor larger competitors that can spread the effect of price discounts in their optical networking product lines across an array of products and services and across a customer base which is larger than ours. Our inability to compete successfully against our competitors would have a material adverse effect on our business, financial condition and results of operations.

Several of our customers have indicated that they intend to establish a second vendor for optical transport products. We do not know when or if these customers will select a second vendor or what impact the selection might have on purchases from us. These customers could reduce their purchases from us, which could in turn have a material adverse effect on us.

New competitors may also emerge to compete with our existing products as well as our future products. There has been an increase in funding of new companies intending to develop new products for the optical networking market. These companies have time to market advantages due to the narrow and exclusive focus of their efforts. In particular, a number of companies, including several start-ups, have announced products that compete with our MultiWave CoreStream, MultiWave Metro, MultiWave CoreDirector and MultiWave EdgeDirector products.

We May Not Be Able To Successfully Complete Development and Achieve Commercial Acceptance of New Products

The MultiWave CoreDirector is in the customer trials phase and has not matured into commercially manufacturable units suitable for field deployment. We expect that field deployable units of the MultiWave CoreDirector will be available in the end of the first calendar quarter 2000. The MultiWave CoreStream product with ultra long-distance transport functionality is in the laboratory testing phase and has not matured into commercially manufacturable units suitable for field deployment. We expect that the MultiWave CoreStream product with ultra long-distance transport functionality will be available for customer trials in the first half of calendar 2000. The maturing process from laboratory prototype to customer trials to commercial acceptance involves a number of steps, including:

- successful completion of product development
- the qualification and multiple sourcing of critical components, including application-specific integrated circuits ("ASIC's") which are not yet finalized
- validation of manufacturing methods
- extensive quality assurance and reliability testing, and staffing of testing infrastructure
- software validation
- establishment of systems integration and burn in requirements, and
- identification and qualification of component suppliers

Each of these steps in turn presents serious risks of failure, rework or delay, any one of which could materially and adversely affect the speed and scope of product introduction and marketplace acceptance of the products. Specialized ASIC's and intensive software testing and validation, in particular, are key to the timely introduction of the MultiWave CoreDirector, and schedule delays are common in the final software and validation phase, as well as in the manufacture of specialized ASIC's. In addition, unexpected intellectual property disputes, failure of critical design elements, and a host of other execution risks may delay or even prevent the introduction of these products.

If we do not develop these products in a timely manner, our competitive position and financial condition could be adversely affected. The markets for the MultiWave CoreDirector and MultiWave EdgeDirector products are relatively new. Commercial acceptance of these products also is not established and there is no assurance that the substantial sales and marketing efforts necessary to achieve commercial acceptance in traditionally long sales cycles will be successful. If the markets for these products do not develop or the products are not accepted by the market, our competitive position and financial condition could be adversely affected.

We are in the laboratory testing phase for future releases of the MultiWave EdgeDirector product. These releases expand upon the limited functionality of the initial release of the MultiWave EdgeDirector and address anticipated market requirement. We can make no assurances of the market acceptance for the initial release of the MultiWave EdgeDirector or our ability to introduce future releases of the MultiWave EdgeDirector in a timely manner. If market acceptance of the initial or future releases of the MultiWave EdgeDirector is limited, or we are unable to successfully develop future releases of the MultiWave EdgeDirector, our competitive position and financial condition could be adversely affected.

Smaller Customers May Increase Fluctuation In Our Results

As we continue to address smaller emerging carriers, timing and volume of purchasing from these carriers can also be more unpredictable due to factors such as their need to build a customer base, acquire rights of way and inter-connections necessary to sell network service, and build out new capacity, all while working within capital budget constraints. This increases the unpredictability of our financial results because even these carriers purchase our products in multi-million dollar increments.

Unanticipated changes in customer purchasing plans also create unpredictability in our results. Most of our anticipated revenue over the next several quarters is comprised of orders of less than \$25 million each from several customers, some of which involve extended payment terms or other financing assistance. Our ability to recognize revenue from financed sales to these carriers will be impacted by their financial condition. Further, we will need to evaluate the collectibility of receivables from these carriers if their financial condition deteriorates in the future. Additionally, purchasing delays or changes in the amount of purchases by any of these customers, could have a material adverse effect on us.

We May Experience Delays From Our Suppliers and For Some Items We Do Not Have Substitute Suppliers

We depend on a small number of suppliers for components of our products, as well as equipment used to manufacture and test our products. Our highest capacity product currently being shipped, the MultiWave CoreStream which currently is capable of up to 96 channels at 2.5 Gb/s or 48 channels at 10.0 Gb/s transmission speeds, includes several higher performance components for which reliable, high volume suppliers are particularly limited. On occasion, we have experienced delays in receipt of components. Any future difficulty in obtaining sufficient and timely delivery of them could result in delays or reductions in product shipments which, in turn, could have a material adverse effect on our business, financial condition and results of operations. Delayed deliveries of key components from these sources could have a material adverse effect on CIENA's near-term results of operations.

Our Success Largely Depends on Our Ability To Retain Key Personnel

Our success has always depended in large part on our ability to attract and retain highly-skilled technical, managerial, sales and marketing personnel, particularly those skilled and experienced with optical communications equipment. Our key founders and employees, together with the key founders and employees of Lightera and Omnia have received a substantial number of CIENA shares and vested options that can be sold at substantial gains. In many cases, these individuals could become financially independent through these sales, before CIENA's future products have matured into commercially deliverable products. Under the circumstances, we face a difficult and significant task of retaining and motivating these key personnel. As CIENA has grown and matured, competitors' efforts to entice our employees to leave have intensified, particularly among competitive startups and other early stage companies seeking to replicate CIENA's experience. CIENA and its employees are parties to agreements that limit the employee's ability to work for a competitor and to solicit CIENA employees and customers following termination of employment. We expect our competitors will respect these agreements and not interfere with them. However, CIENA has in the past been required and may in the future be required to resort to legal actions to enforce these agreements. We could incur substantial costs in enforcing these claims. We can make no assurances that we will be successful in these suits, or that we will be able to retain all of our key contributors or attract new personnel to add to or replace them. The loss of key personnel would likely have a material adverse effect on our business, financial condition and results of operations.

Product Performance Problems Could Limit Our Sales Prospects

The production of new fiberoptic products and systems with high technology content involves occasional problems as the technology and manufacturing methods mature. We are aware of instances domestically and internationally of delayed installation and activation of some of our products due to faulty components. If significant reliability, quality or network monitoring problems develop, a number of material adverse effects could result, including:

- manufacturing rework costs
- high service and warranty expense
- high levels of product returns
- delays in collecting accounts receivable
- reduced orders from existing customers, and
- declining interest from potential customers

Although we maintain accruals for product warranties, actual costs could exceed these amounts.

From time to time, there will be interruptions or delays in the activation of our products and the addition of channels, particularly because we do not control all aspects of the installation and activation activities. If we experience significant interruptions or delays that we can not promptly resolve, confidence in our products could be undermined, which could have a material adverse effect on us.

Our Prospects Depend On Demand Which We Cannot Predict Or Control

We may not anticipate changes in direction or magnitude of demand for bandwidth. Unanticipated reductions in bandwidth demand would adversely affect us.

Our products enable high capacity transmission over long-distance, and certain short-haul portions, of optical communications networks. Our MultiWave CoreDirector product is targeted to high capacity applications and our MultiWave EdgeDirector product is targeted to providers of integrated fiberoptic access and transport networks. Customers, however, determine:

- the quantity of bandwidth needed
- the timing of its deployment, and
- the equipment configurations and network architectures they want

Customer determinations are subject to abrupt change in response to their own competitive pressures, pressures to raise capital and financial performance expectations.

Our Stock Price May Exhibit Volatility

Our common stock price has experienced substantial volatility in the past, and is likely to remain volatile in the future. Volatility can arise as a result of the activities of short sellers and risk arbitrageurs, and may have little relationship to our financial results or prospects. Volatility can also result from any divergence between our actual or anticipated financial results and published expectations of analysts, and announcements we may make. This occurred in 1998. We

attempt to address this possible divergence through our public announcements and reports; however, the degree of specificity we can offer in these announcements, and the likelihood that any forward-looking statements we make will prove correct in actual results, can and will vary. This is due primarily to:

- the uncertainties associated with our dependence on a small number of existing and potential customers
- the impact of changes in the customer mix
- the actions of competitors
- long and unpredictable sales cycles and customer purchasing programs
- the absence of unconditional minimum purchase commitments from any customer
- a lack of visibility into our customers' deployment plans over the course of the capital equipment procurement year, and
- the lack of reliable data on which to anticipate core demand for high bandwidth transmission capacity and for demand for edge service delivery and optical switching products such as our MultiWave CoreDirector.

Divergence will likely occur from time to time in the future, with resulting stock price volatility, irrespective of our overall year-to-year performance or long-term prospects. As long as we continue to depend on relatively few customers, and particularly when a substantial majority of their purchases consist of newly-introduced products like the MultiWave CoreStream, MultiWave EdgeDirector and MultiWave Metro, there is substantial risk of widely varying quarterly results.

Legal Proceedings Could Have an Adverse Effect On Our Business

In August 1998, shareholder class action lawsuits were filed against us and certain of our officers and directors. These lawsuits, which were consolidated into one amended complaint, were dismissed by the United States District Court on July 19, 1999, with leave to amend. On August 20, 1999 plaintiffs filed the second amended class action complaint. We have filed and briefed a motion asking the Court to dismiss the second amended complaint. We believe the allegations in the complaint are without merit and intend to defend the case vigorously. If, after discovery and trial, the case is decided adversely to CIENA, it could have a material adverse effect on our financial condition and results of operations.

Some of Our Suppliers Are Also Our Competitors

Some of our component suppliers are both primary sources for components and major competitors in the market for system equipment. For example, we buy certain components from:

- Lucent
- Alcatel
- Nortel
- NEC, and
- Siemens

Each of these companies offers optical communications systems and equipment which are competitive with our products. Also, Lucent is the sole source of two components and is one of two suppliers of two others. Alcatel and Nortel are suppliers of lasers used in our products and NEC is a supplier of an important piece of testing equipment. A decline in reliability or other adverse change in these supply relationships could materially and adversely affect our business, financial condition and results of operations.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The following discussion about the Company's market risk disclosures involves forward-looking statements. Actual results could differ materially from those projected in the forward-looking statements. The Company is exposed to market risk related to changes in interest rates and foreign currency exchange rates. The Company does not use derivative financial instruments for speculative or trading purposes.

Interest Rate Sensitivity

The Company maintains a short-term investment portfolio consisting mainly of corporate debt securities and U.S. government agency discount notes with an average maturity of less than six months. These held-to-maturity securities are subject to interest rate risk and will fall in value if market interest rates increase. If market interest rates were to increase immediately and uniformly by 10 percent from levels at October 31, 1999, the fair value of the portfolio would decline by approximately \$7.9 million. The Company has the ability to hold its fixed income investments until maturity, and therefore the Company would not expect its operating results or cash flows to be affected to any significant degree by the effect of a sudden change in market interest rates on its securities portfolio.

Foreign Currency Exchange Risk

As a global concern, the Company faces exposure to adverse movements in foreign currency exchange rates. These exposures may change over time as business practices evolve and could have a material adverse impact on the Company's financial results. Historically the Company's primary exposures have been related to nondollar-denominated operating expenses in Canada, Europe and Asia where the Company sells primarily in U.S. dollars. The introduction of the Euro as a common currency for members of the European Monetary Union began during the Company's fiscal year 1999. The foreign currency exposure resulting from the introduction of the Euro has been immaterial to the operating results of the Company. The Company is prepared to hedge against fluctuations in the Euro if this exposure becomes material. As of October 31, 1999 the assets and liabilities of the Company related to nondollar denominated currencies was not material. Therefore an increase or decrease of 10 percent in the foreign exchange rate would not have a material impact on the Company's financial position.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The following is an index to the consolidated financial statements and supplementary data:

	Page Number
Report of Independent Accountants	34
Consolidated Balance Sheets	35
Consolidated Statements of Operations	36
Consolidated Statements of Changes in Stockholders' Equity	37
Consolidated Statements of Cash Flows	38
Notes to Consolidated Financial Statements	39

Report of Independent Accountants

To the Board of Directors and
Stockholders of CIENA Corporation

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations, cash flows and changes in stockholders' equity present fairly, in all material respects, the financial position of CIENA Corporation and its subsidiaries at October 31, 1999 and 1998, and the results of their operations and their cash flows for each of the three years in the period ended October 31, 1999, in conformity with generally accepted accounting principles. These financial statements are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with generally accepted auditing standards which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for the opinion expressed above.



McLean, VA
November 24, 1999

Consolidated Balance Sheets

(in thousands, except share data)	October 31,	
	1998	1999
ASSETS		
Current assets:		
Cash and cash equivalents	\$250,714	\$143,440
Marketable debt securities	15,993	118,956
Accounts receivable (net of allowance of \$1,528 and \$1,703)	78,791	144,348
Inventories, net	70,908	79,608
Deferred income taxes	16,421	25,385
Prepaid income taxes	11,688	—
Prepaid expenses and other	<u>11,409</u>	<u>21,262</u>
Total current assets	455,924	532,999
Equipment, furniture and fixtures, net	125,767	125,252
Goodwill and other intangible assets, net	16,270	12,635
Other assets	<u>4,848</u>	<u>6,949</u>
Total assets	<u>\$602,809</u>	<u>\$677,835</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 27,893	\$ 34,399
Accrued liabilities	34,437	58,486
Income taxes payable	—	8,697
Deferred revenue	1,084	2,954
Other current obligations	<u>1,205</u>	<u>992</u>
Total current liabilities	64,619	105,528
Deferred income taxes	34,125	36,953
Other long-term obligations	<u>3,029</u>	<u>4,881</u>
Total liabilities	<u>101,773</u>	<u>147,362</u>
Commitments and contingencies		
Stockholders' equity:		
Preferred stock—par value \$.01; 20,000,000 shares authorized; zero shares issued and outstanding	—	—
Common stock—par value \$.01; 360,000,000 shares authorized; 134,605,491 and 138,187,356 shares issued and outstanding	1,346	1,382
Additional paid-in capital	328,821	360,082
Notes receivable from stockholders	(586)	(210)
Accumulated other comprehensive income	(107)	(40)
Retained earnings	<u>171,562</u>	<u>169,259</u>
Total stockholders' equity	<u>501,036</u>	<u>530,473</u>
Total liabilities and stockholders' equity	<u>\$602,809</u>	<u>\$677,835</u>

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Operations

Year Ended October 31,

(in thousands, except per share data)	1997	1998	1999
Revenue	\$413,215	\$508,087	\$482,085
Cost of goods sold	<u>166,472</u>	<u>256,014</u>	<u>299,769</u>
Gross profit	<u>246,743</u>	<u>252,073</u>	<u>182,316</u>
Operating expenses:			
Research and development	23,773	73,756	104,641
Selling and marketing	22,627	47,343	61,603
General and administrative	11,965	19,274	22,986
Purchased research and development	—	9,503	—
Pirelli litigation	7,500	30,579	—
Merger related costs	<u>—</u>	<u>2,548</u>	<u>13,021</u>
Total operating expenses	<u>65,865</u>	<u>183,003</u>	<u>202,251</u>
Income (loss) from operations	180,878	69,070	(19,935)
Interest and other income (expense), net	7,586	13,143	14,448
Interest expense	<u>(408)</u>	<u>(313)</u>	<u>(504)</u>
Income (loss) before income taxes	188,056	81,900	(5,991)
Provision (benefit) for income taxes	<u>72,488</u>	<u>36,200</u>	<u>(2,067)</u>
Net income (loss)	<u>\$115,568</u>	<u>\$ 45,700</u>	<u>\$ (3,924)</u>
Basic net income (loss) per common share	<u>\$ 1.52</u>	<u>\$ 0.39</u>	<u>\$ (0.03)</u>
Diluted net income (loss) per common share and dilutive potential common share	<u>\$ 1.10</u>	<u>\$ 0.36</u>	<u>\$ (0.03)</u>
Weighted average basic common shares outstanding	<u>75,964</u>	<u>117,990</u>	<u>133,521</u>
Weighted average basic common and dilutive potential common shares outstanding	<u>104,843</u>	<u>127,894</u>	<u>133,521</u>

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Changes in Stockholders' Equity

(dollars in thousands)	Common Stock		Additional Paid-in- Capital	Notes Receivable From Stockholders	Accumulated Other Compre- hensive Income	Retained Earnings	Total Stockholders' Equity
	Shares	Amount					
Balance of October 31, 1996	14,191,585	\$ 142	\$ 407	\$ (60)	\$ —	\$ 10,294	\$ 10,783
Net income	—	—	—	—	—	115,568	115,568
Translation adjustment	—	—	—	—	(5)	—	(5)
Comprehensive income	—	—	—	—	—	—	115,563
Exercise of warrants	666,086	7	—	—	—	—	7
Exercise of stock options	3,612,182	36	859	(73)	—	—	822
Compensation cost of stock options	—	—	85	—	—	—	85
Issuance of common stock, net of issuance costs	16,413,677	164	179,076	(4)	—	—	179,236
Conversion of Preferred Stock	74,815,740	748	40,256	—	—	—	41,004
Tax benefit from the exercise of stock options	—	—	29,709	—	—	—	29,709
Repayment of receivables from stockholders	—	—	—	69	—	—	69
Balance at October 31, 1997	109,699,270	1,097	250,392	(68)	(5)	125,862	377,278
Net income	—	—	—	—	—	45,700	45,700
Translation adjustment	—	—	—	—	(102)	—	(102)
Comprehensive income	—	—	—	—	—	—	45,598
Exercise of stock options	2,647,907	26	6,215	(392)	—	—	5,849
Compensation of stock options	—	—	54	—	—	—	54
Issuance of common stock, net of issuance costs	21,954,170	220	28,474	(225)	—	—	28,469
Tax benefit from the exercise of stock options	—	—	22,634	—	—	—	22,634
Repayment of receivables from stockholders	—	—	—	99	—	—	99
Purchase acquisitions, net of transaction costs	304,144	3	20,817	—	—	—	20,820
Issuance of warrants for technology rights	—	—	235	—	—	—	235
Balance at October 31, 1998	134,605,491	1,346	328,821	(586)	(107)	171,562	501,036
Net loss	—	—	—	—	—	(3,924)	(3,924)
Translation adjustment	—	—	—	—	67	—	67
Comprehensive loss	—	—	—	—	—	—	(3,857)
Exercise of warrants	403,951	4	—	—	—	—	4
Exercise of stock options	1,721,384	17	8,219	—	—	—	8,236
Compensation cost of stock options and warrants	—	—	8,521	—	—	—	8,521
Issuance of common stock, net of issuance costs	1,456,530	15	3,517	(481)	—	—	3,051
Tax benefit from the exercise of stock options	—	—	11,004	—	—	—	11,004
Repayment of receivables from stockholders	—	—	—	857	—	—	857
Adjustment to conform fiscal year ends of pooled acquisition	—	—	—	—	—	1,621	1,621
Balance at October 31, 1999	<u>138,187,356</u>	<u>\$1,382</u>	<u>\$360,082</u>	<u>\$(210)</u>	<u>\$ (40)</u>	<u>\$169,259</u>	<u>\$530,473</u>

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Cash Flows

Year Ended October 31,

(in thousands)	1997	1998	1999
Cash flows from operating activities:			
Net income (loss)	\$115,568	\$ 45,700	\$ (3,924)
Adjustments to reconcile net income to net cash provided by operating activities:			
Adjustment to conform fiscal year ends of pooled acquisitions	—	—	1,621
Non-cash charges from equity transactions	85	289	8,521
Amortization of premiums on marketable debt securities	—	464	1,776
Effect of translation adjustment	(5)	(102)	67
Purchased research and development	—	9,503	—
Write down of leasehold improvements and equipment	923	1,605	—
Depreciation and amortization	10,256	33,623	50,418
Provision for doubtful accounts	489	806	250
Provision for inventory excess and obsolescence	7,585	9,617	6,534
Provision for warranty and other contractual obligations	11,866	10,523	8,396
Changes in assets and liabilities:			
Increase in accounts receivable	(46,309)	(7,026)	(65,807)
Increase in inventories	(35,466)	(39,416)	(15,234)
Increase in deferred income tax assets	(7,305)	(7,282)	(8,964)
(Increase) decrease in prepaid income taxes	—	(11,688)	11,688
Increase in prepaid expenses and other assets	(2,468)	(18,528)	(13,222)
Increase (decrease) in accounts payable and accrued expenses	30,608	(6,288)	22,159
Increase (decrease) in income taxes payable	(3,916)	(46)	8,697
Increase in deferred income tax liabilities	4,793	5,958	2,828
Increase (decrease) in deferred revenue and other obligations	(2,007)	(1,507)	1,870
Net cash provided by operating activities	<u>84,697</u>	<u>26,205</u>	<u>17,674</u>
Cash flows from investing activities:			
Additions to equipment, furniture and fixtures	(67,030)	(88,913)	(46,776)
Purchase of marketable debt securities	—	(93,869)	(274,897)
Maturities of marketable debt securities	—	77,876	171,934
Net cash paid for business combinations	—	(2,070)	—
Net cash used in investing activities	<u>(67,030)</u>	<u>(106,976)</u>	<u>(149,739)</u>
Cash flows from financing activities:			
Net proceeds from (repayment of) other obligations	(2,238)	1,148	1,639
Net proceeds from issuance of common stock	180,665	34,318	11,291
Tax benefit related to exercise of stock options and warrants	53,083	22,634	11,004
Repayment of notes receivable from stockholders	69	99	857
Net cash provided by financing activities	<u>231,579</u>	<u>58,199</u>	<u>24,791</u>
Net increase (decrease) in cash and cash equivalents	249,246	(22,572)	(107,274)
Cash and cash equivalents at beginning of period	<u>24,040</u>	<u>273,286</u>	<u>250,714</u>
Cash and cash equivalents at end of period	<u>\$273,286</u>	<u>\$ 250,714</u>	<u>\$ 143,440</u>
Supplemental disclosure of cash flow information:			
Cash paid during the period for:			
Interest	<u>\$ 405</u>	<u>\$ 265</u>	<u>\$ 504</u>
Income taxes	<u>\$ 27,455</u>	<u>\$ 30,203</u>	<u>\$ 313</u>
Supplemental disclosure of non-cash financing activities:			
Issuance of common stock for notes receivable from stockholders	<u>\$ 77</u>	<u>\$ 617</u>	<u>\$ 481</u>

The accompanying notes are an integral part of these supplemental consolidated financial statements.

Notes to Consolidated Financial Statements

(1) The Company and Significant Accounting Policies

Description of Business

CIENA is a leader in the rapidly emerging optical networking equipment market. The Company offers a comprehensive portfolio of products for tele- and data-communications service providers worldwide. CIENA's customers include long-distance carriers, competitive local exchange carriers, Internet service providers and wholesale carriers. CIENA offers optical transport, intelligent switching and multi-service delivery systems that enable service providers to provision, manage and deliver high-bandwidth services to their customers. The Company has pursued a strategy to develop and leverage the power of disruptive technologies to change the fundamental economics of building carrier-class tele- and data-communications networks, providing its customers with a competitive advantage.

Principles of Consolidation

The Company has twelve wholly owned U.S. and international subsidiaries which have been consolidated in the accompanying financial statements. The Company completed a merger with Omnia Communications, Inc. ("Omnia") a Delaware company headquartered in Marlborough, Massachusetts on July 1, 1999. On March 31, 1999 the Company completed a merger with Lightera Networks, Inc. ("Lightera") a Delaware company headquartered in Cupertino, California. On February 19, 1998, the Company completed a merger with ATI Telecom International Ltd., ("Alta"). Each of these transactions constituted a tax-free reorganization and have been accounted for as a pooling of interests under Accounting Principles Board Opinion No. 16. Accordingly, all prior period consolidated financial statements presented have been restated to include the combined results of operations, financial position and cash flows of each of the companies as though they had been a part of CIENA.

The accompanying consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All material intercompany accounts and transactions have been eliminated in consolidation.

Fiscal Year

The Company has a 52 or 53 week fiscal year which ends on the Saturday nearest to the last day of October in each year (October 30, 1999; October 31, 1998; and November 1, 1997). For purposes of financial statement presentation, each fiscal year is described as having ended on October 31. Fiscal 1999, 1998 and 1997 comprised 52 weeks. Omnia's fiscal year ended on December 31.

Since the fiscal years for CIENA and Omnia differ, the periods combined for the purposes of the consolidated financial statements are as follows:

CIENA

Fiscal year ended October 31, 1997

Fiscal year ended October 31, 1998

Omnia

June 3, 1997 (date of inception) to December 31, 1997

January 1, 1998 to December 31, 1998

The fiscal year ended October 31, 1999, contain two months of Omnia's financial results, which are also recorded in the fiscal year ending October 31, 1998. The net loss for these two months, November and December 1998 was \$1,621,000.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires the Company to make estimates, judgements and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses, together with amounts disclosed in the related notes to the financial statements. Actual results could differ from the recorded estimates.

Cash and Cash Equivalents

The Company considers all highly liquid investments purchased with original maturities of three months or less to be cash equivalents.

Marketable Debt Securities

The Company has classified its investments in marketable debt securities as held-to-maturity securities as defined by Statement of Financial Accounting Standards No. 115, "Accounting for Certain Investments in Debt and Equity Securities." Such investments are recorded at their amortized cost in the accompanying consolidated balance sheets. All of the marketable debt securities are corporate debt securities with contractual maturities of 6 months or less and have \$60,000 and \$11,000 of unrealized gains and \$9,000 and \$108,000 of unrealized loss, as of October 31, 1998 and 1999, respectively. See Note 3.

Inventories

Inventories are stated at the lower of cost or market, with cost determined on the first-in, first-out basis. The Company records a provision for excess and obsolete inventory whenever such an impairment has been identified.

Equipment, Furniture and Fixtures

Equipment, furniture and fixtures are recorded at cost. Depreciation and amortization are computed using the straight-line method over useful lives of 2–5 years for equipment, furniture and fixtures and of 6–10 years for leasehold improvements.

Goodwill

The Company has recorded goodwill from two purchase transactions. See Note 2. It is the Company's policy to continually assess the carrying amount of its goodwill to determine if there has been an impairment to its carrying value. The Company would record any such impairment when identified.

Concentrations

Substantially all of the Company's cash and cash equivalents are custodied at four major U.S. financial institutions. The majority of the Company's cash equivalents include U.S. Government Federal Agency Securities, short-term marketable securities, and overnight repurchase agreements. Deposits held with banks may exceed the amount of insurance provided on such deposits. Generally these deposits may be redeemed upon demand and, therefore, bear minimal risk.

Historically, the Company has relied on a limited number of customers for a substantial portion of its revenue. During fiscal year 1999 Sprint, MCI WorldCom, and GTS Network Ltd. (formerly Hermes Europe Railtel) each accounted for at least 10% or more of CIENA's revenue and all three combined accounted for 46.2% of the Company's fiscal 1999 revenue. During fiscal 1998 Sprint was the only 10% customer and in total accounted for 52.5 % of the Company's fiscal 1998 revenue. During 1997 both WorldCom and Sprint were 10% customers and combined accounted for 88% of the Company's fiscal 1997 revenue. The Company expects that a significant portion of its future revenue will continue to be generated by a limited number of customers. The loss of any one of these customers or any substantial reduction in orders by any one of these customers could materially adversely affect the Company's financial condition or operating results. Additionally, the Company's access to certain raw materials is dependent upon single and sole source suppliers. The inability of any supplier to fulfill supply requirements of the Company could impact future results.

The Company performs ongoing credit evaluations of its customers and generally does not require collateral from its customers. The Company maintains an allowance for potential losses when identified. As of October 31, 1999 the trade accounts receivable included three customers who each accounted for 30%, 14%, and 12% of the trade accounts receivable, respectively. As of October 31, 1998 the trade accounts receivable included four customers who each accounted for 10%, 11%, 25%, and 26% of the trade accounts receivable, respectively.

Revenue Recognition

CIENA recognizes product revenue in accordance with the shipping terms specified and where collection is probable. For transactions where CIENA has yet to obtain customer acceptance, revenue is deferred until the terms of acceptance are satisfied. Revenue for installation services is recognized as the services are performed unless the terms of the supply contract combine product acceptance with installation, in which case revenues for installation services are recognized when the terms of acceptance are satisfied and installation is completed. Revenues from installation service fixed price contracts are recognized on the percentage-of-completion method, measured by the percentage of costs incurred to date compared to estimated total costs for each contract. Amounts received in excess of revenue recognized are included as deferred revenue in the accompanying balance sheets. For distributor sales where risks of ownership have not transferred, CIENA recognizes revenue when the product is shipped through to the end user.

Revenue-Related Accruals

The Company provides for the estimated costs to fulfill customer warranty and other contractual obligations upon the recognition of the related revenue. Such reserves are determined based upon actual warranty cost experience, estimates of component failure rates, and management's industry experience. The Company's contractual sales arrangements generally do not permit the right of return of product by the customer after the product has been accepted.

Research and Development

The Company charges all research and development costs to expense as incurred.

Income Taxes

The Company accounts for income taxes in accordance with Statement of Financial Accounting Standards No. 109 (SFAS No. 109), "Accounting for Income Taxes." SFAS No. 109 is an asset and liability approach that requires the recognition of deferred tax assets and liabilities for the expected future tax consequences attributable to differences between the carrying amounts of assets and liabilities for financial reporting purposes and their respective tax bases, and for operating loss and tax credit carryforwards. In estimating future tax consequences, SFAS No. 109 generally considers all expected future events other than the enactment of changes in tax laws or rates. Tax savings resulting from deductions associated with stock options and certain stock warrants are credited directly to additional paid in capital when realization of such benefit is fully assured and to deferred tax liabilities prior to such point. See Note 9.

Foreign Currency Translation

The majority of the Company's foreign branches and subsidiaries use the U.S. dollar as their functional currency as the U.S. parent exclusively funds the branches and subsidiaries' operations with U.S. dollars. For those subsidiaries using the local currency as their functional currency, assets and liabilities are translated at exchange rates in effect at the balance sheet date. Resulting translation adjustments are recorded directly to a separate component of stockholders' equity. Where the U.S. dollar is the functional currency, translation adjustments are recorded in other income. The net gain (loss) on foreign currency remeasurement and exchange rate changes for fiscal 1997, 1998 and 1999 was immaterial for separate financial statement presentation.

Computation of Basic Net Income per Common Share and Diluted Net Income per Common and Dilutive Potential Common Share

The Company calculates earnings per share in accordance with the Statement of Financial Accounting Standards No. 128, "Earnings per Share" (SFAS No. 128). SFAS No. 128 simplifies the earnings per share (EPS) computation and replaces the presentation of primary EPS with a presentation of basic EPS. This statement also requires dual presentation of basic and diluted EPS on the face of the income statement for entities with a complex capital structure and requires a reconciliation of the numerator and denominator used for the basic and diluted EPS computations. See Note 7.

Software Development Costs

Statement of Financial Accounting Standards No. 86, "Accounting for the Costs of Computer Software to be Sold, Leased or Otherwise Marketed," requires the capitalization of certain software development costs incurred subsequent to the date technological feasibility is established and prior to the date the product is generally available for sale. The capitalized cost is then amortized over the estimated product life. The Company defines technological feasibility as being attained at the time a working model is completed. To date, the period between achieving technological feasibility and the general availability of such software has been short and software development costs qualifying for capitalization have been insignificant. Accordingly, the Company has not capitalized any software development costs.

Accounting for Stock Options

In October 1995, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 123 (SFAS No. 123), "Accounting for Stock-Based Compensation," which is effective for the Company's consolidated financial statements for fiscal years 1997, 1998, and 1999. SFAS No. 123 allows companies to either account for stock-based compensation under the new provisions of SFAS No. 123 or using the intrinsic value method provided by Accounting Principles Board Opinion No. 25 (APB No. 25), "Accounting for Stock Issued to Employees," but requires pro forma disclosure in the footnotes to the financial statements as if the measurement provisions of SFAS No. 123 had been adopted. The Company has elected to continue to account for its stock based compensation in accordance with the provisions of APB No. 25 and present the pro forma disclosures required by SFAS No. 123. See Note 8.

Comprehensive Income

In June 1997, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 130 (SFAS No. 130), "Comprehensive Income." SFAS No. 130 became effective for the Company's fiscal year 1999. SFAS No. 130 establishes new rules for the reporting and display of comprehensive income and its components. SFAS No. 130 requires that changes in the amounts of certain items, including foreign currency translation adjustments and gains and losses on certain securities be shown in the financial statements. CIENA's accumulated other comprehensive income is comprised entirely of accumulated foreign currency translation adjustments and is shown as a separate amount on CIENA's Consolidated Balance Sheets.

The components of comprehensive income (loss) are as follows (in thousands):

	October 31,	
	1998	1999
Net income (loss)	\$45,700	\$(3,924)
Change in accumulated translation adjustments	<u>(102)</u>	<u>67</u>
Total comprehensive income (loss)	<u>\$45,598</u>	<u>\$(3,857)</u>

Segment Reporting

In June 1997, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 131 (SFAS No. 131), "Disclosures about Segments of an Enterprise and Related Information." The Statement is effective for the Company's fiscal year 1999. SFAS No. 131 establishes annual and interim reporting standards for operating segments of a company. It also requires entity-wide disclosures about the products and services an entity provides, the material countries in which it holds assets and reports revenues, and its major customers. The Company is not organized by multiple operating segments for the purpose of making operating decisions or assessing performance. Accordingly, the Company operates in one operating segment and reports only certain enterprise-wide disclosures.

Newly Issued Accounting Standards

In June 1998, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 133 (SFAS No. 133), "Accounting for Derivative Instruments and Hedging Activities." This Statement requires companies to record derivatives on the balance sheet as assets or liabilities, measured at fair value. Gains or losses resulting from

changes in the values of those derivatives would be accounted for depending on the use of the derivative and whether it qualifies for hedge accounting. SFAS 133 will be effective for the Company's fiscal year ending October 31, 2000. The Company believes the adoption of SFAS No. 133 will not have a material effect on the consolidated financial statements.

Reclassification

Certain prior year amounts have been reclassified to conform to current year consolidated financial statement presentation.

(2) Business Combinations

Omnia

On July 1, 1999, the Company completed a merger with Omnia in a transaction valued at approximately \$483 million. Omnia is a telecommunications equipment supplier which focuses on developing solutions to allow public telephone network operators to offer services cost effectively over integrated metropolitan fiberoptic access and transport networks. Under the terms of the merger, the Company acquired all of the outstanding shares and assumed the stock options of Omnia in exchange for approximately 15.2 million shares of CIENA common stock and 0.8 million CIENA shares issuable upon exercise of stock options. The transaction constituted a tax-free reorganization and has been accounted for as a pooling of interests under Accounting Principles Board Opinion No. 16. Accordingly, all prior period consolidated financial statements presented have been restated to include the combined results of operations, financial position and cash flows of Omnia as though it had been a part of CIENA.

The following table shows the separate historical results of CIENA and Omnia for the periods prior to the consummation of the merger of the two entities. No financial information has been presented for the fiscal year ended 1996 as Omnia did not commence operations until June 1997. Omnia's fiscal year end is December 31. CIENA's results for the years ended October 31, 1997 and 1998 include Omnia's financial results from June 3, 1997 (date of inception) to December 31, 1997 and January 1, 1998 to December 31, 1998, respectively (in thousands).

	Year Ended October 31,		Nine Months
	1997	1998	Ended July 31, 1999
Revenues:			
CIENA	\$413,215	\$508,087	\$340,733
Omnia	—	—	—
Intercompany eliminations	—	—	—
Consolidated revenues	<u>\$413,215</u>	<u>\$508,087</u>	<u>\$340,733</u>
Net Income (loss):			
CIENA	\$115,967	\$ 51,113	\$ (1,020)
Omnia	<u>(399)</u>	<u>(5,413)</u>	<u>(7,403)</u>
Consolidated net income (loss)	<u>\$115,568</u>	<u>\$ 45,700</u>	<u>\$ (8,423)</u>

Lightera

On March 31, 1999 the Company completed a merger with Lightera in a transaction valued at approximately \$459 million. Lightera is a developer of carrier class optical core switches for fiberoptic communications networks. Under the terms of the merger agreement, the Company acquired all of the outstanding shares and assumed outstanding stock options and warrants of Lightera in exchange for approximately 17.5 million shares of CIENA common stock and 2.9 million CIENA shares issuable upon exercise of stock options and warrants. The transaction constituted a tax-free reorganization and has been accounted for as a pooling of interests under Accounting Principles Board Opinion No. 16. Accordingly, all prior period consolidated financial statements presented have been restated to include the combined results of operations, financial position and cash flows of Lightera as though it had been a part of CIENA.

The following table shows the separate historical results of CIENA and Lightera for the periods prior to the consummation of the merger of the two entities. No financial information has been presented for the fiscal year ended 1997 as Lightera did not commence operations until April 1998 (in thousands).

	Year Ended October 31, 1998	Six Months Ended April 30, 1999
Revenues:		
CIENA	\$508,087	\$211,907
Lightera	—	—
Intercompany eliminations	—	—
Consolidated revenues	<u>\$508,087</u>	<u>\$211,907</u>
Net Income (loss):		
CIENA	\$ 53,194	\$ 8,046
Lightera	<u>(2,081)</u>	<u>(6,169)</u>
Consolidated net income	<u>\$ 51,113</u>	<u>\$ 1,877</u>

Terabit

During April 1998 the Company completed an Agreement and Plan of Reorganization with Terabit Technology, Inc. ("Terabit"), a developer of optical components known as photodetectors or optical receivers. Terabit is located in Santa Barbara, California. The purchase price was approximately \$11.5 million and consisted of the issuance of 134,390 shares of CIENA common stock, the payment of \$1.1 million in cash, and the assumption of certain stock options. The transaction was recorded using the purchase accounting method with the purchase price representing approximately \$9.5 million in purchased research and development, \$1.8 million in goodwill and other intangibles, and approximately \$0.2 million in net assets assumed. The amortization period for the intangibles, based on management's estimate of the useful life of the acquired technology, is five years. The operations of Terabit are not material to the consolidated financial statements of the Company and, accordingly, separate pro forma financial information has not been presented.

In connection with the Terabit acquisition, the Company recorded a \$9.5 million charge in the year ended October 31, 1998 for purchased research and development. This generally represents the estimated value of purchased in-process technology related to Terabit's avalanche photodiodes (APD) that have not yet reached technological feasibility and have no alternative future use.

The amount of purchase price allocated to in-process research and development was determined using the discounted cash flow method. This method consisted of estimating future net cash flows attributable in-process APD technology for a discrete projection period and discounting the net cash flows back to their present value. The discount rate includes a factor that takes into account the uncertainty surrounding the successful development of the purchased in-process technology. The estimated revenue associated with the APD technology future net cash flows assumed a 5-year compound annual growth rate of between 5% to 43%. The revenue growth rates were developed considering, among other things, the current and expected industry trends and acceptance of the technologies in historical growth rates for similar industry products. Management's estimates or projections were based upon an estimated period of 10 years with revenues reaching a peak in 2002 and declining through 2008. The estimated net cash flows were discounted to present value at a rate of return which considers the relative risk of achieving the net cash flows and the time value of money. A 30% rate was used to effect the risk associated with Terabits APD technology. This rate is higher than the Company's normal discount rate due to inherent uncertainties surrounding the successful development of purchase in-process technology, the useful life of the technology, and the profitability levels of such technology.

The resulting net cash flows from the APD project was based on management's estimates of revenues, cost of sales, research and development costs, selling, general and administrative costs, and income taxes associated with the project.

Alta

On February 19, 1998, the Company completed a merger with ATI Telecom International Ltd., ("Alta"), a Canadian corporation headquartered near Atlanta, Georgia, in a transaction valued at approximately \$52.5 million. Alta provides a range of engineering, furnishing and installation services for telecommunications service providers in the areas of transport, switching and wireless communications. Under the terms of the agreement the Company exchanged 1,000,000 shares of its common stock for all the common stock of Alta. The merger constituted a tax-free reorganization and has been accounted for as a pooling of interests under Accounting Principles Board Opinion No. 16. Accordingly, all prior period consolidated financial statements presented have been restated to include the combined results of operations, financial position and cash flows of Alta as though it had been a part of CIENA.

Prior to the merger, Alta's year ended on December 31. In recording the business combination, Alta's prior period financial statements have been restated to conform to CIENA's fiscal year end.

All intercompany transactions between CIENA and Alta have been eliminated in consolidation. Certain reclassifications were made to Alta financial statements to conform to CIENA's presentation. No material adjustments were made to conform to CIENA's accounting policies.

The following table shows the separate historical results of CIENA and Alta for the periods prior to the consummation of the merger of the two entities (in thousands):

	Year Ended October 31,	
	1996	1997
Revenues:		
CIENA	\$54,838	\$373,827
Alta	33,625	39,531
Intercompany eliminations	—	(143)
Consolidated revenues	<u>\$88,463</u>	<u>\$413,215</u>
Net Income (loss):		
CIENA	\$14,718	\$112,945
Alta	<u>2,545</u>	<u>3,022</u>
Consolidated net income	<u>\$17,263</u>	<u>\$115,967</u>

Astracom

During December 1997, the Company completed an Agreement and Plan of Merger with Astracom, Inc. ("Astracom"), an early stage telecommunications company located in Atlanta, Georgia. The purchase price was approximately \$13.1 million and consisted of the issuance of 169,754 shares of CIENA common stock, the payment of \$2.4 million in cash, and the assumption of certain stock options. The transaction was recorded using the purchase accounting method with the purchase price representing approximately \$11.4 million in goodwill and other intangibles, and approximately \$1.7 million in net assets assumed. The amortization period for the intangibles, based on management's estimate of the useful life of the acquired technology, is five years. The operations of Astracom are not material to the consolidated financial statements of the Company and, accordingly, separate pro forma financial information has not been presented.

(3) Marketable Debt Securities

Marketable debt securities are comprised of the following (in thousands):

	October 31,	
	1998	1999
Commercial paper	\$15,993	\$105,215
U.S. Government obligations	—	13,741
	<u>\$15,993</u>	<u>\$118,956</u>

(4) Inventories

Inventories are comprised of the following (in thousands):

	October 31,	
	1998	1999
Raw materials	\$ 43,268	\$ 49,298
Work-in-process	8,592	16,386
Finished goods	<u>30,202</u>	<u>26,369</u>
	82,062	92,053
Reserve for excess and obsolescence	<u>(11,154)</u>	<u>(12,445)</u>
	<u>\$ 70,908</u>	<u>\$ 79,608</u>

The following is a table depicting the activity in the Company's reserve for excess and obsolescence (in thousands):

	October 31,	
	1998	1999
Beginning balance	\$ 7,466	\$11,154
Provision charged to operations	9,617	6,534
Amounts written off against the reserve	<u>(5,929)</u>	<u>(5,243)</u>
Ending balance	<u>\$11,154</u>	<u>\$12,445</u>

(5) Equipment, Furniture and Fixtures

Equipment, furniture and fixtures are comprised of the following (in thousands):

	October 31,	
	1998	1999
Equipment, furniture and fixtures	\$141,845	\$182,794
Leasehold improvements	<u>24,076</u>	<u>30,231</u>
	165,921	213,025
Accumulated depreciation and amortization	(41,506)	(88,716)
Construction-in-progress	<u>1,352</u>	<u>943</u>
	<u>\$125,767</u>	<u>\$125,252</u>

(6) Accrued Liabilities

Accrued liabilities are comprised of the following (in thousands):

	October 31,	
	1998	1999
Warranty and other contractual obligations	\$17,256	\$28,582
Accrued compensation	9,229	15,471
Other	<u>7,952</u>	<u>14,433</u>
	<u>\$34,437</u>	<u>\$58,486</u>

(7) Earnings (Loss) Per Share Calculation

The following is a reconciliation of the numerators and denominators of the basic net income (loss) per common share ("basic EPS") and diluted net income (loss) per common and dilutive potential common share ("diluted EPS"). Basic EPS is computed using the weighted average number of common shares outstanding. Diluted EPS is computed using the weighted average number of common shares outstanding, stock options and warrants using the treasury stock method and shares issued upon conversion of all outstanding shares of Mandatorily Redeemable Preferred Stock (in thousands except per share amounts).

	October 31,		
	1997	1998	1999
Net income (loss)	<u>\$115,568</u>	<u>\$ 45,700</u>	<u>\$ (3,924)</u>
Weighted average shares—basic	<u>75,964</u>	<u>117,990</u>	<u>133,521</u>
Effect of dilutive securities:			
Employee stock options and warrants	8,791	9,904	—
Conversion of preferred stock	<u>20,088</u>	<u>—</u>	<u>—</u>
Weighted average shares—diluted	<u>104,843</u>	<u>127,894</u>	<u>133,521</u>
Basic EPS	<u>\$ 1.52</u>	<u>\$ 0.39</u>	<u>\$ (0.03)</u>
Diluted EPS	<u>\$ 1.10</u>	<u>\$ 0.36</u>	<u>\$ (0.03)</u>

Approximately 182,000, 769,000 and 11,886,000 options and restricted stock were outstanding during fiscal 1997, 1998 and 1999 respectively, but were not included in the computation of the Diluted EPS as the effect would be anti-dilutive.

(8) Stockholders' Equity

Stockholder Rights Plan

In December 1997, the Company's Board of Directors adopted a Stockholder Rights Plan. This plan is designed to deter any potential coercive or unfair takeover tactics in the event of an unsolicited takeover attempt. It is not intended to prevent a takeover of the Company on terms that are favorable and fair to all shareholders and will not interfere with a merger approved by the Board of Directors. Each right entitles shareholders to buy a "unit" equal to one one-thousandth of a share of Preferred Stock of the Company. The rights will be exercisable only if a person or a group acquires or announces a tender or exchange offer to acquire 15% or more of the Company's common stock or if the Company enters into certain other business combination transactions not approved by the Board of Directors.

In the event the rights become exercisable, the rights plan allows for CIENA shareholders to acquire stock of the surviving corporation, whether or not CIENA is the surviving corporation, having a value twice that of the exercise price of the Rights. The Rights were distributed to shareholders of record in January 1998. The Rights will expire December 2007 and are redeemable for \$.001 per right at the approval of the Company's Board of Directors.

Public Offerings

In February 1997, the Company successfully completed its initial public offering of Common Stock. The Company sold 5,750,000 shares, inclusive of 750,000 shares from the exercise of the underwriters over-allotment option, at a price of \$23 per share. Net proceeds from the offering were approximately \$121,800,000 with an additional \$600,000 received from the exercise of 300,000 shares of outstanding Convertible Preferred Stock warrants.

In July 1997, the Company completed a public offering of 10,477,216 shares of Common Stock of which 1,252,060 shares were sold by the Company inclusive of 252,060 shares from the exercise of the underwriters over-allotment option, at a price of \$44 per share. Net proceeds to the Company from the public offering were approximately \$52,200,000.

Other Offerings

During 1997, Omnia issued 9,411,617 shares of common stock in exchange for approximately \$5,223,000. In 1998 and 1999 Omnia issued 5,376,665 and 184,495 shares of common stock in exchange for approximately \$12,801,000 and \$66,000, respectively.

During 1998, Lightera issued a total of 16,577,505 shares of common stock in exchange for certain technology rights, notes receivable totaling \$211,000 and proceeds of approximately \$15,893,000. In 1999, Lightera issued 968,511 shares of common stock in exchange for approximately \$104,000.

Stock Incentive Plans

In August of 1999, the Company approved the 1999 Non-Officers Incentive Stock Plan (the "1999 Plan"). Under the 1999 Plan, 6,000,000 shares of the Company's authorized but unissued Common Stock are reserved for options issuable to employees who are not executive officers of the Company. These options vest to the employee over four years and are exercisable once vested. Options under the 1999 Plan are categorized as non-qualified, and the exercise price for each option shall be established by the Board of Directors provided the price is not less than 85% of fair market value.

The Company has an Amended and Restated 1994 Stock Option Plan (the "1994 Plan"). Under the 1994 Plan, 20,050,000 shares of the Company's authorized but unissued Common Stock are reserved for options issuable to employees. Certain of these options are immediately exercisable upon grant, and both the options and the shares issuable upon exercise of the options generally vest to the employee over a four year period. The Company has the right to repurchase any exercised and non-vested shares at the original purchase price from the employees upon termination of employment. In June 1996, the Company approved the 1996 Outside Directors Stock Option Plan (the "1996 Plan"). Under the 1996 Plan, 750,000 shares of the Company's authorized but unissued Common Stock are reserved for options issuable to outside members of the Company's Board of Directors. These options vest to the director over periods from one to three years, depending on the type of option granted, and are exercisable once vested. Under the 1994 Plan and the 1996 Plan, options may be incentive stock options or non-qualified options, and the exercise price for each option shall be established by the Board of Directors provided, however, that the exercise price per share shall not be not less than the fair market value for incentive stock options and not less than 85% of fair market value for non-qualified stock options.

As a result of the Company's merger with Omnia, the Company assumed the Omnia 1997 Stock Plan Option Plan ("the 1997 Plan"). The 1997 Plan provided for the granting of stock options to employees and consultants of Omnia. Options granted under the 1997 Plan were either incentive stock options or nonstatutory stock options. Incentive stock options, ("ISO"), could be granted only to Omnia employees (including officers and directors who were also employees). Nonstatutory stock options ("NSO") could be granted to Omnia employees and consultants. The Company has reserved 759,889 shares of Common Stock for outstanding options under the plan. Options exercised are immediately subject to a repurchase right held by the Company which lapse over a maximum period of four years at such times and under such conditions as determined by the Board of Directors. To date, options granted generally vest over four years.

As a result of the Company's merger with Lightera, the Company assumed the Lightera 1998 Stock Option Plan ("the 1998 Plan"). The 1998 Plan provided for the granting of stock options to employees and consultants of Lightera. Options granted under the 1998 Plan were either incentive stock options or nonstatutory stock options. Incentive stock options, ("ISO"), could be granted only to Lightera employees (including officers and directors who were also employees). Nonstatutory stock options ("NSO") could be granted to Lightera employees and consultants. The Company has reserved 2,529,161 shares of Common Stock for outstanding options under the plan. Options exercised are immediately subject to a repurchase right held by the Company which lapse over a maximum period of five years at such times and under such conditions as determined by the Board of Directors. To date, options granted generally vest over four years.

Following is a summary of the Company's stock option activity (shares in thousands):

	Shares	Weighted Average Exercise Price
Balance at October 31, 1996	11,083	0.97
Granted	1,737	32.81
Exercised	(3,612)	0.27
Canceled	<u>(98)</u>	0.52
Balance at October 31, 1997	9,110	7.33
Granted	6,414	18.99
Exercised	(2,648)	2.40
Canceled	<u>(3,340)</u>	40.12
Balance at October 31, 1998	9,536	4.82
Granted	8,131	23.45
Exercised	(1,728)	4.65
Canceled	<u>(878)</u>	13.29
Balance at October 31, 1999	<u>15,061</u>	14.43

During September 1998, the Company canceled and re-issued outstanding employee stock options with exercise prices in excess of the fair market value, except those options held by outside directors and officers of the Company. A total of 2,905,116 options with an average exercise price of \$42.87 were cancelled and re-issued at \$12.38 per share. At October 31, 1999 approximately 2,030,000 shares of Common Stock subject to repurchase by the Company had been issued upon the exercise of options and restricted stock purchase agreements. 3,961,914 million of the total outstanding options were vested and not subject to repurchase by the Company upon exercise. As of October 31, 1999, approximately 6.4 million shares are available for issuance under these plans.

The following table summarizes information with respect to stock options outstanding at October 31, 1999:

Range of Exercise Price	Options Outstanding			Options Not Subject to Repurchase Upon Exercise	
	Number Outstanding at Oct. 31, 1999	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Number at Oct. 31, 1999	Weighted Average Exercise Price
\$ 0.01 – \$ 0.03	754,475	5.24	\$ 0.03	752,775	\$ 0.03
\$ 0.06 – \$ 1.66	2,586,246	8.27	\$ 0.37	724,100	\$ 0.67
\$ 2.25 – \$ 4.70	2,523,154	6.66	\$ 2.47	1,483,635	\$ 2.47
\$ 7.17 – \$15.63	2,472,106	8.91	\$12.36	958,723	\$12.37
\$17.00 – \$24.25	2,328,629	9.16	\$18.25	17,681	\$17.10
\$25.00 – \$29.81	2,314,488	9.91	\$29.51	—	—
\$30.06 – \$43.25	<u>2,082,210</u>	9.76	\$33.04	<u>25,000</u>	\$43.25
\$ 0.01 – \$43.25	<u>15,061,308</u>	8.55	\$14.43	<u>3,961,914</u>	\$ 4.39

Employee Stock Purchase Plan

In March 1998, the shareholders approved the Corporation's 1998 Stock Purchase Plan ("the Purchase Plan") under which 2.5 million shares of common stock have been reserved for issuance. Eligible employees may purchase a limited number of shares of the Company's stock at 85% of the market value at certain plan-defined dates. As of October 31, 1999, 303,524 shares of common stock had been issued for \$3,347,000 and approximately 2.2 million shares are available for issuance under this plan.

Pro Forma Stock-Based Compensation

Had compensation cost for the Company's stock option plans and the Purchase Plan been determined based on the fair value at the grant date for awards in fiscal years 1997, 1998 and 1999 consistent with the provisions of SFAS No. 123, the Company's net income and net income per share for fiscal 1997 and 1998 would have been decreased and the net loss per share for fiscal 1999 would have been increased to the pro forma amounts indicated below (in thousands, except per share):

	October 31,		
	1997	1998	1999
Net income (loss) applicable to common stockholders—as reported	<u>\$115,568</u>	<u>\$45,700</u>	<u>\$ (3,924)</u>
Net income (loss) applicable to common stockholders—pro forma	<u>\$110,005</u>	<u>\$20,816</u>	<u>\$(40,067)</u>
Basic net income (loss) per share—as reported	<u>\$ 1.52</u>	<u>\$ 0.39</u>	<u>\$ (0.03)</u>
Basic net income (loss) per share—pro forma	<u>\$ 1.45</u>	<u>\$ 0.18</u>	<u>\$ (0.30)</u>
Diluted net income (loss) per share—as reported	<u>\$ 1.10</u>	<u>\$ 0.36</u>	<u>\$ (0.03)</u>
Diluted net income (loss) per share—pro forma	<u>\$ 1.05</u>	<u>\$ 0.16</u>	<u>\$ (0.30)</u>

The above pro forma disclosures are not necessarily representative of the effects on reported net income or loss for future years.

The aggregate fair value and weighted average fair value of each option granted under the various stock option plans, excluding the purchase plan, in fiscal years 1997, 1998 and 1999 were approximately \$33.6 million, \$73.2 million, and \$129.2 million and \$19.33, \$15.17, and \$18.89 respectively. The fair value of each option grant is estimated on the date of grant using the Black-Scholes Option Pricing Model with the following weighted average assumptions for fiscal years 1997, 1998, and 1999:

	October 31,		
	1997	1998	1999
Expected volatility	60%	109%	88%
Risk-free interest rate	5.8%	4.4%	5.5%
Expected life	3.0 yrs.	3.0 yrs.	2.8 yrs
Expected dividend yield	0%	0%	0%

The aggregate fair value and weighted average fair value of each option granted under the Stock Purchase Plan in fiscal 1999 was approximately \$6.5 million and \$11.20, respectively. The fair value of each option grant is estimated on the date of grant using the Black-Scholes Option Pricing Model with the following weighted average assumptions for fiscal year 1999:

October 31, 1999	
Expected volatility	88%
Risk-free interest rate	5.5%
Expected life	0.5 yrs.
Expected dividend yield	0%

(9) Income Taxes

Income (loss) before income taxes and the provision (benefit) for income taxes consists of the following (in thousands):

	October 31,		
	1997	1998	1999
Income (loss) before income taxes	<u>\$188,056</u>	<u>\$81,900</u>	<u>\$(5,991)</u>
Provision (benefit) for income taxes:			
Current:			
Federal	67,529	36,865	5,175
State	7,373	4,444	235
Foreign	<u>98</u>	<u>40</u>	<u>75</u>
Total current	<u>75,000</u>	<u>41,349</u>	<u>5,485</u>
Deferred:			
Federal	(2,015)	(4,496)	(7,477)
State	(497)	(653)	(75)
Foreign	<u>—</u>	<u>—</u>	<u>—</u>
Total deferred	<u>(2,512)</u>	<u>(5,149)</u>	<u>(7,552)</u>
Provision (benefit) for income taxes	<u>\$ 72,488</u>	<u>\$36,200</u>	<u>\$(2,067)</u>

The tax provision reconciles to the amount computed by multiplying income before income taxes by the U.S. federal statutory rate of 35% as follows:

	October 31,		
	1997	1998	1999
Provision at statutory rate	35.0%	35.0%	35.0%
Non-deductible purchased research and development	—	4.3	—
State taxes, net of federal benefit	2.6	4.3	(2.6)
Research and development credit	—	(4.0)	48.9
Foreign sales corporation benefit	—	(1.6)	28.7
Non-deductible merger costs and other	<u>0.9</u>	<u>6.2</u>	<u>(75.5)</u>
	<u>38.5%</u>	<u>44.2%</u>	<u>34.5%</u>

The significant components of deferred tax assets and liabilities were as follows (in thousands):

	October 31,	
	1998	1999
Deferred tax assets:		
Reserves and accrued liabilities	\$14,611	\$14,931
Other	690	637
Net operating loss and credit carry forward	<u>2,682</u>	<u>11,244</u>
Gross deferred tax assets	17,983	26,812
Valuation allowance	<u>(1,562)</u>	<u>(1,427)</u>
Net current deferred tax asset	<u>\$16,421</u>	<u>\$25,385</u>
Deferred tax liabilities:		
Equipment leases	\$ 7,978	\$ 8,738
Services	21,594	23,916
Depreciation and other	<u>4,553</u>	<u>4,299</u>
Deferred long term tax liabilities	<u>\$34,125</u>	<u>\$36,953</u>

As of October 31, 1998, the Company assumed net operating loss carryforwards through its acquisitions of Lightera and Omnia. As of October 31, 1999, the Company has \$22.5 million of net operating loss carryforwards which begin to expire in fiscal 2016.

The income tax provisions do not reflect the tax savings resulting from deductions associated with the Company's stock option plans or the exercise of certain stock warrants. Tax benefits of approximately \$22.6 million and \$3.6 million in fiscal 1998, and \$11.0 million and \$0.7 million in fiscal 1999 from exercises of stock options and certain stock warrants were credited directly to additional paid-in-capital and to long-term deferred income taxes, respectively.

The IRS is currently examining the Company's federal income tax returns for fiscal 1997 and fiscal 1998. Management does not expect the outcome of these examinations to have a material adverse affect on the Company's consolidated financial position, results of operations or cash flows.

(10) Employee Benefit Plans

Employee 401(k) Plan

In January 1995, the Company adopted a 401(k) defined contribution profit sharing plan. The plan covers all full-time employees who are at least 21 years of age, have completed 3 months of service and are not covered by a collective bargaining agreement where retirement benefits are subject to good faith bargaining. Participants may contribute up to 15% of pre-tax compensation, subject to certain limitations. The Company may make discretionary annual profit sharing contributions of up to the lesser of \$30,000 or 25% of each participant's compensation. In fiscal 1997 the Company revised the plan to include an employer matching contribution equal to 100% of the first 3% of participating employee contributions, with a 5-year vesting plan applicable to the Company's contribution. The Company has made no profit sharing contributions to date. During fiscal 1997, 1998 and 1999 the Company made matching contributions of approximately \$0.3 million, \$1.1 million and \$1.7 million, respectively.

(11) Commitments and Contingencies

Operating Lease Commitments

The Company has certain minimum obligations under non-cancelable operating leases expiring on various dates through 2006 for equipment and facilities. Future annual minimum rental commitments under non-cancelable operating leases at October 31, 1999 are as follows (in thousands):

	Fiscal year ending October 31,
2000	\$11,187
2001	10,919
2002	9,350
2003	7,666
2004	7,538
Thereafter	<u>29,932</u>
	<u>\$76,592</u>

Rental expense for fiscal 1997, 1998 and 1999 was approximately \$2,699,000, \$6,104,000, and \$9,467,000, respectively.

Litigation

A class action complaint was filed on August 26, 1998 in U.S. District Court for the District of Maryland entitled *Witkin et al v. CIENA Corporation et al* (Case No. Y-98-2946). Several other complaints, substantially similar in content were consolidated by court order on November 30, 1998. An amended, consolidated complaint was filed on February 16, 1999. On July 19, 1999 the United States District Court dismissed the suit with leave to amend before any discovery had been taken. On August 20, 1999, plaintiffs filed a second amended class action complaint alleging that CIENA and certain officers and directors violated certain provisions of the federal securities laws, including Section 10(b) and Rule 10b-5 under the Securities Exchange Act of 1934, by making false statements, failing to disclose material information and taking other actions intending to artificially inflate and maintain the market price of CIENA's common stock during the Class Period of May 21, 1998 to September 14, 1998, inclusive. The plaintiffs intend to seek certification of the suit as a class action on behalf of all persons who purchased shares of CIENA's common stock during the Class Period and the awarding of compensatory damages in an amount to have been determined at trial together with attorneys' fees. CIENA has filed, and the parties have fully briefed, a motion to dismiss the second amended complaint. CIENA believes the suit is without merit and CIENA intends to continue to defend the case vigorously.

Pirelli Litigation

On June 1, 1998 the Company resolved the long-standing litigation with Pirelli S.p.A. The terms of the settlement involve dismissal of Pirelli's three lawsuits against CIENA previously pending in Delaware, dismissal of CIENA's legal proceedings against Pirelli in the United States International Trade Commission, a worldwide, non-exclusive cross-license to each party's patent portfolios, a five-year moratorium on future litigation between the parties. As a result of the settlement, CIENA recorded a charge for the fiscal year ended October 31, 1998 of \$30.6 million relating to the Pirelli settlement and associated legal fees.

(12) Foreign Sales

The Company has sales and marketing operations outside the United States in Canada, the United Kingdom, Belgium, France, Germany, Japan, Mexico and Brazil. The Company has distributor or marketing representative arrangements covering Italy, the Republic of Korea, Japan, Venezuela, Columbia and Chile. Included in revenues are export sales of approximately \$11.7 million, \$117.1 million, and \$213.6 million in fiscal years 1997, 1998 and 1999, respectively.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

Part III

ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

Information relating to the directors and executive officers of the Company is set forth in Part I of this report under the caption Item 1. Business—"Directors, and Executive Officers" and is incorporated by reference herein.

Section 16(a) Beneficial Ownership Reporting Compliance

Michael A. Champa and Charles Chi each filed a late Form 3 reporting their initial statement of beneficial ownership of the Company's stock. Stephen Bradley filed a late Form 4 reporting a single transaction, Charles Chi filed two late Form 4's reporting six transactions, and Harvey Cash filed one late Form 4 reporting two transactions. Billy Oliver filed three late Form 4's totaling 5 transactions. Clifford Higginson filed one late Form 5 reporting two transactions.

ITEM 11. EXECUTIVE COMPENSATION

The information is incorporated herein by reference to the Company's definitive 2000 Proxy Statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The information is incorporated herein by reference to the Company's definitive 2000 Proxy Statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

The information is incorporated herein by reference to the Company's definitive 2000 Proxy Statement.

ITEM 14. EXHIBITS, FINANCIAL STATEMENT SCHEDULES AND REPORTS ON FORM 8-K

(a) The following documents are filed as a part of this Form:

1. Financial Statement Schedules:

All schedules are omitted because they are not applicable or the required information is shown in the consolidated financial statements or notes thereto.

2. Exhibits: See Index to Exhibits on page 56. The Exhibits listed in the accompanying Index to Exhibits are filed or incorporated by reference as part of this report.

(b) Reports on Form 8-K

No reports filed on Form 8-K were filed during the fourth quarter fiscal 1999.

Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Linthicum, County of Anne Arundel, State of Maryland, on the 10th day of December 1999.

CIENA CORPORATION
By: /s/ Patrick H. Nettles
Patrick H. Nettles
President, Chief Executive Officer
and Director

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons in the capacities and on the date indicated.

<u>Signatures</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Patrick H. Nettles</u> Patrick H. Nettles (Principal Executive Officer)	President, Chief Executive Officer and Director	December 10, 1999
<u>/s/ Joseph R. Chinnici</u> Joseph R. Chinnici (Principal Financial Officer)	Sr. Vice President, Finance and Chief Financial Officer	December 10, 1999
<u>/s/ Andrew C. Petrik</u> Andrew C. Petrik (Principal Accounting Officer)	Vice President, Controller and Treasurer	December 10, 1999
<u>/s/ Harvey B. Cash</u> Harvey B. Cash	Director	December 10, 1999
<u>/s/ John Dillon</u> John Dillon	Director	December 10, 1999
<u>/s/ Billy B. Oliver</u> Billy B. Oliver	Director	December 10, 1999
<u>/s/ Michael J. Zak</u> Michael J. Zak	Director	December 10, 1999
<u>/s/ Stephen P. Bradley</u> Stephen P. Bradley	Director	December 10, 1999

INDEX TO EXHIBITS

Exhibit Number	Description
3.1*	Certificate of Amendment to Third Restated Certificate of Incorporation
3.2*	Third Restated Certificate of Incorporation
3.3*	Amended and Restated Bylaws
4.1*	Specimen Stock Certificate
4.2***	Rights Agreement dated December 29, 1997
4.3****	Amendment to Rights Agreement
10.1*	Form of Indemnification Agreement for Directors and Officers
10.2*	Amended and Restated 1994 Stock Option Plan
10.3*	Form of Employee Stock Option Agreements
10.4*	1996 Outside Directors Stock Option Plan
10.5*	Forms of 1996 Outside Directors Stock Option Agreement
10.7*	Lease Agreement dated October 5, 1995 between the Company and CS Corridor-32 Limited Partnership
10.6*	Series C Preferred Stock Purchase Agreement dated December 20, 1995
10.8†*	Purchase Agreement Between Sprint/United Management Company and the Company dated December 14, 1995
10.9†*	Basic Purchase Agreement between WorldCom Network Services, Inc. and the Company dated September 19, 1996
10.10*	Settlement Agreement and Mutual Release, between the Company and William K. Woodruff & Company, dated August 26, 1996
10.13*	Employment Agreement dated April 9, 1994 between the Company and Patrick Nettles
10.14*	Lease Agreement dated November 1, 1996 by and between the Company and Aetna Life Insurance Company
10.15*	Revolving Note and Business Loan Agreement dated November 25, 1996 between the Company and Mercantile-Safe Deposit & Trust Company
10.16†*	First Addendum to Procurement Agreement between the Registrant and Sprint/United Management Company dated December 19, 1996
10.17*****	Third Addendum to Procurement Agreement between the Registrant and Sprint/United Management Company
10.18*****	Form of Transfer of Control/Severance Agreement
10.19*	Lightera 1998 Stock Option Plan and Form of Stock Option Agreement
10.20**	Omnia Communications, Inc. 1997 stock plan and form of agreements
10.21	Employment Agreement dated August 18, 1999 between the Company and Gary B. Smith (filed herewith)
10.22	1999 Non-Officer Stock Option Plan and Form of Stock Option Agreement (filed herewith)

Exhibit

Exhibit Number	Description
10.23	Lease Agreement dated June 1, 1999 between the Company and Ridgeview Court Associates, L.L.C. (filed herewith)
21**	Subsidiaries of registrant
23.1	Consent of Independent Accountants (filed herewith)
27.1	Financial Data Schedule
*	<i>Incorporated by reference from the Company's Registration Statement on Form S-1 (333-17729).</i>
**	<i>Incorporated by reference from the Company's Registration Statement on Form S-1 (333-28525).</i>
***	<i>Incorporated by reference from the Company's Form 8-K dated December 29, 1997.</i>
****	<i>Incorporated by reference from the Company's Form 8-K dated October 14, 1998.</i>
*****	<i>Incorporated by reference from the Company's Form 10-K dated December 10, 1998.</i>
†	<i>Incorporated by reference from the Company's Form 10-Q dated May 21, 1999.</i>
††	<i>Incorporated by reference from the Company's Form 10-Q dated August 19, 1999.</i>
‡	<i>Confidential treatment has been granted by the Securities and Exchange Commission with respect to certain portions of these exhibits.</i>

(Listing current as of January 17, 2000)

EXECUTIVE OFFICERS

Patrick H. Nettles, Ph.D.

President, Transport Division,
Chief Executive Officer and Director

Stephen B. Alexander

Vice President, Chief Technology Officer

Steve W. Chaddick

Senior Vice President, Systems and Technology

Michael A. Champa

Senior Vice President, Corporate Development

Joseph R. Chinnici

Senior Vice President, Finance
and Chief Financial Officer

Mark Cummings

Senior Vice President, Operations

Jesús León

Senior Vice President, Transport Products
and Technology

Michael O. McCarthy III

Vice President and General Counsel

Andrew C. Petrik

Vice President, Controller and Treasurer

Rebecca K. Seidman

Senior Vice President, Human Resource Development

Gary B. Smith

Chief Operating Officer

OUTSIDE BOARD MEMBERS

Stephen P. Bradley, Ph.D.

William Ziegler Professor of Business Administration
Harvard Business School

H. Berry Cash

General Partner, InterWest Partners

John R. Dillon

Retired-Cox Enterprises, Inc.

Billy B. Oliver

Independent Communications Consultant

Gerald H. Taylor

Independent Communications Consultant

Michael J. Zak

General Partner, The Charles River Partnerships