CIENA CORP
Form 10-K/A
May 15, 2002

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

FORM 10-K/A

(Mark One)

[X] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended October 31, 2001

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	**23-2725311**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1201 Winterson Road, Linthicum, MD	**21090-2205**
(Address of principal executive offices)	(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 required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. YES [X] 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 328,022,264 shares of Common Stock of the Registrant issued and outstanding as of October 31, 2001, excluding 5,294,320 shares of Common Stock held by affiliates of the Registrant was $4,986,146,734. This amount is based on the average bid and asked price of the Common Stock on the Nasdaq Stock Market of $15.45 per share on November 2, 2001.

DOCUMENTS INCORPORATED BY REFERENCE

Part III of the Form 10-K incorporates by reference certain portions of the Registrant s proxy statement for its 2002 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

The information in this Form 10-K 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 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.

Item 1. Business

GENERAL

Overview

CIENA is a leader in the intelligent optical networking equipment market. We offer a portfolio of products for communications service providers worldwide. Our customers include long-distance carriers, competitive and incumbent local exchange carriers, Internet service providers, wireless and wholesale carriers. CIENA offers optical transport and intelligent optical switching systems that enable service providers to provision, manage and deliver high-bandwidth services to their customers. We have 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 our customers with a competitive advantage. CIENA s intelligent optical networking products are designed to enable carriers to deliver any time, any size, any priority bandwidth to their customers.

The Company had revenues of $1,603.2 million for its fiscal year ended October 31, 2001, an increase of more than 86% when compared with fiscal 2000 revenues of $858.8 million. The Company recorded a net loss of $1,794.1 million in fiscal 2001 compared with net income of $81.4 million for fiscal 2000.

For the fiscal year ended October 31, 2001, the Company recorded revenue from sales of intelligent optical networking equipment to a total of 53 customers. This represents an increase of more than 65% over 2000 s customer base of 32. During fiscal 2001, Qwest and Sprint each represented more than 10% of CIENA s total revenues.

CIENA believes it holds the leading position in the global next-generation optical networking market with approximately 33% market share. Our belief is based upon estimates developed from a variety of sources, including vendors public statements regarding their optical networking businesses, CIENA internal estimates, and recent discussions with industry analysts, such as RHK, CIR, Dell Oro, Infonetics, KMI, and IDC.

Historically, the majority of CIENA s revenue has come from the sale of 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 long-distance optical transport equipment utilizing dense wavelength division multiplexing (DWDM) technology. The majority of CIENA s fiscal 2001 revenue was derived from sales of its long distance optical transport products. During the fiscal year 2001, CIENA also recognized meaningful revenue for the first time from the sale of its intelligent optical core switch, MultiWave CoreDirector. CIENA believes it holds an industry-leading market share in this important emerging product category. In addition, during 2001, CIENA also recognized revenue from the sale of its metropolitan optical transport product line, MultiWave Metro, and its next-generation multi-service access and switching platform MultiWave MetroDirector K2.

Our research and development efforts as well as potential future acquisition and partnership activities are targeted at capitalizing on our installed base of carrier customers and leveraging our position as a leader in the rapidly growing optical networking market.

INDUSTRY BACKGROUND

The world s tele- and data-communications infrastructure is formed by fiber optic networks owned and operated by service providers. In recent years, the combination of several factors, including global deregulation which fueled competition among service providers and increased bandwidth demand resulting from the proliferation of the Internet and the emergence of electronic commerce, gave rise to the increased deployment of optical networking equipment.

Deregulation in the United States telecom industry and privatization in the international telecom industry during the 1990 s began a transition from an industry characterized by a small number of heavily regulated large service providers to one in which numerous insurgent competitors began to emerge. Rapid traffic growth and readily available capital further fueled the growth in the number of service providers as emerging carriers built networks and fought to take market share from the incumbents. This rush of capital and new competitors into the market left many service providers with a situation in which capital and operating expenses grew faster than revenues. In addition, many equipment vendors offered substantial vendor financing to service providers as a means to encourage sales, thereby creating a temporary, and ultimately unsustainable demand for networking equipment.

Toward the end of calendar 2000 and into calendar 2001, capital markets tightened, leading to what appears to be a new period of consolidation among service providers. As access to capital lessened, many service providers curtailed further network build-outs and dramatically reduced their overall capital spending. In addition, the industry saw the emergence and general availability of next generation optical networking equipment that enabled carriers to spend less and do more. This new equipment offered carriers the ability to grow their networks more efficiently while lowering both initial capital expenditures and ongoing operational expenses. The combined effect of these developments was a sharp decline in the demand for legacy telecom equipment and a general overall slowdown in carriers equipment purchases. As a result, many equipment vendors, who were now experiencing financial challenges of their own because of the slowdown in demand, stepped away from their previous practice of providing vendor financing. This only exacerbated the capital crunch and caused further capital spending reductions by carriers. In addition, several carriers found that they had built networks in anticipation of demand that failed to materialize and now faced an over capacity situation. Some carriers, with no access to additional capital and inadequate revenue, failed.

During this time service providers looked to new products and technologies, in particular optical networking equipment, to help them more efficiently scale their networks to handle the increased traffic load while also bringing their spending and expenses in line with their revenue growth.

CIENA S SOLUTIONS

CIENA s intelligent optical networking equipment was designed to enable service providers to transition from inefficient, legacy, voice-centric networks to more efficient data-optimized, intelligent optical networks. CIENA s systems address the network scalability and capital spending challenges and the escalating operational costs faced by service providers.

CIENA leverages its expertise in optics, software, systems and Application Specific Integrated Circuits (ASICs), to develop innovative products designed to lower the cost of constructing and operating communications networks.

CIENA s equipment can replace multiple legacy network elements with fewer, more intelligent network elements, thereby simplifying the network and lowering carriers initial capital costs and ongoing operations expenses.

With the bandwidth flexibility and availability enabled by CIENA s optical transport equipment utilizing DWDM technology, service providers are able to ramp their network bandwidth with demand, adding bandwidth when and where it is needed and only paying for capacity as it is added and turned up.

CIENA s equipment is designed to lower network operating costs by enabling carriers to manage network traffic and network bandwidth more efficiently.

CIENA s equipment also is designed to enable carriers to shorten the time it takes to provision services, in

some cases from months to nearly real-time, thereby accelerating revenue generation.

In addition to capital and operational cost savings, CIENA s equipment and network management software is designed to enable carriers to offer new, revenue-generating and service-differentiating optical services.

Our optical networking product portfolio is targeted at the critical areas of service provider networks: intelligent optical switching, long-distance optical transport, short-distance optical transport and network management.

Intelligent Optical Core Switching. Our family of intelligent optical core switches, MultiWave CoreDirector, and MultiWave CoreDirector CI, enable carriers to manage network bandwidth more efficiently. CoreDirector and CoreDirector CI help carriers solve both the challenges of network scalability and escalating operating costs by incorporating the functionality of multiple network elements into a single network element with previously unavailable switching and bandwidth management capabilities.

Multi Service Access and Switching. MultiWave MetroDirector K2 is CIENA s next-generation multi-service access and switching platform designed for service providers seeking increased availability of usable, cost-effective bandwidth. MultiWave MetroDirector K2 has been designed to easily integrate into existing network environments and deliver superior levels of price/performance, bandwidth optimization, reliability, service flexibility, provisioning capabilities, and support for circuit-switched and data-centric traffic. The MultiWave MetroDirector K2 platform has an innovative architecture that helps service providers alleviate traffic gridlock in metropolitan networks, while providing the opportunity for increased revenues and improved performance from their existing network.

Optical Transport. CIENA s long-distance optical transport products, MultiWave CoreStream, MultiWave Sentry, MultiWave 1600, and our short distance products, MultiWave Metro, MultiWave Metro One and MultiWave Firefly, utilize DWDM technology which enables carriers to cost effectively add critical network bandwidth when and where they need it. As a result, service providers are better able to scale their networks to meet demand.

Network Management. ON-Center, CIENA s fully integrated family of software-based tools for comprehensive element, network and service layer management, is designed to enable accelerated deployment of new, differentiating optical services. ON-Center is designed to reduce network operating and management costs.

CIENA calls the network architecture created by these products LightWorks. The components of CIENA s LightWorks architecture can be sold together as a complete network solution or separately as best-of-breed solutions. CIENA s LightWorks architecture is designed to dramatically simplify a carrier s network by reducing the number of network elements. We believe this network simplification will lead to lower capital equipment cost and lower operating cost.

STRATEGY

CIENA s strategy is to maintain and build upon its market leadership in the deployment of intelligent optical networking systems and to leverage our technologies in order to provide solutions for both voice and data communications-based network architectures. We believe that the technological, operational and cost benefits of our optical networking solutions create competitive advantages for service providers worldwide. We believe our solutions will become increasingly important as these service providers are being pressed by their customers to deliver services to address the dramatic growth in Internet and other data communications traffic and at the same time need to find ways to reduce operating and capital expenses while ultimately realizing and improving profits. CIENA s strategy includes the following:

Expand Our Base of Customers Using Our Optical Networking Solutions. We believe that achieving early widespread operational deployment of our systems in a particular carrier s network will provide CIENA significant competitive advantages with respect to additional optical networking deployments and will enhance our marketing to other carriers as a field-proven supplier. While continuing to aggressively serve our existing customers, we intend to actively pursue additional optical networking deployment opportunities among carriers in domestic and foreign long distance, interoffice and local exchange markets.

Target Incumbent Carriers. The nature of our customer base requires a focused sales effort on a customer-by-customer basis. We plan to shift the focus of our sales and marketing efforts towards incumbent carriers.

Sustain Our Investment in Research and Development. We believe our future success will depend heavily on our ability to offer products that excel in meeting the needs of our customers products that will allow them to reduce their capital expenditures and operating costs and to address the obstacles they will confront as they build out, grow and operate next generation optical networks. In order to meet this challenge, we believe we must make significant and sustained investments in enhancing our existing products and developing new ones. We must also continue to monitor developments in optical networking technology and, where appropriate, make strategic investments or acquisitions designed to help us maintain our technological leadership. We will take advantage of our strong balance sheet to continue to make investments in these areas even during periods in which our revenues are reduced by temporary declines in demand.

Continue to Emphasize Technical Support and Customer Service. CIENA markets technically advanced systems to sophisticated customers. The nature of CIENA s systems and market require a high level of technical support and customer service. We believe we have a good reputation for our technical support and customer service and we intend to emphasize our global service, and support capabilities as differentiating factors in our efforts to maintain and enhance our market position. CIENA offers complete engineering, furnishing and installation services as well as full-time customer support from strategic locations worldwide.

Maintain World Class Manufacturing Capability. CIENA s optical networking systems play a critical role in our customers networks. Quality assurance and manufacturing excellence are necessary for CIENA to achieve success. CIENA believes it has developed a world class optical manufacturing and system test capability and this capability provides CIENA with a competitive advantage. In addition, CIENA expects to utilize this expertise to leverage our manufacturing capability with contract manufacturers.

Leverage the Company s High Bandwidth Technologies and Know-How. We believe there will be further opportunities for the application of next generation solutions in service provider networks. We believe, for instance, that the bandwidth and capacity management enabled by next generation equipment at the core of service provider networks will result in the need for more efficient traffic handling and management toward the edge of the network. CIENA expects to leverage the core competencies it has developed in the design, development and manufacturing of its optical transport and intelligent optical switching product lines by pursuing internal product development efforts, forming strategic alliances and making acquisitions to address these expected opportunities, CIENA intends to move aggressively to maintain leadership in the design and development of intelligent optical networking equipment and software that will both respond to customer needs and help customers move toward newer, higher capacity, more cost-efficient network designs for the future.

Pursue the Opportunity for Solution Sales. As one of the few equipment vendors with a complete next generation product set, CIENA is in a position to pursue a solution sale approach with carriers. CIENA is developing the capability to offer carriers a choice of choosing either an open architecture approach to building networks one that potentially combines equipment from multiple vendors, or an integrated solution from CIENA one that utilizes only CIENA equipment. With an integrated CIENA network, service providers will be able to take advantage of significant capital cost savings through the application of integrated optics across CIENA s product lines. In addition, an integrated CIENA network will offer customers significant network management and service provisioning benefits that have the potential to lower operations costs. CIENA believes that during challenging economic times, service providers will look to consolidate the number of vendors from which they purchase. CIENA believes that its ability to offer carriers an integrated solution that delivers significant capital and operational cost savings over other vendors solutions will be a strategic advantage.

PRODUCTS

Our optical networking product portfolio is targeted at the critical areas of service provider networks: intelligent optical switching, long-distance optical transport, short-distance optical transport and network management. CIENA s open architecture design means its products interoperate with most carriers existing fiber optic transmission systems, and network elements, including connecting directly to either traditional voice equipment, or data-centric equipment.

Intelligent Optical Core Switching

Product	Features
MultiWave CoreDirector	Provides traffic management and switching capability beyond current network solutions of up to 256 ports of OC-48 or up to 640 gigabits per second in a single 7 foot bay. Designed for in-service growth: scalable to 1,536 and 3,072 port configurations in the future. Designed to reduce capital equipment costs by displacing multiple legacy network devices.

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	Designed to simplify service provisioning, in some cases reducing provisioning times from months to real-time. Offers the ability to switch at the wavelength level, OC-192, OC-48 or at levels down to an STS-1. May enable new revenue opportunities for service providers through new optical layer capabilities and services. Development to include benefits of both optical optical (OO) and optical-electrical-optical (OEO) switching functionality integrated into one intelligent system.
CoreDirector CI	Delivers CoreDirector functionality in a smaller package and at a lower entry cost that is ideal for lower capacity networks or smaller switching sites. Provides up to 64 ports of OC-48 or up to 160 gigabits per second in half the space occupied by a full size CoreDirector.

Next-Generation Multi-Service Access Switching

Product	Features
MultiWave MetroDirector K2	Provides scalability from 1.5 megabits per second to 10 gigabits per second with total switching capacity of 480 gigabits per second. Extends the intelligence of CoreDirector software to the edge of the network and enables end-to-end point-and-click provisioning. Designed to reduce capital equipment costs by displacing multiple legacy network devices with a single network element. Supports multiple services including voice and native data over SONET, and will enable IP, ATM, 10/100 Ethernet, Gigabit Ethernet and VLAN services.

Long-Distance Optical Transport

Product	Features
MultiWave CoreStream	CIENA s fourth generation carrier-class intelligent optical transport product. First commercially deployed 96-channel DWDM system with commercial shipments beginning in fiscal Q3 1999. Utilizes DWDM technology to deliver up to 96 optical channels at 2.5 gigabits per second (240 gigabits) or up to 48 channels at 10 gigabits per second (480 gigabits). Designed for in-service growth; scalable to handle 3.2 terabits of traffic in the future. With ultra-long haul features ultimately capable of transporting signals up to 5,000 kilometers without electrical regeneration.
MultiWave Sentry 4000	CIENA s third generation carrier-class intelligent optical transport product. First commercially deployed 40-channel system with commercial shipments beginning in fiscal Q2 1998. Utilizes DWDM technology to deliver up to 40 channels at 2.5 gigabits per second (100 gigabits).
MultiWave Sentry 1600	CIENA s second generation carrier-class intelligent optical transport product. First commercially deployed 16-channel system with commercial shipments beginning in the second half of fiscal 1996. Utilizes DWDM technology to deliver up to 16 channels at 2.5 gigabits

	per second (40 gigabits). Incorporated performance monitoring capabilities, not previously available in DWDM equipment.
MultiWave 1600	CIENA s first generation carrier-class intelligent optical transport product. First commercially deployed 16-channel system with commercial shipments beginning in the first half of fiscal 1996. Utilizes DWDM technology to deliver 16 channels at 2.5 gigabits. per second (40 gigabits).

Short-Distance Optical Transport

Product	Features
MultiWave Metro	A carrier-class optical transport product designed specifically to address the performance and economic requirements of metropolitan markets. Provides up to 24 duplex channels over a single fiber pair, enabling a service provider to transport up to 60 gigabits per second. Supports multiple network topologies, such as rings, hubs, and stars. Allows service providers to carry non-SONET/SDH, data formats such as ESCON, Fibre Channel, Gigabit Ethernet and rate-adaptive Gigabit Ethernet, FICON, and digitized video.
MultiWave Metro One	Offers the same carrier-class reliability and functionality as MultiWave Metro, but for a single channel in a reduced size and reduced power consumption package.
MultiWave Firefly	MultiWave Firefly was developed specifically for use by carriers in short-distance, point-to-point applications. This system multiplexes up to 24 channels at 2.5 gigabits per second, over a single fiber pair, allowing a carrier to transport up to 60 gigabits per second.

Network Management

Product	Features
LightWorks ON-Center	Fully integrated family of software-based tools for comprehensive element, network and service layer management across service provider networks. Designed to enable accelerated deployment of new, differentiating optical services, reduced network operating and management costs, and innovative customer service solutions. Designed so that service providers can select any or all components necessary to meet their particular network s management needs. Elements include: An Optical Service Layer Management System for cross-vendor end-to-end service management; an Optical Network Management System for integrated management across all of CIENA s intelligent optical transport, switching and access systems, and; a Modeling and Planning System for network design.

PRODUCT DEVELOPMENT

We believe there will be further opportunities for the application of next generation solutions in service provider networks. We believe, for instance, that the bandwidth and capacity management enabled by next generation equipment at the core of service provider networks will result in the need for more efficient traffic handling and management toward the edge of the network. CIENA expects to leverage the core competencies it has developed in the design, development and manufacturing of its optical transport and intelligent optical switching product lines by pursuing internal product development efforts, forming strategic alliances and making acquisitions to address these expected opportunities. We also believe there may be opportunities for us to develop products and technologies complementary to existing optical networking technologies which may broaden our ability to provide, facilitate and/or interconnect with high bandwidth solutions offered throughout fiber optic networks. CIENA intends to focus its product development efforts and possibly pursue strategic alliances or acquisitions to address expected opportunities in these areas.

MARKETING AND DISTRIBUTION

CIENA s intelligent optical networking systems require substantial investment, and our 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 affect 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.

CIENA has organized worldwide sales activities by geographical regions: North America; Latin America; Europe, Middle East, and Africa; and Asia Pacific. Sales teams, comprised of an account manager, systems engineers and technical support and training personnel, are assigned responsibility for each customer account. In some countries CIENA makes use of distributors, independent marketing representatives or independent sales consultants. CIENA has established offices in Belgium, Brazil, Canada, China, France, Germany, Japan, Korea, Mexico, Spain, Sweden, United Kingdom and United States.

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

MANUFACTURING

CIENA 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 used in its optical transport product lines. CIENA relies on a small number of contract manufacturers to manufacture its MultiWave CoreDirector and MultiWave MetroDirector K2 product lines, with final system test and assembly performed by CIENA. We also rely on third party manufacturers to manufacture the majority of the components for our products and continue to evaluate whether additional portions of our manufacturing can be done on a reliable and cost-effective basis by third party manufacturers.

CIENA believes that portions of its manufacturing technologies and processes represent a competitive advantage. We have invested significantly in automated production capabilities, production process control systems, and manufacturing process improvements. Certain critical manufacturing functions require a highly skilled work force, and CIENA invests significant resources in training and in maintaining the quality of its manufacturing personnel.

CIENA s optical transport product lines utilize hundreds of individual parts, many of which are customized for us. 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. CIENA works closely with its strategic component suppliers to pursue new component technologies that could either reduce cost or enhance the performance of our products.

COMPETITION

Competition in the telecommunications equipment industry is intense, particularly in that portion of the industry focused on delivering higher bandwidth and more cost effective services throughout the telecommunications network. CIENA believes that its position as a leading supplier of open architecture optical networking equipment gives it a competitive advantage and expects to leverage that advantage by gaining general market acceptance of its core and access switching products. However, competition has been and will continue to be very intense. See Item 7. Management s Discussion and Analysis of Financial Conditions and Results of Operations.

CIENA s competition 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 better established relationships with the incumbent carriers than CIENA. Included among CIENA s competitors are Lucent Technologies Inc., (Lucent), Northern Telecom Inc. (Nortel), Alcatel Alsthom Group (Alcatel), NEC Corporation (NEC), Cisco Systems, Inc. (Cisco), Siemens AG (Siemens), Fujitsu Group (Fujitsu), Hitachi Ltd. (Hitachi) and Telefon AB LM Ericsson (Ericsson). CIENA also believes that several smaller companies, such as ONI Systems Corp. (ONI), Sycamore Networks, Inc. (Sycamore), Corvis Corporation (Corvis), and Tellium, Inc. (Tellium), will be able to win som share of the optical networking market. CIENA believes each of its major competitors is engaged in the development, introduction or deployment of products directly competitive with CIENA s optical transport, core switching and next-generation multi-service access and switching platforms.

In addition to optical networking equipment suppliers, traditional TDM-based transmission, SONET multiplexing, and digital cross-connect equipment suppliers compete with CIENA in the market for transmission capacity and switching capabilities. Lucent, Alcatel, Tellabs, Inc. (Tellabs), Nortel, Fujitsu, Hitachi and NEC are already providers of a full complement of such transmission and switching equipment. These and other competitors have introduced or are expected to introduce equipment that will offer 10 Gbps transmission and/or switching capability.

Patents and Other Intellectual Property Rights

CIENA has licensed intellectual property from third parties, including 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. CIENA also licenses from third parties certain software components for its network management products. These licenses are perpetual but will generally terminate after an uncured breach of the agreement by CIENA. CIENA also relies on contractual rights, trade secrets and copyrights to establish and protect its proprietary rights in its products.

CIENA enforces its intellectual property rights vigorously against infringement or misappropriation. CIENA 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 CIENA. These agreements acknowledge CIENA s exclusive ownership of all intellectual property developed by the individual during the course of his or her work with CIENA, and require that all proprietary information disclosed to the individual will remain confidential. CIENA s employees generally also sign agreements not to compete with CIENA for a period of twelve months following any termination of employment.

As of November 2001, CIENA had received 81 United States patents, and 213 pending U.S. patent applications. We also have a number of foreign patents and patent applications. Of the United States patents that have been issued to CIENA, the earliest any will expire is 2015. Pursuant to an agreement between CIENA and General Instrument Corporation dated March 10, 1997, CIENA 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.

EMPLOYEES

As of October 31, 2001, CIENA and its subsidiaries employed 3,778 persons, of whom 962 were primarily engaged in research and development activities, 1,624 in manufacturing, 275 in installation services, 578 in sales, marketing, customer support and related activities and 339 in administration. On November 12, 2001, CIENA announced a reduction in its manufacturing and manufacturing support workforce of approximately 10 percent or approximately 380 employees. None of CIENA s employees are currently represented by a labor union. CIENA 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 CIENA:

Name	Age	Position
Patrick H. Nettles, Ph.D. (1)	58	Executive Chairman of the Board of Directors
Gary B. Smith (1)	41	President, Chief Executive Officer and Director
Stephen B. Alexander	42	Senior Vice President, Chief Technology Officer
Steve W. Chaddick	50	Senior Vice President, Systems and Technology and Chief Strategy Officer
Joseph R. Chinnici	47	Senior Vice President, Finance and Chief Financial Officer
Michael O. McCarthy III	36	Senior Vice President, Worldwide Sales and Support
Russell B. Stevenson, Jr.	60	Senior Vice President, General Counsel and Secretary
Andrew C. Petrik	38	Vice President, Controller and Treasurer
Stephen P. Bradley, Ph.D. (1)(3)	60	Director
Harvey B. Cash (1)(2)	63	Director
John R. Dillon (1)(3)	60	Director
Lawton W. Fitt (1)(3)	48	Director
Judith M. O Brien (1)(2)	51	Director
Gerald H. Taylor (1)(2)	60	Director

(1) The Company s Directors hold staggered terms of office, expiring as follows: Ms. Fitt and Messrs Dillon and Nettles in 2004; Ms. O Brien and Messrs Cash and Smith in 2002; Messrs Bradley and Taylor in 2003

(2) Member of the Human Resources Committee

(3) Member of the Audit Committee

Patrick H. Nettles, Ph.D. has served as Executive Chairman of the Board of Directors since May 2001. From October 2000 until May 2001, Dr. Nettles served as CIENA s Chairman of the Board of Directors and Chief Executive Officer. From April 1994 until October 2000, Dr. Nettles served as President, Chief Executive Officer and Director of the Company. Dr. Nettles is a Trustee for the California Institute of Technology and a member of the advisory board to the President of Georgia Institute of Technology. Additionally, he serves on the board of trustees of the Center for Excellence in Education and was elected to the board of directors at Axcelis Technologies, Inc. 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 began serving as Chief Executive Officer of CIENA in May 2001, in addition to his existing responsibilities as President and Director, positions he has held since October 2000. Prior to his current role, his positions with the company include: Chief Operating Officer and Senior Vice President of Worldwide Sales. Mr. Smith joined CIENA in November 1997 as Vice President of International Sales. From 1995 through 1997, Mr. Smith served as Vice President of Sales and Marketing for Intelsat. Mr. Smith currently serves on the board of directors for Valaran Corporation. Mr. Smith received an M.B.A. from Ashridge Management College, U.K.

Stephen B. Alexander has served as Senior Vice President and Chief Technology Officer of CIENA since January 2000. He served as CIENA s Vice President and Chief Technology Officer from September 1998 to January 2000, and as Vice President, Transport Products from September 1996 to August 1998. Mr. Alexander has served as an Associate Editor for the Journal of Lightwave Technology and was a General Chair of the conference on Optical Fiber Communication (OFC) in 1997. Mr. Alexander received both his B.S. and M.S. degrees in electrical engineering from the Georgia Institute of Technology.

Steve W. Chaddick was appointed CIENA s Chief Strategy Officer in May 2001, in addition to his existing responsibilities as Senior Vice President, Systems and Technology, a role he has held since February 2000. Between July 1999 and February 2000, Mr. Chaddick served as President of CIENA s Core Switching Division. From August 1998 to July 1999, he served as the Company s Senior Vice President, Strategy and Corporate Development, and from CIENA s inception in 1994 until August 1998, Mr. Chaddick served as Vice President, Product Development, and Senior Vice President, Products and Technologies. Mr. Chaddick holds several patents in the area of WDM systems and techniques, and serves on the Georgia Tech Advisory Board, the Advisory board of the School of Electrical and Computer Engineering. Mr. Chaddick received both his B.S. and M.S. degrees in electrical engineering from the Georgia Institute of Technology and is a member of the Georgia Tech Academy of Distinguished Engineering Alumni.

Joseph R. Chinnici has served as CIENA s Senior Vice President, Finance and Chief Financial Officer since August 1997. From May 1995 to August 1997, Mr. Chinnici served as the Company s Vice President, Finance and Chief Financial Officer. Mr. Chinnici joined CIENA in September 1994 as its Controller. Mr. Chinnici serves on the board of directors for OTG Software and holds a B.S. degree in accounting from Villanova University and an M.B.A. from Southern Illinois University.

Michael O. McCarthy III has served as CIENA s Senior Vice President, Worldwide Sales and Support since May 2001. Mr. McCarthy served as the Company s Vice President and General Counsel from July 1999 to May 2001 and previously served as the Assistant General Counsel from September 1997 to July 1999. From June 1996 to September 1997 Mr. McCarthy was a Corporate Counsel in MCI Communications Corporation s mergers and acquisitions group. 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.

Russell B. Stevenson, Jr. has served as Senior Vice President, General Counsel and Secretary since joining CIENA in August 2001. From March 2000 to August 2001, he was Executive Vice President, General Counsel and Secretary of ARBROS Communications, Inc., an integrated communications provider. From 1996 to 2000, Mr. Stevenson was Executive Vice President and General Counsel of Cyber Cash, Inc. Mr. Stevenson graduated with distinction from Cornell University and Cum Laude from Harvard Law School.

Andrew C. Petrik has served as Vice President, Controller and Treasurer of CIENA since August 1997. He served as Controller and Treasurer for the Company from December 1996 to August 1997. Mr. Petrik joined CIENA in 1996 as Controller. From 1989 to 1996, Mr. Petrik was employed by Microdyne Corporation where he was the Assistant Vice President of Marketing and Product Planning from 1994 to 1996. Mr. Petrik holds a B.S. degree in accounting from the University of Maryland and is a Certified Public Accountant.

Stephen P. Bradley, Ph.D. has served as a Director of the Company since 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. degree in electrical engineering from Yale University in 1963 and his M.S. degree and Ph.D. in operations research from the University of California, Berkeley, in 1965 and 1968 respectively.

Harvey B. Cash has served as 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 that he joined in 1985. Mr. Cash serves on the board of directors of the following public companies; i2 Technologies, Silicon Laboratories, MicroTune, Inc. and Liberté, Inc.. Mr. Cash received a B.S. degree in electrical engineering from Texas A&M University and an M.B.A. degree from Western Michigan University. Mr. Cash served on the board of directors of Benchmarq Microelectronics from 1990 to 1999, on the board of directors of Aurora Electronics, Inc. from 1991 to 1999 and on the Board of AMX Corporation from 1996 to 2001.

John R. Dillon has served as a Director of the Company since October 1999. Mr. Dillon serves on the board of directors of Airgate PCS. Mr. Dillon s experience includes a variety of positions at such companies as The Coca-Cola Company, Scientific Atlanta and Fuqua National. Mr. Dillon joined Cox Communication in 1981 as Vice President Finance, and Chief Financial Officer. He was instrumental in taking the Company 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. Mr. Dillon holds an M.B.A. degree from Harvard Business School and a B.E.E. 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 served on the Georgia Institute of Technology National Advisory Board.

Lawton W. Fitt became a Director of the Company in November 2000. Ms. Fitt was elected a partner at Goldman Sachs in 1994 and has been a managing director since 1996. She has been involved in investment banking and equity underwriting for high-technology companies, including numerous initial public offerings in the Internet, software and communications equipment sectors. Ms. Fitt is currently co-head of Goldman Sachs European High Technology Investment Banking Group. Ms. Fitt serves as a director on the boards of Wink Communications, Inc. and NewView Corporation. Ms. Fitt is a trustee of the Darden School Foundation. Ms. Fitt received an A.B. degree in European History from Brown University and her M.B.A degree from the Darden School of the University of Virginia.

Judith M. O Brien has served as a Director of the Company since July 2000. Since February 2001 Ms. O Brien has been a Managing Director at INCUBIC L.L.C. From 1984 until 2001, Ms. O Brien was a partner with Wilson Sonsini Goodrich & Rosati, where she specialized in corporate finance, mergers and acquisitions and general corporate matters. In July 1993, Ms. O Brien was named as one of the top 25 lawyers under 45 in California by the California Law Business, and in 1997 she was named one of the top five women attorneys in Northern California by the California Lawyer as well as one of the leading women securities lawyers by The Recorder. In February 2001, she was named one of the nation's top 100 venture investors in 2000. Ms. O Brien received her B.A. from Smith College and her law degree from UCLA, where she was a member of Order of the Coif.

Gerald H. Taylor has served as a Director of the Company since January 2000. Mr. Taylor serves as a Managing Member of mortonsgroup, LLC. and serves on the board of directors of Lafarge Corporation, INETO and Intelliden. Mr. Taylor brings 29 years of experience from MCI. During his employment with MCI, Mr. Taylor was integrally involved in establishing MCI as one of the world s largest telecommunications companies. In addition to his roles as Chief Executive Officer from November 1996 to October 1998, as President from July 1994 to November 1996, and as Chief Operating Officer from 1993 until 1996, Mr. Taylor held key roles in operations, sales and marketing. Since 1998 Mr. Taylor has worked as an independent consultant for the telecom industry. Mr. Taylor received a B.S. degree in physics from San Francisco State University.

COMPANY

CIENA Corporation was incorporated in Delaware in November 1992. We completed our initial public offering on February 7, 1997, a secondary offering on July 2, 1997, and a follow-on offering on February 9, 2001. CIENA s principal executive offices are located at 1201 Winterson Road, Linthicum, Maryland 21090. Our telephone number is (410) 865-8500.

PART II

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 . CIENA 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 1997, 1998, 1999 and 2000 comprised 52 weeks and fiscal 2001 comprised 53 weeks.

Balance Sheet Data:

	As of October 31, (in thousands)				
	1997	**1998**	**1999**	**2000**	**2001**
Cash and cash equivalents	$273,286	$250,714	$143,440	$ 143,187	$ 397,890
Working capital	338,078	391,305	427,471	639,675	1,936,707
Total assets	468,247	602,809	677,835	1,027,201	3,317,301
Long-term obligations, excluding current portion	1,900	3,029	4,881	4,882	869,865
Stockholders equity	$377,278	$501,036	$530,473	$ 809,835	$2,128,982

Statement of Operations Data:

	Year Ended October 31, (in thousands, except per share data)				
	1997	**1998**	**1999**	**2000**	**2001**
Revenue	$413,215	$508,087	$482,085	$858,750	$1,603,229
Cost of goods sold	166,472	256,014	299,769	477,393	904,549
Gross profit	246,743	252,073	182,316	381,357	698,680
Operating expenses:					
Research and development(exclusive of $0, $0, $0, $0 and $17,825 deferred stock compensation costs)	23,773	71,186	101,006	125,434	235,831
Selling and marketing (exclusive of $0, $0, $0, $0 and $8,336 deferred stock compensation costs)	22,627	47,343	61,603	90,922	146,949
General and administrative (exclusive of $40, $40, $40, $40 and $15,206 deferred stock compensation costs)	11,436	18,428	22,696	33,960	57,865
Settlement of accrued contract obligation				(8,538)	
Deferred stock compensation costs	40	40	40	40	41,367
Amortization of goodwill		2,341	3,197	3,197	177,786
Amortization of intangible assets		229	438	438	4,413
In-process research and development		9,503			45,900
Restructuring costs					15,439
Goodwill impairment					1,719,426
Pirelli litigation	7,500	30,579			
Merger related costs		2,548	13,021		
Provision for doubtful accounts	489	806	250	28,010	(6,579)