

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 October 28 , 2023
ended

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission file number 001-36250

Ciena Corp oration

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)
7035 Ridge Road , Hanover , MD
(Address of principal executive offices)

23-2725311
(I.R.S. Employer
Identification No.)
21076
(Zip Code)

Registrant's telephone number, including area code: **(410) 694-5700**

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.01 par value	CIEN	New York Stock Exchange

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

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

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

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☐ No ☒

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

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐
Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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

The aggregate market value of the registrant's Common Stock held by non-affiliates of the registrant was approximately \$ 6.8 billion based on the closing price of the Common Stock on the New York Stock Exchange on April 28, 2023.

The number of shares of registrant's Common Stock outstanding as of December 8, 2023 was 144,830,337 .

DOCUMENTS INCORPORATED BY REFERENCE

Part III of the Form 10-K incorporates by reference certain portions of the registrant's definitive proxy statement for its 2024 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.

CIENA CORPORATION
ANNUAL REPORT ON FORM 10-K
FOR FISCAL YEAR ENDED OCTOBER 28, 2023
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PART I

Cautionary Note Regarding Forward-Looking Statements

This annual report contains statements that discuss future events or expectations, projections of results of operations or financial condition, changes in the markets for our products and services, trends in our business, business prospects and strategies and other “forward-looking” information. In some cases, you can identify “forward-looking statements” by words like “may,” “will,” “would,” “can,” “should,” “could,” “expects,” “future,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “intends,” “potential,” “projects,” “targets,” or “continue” or the negative of those words and other comparable words. These statements may relate to, among other things, our competitive landscape; market conditions and growth opportunities; factors impacting our industry and markets, including macroeconomic conditions and global supply chain constraints; factors impacting the businesses of network operators, their network architectures and their adoption of next-generation network infrastructures; our strategy, including our research and development, supply chain and go-to-market initiatives and our efforts to increase the reach of our business into new or growing product, customer and geographic markets; our order volumes, backlog and seasonality in our business; expectations for our financial results, revenue, gross margin, operating expense and key operating measures in future periods; the adequacy of our sources of liquidity to satisfy our working capital needs, capital expenditures and other liquidity requirements; cybersecurity events; business initiatives including information technology (“IT”) and environmental, social and governance (“ESG”) initiatives; the impact of changes in tax law and our effective tax rates; and market risks associated with financial instruments and foreign currency exchange rates. These statements are subject to known and unknown risks, uncertainties and other factors, and actual events or results may differ materially from any future results, activity, performance, or achievements expressed or implied by these forward-looking statements, including due to factors such as those set forth below in “Risk Factors Summary.”

For a discussion of additional important factors that could cause actual results to vary materially from those anticipated in the forward-looking statements, see “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Risk Factors” in this annual report. We operate in a very competitive and dynamic environment and new risks and uncertainties emerge, are identified or become apparent from time to time and therefore may not be identified in this annual report. We cannot predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this annual report. You should be aware that the forward-looking statements contained in this annual report are based on our current views and assumptions. We undertake no obligation to revise or update any forward-looking statements made in this annual report to reflect events or circumstances after the date hereof or to reflect new information or the occurrence of unanticipated events, except as required by law. The forward-looking statements in this annual report are intended to be subject to protection afforded by the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995. Unless the context requires otherwise, references in this annual report to “Ciena,” the “Company,” “we,” “us” and “our” refer to Ciena Corporation.

Risk Factors Summary

Investing in our securities involves a high degree of risk. The following is a summary of the principal factors that make an investment in our securities speculative or risky, as more fully described below in the section titled “Risk Factors.” This summary should be read in conjunction with the “Risk Factors” section and should not be relied upon as an exhaustive summary of the material risks facing our business. In addition to this summary, you should consider the information set forth in the “Risk Factors” section and the other information contained in this annual report before investing in our securities.

Risks Related to Our Business and Industry

- Our backlog may not be an accurate indicator of the level and timing of our future revenues.
- Our revenue, gross margin and operating results can fluctuate significantly and unpredictably from quarter to quarter.
- Challenges relating to supply chain dynamics, including semiconductor components, could adversely impact our growth, gross margins and financial results.
- A small number of customers account for a significant portion of our revenue. The loss of one or more of these customers or a significant reduction in their spending could have a material adverse effect on our business and results of operations.
- We face intense competition that could hurt our sales and results of operations, and we expect the competitive landscape in which we operate or intend to operate to continue to broaden to include additional solutions providers.
- Investment of research and development resources in communications networking technologies for which there is not an adequate market demand, or failure to invest sufficiently or timely in technologies for which there is high market demand, would adversely affect our revenue and profitability.
- We have no guaranteed purchases and regularly must re-win business for existing customers.
- Network equipment sales often involve lengthy sales cycles and protracted contract negotiations that may require us to agree to commercial terms or conditions that negatively affect pricing, risk allocation, payment and the timing of revenue recognition.

- If we are unable to adapt our business to the consumption models for networking solutions adopted by our customers and to offer attractive solutions across these consumption models, our business, competitive position and results of operations could be adversely affected.
- Our go-to-market activities and the distribution of our WaveLogic™ coherent modem technology within the market for high-performance transceivers/modems could expose us to increased or new forms of competition, or adversely affect our existing systems business and results of operations.
- Accurately matching necessary inventory levels to customer demand within the current environment is challenging, and we may incur additional costs or be required to write off significant inventory that would adversely impact our results of operations.
- If the market for network software does not evolve in the way we anticipate or if customers do not adopt our Blue Planet® Automation Software and Services, we may not be able to monetize these software assets and realize a key part of our business strategy.
- Our exposure to the credit risks of our customers and resellers may make it difficult to collect receivables and could adversely affect our revenue and operating results.
- We may be required to write down the value of certain significant assets, which would adversely affect our operating results.
- Problems affecting the performance, interoperability, reliability or security of our products could damage our business reputation and negatively affect our results of operations.
- Strategic acquisitions and investments could disrupt our operations and may expose us to increased costs and unexpected liabilities.
- Emerging issues related to the development and use of artificial intelligence (AI) could give rise to legal or regulatory action, damage our reputation or otherwise materially harm our business.

Risks Relating to the Macroeconomic Environment and our Global Presence

- Our business and operating results could be adversely affected by unfavorable changes in macroeconomic and market conditions and reductions in the level of spending by customers in response to these conditions.
- The international scale of our sales and operations exposes us to additional risk and expense that could adversely affect our results of operations.
- Efforts to increase our sales and capture market share in targeted international markets may be unsuccessful.
- We may be adversely affected by fluctuations in currency exchange rates.

Risks Related to Our Operations and Reliance on Third Parties

- We may experience delays in the development and production of our products that may negatively affect our competitive position and business.
- We rely on third-party contract manufacturers, and our business and results of operations may be adversely affected by risks associated with their businesses, financial condition, and the geographies in which they operate.
- Our reliance on third-party component suppliers, including sole and limited source suppliers, exposes our business to additional risk, including risk relating to our suppliers' businesses and financial position and risks arising as a result of geopolitical events, and could limit our sales, increase our costs and harm our customer relationships.
- We rely on third-party resellers and distribution partners to sell our solutions, and on third-party service partners for installation, maintenance and support functions, and our failure to develop and manage these relationships effectively could adversely affect our business, results of operations, and relationships with our customers.
- We may be exposed to unanticipated risks and additional obligations in connection with our resale of complementary products or technology of other companies.
- Growth of our business is dependent on the proper functioning and scalability of our internal business processes and information systems. Adoption of new systems, modifications or interruptions of services may disrupt our business, processes and internal controls.
- Restructuring activities could disrupt our business and affect our results of operations.
- If we are unable to attract and retain qualified personnel, we may be unable to manage our business effectively.

Risks Related to Intellectual Property, Litigation, Regulation and Government Policy

- Our intellectual property rights may be difficult and costly to enforce.
- We may incur significant costs in response to claims by others that we infringe their intellectual property rights.
- Our products incorporate software and other technology under license from third parties, and our business would be adversely affected if this technology were no longer available to us on commercially reasonable terms.
- Data security breaches and cyber-attacks targeting our enterprise technology environment and assets could compromise our intellectual property, technology or other sensitive information, and cause significant damage to our business, reputation and operational capacity.
- We are a party to legal proceedings, investigations and other claims or disputes, which are costly to defend and, if determined adversely to us, could require us to pay fines or damages, undertake remedial measures, or prevent us from taking certain actions, any of which could adversely affect our business.

- Changes in trade policy, including the imposition of tariffs and other import measures, increased export control and investment restrictions, and efforts to withdraw from or materially modify international trade agreements, as well as other regulatory efforts impacting the import and sale of foreign equipment, may adversely affect our business, operations and financial condition.
- Changes in government regulations affecting the communications and technology industries and the businesses of our customers could harm our prospects and operating results.
- Government regulations related to the environment, climate change and social initiatives could adversely affect our business and operating results.
- Investor and other stakeholder scrutiny related to our environmental, social and governance practices, and our disclosed performance and aspirations for these practices, may increase costs and expose us to numerous risks.
- Changes in tax law or regulation, effective tax rates and other adverse outcomes with taxing authorities could adversely affect our results of operations.
- Failure to maintain effective internal controls over financial reporting could have a material adverse effect on our business, operating results and stock price.

Risks Related to Our Common Stock, Indebtedness and Investments

- Our stock price is volatile.
- Outstanding indebtedness under our senior secured credit facilities and senior unsecured notes may adversely affect our liquidity and results of operations and could limit our business.
- Significant volatility and uncertainty in the capital markets may limit our access to funding on favorable terms or at all.

Item 1. Business

Overview

We are a network platform, software, and services company, providing solutions that enable a wide range of network operators to deploy and manage next-generation networks that deliver services to businesses and consumers. We provide hardware, software and services that support the delivery of video, data and voice traffic over core, metro, aggregation and access communications networks. Our solutions are used globally by communications service providers, cable and multiservice operators, cloud providers, submarine network operators, governments, and enterprises across multiple industry verticals.

Our portfolio is designed to enable the Adaptive Network™, which is our vision for a network end state that leverages a programmable and scalable network infrastructure, driven by software control and automation capabilities, that is informed by network analytics and intelligence. By transforming network infrastructures into dynamic, programmable environments driven by automation and analytics, network operators can realize greater business agility, adapt dynamically to changing end-user service demands, and rapidly introduce new revenue-generating services. They can also gain valuable, real-time network insights, allowing them to optimize network performance and maximize the return on their network infrastructure investment.

Our solutions include Networking Platforms, including our Optical Networking portfolio and our Routing and Switching portfolio, which can be applied from the network core to end-user access points, and which allow network operators to scale capacity, increase transmission speeds, allocate traffic efficiently and adapt dynamically to changing end-user service demands. Our Optical Networking portfolio, which we previously referred to as our Converged Packet Optical portfolio, includes products that support long haul and regional networks, submarine and data center interconnect networks, and metro and edge networks. Our Routing and Switching portfolio includes products and solutions that enable efficient internet protocol ("IP") transport in next-generation metro core, aggregation, and access networks, including in enterprise edge and broadband access applications.

To complement our Networking Platforms, we offer Platform Software, which includes our Manage, Control and Plan ("MCP") applications that deliver advanced multi-layer domain control and operations. Through our Blue Planet® Software, we also enable complete service lifecycle management automation with productized operational support systems ("OSS"), which include inventory, orchestration and assurance solutions that help our customers to achieve closed loop automation across multi-vendor and multi-domain environments.

In addition to our systems and software, we also offer a broad range of services that help our customers build, operate and improve their networks and associated operational environments. These include network transformation, consulting, implementation, systems integration, maintenance, network operations center ("NOC") management, learning, and optimization services.

Industry Background

Network Traffic Growth and Increased Capacity Requirements

The markets into which we sell are dynamic and characterized by a high rate of change. Optical networks – which carry video, data and voice traffic by encoding digital information on multiple wavelengths of light traveling across fiber optic cables – have experienced strong demand for increased bandwidth due to traffic growth. This network traffic growth is being driven by a diverse set of communications services that often require on-demand service levels by enterprise and consumer end users, as well as cloud-based services and applications:

- *Cloud-Based Services.* Enterprises and consumers continue to replace locally-housed computing and storage by adopting a broad array of innovative cloud-based models – including Platform as a Service (PaaS), Software as a Service (SaaS) and Infrastructure as a Service (IaaS) – and an expanding range of cloud-based services that host key applications, store data, enable the viewing and downloading of content, and utilize on-demand computing resources. In addition, content is increasingly moving to the network edge, creating new capacity and traffic demands closer to the user.
- *Over-the-Top (“OTT”) Services and Video Streaming.* OTT content refers to video, multimedia and other applications provided directly from the content source to the viewer or end user across a third-party network. Traffic from streaming and OTT services, including high definition and ultra-high definition video, has expanded with the increased availability of, and end-user demand for, video content accessible through a variety of devices and media.
- *Mobile Traffic and Fifth-Generation Wireless Broadband (“5G”).* Traffic from mobile web applications, including video, internet and data services, has expanded with the continued proliferation of smartphones and other wireless devices. Because much of wireless traffic ultimately travels across a wireline network to reach its destination, growth in mobile communications continues to place higher demands upon wireline networks, including the backhaul and fronthaul portions of networks emanating from cell sites. 5G technology is further enabling meaningful increases in bandwidth and performance, and enabling emerging applications and services that 4G/LTE networks cannot support. To fully capitalize on these opportunities, network operators will need to consider the demands 5G technology will place on their wireline infrastructures.
- *Residential Access Applications and Enterprise Applications.* In recent years there has been a shift in bandwidth demands, traffic patterns and computing functions to the edge of networks. This trend was meaningfully accelerated by the COVID-19 pandemic, including due to an increase in remote and hybrid working, distance learning, and work from home arrangements. With a higher percentage of data flows concentrating closer to the network edge, more capacity and higher bandwidth to home and enterprise locations is required. These shifts could be permanent, and could influence network architectures and require network operators to adapt.
- *Fiber-Based Access Networks.* Network densification initiatives by cable and multiservice operators seek to push more digital fiber closer to the end user in an effort to increase potential bandwidth, computing capability and data speeds to homes and enterprises, while decreasing power, space and operating costs. Wireline service providers are responding to similar service and end customer demands by extending fiber to the home and deeper into access networks.

Emerging technologies, services and applications are further impacting, or expected to impact network infrastructures, particularly at the edge of networks, where increased computing power and automation are required to meet the quality of experience required by end users. These include:

- *Internet of Things (“IoT”).* As networked connections between devices and servers grow, machine-to-machine-related traffic (“M2M”) is expected to represent an increasing portion of traffic. These connections allow sharing of data that can be monitored and analyzed, including in smart grid applications, health care and safety monitoring, resource and inventory management, home entertainment, consumer appliances, connected transportation and other M2M data applications.
- *Immersive Technologies and Ultra-High Definition Video (“UHD”).* Immersive technologies like virtual reality (“VR”), augmented reality (“AR”), interactive experiences, gaming and 360° video, as well as UHD (4K and 8K) video, are placing or likely to place further capacity demands on networks as adoption of these technologies grows. Consumer electronics and other technology companies are rapidly advancing these applications, which require high bandwidth and low latency, and are making the associated devices more widely available and affordable to consumers.
- *Edge Computing.* To provide end users with the required experience for a growing set of immersive cloud services, network operators have increased, and are expected to continue to increase, the number and capabilities of edge computing locations to allow these latency-sensitive workloads to be processed closer to users. These changes at the edge of networks may affect network topologies, demands and traffic patterns.

- *Machine Learning ("ML") and Artificial Intelligence ("AI")*. By increasing network intelligence and improving automation, ML and AI can enable improvements in network planning, operations, user experience and trouble resolution. Adoption of these technologies is expected to continue to increase as the IoT expands and additional services are created, and ML and AI are expected to serve as drivers of further network traffic and solutions innovation, including driving bandwidth needs in industries including manufacturing, research and development, robotics, security, healthcare, and transportation.
- *Generative AI ("Gen-AI")*. In recent periods, Gen-AI platforms have experienced rapid and unprecedented user adoption with a notable array of new offerings entering the market across a diverse set of use cases. While Gen-AI remains a nascent space and may be subject to further regulation, it presents significant opportunities for businesses and other users to automate tasks, augment creativity, and improve operational efficiency. Given the Gen-AI adoption trajectory to date, and its potential to be a significant contributor to innovation and productivity, Gen-AI may be a significant stimulant or accelerator of network demand, both inside and outside of the data center, in future periods.

We believe that increased adoption of these technologies, services, and applications and their performance requirements will further increase network traffic and place additional service challenges on network infrastructures, requiring network operators to invest in their metro, access and aggregation networks, as well as their core networks.

Demand for More Programmable and Automated Networks

To create a more digital experience for their end users, reduce operational costs and introduce more service agility, network operators are investing in next-generation infrastructures that combine end-to-end service automation with the deployment of highly programmable infrastructures. We expect network operators will continue to pursue strategies that better leverage analytics and control capabilities in an effort to achieve closed loop automation. Closed loop automation is a continuous cycle of communications between the programmable network infrastructure and software control elements to analyze network conditions, traffic demands, and resource availability to determine the best placement of traffic or network functions to deliver optimal service quality and resource utilization.

We believe that adoption of these strategies, and the related evolution of core, metro, aggregation and access network infrastructures, will require network operators and their network solutions vendors increasingly to look to utilize an ecosystem of both physical and virtual network resources, optimized through software. We expect that these network architectural approaches, in turn, will require an increased degree of cooperation, collaboration and interoperability among networking solutions vendors.

Different Approaches to Design and Procure Network Infrastructure Solutions

Network operators are pursuing a diverse range of approaches, or "consumption models," in their design and procurement of network infrastructure solutions. In addition to purchasing fully integrated network solutions including hardware, software and services from the same vendor, new consumption models include the procurement or use of:

- a fully integrated infrastructure solution from one vendor with the separate use of a network operator's own software or that of another vendor;
- integrated photonic line systems with open interfaces from one vendor and the separate or "disaggregated" procurement of modem technology from a different vendor;
- open source software in concert with or as an alternative to integrated, proprietary third-party software solutions;
- open IP network operating systems running on off-the-shelf third-party equipment; and
- system integration services or customer self-integration to reconstitute the disaggregated components.

Some network operators, including certain of our largest customers, have adopted or are pursuing development and use of published reference designs and open source specifications for the procurement of off-the-shelf or commoditized hardware (often referred to as "white box" hardware). This commoditized hardware could be used with in-house developed data path and control software or third-party developed network operating software. Further, some network operators are pursuing network strategies that emphasize the deployment of smaller form factor, pluggable modem technology, that can be housed in a switch or router platform or used in place of a modem in a traditional optical system.

The consumption models that ultimately emerge and their level of adoption will depend in significant part on the circumstances and strategies of certain network operators. While the adoption of these approaches has been limited to date, we expect that continued customer consideration of a variety of consumption models will require network operators and vendors alike to assess, and possibly broaden, their offerings and commercial models over time, thereby placing a premium on a vendor's ability to provide a range of network solutions with the maximum amount of flexibility and choice.

Supply Chain Dynamics

In the face of demand across a range of industries, global supply for certain raw materials and components, including, in particular, semiconductor, integrated circuits, and other electronic components, experienced substantial constraint and disruption in recent prior periods. Though supply conditions have begun to stabilize, in response to this period of constrained supply, governments worldwide have intensified efforts to enhance supply chain resilience, emphasizing the need for robust risk management strategies.

In addition, current dynamics between the United States and China are playing a pivotal role in shaping the global supply chain landscape, and have had an important impact on trade policies, resiliency efforts, and various domestic preference and investment initiatives. This changing bilateral relationship, which is marked by trade tensions and geopolitical complexities, has prompted both nations to reassess their economic strategies, creating a dynamic environment for many industries. This situation, characterized by tariffs and technological competition, may introduce reconfiguration of global supply chains and prompt companies to diversify sourcing and manufacturing locations. Simultaneously, there is a growing emphasis on domestic preference initiatives, as countries seek to bolster their own manufacturing capabilities in an effort to ensure greater economic autonomy. This evolving landscape presents challenges and opportunities for companies navigating the wide range of resulting regulatory, economic and supply chain management complexities.

Product Development and Sustainability

As network traffic and service expansion continue to grow, network operators are looking toward technology innovation to help support their business models and prepare for a low carbon future. Network operators are increasingly looking to their technology vendor partners to help them manage the environmental impact of their networks, including energy use, greenhouse gas emissions, and equipment refurbishment and recycling. Market transition to a low carbon future and greener technology present meaningful opportunities for enhanced competitive positioning and business growth for technology innovation leaders capable of advancing a product development strategy that addresses network performance and sustainability outcomes.

Strategy

Our strategy is to leverage our technology leadership, diversification and global scale to drive the profitable growth of our business. Key elements of this strategy include:

Extend Innovation Leadership in Core and Optical Networking. We are focused on using our significant research and development investment capacity to push the pace of innovation in our traditional markets and to provide leading offerings that leverage our Adaptive Network vision to make our customers' networks more dynamic through further advances in programmable network platforms, analytics, control and automation. We continue to innovate, increase the performance of, and enhance the capabilities for our leading WaveLogic™ coherent modem technology in multiple form factors. Specifically, we intend to bring to market the sixth generation of this technology in our WaveLogic6 Extreme performance-optimized form factor and our WaveLogic6 Nano ("WL6n") pluggable offering for users that prioritize power and space considerations. To support our enhanced portfolio and solutions offerings, we intend to grow our attached services business and leverage network transformation with a broader service offering that includes network migration, optimization and multi-vendor network integration.

Invest in Next Generation Metro and Edge Networking Solutions. To expand our addressable markets and capture additional opportunities in metro and edge applications, we are making significant investments in our Routing and Switching solutions. We are leveraging our optical expertise to offer new architectural approaches to address Metro and Edge network use cases. Among other things, during fiscal 2023, we introduced WaveRouter™, a purpose-built coherent metro router designed to converge IP and Optical layers in the metro network. To further advance our strategy, during the first quarter of fiscal 2023, we acquired Benu Networks, Inc. ("Benu") and its portfolio of cloud-native software solutions, including a virtual Broadband Network Gateway ("v)BNG"), which complements and extends our existing portfolio of broadband access solutions. During the first quarter of fiscal 2023, we also acquired Tibit Communications, Inc. ("Tibit"), a provider of passive optical network ("PON") technology and solutions, which allowed us to add our microplug Optical Line Terminal ("OLT") transceiver, which combines PON hardware and software for integration into an Ethernet switch for broadband and other applications, to our portfolio.

Promote Enhanced Software Automation. To support our customers' business needs for rapid service introduction and optimized network operation, we seek to improve network layer automation and programmability by advancing our multi-layer domain controller - MCP software and applications. We are also focused on gaining adoption and expanding application for our Adaptive IP software, leveraging our Service-Aware Operating System ("SAOS") embedded in our Routing and Switching products. We also seek to promote broader adoption of our Blue Planet Automation Software, highlighting its ability to automate the service management lifecycle. In so doing, we believe that Blue Planet can help customers with their digital transformations by transitioning legacy networks into "service ready" networks, accelerating the creation, delivery and management of new services. A key part of our strategy is to grow our software business as a portion of our total business

through expanded customer adoption and broader applications, and to gain adoption of recurring and subscription-based models.

Deliver Innovative Global Services. Underpinning all aspects of our portfolio is our broad suite of value-added global services that help our customers to build, operate and improve their networks. We are focused on broadening our advanced services capabilities with offerings to maximize our customers' network infrastructure investment throughout the network lifecycle, including systems integration, multi-vendor migration, and transformation. Key to our delivery of strong services offerings is our close collaboration with our customers, which allows us to gain valuable insight into the challenges they face and provide services that meet their desired business outcomes.

Embrace Multiple Consumption Models and Offer Component Level Solutions. We offer a range of networking solutions across different consumption models to drive the evolution of next-generation network infrastructures and to promote choice in our markets. We have made our coherent optical technology available in both integrated systems and pluggable form factors that together address a range of technical and economic requirements of network operators. We are also pursuing sales opportunities that leverage our WaveLogic technology in the form of high-performance transceivers/modems – the combination of a Ciena-designed optical chipset and application-specific integrated circuit ("ASIC") with other key optical components that is sold independently of integrated systems. By addressing multiple consumption models, including by offering component level solutions to the market, we seek to secure a larger portion of the world's optical network wavelengths, expand our addressable market and access new customer verticals and applications.

Grow Addressable Market Opportunity by Accessing High-Growth Applications and Customer Segments. A key part of our strategy is to expand our addressable market opportunity and market reach into complementary and adjacent network applications. We believe that addressable market expansion, and the diversification it provides, is important to address the dynamic industry environment in which we operate, to continue to grow our business, and to better withstand potential risks adversely affecting particular geographies, markets or customer segments. We seek to continue to expand and diversify our solutions offerings, customer base and reach to address fast-growing applications, markets and geographies, including those that are adjacent to or complementary with our current addressable market. Our research and development and go-to-market strategies seek to position us to capture additional market share with existing customers and emerging network operators, and to displace competitors, particularly in international markets.

Customers and Markets

We sell our product and service solutions through direct and indirect sales channels to network operators in the following customer and market segments:

- *Communications Service Providers.* Our communications service provider customers include regional, metro, national and international wireline and wireless carriers, and access network providers.
- *Cloud Providers.* Our cloud provider customers – also referred to in our markets as web-scale or hyper-scale providers – include internet content providers and providers of internet services and infrastructure, including data centers, cloud compute, SaaS, storage, AI, and web hosting services. These providers are focused on applications including search, social media, video, real-time communications and cloud-based service offerings, as well as other emerging network services. In addition to their direct investment in building and operating networks, these customers are also significant purchasers of capacity on submarine and wireline networks globally, and they heavily influence networking solution alternatives by other network operators, including communications service providers.
- *Cable and Multiservice Operators (MSO).* Our customers include regional, metro, national and international cable and multiservice operators.
- *Submarine Network Operators.* Our customers include service providers, cloud providers and consortia operators of submarine communications networks across the globe.
- *Enterprises.* Our enterprise customers include large, multi-site commercial organizations, including participants in the financial, healthcare, transportation, utilities, energy and retail industries.
- *Government and Research & Education.* Our government customers include federal, state, and local agencies, as well as large, advanced research and education networks.

Products and Services

Our products and services include the solutions described below within our Networking Platforms, Platform Software and Services, Blue Planet Automation Software and Services, and Global Services operating segments. We also offer solutions that

bring together multiple products and services from across our operating segments and portfolios to address key customer use cases and infrastructure needs with an aim to enable our customers to evolve their existing network environments.

Networking Platforms

Our Networking Platforms segment consists of our Optical Networking and Routing and Switching portfolios.

Optical Networking. Our Optical Networking portfolio includes a range of products and solutions that use our WaveLogic coherent optical technology and our intelligent photonics solutions and are optimized for the convergence of coherent optical transport, open optical networking, Optical Transport Network (“OTN”) switching and IP routing and switching.

Our 6500 Packet-Optical Platform provides a flexible and scalable converged multi-layer transport solution that adds capacity to core, regional, metro and submarine networks and enables efficient transport at high transmission speeds. This platform provides leading coherent wavelength capacities, from 100G to 800G, along with a flexible photonic layer and multi-layer control plane capabilities for scale and service differentiation. This platform, which includes several chassis sizes and a comprehensive set of line cards optimized for individual services or applications, can be used throughout the network, from customer premises to access and metropolitan networks, regional and core networks, and submarine cable landing sites.

Our Waveserver® family of products consists of compact, modular interconnect platforms that allow network operators to scale bandwidth and support high-bandwidth interconnect applications, such as high-speed data transfer from 100G to 800G, content delivery, virtual machine migration and disaster recovery/backup between data centers. Waveserver® is purpose-built to address disaggregated transponder, data center and general space-constrained applications, using a small footprint and low power design. With its modern software architecture, open application programming interfaces (“APIs”), and common data models, Waveserver® is easy to operate and integrate into existing networks and facilitates deployment of on-demand cloud and high-capacity connectivity services.

Our 6500 Reconfigurable Line System (“RLS”) is a compact, disaggregated, intelligent photonic layer line system that improves scalability, reduces footprint, and offers flexibility and programmability. Its applications include subsea, long-haul and metro data center interconnection and general network modernization and simplification. It offers increased fiber capacity through automated C- and L-band deployments and provides highly dense, remote optical add/drop multiplexing and switching features that enable network operators to react to unpredictable traffic requirements by scaling connectivity and capacity.

Our coherent-optimized edge line system, Coherent ELS, is a high-capacity disaggregated line system that is designed to address next-generation access photonic line system requirements, including the transport of coherent wavelengths originating from pluggables, through a compact, hardened form factor designed to accommodate outside plant deployments. With a focus on reducing operational complexity, our Coherent ELS open line system (OLS) uses integrated intelligence and automation to simplify and scale deployments.

Our O-NID is a purpose-built edge OTN demarcation device that modernizes OTN networks by delivering OTN to the edge in a compact, hardened form factor that is designed to flexibly address a range of applications while reducing cost, space, and power. The O-NID allows network providers to seamlessly extend the reach of their OTN networks closer to the edge and customer premises where space and power are limited and can efficiently deliver gigabit ethernet (“GbE”)/10GbE services and 10G waves to the customer premises with a solution that simplifies deployments, service turn-up, and management.

We also offer footprint-optimized WaveLogic 5 Nano (WL5n) 100G-400G coherent pluggable transceivers to address next-generation access, metro, regional and data center interconnect network applications, which are supported across both our systems and third-party equipment. Our opportunities with high-performance coherent transceiver pluggables, WaveLogic modules and our strategy to offer component level solutions based on our technology, remain in the early stages and revenue has not been significant to date. Sales of these products are reflected within the Optical Networking product line of our Networking Platforms segment.

We also offer our 5400 family of Packet-Optical Platforms, which provide for optical transport, traffic aggregation at the network edge and switching that are optimized for handoff at the network core.

Routing and Switching. Our Routing and Switching portfolio includes products and solutions that enable next-generation metro, access and aggregation, or “edge” networks, including solutions that allow customers to simplify their network designs while delivering new, revenue-generating services. These products route, aggregate and switch IP-based traffic to support applications including IP services, Ethernet business services, cell site routing, mobile cross-haul, converged haul, 5G, fiber-based access networks, and residential broadband access. Our Routing and Switching products are based on our Adaptive IP approach, which delivers end-to-end IP-based services in an automated and more simplified manner than traditional IP network

designs. Our Routing and Switching products enable operators to achieve improved network cost effectiveness, including reduced costs associated with power and space, as compared to more complex, traditional IP routing.

Central to our Routing and Switching platforms is our SAOS next-gen IP network operating system, which provides the software-based capabilities to support 5G, IP VPN services, access, PON, converged interconnect network (CIN) architectures, and coherent optical transport applications in our portfolio. SAOS provides automation-friendly intelligence and operational data to enable network-level programmability supported by open standards.

Our 3000 family of Service Delivery Platforms and our 5000 family of Service Aggregation Platforms support network access and aggregation, respectively, and have been principally deployed to support IP and Ethernet business services, wireless front haul, backhaul and mid-backhaul applications, and residential broadband applications. Our 3000 family of platforms are purpose-built to fit small to large customer sites as well as multi-tenant offices, residential buildings or homes, and edge office or outside plant applications. Our 5000 family provides aggregation to fill higher capacity links within both the metro access and aggregation tiers of networks, allowing operators to reduce the number of router assets required in the core and to better implement edge cloud architectures.

Our 8100 Coherent Routing platforms combine high-capacity multi-terabit IP routing and switching from 1GbE to 100GbE with high capacity WaveLogic 5 Nano coherent optical transport from 100/200/400GbE for next-generation metro and edge applications.

Our WaveRouter™ is a purpose-built coherent metro router designed to converge IP and Optical layers in the metro network. WaveRouter can flexibly scale Wide Area Network ("WAN") traffic from 6-192T, with the ability to scale up and out, delivering capacity when and where needed. With optional WaveLogic™ capabilities, WaveRouter can support dense, high-capacity coherent routing and switching metro applications.

Our Vyatta virtual routing and switching technology and products include a cloud-grade router and software for enterprise and cloud networks that enable hardware-like routing performance for enterprises across multi-cloud and virtualized edge networks. This scalable and modular software can be deployed as a Virtual Machine (VM) application as well as in virtualized and disaggregated network environment.

Our 6500 Packet Transport System ("PTS") combines packet switching, control plane operation and integrated optics. Together with our 3900 platforms, PTS enables our service provider customers to migrate their legacy TDM (SONET/SDH/PDH) services to a scalable, lower operational cost packet solution.

Our Routing and Switching portfolio includes our microplug OLT transceiver, combining PON hardware and software, for integration into an Ethernet switch for broadband and other applications. We added this technology as a result of our acquisition of Tibit in the first quarter of fiscal 2023. Our Routing and Switching portfolio also includes cloud-native software solutions, including a virtual Broadband Network Gateway for access networks, which we acquired in our acquisition of Benu in the first quarter of fiscal 2023.

Our Routing and Switching portfolio also includes our 8700 Packetwave Platform, a multi-terabit packet switching platform for high-density metro networks and inter-data center wide area networks.

Platform Software and Services

Our software offerings also include our Platform Software, which provides domain control management, analytics, data and planning tools and applications to assist customers in managing their networks, including by creating more efficient operations and more proactive visibility into their networks. Our Platform Software includes:

- *Manage, Control and Plan*. MCP software provides intelligent, multi-layer network control of our routing, switching and optical solutions, enabling simplification, acceleration and automation of multi-layer network operations. Our MCP domain controller provides fault, configuration, accounting, performance and security management for multi-layer networks, in combination with services management and online network planning. MCP simplifies multi-layer lifecycle operations – including equipment commissioning, service provisioning, service assurance and performance monitoring. MCP provides this functionality for Ciena-developed products as well as a number of products developed by other vendors where they form a unified solution.
- *MCP Apps*. Our suite of MCP applications integrate software control and analytics applications in a unified interface that provides network performance data. Through our suite of MCP applications and open APIs, MCP software can integrate into network operators' OSS and business processes, supporting our customers' journey towards automation of end-to-end operational workflows.

- *Platform Software Services*. To complement our Platform Software portfolio, we offer a range of related services that include software subscription services, consulting, network migration and integration, installation and upgrade support services, and technical support relating to our Platform Software offerings. These services are focused on enabling our customers to operate their Ciena networks most efficiently and to modernize their operations.

Our Platform Software offering also includes planning tools as well as a number of legacy software solutions, including our OneControl unified management system, that support our installed base of network solutions. As we achieve further customer adoption of our MCP software platform, and as we transition features, functionality and customers to that platform, we expect revenue to decline for our legacy Platform Software solutions.

Blue Planet Automation Software and Services

Our Blue Planet Automation Software is a comprehensive, cloud native, and standards-based software portfolio that enables our service provider customers to accelerate their digital transformation and monetize their networks by automating services delivery across multiple vendors and domains. Our Blue Planet product applications are open and modular, and can be deployed either individually or in any combination on a single cloud-native platform. These applications include:

- *Inventory ("BPI")*. By integrating or "federating" data from multiple inventory systems and presenting it in a single dynamic view, BPI allows real-time visibility into the end-to-end topology and status of network, cloud, and service resources. Integrating with legacy OSS, BPI helps network providers simplify key operational processes such as service fulfillment, network planning and service assurance.
- *Multi-Domain Service Orchestration (MDSO)*. Network infrastructures are comprised of multiple technology layers and domains – such as the radio access network ("RAN"), data center, cloud, access, transport, and mobile core networks. With new 5G network implementations, it is often complex for network operators to offer automated, end-to-end services in this environment. Blue Planet provides model-driven, intent-based service orchestration across multiple physical and virtual network domains, multiple layers (Optical, Ethernet, IP, SD WAN, PON, Mobile Core, RAN, and slicing), and multiple hardware and software vendors.
- *Multi-Cloud Orchestration ("MCO")*. Operators are deploying a growing number of cloud-based services to meet the needs of their customers. Blue Planet MCO provides orchestration of Cloud-Native Functions (CNFs), Virtual Network Functions (VNFs) and other cloud-based resources. MCO uses an open, vendor-agnostic approach that allows network operators to manage the lifecycle of cloud-based resources within and across multiple clouds and cloud providers.
- *Route Optimization and Analysis ("ROA")*. ROA combines routing, traffic and performance analytics for real-time monitoring of IP services across domains and across the cloud. These capabilities provide enhanced network observability capabilities and enable troubleshooting of latent or transient network problems, and modeling, to predict the impact of network infrastructure, service and workload changes, to build more resilient networks.
- *Unified Assurance & Analytics ("UAA")*. UAA leverages multi-layer/multi-domain assurance and AI-powered analytics to provide insights into the health and performance of network resources and services, ensuring an end-customer quality of experience and availability to meet dynamic service demands.
- *Blue Planet Services*. To complement our software portfolio, we offer a range of related services that include professional services for solution customization and OSS integration, software and solution support services, consulting and design, and technical support relating to our software offerings. These services are focused on enhancing network automation and network analytics, enabling multi-vendor integration and support, and implementing programmable multi-domain next-generation networks.

The Blue Planet Automation Software portfolio allows operators to fulfill services rapidly and to meet end-customer quality-of-experience expectations via an entire services lifecycle approach. It also advances network operators towards their vision of self-healing and self-optimizing networks via closed loop automation. Our entrance into the market relating to these software automation capabilities remains in the early stages and, as such, revenue from our Blue Planet Automation Software and Services segment continues to represent a relatively small portion of our total revenue.

Global Services

We offer a broad suite of value-added services that help our customers to build, operate and improve their networks. We believe that our services offerings, and our close collaboration with our customers, provide us with valuable insight into the network and business challenges they face, allowing us to provide services to meet their desired business outcomes. We

continue to broaden our advanced services capabilities with offerings including systems integration, multi-vendor migration, and transformation.

Our Global Services portfolio includes a range of offerings to meet customer needs and maximize their network infrastructure investment throughout the network lifecycle. These include:

- *Build.* Consulting services to enhance network performance or plan migration to next-generation infrastructures, implementation services to deliver proper planning, design, and deployment services, systems integration services to integrate third-party solutions, and migration services to help customers adopt new technologies and retire legacy equipment;
- *Operate.* Maintenance services that provide end-to-end support for network hardware and software, and managed services to provide management of network infrastructure operations; and
- *Improve.* Optimization services designed to ensure that networks are running at peak performance, and learning services designed to enable customers to understand and operate their networks more effectively.

These services are delivered using a combination of our internal services resources, technical support engineers, and qualified and authorized third-party service partners.

Product Development

To remain competitive, we must continually invest in and enhance our solutions offerings, addressing new market opportunities, adding new features and functionality, and ensuring alignment with market demand. Our product development efforts seek to design and bring to market solutions that embrace our Adaptive Network vision through further advances in programmable systems and software, analytics, and control and automation. Through our development efforts, we seek to support network operators as they pursue new business models and sources of revenue from their network infrastructure and services, and to achieve improved economics, network sustainability, and return on their network infrastructure investment. We seek to develop products aimed at optimizing price for performance, managing power consumption, lifecycle operating costs and space requirements, and minimizing the environmental impact of our customers' network operations. Our approach is also focused on designing products that address a range of emerging consumption models for networking solutions. Our current development efforts are focused on:

- Reinforcing our coherent optical leadership with continued development that advances reach, transmission speed, spectral efficiency, power-per-bit, and service automation and assurance;
- Executing on parallel innovation paths for our next generation modem technology, including introducing our WaveLogic6 Extreme and WaveLogic6 Nano offerings;
- Delivering on our Adaptive IP approach and extending the IP/routing capabilities and use cases of our Routing and Switching solutions to include converged metro core routing and support for mobile network 5G routing and cross-haul, enterprise edge, and fiber-based access networks for enterprise and residential access service delivery;
- Extending capacity of our fiber-based broadband access technologies and solutions;
- Pursuing development to address different consumption models, including our module, pluggable, and component development initiatives;
- Enhancing our Adaptive Network vision through advances in hardware programmability and software-based domain control, automation and analytics through MCP and purpose-built applications;
- Advancing our software-led transformation strategy and product development for our Blue Planet Automation Software to enable generation OSS transformation and closed loop automation;
- Developing products that enhance security and reduce risk to our customers' networks from cyber attacks; and
- Delivering products that minimize the lifecycle climate impacts of our customers' networks and support their sustainability goals.

Our research and development efforts are also geared toward portfolio optimization and engineering changes intended to drive product and manufacturing cost reductions across our platforms, and enable multi-vendor sourcing of components.

We regularly review our existing solutions offerings and prospective development of new features, components or products in order to determine their fit within our portfolio and broader corporate strategy. We also assess the market demand, technology evolution, prospective return on investment and growth opportunities, as well as the costs and resources necessary to develop and support these products. To ensure that our product development investments and solutions offerings are closely aligned with market demand, we continually seek input from customers and promote collaboration among our product development, marketing and sales organizations. In some cases, where we seek to utilize or gain access to complementary or

emerging technologies or solutions, we may obtain technology through an acquisition or, alternatively, through initiatives with third parties pursuant to technology licenses, OEM arrangements and other strategic technology relationships or investments. In addition, we participate in industry and standards organizations and, where appropriate, incorporate information from these affiliations throughout the product development process.

Global Customer Engagement

Our Global Customer Engagement organization includes a direct and indirect sales, system engineering, and services presence that is organized geographically around the following geographies and customer types: (i) the United States, Canada, the Caribbean and Latin America ("Americas"); (ii) "International", which includes Europe, Middle East and Africa ("EMEA") and Asia Pacific, Japan and India ("APAC"); and (iii) global cloud and content networking customers, which include cloud provider, content, and data center companies. Within each focus area, we maintain specific teams or personnel that focus on a particular region, country, customer or market vertical. These teams include sales management, account salespersons and sales engineers, as well as partner resources, field marketing, services professionals and commercial management personnel, who ensure that we maintain a high-touch, consultative relationship with our customers.

We also maintain a global partner program that includes distributors, resellers, systems integrators, service providers, original equipment manufacturers, original design manufacturers, and other third-party distributors who market and sell our products and services. We utilize these third-party channel partners to market and sell our solutions into specific geographies, applications or customer verticals. We believe there are opportunities to leverage these relationships to expand our addressable market, while at the same time reducing the financial and operational risk of entering additional markets. For third parties in our Ciena Partner Network, we maintain a code of conduct that is available on our website and that sets forth our expectations for the high standards of ethical and legally compliant conduct we require of them in supporting our business.

To support our global customer engagement efforts, we invest in marketing activities to generate demand for our products and services. Our marketing strategy is highly focused on building our brand to create customer preference for Ciena, engaging in thought leadership programs to illustrate how our innovations solve customer business problems, and enabling our sales teams to drive customer adoption of our solutions. Our marketing team supports our sales efforts through a variety of activities, including direct customer interaction, account-based marketing campaigns, portfolio marketing, industry events, media relations, industry analyst relations, social media, trade shows, our website and other marketing vehicles for our customers and channel partners.

Operations and Supply Chain Management

Most of the manufacturing for our products is conducted through third-party contract manufacturers. Our operations personnel manage the relationships with these third-party manufacturers and the global supply chain, addressing component sourcing, manufacturing, product testing and quality, and fulfillment and logistics relating to the distribution and support of our products.

We utilize a sourcing strategy that traditionally emphasized global procurement of materials and product manufacturing in lower labor cost regions. We rely upon third-party contract manufacturers, including those with facilities in Canada, Mexico, Thailand, India, and the United States, to manufacture, support and ship our products, and therefore are exposed to risks associated with their businesses, financial condition and the geographies in which they operate, including political risk, changes in tax and trade policy involving such countries, and physical risk, including the impact of climate change. We also rely upon contract manufacturers and other third parties to perform design and prototype development, component procurement, full production, final assembly, testing and distribution operations. Our manufacturers and component distribution partners procure components necessary for assembly and manufacture of our products based on our specifications, approved vendor lists, bills of materials and testing and quality standards. Our manufacturers and component distribution partners' activity is based on rolling forecasts that we provide to them to estimate demand for our products. We work closely with these partners and our suppliers to manage material, quality, cost and delivery times, and we continually evaluate their services to ensure performance on a reliable and cost-effective basis. Generally, our agreements with our suppliers and contract manufacturers are frame agreements against which we place purchase orders and do not commit to long-term volume purchases.

We currently use distribution partners to fulfill and deliver our products. We believe that our sourcing, manufacturing, and distribution strategies allow us to conserve capital, lower costs of product sales, adjust quickly to changes in market demand and operate without dedicating significant resources to manufacturing-related plant and equipment.

We continue to focus on a range of initiatives that seek to optimize our operations, improve our resiliency, and drive cost reductions and efficiencies. Our efforts include process optimization initiatives, such as vendor-managed inventory, and other operational models and strategies designed to drive improved efficiencies in our sourcing, production, logistics and fulfillment.

To enhance operational efficiency and modernize our supply chain operations, while driving long-term sustainability and resilience in the face of dynamic market conditions, we are pursuing a number of digital technology transformation efforts, including advanced analytics, automation, and other digital solutions. We regularly assess and monitor our supply chain risks, and have implemented various strategies to mitigate these risks and enhance resilience. These measures include dual-sourcing strategies, inventory management initiatives, and ongoing collaboration with key suppliers to ensure transparency and alignment with our goals.

We actively work with our third-party vendors and business partners to promote socially responsible business practices within our global supply chain. To that end, we have adopted the principles set forth in the Responsible Business Alliance ("RBA") Code of Conduct. The RBA Code of Conduct establishes standards that aim to ensure working conditions in the electronics industry, or industries in which electronics are a key component, and its supply chains are safe, that workers are treated with respect and dignity, and that business operations are environmentally responsible and conducted ethically. We promote these principles and require our suppliers to agree to adhere to these same standards. We also publish a Sustainability Report and maintain a Human Rights Policy applicable to suppliers, each of which includes more detail about our efforts to promote responsible business practices.

Seasonality

We have historically experienced seasonal quarterly fluctuations in customer activity in both orders and revenue, particularly with service provider customers. We have experienced reductions in order volume toward the end of the calendar year, as the procurement cycles of these customers slow and network deployment activity is curtailed. This period coincides with the first quarter of our fiscal year. This seasonality in our order flows has typically caused revenue for the first quarter of our fiscal year to be below that of the preceding quarter. These seasonal effects may not apply consistently in future periods and may not be a reliable indicator of our future revenue or results of operations. The effects of the dynamic supply and demand environment we have experienced in recent periods, together with our increased backlog, have impacted and may continue to impact the traditional seasonality in our business. In addition, the growth as a percentage of our revenue of cloud provider customers, who do not necessarily follow the same seasonal ordering pattern, may also change this pattern in the future. For a more detailed discussion of the current supply and demand environment and our backlog, see "Management's Discussion and Analysis of Financial Condition and Results of Operations— Overview" in Item 7 of Part II of this report.

Competition

Competition among networking solution vendors remains intense on a global basis. The market in which we compete is characterized by rapidly advancing technology, frequent introduction of new solutions, and aggressive selling efforts, including using significant pricing pressure to displace incumbent vendors and capture market share. Competition for sales of networking solutions, including our Networking Platforms and Platform Software and Services, is dominated by a small number of very large, multi-national companies. Our competitors include Nokia, Huawei (as defined below), Cisco, Juniper Networks, and ZTE. As compared to us, many of these competitors have substantially greater financial, operational and marketing resources, significantly broader product offerings and more established relationships with service providers and other customer segments. Because of their scale and resources, they may be perceived to be a better fit for the procurement or network strategies of larger network operators. We also continue to compete with several smaller but established companies that offer one or more products that compete directly or indirectly with our offerings or whose products address specific niches within the markets and customer segments we address. These competitors include Infinera, Ribbon Communications, Calix, Adtran, DZS, and Ekinops. We also compete with a number of companies that provide significant competition for a specific product, application, service, customer segment or geographic market.

Keeping pace with the market's demands for technology innovation requires considerable research and development investment capacity. As a result, some of our competitors, both large and small, have chosen to rely upon component and module technology developed by and procured from third-party providers, including NTT Electronics, Marvell Technology Group and Cisco. We may compete with these providers, either indirectly as a result of their technology being a key enabling technology for our competitors or an alternative consumption model such as "white box" technology, or directly in module, pluggable and component sales opportunities.

As we promote our corporate strategy and seek increased customer adoption of our Blue Planet Automation Software, we expect to compete more directly with software vendors and traditional IT services vendors. Competitors for our Blue Planet Automation Software include Cisco, Nokia, Amdocs, Netcracker and Ericsson.

Across our markets and segments, the principal competitive factors can include, among others:

- functionality, speed, capacity, scalability and performance of network solutions;
- the ability to meet business needs and drive successful outcomes;

- price for performance, cost per bit and total cost of ownership of network solutions;
- incumbency and strength of existing business relationships;
- technology roadmap and forward innovation capacity, including the ability to invest significant sums in research and development;
- time-to-market in delivering products and features;
- company stability and financial health;
- ability to offer comprehensive networking solutions, consisting of hardware, software and services;
- flexibility and openness of platforms, including ease of integration, interoperability and integrated management;
- ability to offer solutions that accommodate a range of different consumption models;
- operating costs and total cost of ownership;
- software and network automation capabilities;
- ability to manage challenging supply chain environments, including manufacturing and lead-time capability;
- services and support capabilities;
- security of enterprise, product development, support processes, and products;
- space requirements and power consumption of network solutions; and
- ability to offer solutions that help customers manage the lifecycle impacts of their networks and achieve their climate sustainability goals.

Our competitive landscape has been and is likely to continue to be impacted by international trade and related matters, in particular between the U.S. and China. For example, in May 2019, the U.S. Department of Commerce amended the U.S. Export Administration Regulations (“EAR”) by adding Huawei Technologies Co., Ltd. (“Huawei”) and certain affiliates to the “Entity List” for actions contrary to the national security and foreign policy interests of the U.S., resulting in significant new restrictions on the export, reexport and transfer of U.S. regulated technologies and products to Huawei. In August 2020, the U.S. Department of Commerce added additional Huawei affiliates to the Entity List, confirmed the expiration of a temporary general license applicable to Huawei, and amended the foreign direct product rule under the EAR in a manner that significantly expanded its application to Huawei. Separately, the U.S. has taken steps to restrict federal agencies from doing business with, and U.S. wireless carriers from using federal subsidies to buy equipment from, Huawei and ZTE. The U.S. has also encouraged other governments to consider similar restrictions. These actions have resulted in escalating tensions between the U.S. and China and retaliation by China, and introduce a risk that the Chinese government may take further steps to retaliate against U.S. industries or companies.

We also expect the competition in our industry to continue to broaden and to intensify as network operators pursue a diverse range of network strategies and consumption models. As these changes occur, we expect that our business will overlap more directly with additional networking solution suppliers, including IP router vendors, data center switch providers and other suppliers or integrators of networking technology traditionally geared toward different network applications, layers or functions. We may also face competition from system and component vendors, including those in our supply chain, who develop pluggable modem technology or other networking products based on off-the-shelf or commoditized hardware technology, referred to as “white box” hardware, particularly where a customer’s network strategy seeks to emphasize deployment of such product offerings or to adopt a disaggregated approach to the procurement of hardware and software.

Patents, Trademarks and Other Intellectual Property Rights

The success of our business and technology leadership depends significantly on our proprietary and internally developed technology. We rely upon the intellectual property protections afforded by patents, copyrights, trademarks and trade secret laws to establish, maintain and enforce rights in our proprietary technologies and product branding. We regularly file applications for patents and have a significant number of patents in the United States and other countries in which we do business. As of December 1, 2023, we had approximately 2,100 issued patents and more than 650 pending patent applications worldwide.

Enforcing proprietary rights, especially patents, can be costly, and we cannot be certain that the steps that we are taking will detect, prevent, or minimize the risks of all unauthorized use. The industry in which we compete is characterized by rapidly changing technology, a large number of patents, and frequent claims and related litigation regarding patent and other intellectual property rights. We have been subject to several claims related to patent infringement, and we have been requested to indemnify customers pursuant to contractual indemnity obligations relating to infringement claims made by third parties. Intellectual property infringement assertions could cause us to incur substantial costs, including settlement costs and legal fees in the defense of related actions. If we are not successful in defending these claims, our business could be adversely affected.

Our operating system software, Platform Software, Blue Planet Automation Software and other solutions incorporate software and components under licenses from third parties, including software subject to various open source software licenses. Failure to obtain or maintain such licenses or other third-party intellectual property rights could affect our development efforts

and market opportunities, or could require us to re-engineer our products or to obtain alternate technologies. Moreover, there is a risk that open source and other technology licenses could be construed in a manner that could impose unanticipated conditions or restrictions on our ability to commercialize our products.

Environment and Sustainability

In 2023, we set new environmental goals that have been approved by the Science Based Target initiative and align our decarbonization efforts with the Paris Climate Agreement to limit global warming to 1.5 degrees Celsius above pre-industrial levels. Our environmental strategy involves continued innovation of our products and services to help reduce power, space, and materials, driving operational efficiencies to reduce our business impact on the environment, engagement and collaboration with our suppliers and other business partners, and promoting an employee experience that engages our workforce on sustainability.

Our products and product development efforts pursue improvements in our solutions space and power requirements, creating more efficient and sustainable networks for our customers and enabling their climate ambitions. We promote environmental sustainability through our efforts to improve the energy efficiency per gigabit of throughput in our networking solutions, as well as our initiatives to reduce the total number of network elements required to operate a network. We pursue opportunities to minimize the resource impacts in our product design, and to manage the life cycle impact of our products, including packaging and distribution, support, and end-of-life reuse, refurbishment, and recycling. We voluntarily provide on an annual basis CDP climate change and water disclosures and are a member of the RBA. We seek to ensure that our key direct suppliers adopt the standards and principles set forth in the RBA Code of Conduct.

People and Culture

Our technology solutions are developed, marketed, sold and supported by the talented individuals that make up our global workforce of 8,483 employees as of October 28, 2023, over 98% of whom were full-time employees. We have a broad base of talent in more than 38 countries, with approximately 57% in the Americas, 35% in APAC, and 8% in EMEA, the majority of whom are in engineering, operations or sales roles.

We believe that our industry and innovation leadership is ultimately rooted in people. Competition for qualified personnel in the technology space is intense, and our success depends in large part on our ability to recruit, develop and retain a productive and engaged workforce. Accordingly, investing in our employees and their well-being, offering competitive compensation and benefits, and adopting progressive human capital management practices constitute a core element of our corporate strategy.

Our Board of Directors oversees our corporate strategy, which includes management's design and execution of our "people strategy." This strategy seeks to ensure that we continue to attract and retain the talent necessary to execute on our business plans, and that we have programs, initiatives, rewards and recognition that are well aligned and support these goals. Through our "People Promise," we promote a workplace environment where our employees are empowered, feel included, and have an opportunity to make a difference through their work at Ciena. In doing so, we seek to cultivate for employees a culture of vibrancy, belonging and happiness, enabling us to be an attractive employer of choice within our markets. Our executive team is actively involved in and sponsors key initiatives and employee resource groups intended to promote this corporate culture. To that end, our people strategy is focused on the following:

- *Promote a Diverse, Inclusive, and Equitable Culture.* We promote an inclusive and diverse workplace, where all individuals are respected and feel they belong regardless of their age, race, national origin, gender, religion, disability, sexual orientation or gender identity through recruiting outreach, internal networking and resource groups, inclusivity networks, and mentoring programs. We also maintain a global Inclusivity Council, which is led by two of our executives and aims to address actions for inclusion, and we have signed The CEO Action for Diversity & Inclusion. As of October 28, 2023, our global workforce was approximately 21.6% female. Our Board of Directors is 30% female and 20% ethnically diverse. As of December 31, 2022, in the U.S., where we are headquartered, our 1,890 employee workforce approximately reflected the following ethnicities: 64.2% White, 21.9% Asian, 6.2% Hispanic or Latino, 5.0% Black or African American, 2.2% two or more races (Not Hispanic or Latino), and 0.5% additional groups (including American Indian, Alaska Native, Native Hawaiian or Other Pacific Islander). We regularly monitor our recruitment process to improve the diversity of our workforce and candidate pool and continue to offer Conscious Inclusion workshops to deepen understanding within our diverse groups. In addition, we support multiple active internal networking and resource groups, including our Women at Ciena group, Black & African Heritage at Ciena group, LatinX at Ciena group, Asian at Ciena group, Pride at Ciena group, Vets at Ciena group, and Next at Ciena early in career group. In fiscal 2023, we continued to run a targeted development program aimed at strengthening

underrepresented individuals' sense of belonging and enhancing communication, confidence, self-awareness and financial acumen.

- *Support Employee Wellbeing and Engagement.* We prioritize supporting the overall wellbeing of our employees and their eligible dependents. We provide a broad and diverse suite of programs that focus on physical, mental and emotional, financial and social wellbeing, and have expanded our offerings to include a focus on key life events such as aging and retirement readiness. Our wellbeing programs are deployed through a variety of means, including expense reimbursement benefits, wellbeing challenges and rewards, 24x7 crisis support, employee assistance resources, mental health coaching, and a library of resources accessible to participants digitally and through hosted webinars. We regularly seek input from employees through employee engagement and pulse surveys on specific issues that are intended to assess our degree of success in promoting an environment that supports our People Promise and measures our culture of compliance. Our fiscal 2023 employee engagement survey had a participation rate of approximately 84% and resulted in an engagement score that exceeded industry benchmarks. Our global wellbeing program also includes a long-standing practice of remote and flexible working arrangements and flexible paid time off in many of our geographies.
- *Offer Competitive Compensation and Ensure Pay Equity.* We strive to ensure that our employees receive competitive, fair and transparent compensation, and progressive benefits offerings. We conduct an annual pay equity assessment of gender globally and of ethnicity in the U.S., and take action to ensure that we are paying individuals performing similar work equitably. We deployed Syndio's workplace equity platform beginning in fiscal 2020 to fine-tune our methodology and enable regular global pay equity assessments. To align performance and stockholder interest, we base our annual incentive compensation on both business and individual performance, we maintain an employee stock purchase plan, and we have broadly expanded employee participation in equity compensation in recent years. We also offer comprehensive family leave, including global family leave to support employees throughout various life stages, carer's leave, bereavement leave, parental leave that includes a minimum of 18 weeks paid time off for new mothers (including eight weeks recovery and ten weeks bonding) and ten weeks paid time off for new fathers and adoptive parents, and financial assistance for adoptive parents, and recently expanded flexible paid time-off to more than 98% of our workforce globally. We offer meaningful retirement benefits and programs to promote retirement readiness among our employees. In recent years, we have enhanced employer contributions to our North America retirement plans, added our first ESG fund option for employees and, as of October 28, 2023, achieved greater than 99% participation of eligible employees in the U.S. and Canada in our defined contribution retirement plans.
- *Provide Programs for Employee Recognition.* We also offer rewards and recognition programs to our employees, including peer and management-initiated awards to recognize employees who achieve noteworthy accomplishments and who best exemplify our core values, as well as patent incentive and distinguished engineer awards. We believe that providing these recognition programs helps drive strong employee performance.
- *Create Opportunities for Growth and Development.* As of October 28, 2023, approximately 20.9% of our employees are "early in career," or age 30 and under, 51% are "mid-career," or age 31 to 50, and 28.1% are "late in career," or age 51 and over. We focus on creating opportunities for employee growth, development, training, and education at all career stages. We provide opportunities to cultivate talent and identify candidates for new roles from within the company, and deliver early in career and new graduate networking and development programs, management and leadership development programs, coaching and mentoring programs, and support for continuing education through tuition reimbursement. We operate a leadership succession planning process that aims to develop and retain key talent and ensure business continuity for key roles. We also recently launched a program to identify individuals throughout the organization who have been identified as having high potential for future growth and development, so that this earlier in career talent can be nurtured for future leadership roles.
- *Promote Community Outreach and Support.* We believe it is important to give back and promote community outreach and support through corporate giving, charitable matching, and employee volunteerism in the communities in which we live and work. Through our "Ciena Cares" community program, we provide corporate matching of employee charitable donations, flexible volunteering during work time, and corporate rewards for service hours that can be donated by employees to their charity of choice. Our Digital Inclusion initiative aims to mobilize our global workforce, leverage our innovation leadership, and collaborate with customers, suppliers and other partners to help bridge the digital divide. Through this initiative, we have funded programs to support underserved students in communities across the globe by providing greater connectivity, access to enabling technologies and digital skills development.
- *Promote a Strong Ethical Business Culture.* We believe that commitments to good corporate governance and the highest ethical standards are essential to our long-term success, and we are dedicated to instilling in our employees a

commitment to integrity and business ethics. We maintain a Code of Business Conduct and Ethics that sets standards of conduct for Ciena's directors, officers and employees. All employees are required to complete training on our Code of Business Conduct and Ethics, and we conduct recurring employee affirmations with respect to our Code of Business Conduct and Ethics and periodic training and communication related to specific topics contained therein. In addition, we maintain a Corporate Compliance Committee that promotes integrity and compliance leadership throughout Ciena, and a dedicated function focused exclusively on Compliance and Ethics. We also maintain several easily accessible internal and external methods by which our employees, business partners, and investors can report concerns relating to the ethical operation of our business, including anonymously where permitted. We conduct surveys of all employees on our compliance program and culture of integrity in order to assess and strengthen our culture and practices, and received feedback from approximately 69% of our employees on these surveys in fiscal 2022.

Governmental Regulations

Environmental Matters

Environmental regulation is increasing across various jurisdictions, and we expect that our domestic and international operations may be subject to additional environmental compliance requirements, which could require us to incur additional costs. To date, our compliance actions and costs relating to environmental regulations have not resulted in a material cost or effect on our capital expenditures, earnings, or competitive position. Our business and operations are currently subject to environmental laws in various jurisdictions around the world, including the Waste Electrical and Electronic Equipment ("WEEE") and Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment ("RoHS") regulations adopted by the European Union (the "EU"). We are also subject to disclosure and related requirements that apply to the presence of "conflict minerals" in our products or supply chain. We seek to operate our business in compliance with applicable laws relating to the materials and content of our products and product takeback and recycling, and have programs, policies, and customer offerings that help us to address these laws.

Other Regulations

As a company with global operations, we are subject to complex foreign and U.S. laws and regulations, including trade regulations, tariffs, import and export regulations, anti-bribery and corruption laws, antitrust or competition laws, data privacy laws and regulations, such as the EU General Data Protection Regulation (the "GDPR"), cybersecurity laws and regulations, and environmental regulations, among others. We have policies and procedures in place to promote compliance with these laws and regulations. To date, our compliance actions and costs relating to these laws, rules and regulations have not resulted in a material cost or effect on our capital expenditures, earnings or competitive position. Government regulations are subject to change and, accordingly, we are unable to assess the possible effect of compliance with future requirements or whether our compliance with such regulations will materially impact our business in the future. For further discussion of how government regulations may affect our business, see the related discussion in "Risk Factors – Risks Related to Intellectual Property, Litigation, Regulation and Government Policy."

Access to SEC Reports

Our website address is www.ciena.com. We make our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports, available free of charge in the "Investors" section of our website as soon as reasonably practicable after we file these reports with the Securities and Exchange Commission (the "SEC"). We routinely post these reports, recent news and announcements, financial results and other important information about our business on our website at www.ciena.com. Information contained on our website is not a part of this annual report.

Information About Our Executive Officers and Directors

The table below sets forth certain information concerning our executive officers and directors:

Name	Age	Position
Patrick H. Nettles, Ph.D.	80	Executive Chairman of the Board of Directors
Gary B. Smith	63	President, Chief Executive Officer and Director
Joe Cumello	52	Senior Vice President and General Manager of Blue Planet
Dino DiPerna	62	Senior Vice President, Global Research & Development
Brodie Gage	48	Senior Vice President, Global Products & Supply Chain
Sheela Kosaraju	51	Senior Vice President and General Counsel, and acting Chief People Officer
James E. Moylan, Jr.	72	Senior Vice President and Chief Financial Officer
Andrew C. Petrik	60	Vice President and Controller
Jason M. Phipps	51	Senior Vice President, Global Customer Engagement
David M. Rothenstein	55	Senior Vice President, Chief Strategy Officer and Secretary
Hassan M. Ahmed, Ph.D. (1)(3)	65	Director
Bruce L. Claflin (1)(2)	72	Director
Lawton W. Fitt (2)	70	Director
Patrick T. Gallagher (1)(3)	68	Director
Devinder Kumar (2)	68	Director
T. Michael Nevens (2)	74	Director
Joanne B. Olsen (1)(3)	65	Director
Mary G. Puma (2)	65	Director

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- (1) Member of the Compensation Committee
(2) Member of the Audit Committee
(3) Member of the Governance and Nominations Committee

Our Directors hold staggered terms of office, expiring as follows: Dr. Ahmed, Mr. Claflin, Mr. Gallagher, and Mr. Nevens in 2024; Ms. Fitt, Mr. Kumar and Dr. Nettles in 2025; and Ms. Olsen and Mr. Smith in 2026. Ms. Puma was appointed to fill a newly created vacancy in Class II of the Board of Directors. Accordingly, she will stand for election at the 2024 Annual Meeting of Stockholders and, if elected by stockholders, her term of office will expire in 2026.

Patrick H. Nettles, Ph.D. has served as a Director of Ciena since April 1994 and as Executive Chairman of the Board of Directors since May 2001. From October 2000 to May 2001, Dr. Nettles was Chairman of the Board of Directors and Chief Executive Officer of Ciena, and he was President and Chief Executive Officer from April 1994 to October 2000. Dr. Nettles serves as a Trustee for the California Institute of Technology. Dr. Nettles previously served on the boards of directors of Axcelis Technologies, Inc., where he was independent chairman of the board, The Progressive Corporation, where he was chair of the audit committee, Appttrigger, Inc., which was formerly known as Carrius Technologies, Inc., and Optiwind Corp, and previously served as a Trustee for the Georgia Tech Foundation, Inc.

Gary B. Smith joined Ciena in 1997 and has served as President and Chief Executive Officer since May 2001. Mr. Smith has served on Ciena's Board of Directors since October 2000. Prior to his current role, his positions with Ciena included Chief Operating Officer and Senior Vice President, Worldwide Sales. Mr. Smith previously served as Vice President of Sales and Marketing for INTELSAT and Cray Communications, Inc. Mr. Smith previously served on the boards of directors of CommVault Systems, Inc. and Avaya Inc. Mr. Smith serves on the Wake Forest University Entrepreneurship Advisory Council, and participates in initiatives with the Center for Corporate Innovation.

Joe Cumello has served as Senior Vice President and General Manager of Blue Planet, a division of Ciena, since January 2023. Mr. Cumello is responsible for managing Ciena's Blue Planet Automation Software and Services portfolio. From November 2020 to January 2023, Mr. Cumello served as Ciena's Senior Vice President, Global Marketing & Communications, from February 2017 to November 2020 served as Vice President, Global Marketing and Partners, and from August 2015 to February 2017 served as Vice President, Portfolio Marketing. Mr. Cumello initially joined Ciena in 2004 through our

acquisition of Internet Photonics. Following that, he held executive roles at Sidera Networks and SafeNet. He then joined Cyan, Inc. in 2013, where he served as Chief Marketing Officer, before rejoining Ciena in 2015 through our acquisition of Cyan, Inc.

Dino DiPerna joined Ciena in 2010 through our acquisition of Nortel's optical business and has served as Senior Vice President of Global Research and Development since October 2023, in which capacity he is responsible for directing the development of Ciena's portfolio of Optical Networking, Network Control and Planning, and Routing and Switching products and solutions. From August 2013 to October 2023, Mr. DiPerna served as Ciena's Vice President, Converged Packet Optical Research & Development, and from March 2010 to July 2013, served as Vice President, Optical Networks Research & Development. Prior to joining Ciena, Mr. DiPerna held senior engineering roles at Nortel for more than two decades.

Brodie Gage joined Ciena in 2010 through our acquisition of Nortel's optical business and has served as Senior Vice President of Global Products and Supply Chain since October 2023, in which capacity he oversees functions including Product Line Management, Global Supply Chain, and Solutions, Engineering, and Introduction. From November 2017 to October 2023, Mr. Gage served as Ciena's Vice President of Product Line Management and Solutions. Prior to joining Ciena, Mr. Gage held global leadership roles across engineering, marketing, business development, and product line management at Nortel.

Sheela Kosaraju joined Ciena in 2010 and has served as Senior Vice President and General Counsel since January 2023, and as acting Chief People Officer since August 2023. From August 2020 to January 2023, Ms. Kosaraju served as Vice President, Deputy General Counsel and Head of International Legal, from May 2017 to August 2020 served as Vice President, International General Counsel. Prior to joining Ciena, Ms. Kosaraju served as general counsel for two early-stage companies, HomeCom Communications and Closedloop Solutions.

James E. Moylan, Jr. joined Ciena in 2007 and has served as Senior Vice President and Chief Financial Officer since December 2007.

Andrew C. Petrik joined Ciena in 1996 and has served as Vice President, Controller since August 1997. He also served as Treasurer from August 1997 to October 2008.

Jason M. Phipps joined Ciena in 2002 and has served as Senior Vice President, Global Customer Engagement (formerly titled Senior Vice President, Global Sales and Marketing) since February 2017, in which capacity he is responsible for Ciena's global sales, systems engineering, services, and partner organization. From January 2014 to February 2017, Mr. Phipps served as Vice President and General Manager, North America Sales, during which time he also oversaw the Global Partners & Channels practice, and from March 2011 to December 2013 he served as Vice President, Global Sales Operations. Mr. Phipps has also previously held a number of sales and marketing leadership positions with Ciena.

David M. Rothenstein joined Ciena in January 2001 and, after serving as acting Chief Strategy Officer since March 2022, has served as Senior Vice President and Chief Strategy Officer since January 2023. From November 2008 to January 2023, he served as Senior Vice President, General Counsel and Secretary. Prior to that, he served as Vice President and Associate General Counsel from July 2004 to October 2008 and previously as Assistant General Counsel.

Hassan M. Ahmed, Ph.D. has served as a Director of Ciena since June 2020. Dr. Ahmed has served as Executive Chairman and CEO of Sway AI, Inc. since March 2021 and served as Executive Chairman of Founder SPAC from March 2021 to August 2022. He previously served as Chairman of the board of directors and Chief Executive Officer of Affirmed Networks, Inc., which was acquired by Microsoft in April 2020. Before founding Affirmed Networks in 2010, he was a senior advisor at Charles River Ventures. From 1998 to 2008, Dr. Ahmed served as Chairman and Chief Executive Officer of Sonus Networks, Inc. Prior to that time, he served in various executive roles at Ascend Communications, Inc., Cascade Communications Corporation and Analog Devices, Inc. He also served as President and founder of WaveAccess, Inc., and founded and served as director of the VLSI Systems Group of Motorola Codex. Dr. Ahmed previously served as Associate Professor of Electrical, Computer and Systems Engineering and Associate Professor of Finance at Boston University. Dr. Ahmed currently serves on the board of directors of Vesper Technologies, Inc., Oxefit, Inc., Avesha Inc., and Sway AI, Inc., all private companies. Dr. Ahmed previously served on the boards of directors of KINS Technology Group, Inc. and Founder SPAC, both publicly traded companies.

Bruce L. Claflin has served as a Director of Ciena since August 2006. Mr. Claflin served as President and Chief Executive Officer of 3Com Corporation from January 2001 until his retirement in February 2006. Mr. Claflin joined 3Com as President and Chief Operating Officer in August 1998. Prior to 3Com, Mr. Claflin served as Senior Vice President and General Manager, Sales and Marketing, for Digital Equipment Corporation. Mr. Claflin also worked for 22 years at IBM, where he held various sales, marketing and management positions, including general manager of IBM PC Company's worldwide research and development, product and brand management, as well as president of IBM PC Company Americas. Mr. Claflin currently serves on the board of directors of IDEXX Laboratories, Inc., a publicly traded company, where he is Chair of the Governance and

Corporate Responsibility Committee and serves on the Audit Committee. Mr. Claflin previously served on the board of directors of Advanced Micro Devices, Inc. ("AMD"), where he served as Chairman for 10 years.

Lawton W. Fitt has served as a Director of Ciena since November 2000. From October 2002 to March 2005, Ms. Fitt served as Director of the Royal Academy of Arts in London. From 1979 to October 2002, Ms. Fitt was an investment banker with Goldman Sachs & Co., where she was a partner from 1994 to October 2002. Ms. Fitt currently serves on the boards of directors of The Carlyle Group Inc., where she serves as Lead Independent Director, and The Progressive Corporation, where she serves as Chairperson of the Board, both publicly traded companies. Ms. Fitt also serves as a director or trustee of several non-profit organizations. Ms. Fitt previously served on the boards of directors of Micro Focus International PLC, ARM Holdings PLC and Thomson Reuters Corporation.

Patrick T. Gallagher has served as a Director of Ciena since May 2009. Since October 2007, Mr. Gallagher has served as Chairman of Harmonic Inc., a publicly traded company and global provider of high-performance video solutions to the broadcast, cable, telecommunications and managed service provider sectors. Mr. Gallagher has served as Chairman of privately held Mirabeau SAS, a French wine producer, since August 2019. From January 2014 until January 2022, Mr. Gallagher served as Chairman of privately-held Intercloud SAS, an international software defined cloud interconnect company. Previously, from March 2008 until April 2012, Mr. Gallagher served as Chairman of Ubiquisys Ltd, from January 2008 until February 2009, Mr. Gallagher served as Chairman of Macro 4 plc, and from May 2006 until March 2008, he served as Vice Chairman of Golden Telecom Inc. From 2003 until 2006, Mr. Gallagher was Executive Vice Chairman and served as Chief Executive Officer of FLAG Telecom Group Ltd. and, prior to that role, he held various senior management positions at British Telecom.

Devinder Kumar has served as a Director of Ciena since August 2019. Mr. Kumar served as Executive Vice President and Chief Financial Officer of AMD from January 2013 to January 2023, in which capacity he was responsible for the global finance organization as well as global corporate services and facilities. He also served as Treasurer of AMD from April 2015 to January 2023. Mr. Kumar retired in April 2023. Since joining AMD in 1984, Mr. Kumar progressed through several leadership positions in corporate accounting and corporate finance, including serving as CFO, corporate controller and assistant treasurer. He also spent 10 years in Asia as financial controller for AMD Penang and group regional finance director for AMD's Manufacturing Services Group across Singapore, Thailand, China and Malaysia.

T. Michael Nevens has served as a Director of Ciena since February 2014. Since 2006, Mr. Nevens has served as senior adviser to Permira Advisers, LLC, an international private equity fund and is currently an Emeritus Senior Advisor. From 1980 to 2002, Mr. Nevens held various leadership positions at McKinsey & Co., most recently as a director (senior partner) and as managing partner of the firm's Global Technology Practice. He also served on the board of the McKinsey Global Institute, which conducts research on economic and policy issues. Mr. Nevens has been an adjunct professor of Corporate Governance and Strategy at the Mendoza College of Business at the University of Notre Dame. Mr. Nevens also serves as Chairman of the board of directors of NetApp, Inc., a publicly traded company, and on the board of directors of Longbow Security, Inc. (previously TalonX, Inc.), a private company. Mr. Nevens previously served on the board of directors of Altera Corporation.

Joanne B. Olsen has served as a Director of Ciena since October 2018. Ms. Olsen previously served as Executive Vice President of Global Cloud Services and Support at Oracle from 2016 until her retirement in August 2017. In that role, she drove Oracle's cloud transformation services and support strategy, partnering with leaders across all business units. Ms. Olsen previously served as Senior Vice President and leader of Oracle's applications sales, alliances, and consulting organizations in North America from 2012 through 2016, and from 2010 through 2012 served in various general management positions at Oracle. Ms. Olsen began her career with IBM, where, between 1979 and 2010, she held a variety of executive management positions across sales, global financing and hardware. Ms. Olsen also serves on the boards of directors of Teradata Corporation and Keysight Technologies, Inc., both publicly traded companies.

Mary G. Puma has served as a Director of Ciena since August 2023. Ms. Puma has served as Executive Chairperson of the board of directors of Axcelis Technologies, Inc. ("Axcelis"), a publicly traded company engaged in the supply of capital equipment for the semiconductor chip manufacturing industry, since May 2023. Ms. Puma previously served at Axcelis as President and Chief Executive Officer from January 2002 to May 2023, as President and Chief Operating Officer from July 2000 to January 2002, and as Chairperson of the Board from 2005 to 2015. In 1998, Ms. Puma became General Manager and Vice President of Axcelis's predecessor, the Implant Systems Division of Eaton Corporation. Prior to joining Eaton Corporation in 1996, Ms. Puma spent 15 years in various marketing and general management positions at General Electric. Ms. Puma also currently serves on the boards of directors of Allegro Microsystems and SMART Global Holdings, both publicly traded companies. She also serves on the board of directors of SEMI, a global industry association serving the manufacturing supply chain for the micro- and nano-electronics industries, where she has served as Chairperson of the Board since December 2022. Ms. Puma previously served on the boards of directors of Nordson Corporation and Apogent Technologies, both publicly traded companies. Ms. Puma holds a Bachelor of Arts degree in economics from Tufts University and a Master of Science degree from the MIT Sloan School of Management.

Item 1A. Risk Factors

Investing in our securities involves a high degree of risk. In addition to the other information contained in this report, you should consider the following risk factors before investing in our securities.

Risks Related to Our Business and Industry

Our backlog may not be an accurate indicator of the level and timing of our future revenues.

As a result of order volumes growth in prior periods, driven by supply chain constraints and longer delivery lead times, our backlog grew from \$1.2 billion at the end of fiscal 2020 to \$4.2 billion at the end of fiscal 2022. As supply chain conditions improved, we have been able to increase shipment volumes and reduce lead times, and our backlog decreased to \$2.6 billion at the end of fiscal 2023. However, our order volumes began to moderate in the fourth quarter of fiscal 2022, and we continued to experience orders that are below revenue during fiscal 2023. We do not expect the very high level of orders we experienced in earlier periods in fiscal 2021 and fiscal 2022 to return or continue in the long-term. While we expect order volumes to normalize over time, we expect our backlog to continue to reduce in fiscal 2024. Backlog may be fulfilled several quarters following receipt of a purchase order, either due to customer schedules or delays caused by supply chain constraints. Generally, our customers may cancel, delay delivery or change their orders with limited advance notice, or they may decide not to accept our products and services, although instances of both cancellation and non-acceptance have been rare historically. Backlog also includes certain service obligations that may relate to a multi-year support period. As a result, backlog should not necessarily be viewed as an accurate indicator of future revenue for any particular period.

Our revenue, gross margin, and operating results can fluctuate significantly and unpredictably from quarter to quarter.

Our revenue, gross margin, and results of operations can fluctuate significantly and unpredictably from quarter to quarter. Our budgeted expense levels are based on our visibility into customer spending plans and our projections of future revenue and gross margin. Visibility into customer spending levels can be uncertain, spending patterns are subject to change, and reductions in our expense levels can take significant time to implement. Historically, a significant portion of our quarterly revenue was generated from customer orders received during that same quarter (which we refer to as “book to revenue”) and was therefore less predictable and subject to fluctuation due to a quarterly shortfall in orders from expectations. During fiscal 2022, however, we generated a significant backlog of customer orders, and through the first half of fiscal 2023, our revenue was more significantly impacted by availability of supply, as well as customer delivery deferrals of existing backlog. Specifically, during fiscal 2023, certain customers, including communications service providers and cable and multiservice operators in North America, and cloud providers, that had earlier placed significant advanced orders, rescheduled deliveries for a portion of such orders, to address their capital budget and capacity to absorb such inventory operationally. We expect our backlog to continue to reduce in fiscal 2024. As that happens, we expect our reliance upon securing quarterly book to revenue orders to grow and those orders to represent a more typical composition of our quarterly revenue over time. However, within these dynamics, our results for a particular period can be difficult to predict. These dynamics, as well as a range of factors, including those set forth below, can materially adversely affect quarterly revenue, gross margin, and operating results:

- changes in spending levels or network deployment plans by customers, particularly with respect to our service provider and cloud provider customers;
- order timing and volume, including book to revenue orders;
- the timing of revenue recognition on sales, particularly relating to large orders;
- availability of components and manufacturing capacity;
- shipment and delivery timing, including any deferral of delivery;
- backlog levels;
- the level of competition and pricing pressure in our industry;
- the pace and impact of price erosion that we regularly encounter in our markets;
- the impact of commercial concessions or unfavorable commercial terms required to maintain incumbency or secure new opportunities with key customers;
- the mix of revenue by product segment, geography, and customer in any particular quarter;
- our level of success in achieving targeted cost reductions and improved efficiencies in our supply chain;
- our incurrence of start-up costs, including lower margin phases of projects required to support initial deployments, gain new customers or enter new markets;
- our level of success in accessing new markets and obtaining new customers;
- long- and short-term changing behaviors or customer needs that impact demand for our products and services or the products and services of our customers;
- technology-based price compression and our introduction of new platforms with improved price for performance;

- changing market, economic, and political conditions, including the impact of tariffs and other trade restrictions or efforts to withdraw from or materially modify international trade agreements;
- factors beyond our control such as natural disasters, climate change, acts of war or terrorism, and public health emergencies, such as the COVID-19 pandemic;
- the financial stability of our customers and suppliers;
- consolidation activity among our customers, suppliers, and competitors;
- installation service availability and readiness of customer sites;
- adverse impact of foreign exchange; and
- seasonal effects in our business.

As a result of these factors and other conditions affecting our business and operating results, we believe that quarterly comparisons of our operating results are not necessarily a good indication of future performance. Quarterly fluctuations from the above and other factors may cause our revenue, gross margin, and results of operations to underperform in relation to our guidance, long-term financial targets or the expectations of financial analysts or investors, which may cause volatility or decreases in our stock price.

Challenges relating to supply chain dynamics, including semiconductor components, could adversely impact our growth, gross margins and financial results.

In the face of demand across a range of industries, global supply for certain raw materials and components, including, in particular, semiconductor, integrated circuits, and other electronic components used in most of our products, experienced substantial constraint and disruption in recent prior periods. As a result, we experienced significant component shortages, extended lead times, increased costs, and unexpected cancellation or delay of previously committed supply of key components across our supplier base. While reliability of supply has improved, extended lead times and elevated component costs could continue to adversely impact our revenue, our cost of goods sold, and our ability to reduce the cost to produce our products in a manner consistent with prior periods. It is unclear when the supply environment will fully stabilize and what impacts it will have on our business and results of operations in future periods. In addition, current geopolitical trends could impact the availability of components, and certain related export controls on critical minerals and semiconductor technology and chips could constrain supply and adversely impact both delivery and development of such components. This volatility has adversely affected, and could further affect, component availability, lead times and cost, which can adversely impact our revenue and have an impact on customer purchasing decisions. In an effort to address these risks, we have implemented mitigation strategies, including expanding manufacturing capacity, implementing multi-sourcing activities, qualifying alternative parts, and redesigning products; however, these efforts may fail to reduce the impact of adverse supply chain conditions. Supply chain challenges could also impact customer satisfaction or future business opportunities with customers, and result in increased use of cash, engineering design changes, and delays in new product introductions, each of which could adversely impact our business and financial results.

A small number of customers account for a significant portion of our revenue. The loss of one or more of these customers or a significant reduction in their spending could have a material adverse effect on our business and results of operations.

A significant portion of our revenue is concentrated among a small number of customers. For example, our ten largest customers contributed 53.7% of our revenue for fiscal 2023 and 56.3% of our revenue for fiscal 2022. Historically, our largest customers by revenue have principally consisted of large communications service providers. For example, a cloud provider customer accounted for approximately 12.8% of our revenue for fiscal 2023, AT&T accounted for approximately 10.6% of our revenue for fiscal 2023 and 11.9% of our revenue for fiscal 2022, and Verizon accounted for approximately 11.1% of our revenue for fiscal 2022. As a result of efforts in recent years to diversify our business, the customer segments and geographies that comprise our customer base and top customers by revenue have changed. During fiscal 2023, four cloud providers were among our top ten customers. Cloud provider customers have been important contributors to our revenue through both our direct sales to them, including for data center interconnection, and their indirect impact on purchases by other network operators. Consequently, our financial results and our ability to grow our business are closely correlated with the spending of a relatively small number of customers. Our business and results of operations could be materially adversely impacted by the loss of a large customer within or outside of these customer segments as well as by reductions in spending or capital expenditure budgets, changes in network deployment plans or changes in consumption models for acquiring networking solutions by our largest customers.

There have been significant horizontal and vertical consolidation activities by communications service providers and cable operators. Customer consolidation can increase customer purchasing power and has in the past resulted in delays or reductions in network spending due to changes in strategy or leadership, the timing of regulatory approvals and high levels of debt taken on as a result of such transactions.

Because of our concentration of revenue with communications service providers and cloud providers, our business and results of operations can be significantly affected by market, industry, regulatory or competitive dynamics adversely affecting these customer segments. For example, communications service providers continue to face a rapidly shifting competitive landscape as cloud service operators, OTT providers, and other content providers continue to challenge their traditional business models and network infrastructures. These dynamics have in the past had an adverse effect on network spending levels by certain of our largest service provider customers. Several of these, including AT&T, have announced various initiatives that seek to modify how they purchase networking infrastructure or reduce capital expenditures on network infrastructure in future periods that may adversely affect our results of operations. Our business and results of operations could be materially adversely affected by these factors and other market, industry or competitive dynamics adversely impacting our customers.

We face intense competition that could hurt our sales and results of operations, and we expect the competitive landscape in which we operate or intend to operate to continue to broaden to include additional solutions providers.

We face an intense competitive market for sales of communications networking equipment, software and services. Competition is intense on a global basis, as we and our competitors aggressively seek to capture market share and displace incumbent equipment vendors. Our industry has historically been dominated by a small number of very large vendors, some of which have substantially greater financial, marketing and research and development resources, broader product offerings and more established relationships with service providers and other customer segments than we do. In addition, to drive scale and market share gains and meet the intense investment capacity required to keep pace with technology innovation, acquisition activity among vendors of networking solutions has increased. Consolidation in our industry may result in competitors with greater resources, pricing flexibility, or other synergies, which may provide them with a competitive advantage.

Certain of our customers are adopting procurement strategies that seek to purchase a broader set of networking solutions from two or more vendors. As these customers move to dual or multiple vendor strategies and add new vendors, we may lose our status as sole or primary vendor. We also compete with a number of smaller companies that provide significant competition for specific products, applications, customer segments or geographic markets. Due to the narrower focus of their efforts, these competitors may be more attractive to customers in a particular product niche or commercial opportunity.

Generally, competition in our markets is based on any one or a combination of the following factors:

- functionality, speed, capacity, scalability and performance of network solutions;
- the ability to meet business needs and drive successful outcomes;
- price for performance, cost per bit and total cost of ownership of network solutions;
- incumbency and strength of existing business relationships;
- technology roadmap and forward innovation capacity, including the ability to invest significant sums in research and development;
- time-to-market in delivering products and features;
- company stability and financial health;
- ability to offer comprehensive networking solutions, consisting of hardware, software and services;
- flexibility and openness of platforms, including ease of integration, interoperability and integrated management;
- ability to offer solutions that accommodate a range of different consumption models;
- operating costs and total cost of ownership;
- software and network automation capabilities;
- ability to manage challenging supply chain environments, including manufacturing and lead-time capability;
- services and support capabilities;
- security of enterprise, product development, support processes, and products;
- space requirements and power consumption of network solutions; and
- ability to offer solutions that help customers manage the lifecycle impacts of their networks and achieve their climate sustainability goals.

Part of our strategy is to leverage our technology leadership and to aggressively capture additional market share and displace competitors, particularly with communications service providers internationally. In an effort to maintain our incumbency or to secure new customer opportunities, we have in the past, and may in the future, agree to aggressive pricing, commercial concessions and other unfavorable terms that result in low or negative gross margins on a particular order or group of orders. Competition can also result in onerous commercial and legal terms and conditions that place a disproportionate amount of risk on us.

We expect the competition in our industry to continue to broaden and to intensify, as we invest in complementary technologies or adjacent market opportunities, and as network operators pursue a diverse range of network strategies and consumption models. As these changes occur, we expect that our business will compete more directly with additional networking

solution suppliers, including IP router vendors, component vendors and other suppliers or integrators of networking technology. In addition, as we seek increased customer adoption of our Blue Planet Automation Software and Services, and as network operator demands for programmability, automation and analytics increase, we expect to compete more directly with software vendors and IT vendors or integrators of these solutions. We may also face competition from system and component vendors, including those in our supply chain, that develop networking products based on off-the-shelf or commoditized hardware technology, referred to as “white box” hardware, and as we pursue additional methods to bring the enabling technologies in our networking platforms to market. An increase in competitive intensity, the adoption of new consumption models, our entry into new markets or the entry of new competitors into our markets may adversely impact our business and results of operations.

Investment of research and development resources in communications networking technologies for which there is not an adequate market demand, or failure to invest sufficiently or timely in technologies for which there is high market demand, would adversely affect our revenue and profitability.

The market for communications networking hardware and software solutions is characterized by rapidly evolving technologies, changes in market demand and increasing adoption of software-based networking solutions. We continually invest in research and development to sustain or enhance our existing hardware and software solutions and to develop or acquire new technologies including new software platforms. There is often a lengthy period between commencing these development initiatives and bringing new or improved solutions to market. Accordingly, there is no guarantee that our new products or enhancements to other solutions will achieve market acceptance or that the timing of market adoption will be as predicted. As a general matter, there is a significant possibility that some of our development decisions, including significant expenditures on acquisitions, research and development, or investments in technologies, will not meet our expectations, and that our investment in some projects will be unprofitable. There is also a possibility that we may miss a market opportunity because we failed to invest or invested too late in a technology, product or enhancement sought by our customers or the markets into which we sell. Changes in market demand or investment priorities may also cause us to discontinue existing or planned development for new products or features, which can have a disruptive effect on our relationships with customers. In addition, failure to develop, on a cost-effective basis, innovative new or enhanced solutions that are attractive to customers and profitable to us could have a material adverse effect on our business, results of operations, financial condition and cash flows.

We have no guaranteed purchases and regularly must re-win business for existing customers.

Generally, our customer contracts do not require customers to purchase any minimum or guaranteed volumes, and we conduct sales through framework contracts under which customers place purchase orders for which they often have the right to modify or cancel. We must regularly compete for and win business with existing customers across all of our customer segments. In addition, cloud providers tend to operate on shorter procurement cycles than some of our traditional customers, which can require us to compete to re-win business with these customers more frequently than required with other customers segments. As such, there is no assurance that our incumbency will be maintained at any given customer or that our revenue levels from a customer in a particular period can be achieved in future periods. Customer spending levels can be unpredictable, and our sales to any customer could significantly decrease or cease at any time.

Network equipment sales often involve lengthy sales cycles and protracted contract negotiations that may require us to agree to commercial terms or conditions that negatively affect pricing, risk allocation, payment and the timing of revenue recognition.

Our sales efforts, particularly with communications service providers, cloud providers and other large customers, often involve lengthy sales cycles. These selling efforts often involve a significant commitment of time and resources that may include extensive product testing, laboratory or network certification, network or region-specific product certification and homologation requirements for deployment in networks. Even after a customer awards its business to us or decides to purchase our solutions, the length of time before deployment can vary depending on the customer’s schedule, site readiness, the size of the network deployment, the degree of custom configuration required and other factors. Additionally, these sales also often involve protracted and sometimes difficult contract negotiations in which we may deem it necessary to agree to unfavorable contractual or commercial terms that adversely affect pricing, expose us to penalties for delays or non-performance, and require us to assume a disproportionate amount of risk. To maintain incumbency with key customers, we have in the past and may in the future be required to offer discounted pricing, make commercial concessions or offer less favorable terms as compared to our historical business arrangements with these customers. We may also be requested to provide deferred payment terms, vendor or third-party financing or other alternative purchase structures that extend the timing of payment. Alternatively, customers may insist on terms and conditions that we deem too onerous or not in our best interest, and we may be unable to reach a commercial agreement. As a result, we may incur substantial expense and devote time and resources to potential sales opportunities that never materialize or result in lower than anticipated sales and gross margin.

If we are unable to adapt our business to the consumption models for networking solutions adopted by our customers and to offer attractive solutions across these consumption models, our business, competitive position and results of operations could be adversely affected.

Growing bandwidth demands and network operator efforts to reduce costs are resulting in a diverse range of approaches to the design and procurement of network infrastructure. We refer to these different approaches as “consumption models.” These consumption models can include: the traditional systems procurement of fully integrated solutions including acquiring hardware, software and services from the same vendor; the procurement of a fully integrated hardware solution from one vendor with the separate use of a network operator’s own SDN-based controller; the procurement of an integrated photonic line system with open interfaces from one vendor and the separate or “disaggregated” procurement of modem technology from a different vendor; or the development and use of published reference designs and open source specifications for the procurement of “white box” hardware to be used with open source software. In parallel, network operators are also exploring procurement alternatives for software solutions, ranging from integrated and proprietary software platforms to fully open source software.

We believe that network operators will continue to consider a variety of different consumption models. Many of these approaches are in their very early stages of development and evaluation, and the types of models and their levels of adoption will depend in significant part on the nature of the circumstances and strategies of particular network operators. Among our customers, AT&T, certain cloud providers and others are pursuing network strategies that emphasize enhanced software programmability, management and control of networks, and deployment of “white box” hardware. A number of network operators are pursuing the deployment of smaller form factor, pluggable modem technology, particularly within switching and routing solutions, as an alternative to integrated optical networking platforms. Other network operators, including certain of our cloud provider customers, are playing a leading role in the transition to software-defined networking, the standardization of communications network solutions and the assembly of their own hardware platforms based on enabling third party components. We believe that the potential for different approaches to the procurement of networking infrastructure will require network operators and vendors to evolve and broaden their existing solutions and commercial models over time. Adoption of a range of consumption models may also alter and broaden our competitive landscape to include other technology vendors, including routing vendors, component vendors and IT software vendors. If we are unable to adapt our business to these new consumption models and offer attractive solutions and commercial models that accommodate the range of consumption models ultimately adopted by our customers or within our markets, our business, competitive position and results of operations could be adversely affected.

Our go-to-market activities and the distribution of our WaveLogic coherent modem technology within the market for high-performance transceivers/modems could expose us to increased or new forms of competition, or adversely affect our existing systems business and results of operations.

We recently entered the market for high-performance transceivers/modems to monetize our coherent optical technology, expand our addressable market and address a range of customer consumption models for networking solutions. Making our critical technology available in this manner could adversely impact the sale of products in our existing systems business. For example, our customers may choose to adopt disaggregated consumption models or third-party solutions that embed Ciena-designed optical modules instead of purchasing systems-based solutions from us. Accordingly, we may encounter situations where we are competing for opportunities in the market directly against a system from one of our competitors that incorporates Ciena-designed modules or other component technologies. Making this key technology available and enabling third-party sales of Ciena-designed modules may adversely affect our competitive position and increase the risk that third parties misappropriate or attempt to use our technology or related intellectual property without our authorization. These and other risks or unanticipated liabilities or costs associated with the sales of our WaveLogic coherent technology could harm our reputation and adversely affect our business and our results of operations. Our go-to-market activities and the distribution of our WaveLogic coherent technology within the market for high-performance transceivers/modems could expose us to increased or new forms of competition, or adversely affect our systems business and results of operation.

Accurately matching necessary inventory levels to customer demand within the current environment is challenging, and we may incur additional costs or be required to write off significant inventory that would adversely impact our results of operations.

From the second quarter of fiscal 2021 through the third quarter of fiscal 2022, we received unprecedented orders for our products and services, during a period when the supply environment was constrained. We took a number of steps to mitigate these challenges, including extending our purchase commitments and placing non-cancellable, advanced orders with or through suppliers, particularly for long lead-time components. As of October 28, 2023, we had \$1.7 billion in outstanding purchase order commitments to our contract manufacturers and component suppliers for inventory. We also expanded our manufacturing capacity and accumulated available raw materials inventory to prepare us to be able to produce finished goods more quickly as supply constraints eased for those components in shorter supply. As a result of this strategy, our inventory increased from \$374.3

million at the end of fiscal 2021 to \$1.1 billion at the end of fiscal 2023. These inventory practices and their associated costs, had in recent fiscal periods, and could in the future continue to have, an adverse impact on our cash from operations.

These inventory practices, particularly when considered in the context of our backlog, further introduce obsolescence risk that can impact our results of operations and financial condition. During fiscal 2023, certain customers, including communications service providers and cable and multiservice operators in North America and cloud providers, that had earlier placed significant advanced orders, rescheduled deliveries for a portion of such orders. Accordingly, our inventory needs for a particular period can fluctuate and be difficult to predict. If our customers were to cancel or delay orders for extended periods, inventory could become obsolete and we could be required to write off or write down the inventory associated with those orders. In addition, if customers were to cancel or delay existing or forecasted orders for which we have significant outstanding commitments to our contract manufacturers or suppliers, we may be required to purchase inventory under these commitments that we are unable to sell. If we are required to write off or write down a significant amount of inventory, our results of operations for the applicable period would be materially adversely affected. Our inability to effectively manage the matching of inventory with customer demand, particularly within any supply constrained environment, could adversely impact our results of operations and financial condition, and could result in loss of revenue, increased costs, or delays that could adversely impact customer satisfaction.

If the market for network software does not evolve in the way we anticipate or if customers do not adopt our Blue Planet Automation Software and Services, we may not be able to monetize these software assets and realize a key part of our business strategy.

A key part of our business strategy is to increase customer adoption of our Blue Planet Automation Software. If the markets relating to software solutions for network automation, including service orchestration, route optimization, analytics and assurance, and multi-cloud orchestration, do not develop as we anticipate, or if we are unable to commercialize, increase market awareness and gain adoption of our Blue Planet Automation Software and Services within those markets, revenue from our Blue Planet Automation Software and Services may not grow. We have a limited history in commercializing and selling these software solutions and we continue to build out the capability of our Blue Planet portfolio. Moreover, the market and competitive landscape for these solutions is dynamic, and it is difficult to predict important trends, including the potential growth, if any, of this market. If the market for these software solutions does not evolve in the way we anticipate or if customers do not adopt our Blue Planet Automation Software and Services, a part of our strategy for growth would be adversely affected and our financial results may suffer.

Our exposure to the credit risks of our customers and resellers may make it difficult to collect receivables and could adversely affect our revenue and operating results.

In the course of our sales to customers and resale channel partners, we may have difficulty collecting receivables, and our business and results of operations could be exposed to risks associated with uncollectible accounts. Lack of liquidity in the capital markets, macroeconomic weakness and market volatility may increase our exposure to these credit risks. Our attempts to monitor customer payment capability and to take appropriate measures to protect ourselves may not be sufficient, and it is possible that we may have to write down or write off accounts receivable. Such write-downs or write-offs could negatively affect our operating results for the period in which they occur, and, if large, could have a material adverse effect on our revenue and operating results.

We may be required to write down the value of certain significant assets, which would adversely affect our operating results.

We have a number of significant assets on our balance sheet as of October 28, 2023, the value of which can be adversely impacted by factors related to our business and operating performance, as well as factors outside of our control. As of October 28, 2023, our balance sheet includes a \$809.3 million net deferred tax asset. The value of our net deferred tax assets can be significantly impacted by changes in tax policy, changes in future tax rates, or by our tax planning strategy. If any write-downs are required, our operating results may be materially adversely affected.

As of October 28, 2023, our balance sheet also includes \$444.8 million of goodwill. We test each reporting unit for impairment of goodwill on an annual basis and between annual tests, if an event occurs or circumstances change that would, more likely than not, reduce the fair value of the reporting unit below its carrying value. As of October 28, 2023, our balance sheet also includes \$575.0 million in long-lived assets, which includes \$205.6 million of intangible assets. Valuation of our long-lived assets requires us to make assumptions about future sales prices and sales volumes for our products. These assumptions are used to forecast future, undiscounted cash flows on which our estimates are based. If market conditions or our forecasts for our business or any particular operating segment change, we may be required to reassess the value of these assets. We could be required to record an impairment charge against our goodwill and long-lived assets or a valuation allowance against our deferred

tax assets. Any write-down of the value of these significant assets would have the effect of decreasing our earnings or increasing our losses in such period. If we are required to take a substantial write-down or charge, our operating results would be materially adversely affected in such period.

Problems affecting the performance, interoperability, reliability or security of our products could damage our business reputation and negatively affect our results of operations.

The development and production of sophisticated hardware and software for communications network equipment is highly complex. Some of our products can be fully tested only when deployed in communications networks or when carrying traffic with other equipment, and software products may contain bugs that can interfere with expected performance. As a result, undetected defects or errors, and product quality, interoperability, reliability, security and performance problems are often more acute for initial deployments of new products and product enhancements. We have recently launched, or are in the process of launching, a number of new hardware and software offerings, including new evolutions of our WaveLogic coherent optical modem technology and new Routing and Switching platforms and solutions targeting edge, access and aggregation networks. Unanticipated product performance problems can relate to the design, manufacturing, installation, operation and interoperability of our products. Undetected errors can also arise as a result of defects in components, software or manufacturing, installation or maintenance services supplied by third parties, and technology acquired from or licensed by third parties. From time to time, we have had to replace certain components, provide software remedies or other remediation in response to defects or bugs, and we may have to do so again in the future. Remediation of such events could materially adversely impact our business and results of operations. In addition, we have encountered and may continue to encounter unanticipated security vulnerabilities relating to our technology, including as a result of the activities of our supply chain and our use of third party software. Our products are used in customer networks and transmit a range of sensitive information, and our software products, including our Blue Planet solutions, play an important role in managing network elements and delivering services. Communications technologies have frequently been the target of attacks from a range of threat actors including nation states and other malicious parties. Any actual or perceived exposure of our solutions to vulnerabilities, malicious software or cyber-attacks could result in liability or regulatory action and adversely affect our business and results of operations. Product performance, reliability, security and quality problems may result in some or all of the following effects:

- damage to our reputation, declining sales and order cancellations;
- increased costs to remediate defects or replace products;
- payment of liquidated damages, contractual or similar penalties, or other claims for performance failures or delays;
- increased warranty expense or estimates resulting from higher failure rates, additional field service obligations or other rework costs related to defects;
- higher charges for increased inventory obsolescence;
- disruption to the operation of our network operator customers;
- reporting and other publication to customers or regulatory bodies;
- costs, liabilities and claims that may not be covered by insurance coverage or recoverable from third parties; and
- delays in recognizing revenue or collecting accounts receivable.

These and other consequences relating to undetected errors affecting the quality, reliability and security of our products could negatively affect our business and results of operations.

Strategic acquisitions and investments could disrupt our operations and may expose us to increased costs and unexpected liabilities.

From time to time, we acquire or make investments in other technology companies, or enter into other strategic relationships, to expand the markets we address, diversify our customer base or acquire, or accelerate the development of, technology or products. To do so, we may use cash, issue equity that could dilute our current stockholders, or incur debt or assume indebtedness. Strategic transactions can involve numerous additional risks, including:

- failure to consummate or delay in consummating such transactions;
- failure to achieve the anticipated transaction benefits or the projected financial results and operational synergies;
- greater than expected acquisition and integration costs;
- disruption due to the integration and rationalization of operations, products, technologies and personnel;
- diversion of management attention;
- difficulty completing projects of the acquired company and costs related to in-process projects;
- difficulty managing customer transitions or entering into new markets;
- the loss of key employees;
- disruption or termination of business relationships with customers, suppliers, vendors, landlords, licensors and other business partners;

- ineffective internal controls over financial reporting;
- dependence on unfamiliar suppliers or manufacturers;
- assumption of or exposure to unanticipated liabilities, including intellectual property infringement or other legal claims; and
- adverse tax or accounting impact.

As a result of these and other risks, our acquisitions, investments or strategic transactions may not realize the intended benefits and may ultimately have a negative impact on our business, results of operation and financial condition.

Emerging issues related to the development and use of artificial intelligence (AI) could give rise to legal or regulatory action, damage our reputation or otherwise materially harm our business.

Our development and use of AI technology in our products and operations remains in the early phases. While we aim to develop and use AI responsibly and attempt to mitigate ethical and legal issues presented by its use, we may ultimately be unsuccessful in identifying or resolving issues before they arise. AI technologies are complex and rapidly evolving and the technologies that we develop or use may ultimately be flawed. Moreover, AI technology is subject to rapidly evolving domestic and international laws and regulations, which could impose significant costs and obligations on the company. For example, in 2023 the Biden Administration issued a new, executive order on safe, secure and trustworthy AI and the EU introduced the AI Act to establish rules for providers and users. Emerging regulations may pertain to data privacy, data protection, and the ethical use of AI, as well as clarifying intellectual property considerations. Our use of AI could give rise to legal or regulatory action, increased scrutiny or liability, damage our reputation or otherwise materially harm our business.

Risks Relating to the Macroeconomic Environment and our Global Presence

Our business and operating results could be adversely affected by unfavorable changes in macroeconomic and market conditions and reductions in the level of spending by customers in response to these conditions.

Our business and operating results depend significantly on general market and economic conditions. Market volatility and weakness in the regions in which we operate have previously resulted in sustained periods of decreased demand for our products and services that have adversely affected our operating results. The current global macroeconomic environment is volatile and continues to be significantly and adversely impacted by inflation, geopolitical trends impacting the global supply chain, rising interest rates, and a dynamic environment for customer spending. Macroeconomic and market conditions could also be adversely affected by a variety of political, economic or other factors in the United States and international markets that could in turn adversely affect spending levels of our customers and their end users, and could create volatility or deteriorating conditions in the markets in which we operate. Due to our concentration of revenue in the United States, we would expect to incur a more significant impact from any adverse change in the capital spending environment or macroeconomic or market weakness in the United States. Macroeconomic uncertainty or weakness could result in:

- reductions in customer spending and delay, deferral or cancellation of network infrastructure initiatives;
- increased competition for fewer network projects and sales opportunities;
- increased pricing pressure that may adversely affect revenue, gross margin and profitability;
- decreased ability to forecast operating results and make decisions about budgeting, planning and future investments;
- increased overhead and production costs as a percentage of revenue;
- tightening of credit markets needed to fund capital expenditures by us or our customers;
- customer financial difficulty, including order cancellations, delivery deferrals, longer collection cycles and difficulties collecting accounts receivable or write-offs of receivables;
- business and financial difficulties faced by our suppliers or other partners, including impacts to material costs, sales, liquidity levels, ability to continue investing in their businesses, ability to import or export goods, ability to meet development commitments and manufacturing capability; and
- increased risk of charges relating to excess and obsolete inventories and the write-off of other intangible assets.

Each of our customers has a unique set of circumstances, and it is unclear how macroeconomic and market conditions may continue to impact their purchasing volumes or behaviors. Reductions in customer spending in response to unfavorable or uncertain macroeconomic and market conditions, globally or in a particular region where we operate, would adversely affect our business, results of operations and financial condition.

The international scale of our sales and operations exposes us to additional risk and expense that could adversely affect our results of operations.

We market, sell and service our products globally, maintain personnel in numerous countries, and rely on a global supply chain for sourcing important components and manufacturing our products. Our international sales and operations are subject to inherent risks, including:

- adverse social, political and economic conditions, such as continued inflation and rising interest rates;
- effects of adverse changes in currency exchange rates;
- greater difficulty in collecting accounts receivable and longer collection periods;
- difficulty and cost of staffing and managing foreign operations;
- higher incidence and risk of corruption or unethical business practices;
- less protection for intellectual property rights in some countries;
- tax and customs changes that adversely impact our global sourcing strategy, manufacturing practices, transfer-pricing, or competitiveness of our products for global sales;
- compliance with certain testing, homologation or customization of products to conform to local standards;
- significant changes to free trade agreements, trade protection measures, tariffs and other import measures, export compliance, economic sanctions measures, domestic preference procurement requirements, qualification to transact business and additional regulatory requirements;
- natural disasters (including as a result of climate change), acts of war or terrorism, and public health emergencies, including the COVID-19 pandemic; and
- uncertain economic, legal and political conditions in Europe, Asia and other regions where we do business, including, for example, as a result of continued impacts of Brexit on the relationship between the United Kingdom and Europe, the ongoing military conflicts between Russia and Ukraine and Israel and Hamas, and changes in China-Taiwan and U.S.-China relations.

We utilize a sourcing strategy that emphasizes global procurement of materials that has direct or indirect dependencies upon a number of vendors with operations in the Asia-Pacific region. We also rely upon third-party contract manufacturers, including those with facilities in Canada, Mexico, Thailand and the United States, to manufacture, support and ship our products. Physical, regulatory, technological, market, reputational, and legal risks related to climate change in these regions and globally are increasing in impact and diversity and the magnitude of any short-term or long-term adverse impact on our business or results of operations remains unknown. The physical impacts of climate change, including as a result of certain types of natural disasters occurring more frequently or with more intensity or changing weather patterns, could disrupt our supply chain, result in damage to or closures of our facilities, and could otherwise have an adverse impact on our business, operating results, and financial condition. See also the risk factor below entitled *"Government regulations related to the environment, climate change and social initiatives could adversely affect our business and operating results."*

Our international operations are subject to complex foreign and U.S. laws and regulations, including anti-bribery and corruption laws, antitrust or competition laws, data privacy laws, such as the GDPR, and environmental regulations, among others. In particular, recent years have seen a substantial increase in anti-bribery law enforcement activity by U.S. regulators, and we currently operate and seek to operate in many parts of the world that are recognized or perceived as having greater potential for corruption. Violations of any of these laws and regulations could result in fines and penalties, criminal sanctions against us or our employees, prohibitions on the conduct of our business and on our ability to offer our products and services in certain geographies, and significant harm to our business reputation. Our policies and procedures to promote compliance with these laws and regulations and to mitigate these risks may not protect us from all acts committed by our employees or third-party vendors, including contractors, agents and services partners or from the misinterpretation or changing application of such laws. Additionally, the costs of complying with these laws (including the costs of investigations, auditing and monitoring) could adversely affect our current or future business.

Our business, operations and financial results could also be adversely impacted by instability, disruption or destruction in a significant geographic region, including as a result of war, terrorism, riot, civil insurrection or social unrest; natural or man-made disasters; public health emergencies; or economic instability or weakness. For example, in February 2022, armed conflict escalated between Russia and Ukraine. The United States and certain other countries have imposed sanctions on Russia and could impose further sanctions, which could damage or disrupt international commerce and the global economy. We are complying with a broad range of U.S. and international sanctions and export control requirements imposed on Russia and, in March 2022, we announced our decision to suspend our business operations in Russia immediately. Although this decision did not materially impact our results of operations for fiscal 2022 or 2023 due to the limited amount of business that we conducted in Russia historically, it is not possible to predict the broader or longer-term consequences of this conflict, which could include further sanctions, export control and import restrictions, embargoes, regional instability, geopolitical shifts and adverse effects on macroeconomic conditions, security conditions, currency exchange rates and financial markets. Such geopolitical instability and uncertainty could have a negative impact on our ability to sell to, ship products to, collect payments from, and support customers in certain countries and regions based on trade restrictions, sanctions, embargoes and export control law restrictions, and

logistics restrictions including closures of air space, and could increase the costs, risks and adverse impacts from supply chain and logistics challenges.

The success of our international sales and operations will depend, in large part, on our ability to anticipate and manage these risks effectively. Our failure to manage any of these risks could harm our international operations, reduce our international sales, and could give rise to liabilities, costs or other business difficulties that could adversely affect our operations and financial results.

Efforts to increase our sales and capture market share in targeted international markets may be unsuccessful.

Part of our business and growth strategy is to expand our geographic reach and increase market share in international markets through a combination of direct and indirect sales resources. We are also aggressively pursuing opportunities with service provider customers in additional geographies, including EMEA and APAC. This diversification of our markets and customer base has been a significant component of the growth of our business in recent years. Our efforts to continue to increase our sales and capture market share in international markets may ultimately be unsuccessful or may adversely impact our financial results, including our gross margin. Our failure to continue to increase our sales and market share in international markets could limit our growth and could harm our results of operations.

We may be adversely affected by fluctuations in currency exchange rates.

As a company with global operations, we face exposure to movements in foreign currency exchange rates. Due to our global presence, a portion of our revenue, operating expense and assets and liabilities are non-U.S. Dollar denominated and therefore subject to foreign currency fluctuation. We face exposure to currency exchange rates as a result of the growth in our non-U.S. Dollar denominated operating expense in Canada, Europe, Asia and Latin America. An increase in the value of the U.S. Dollar could increase the real cost to our customers of our products in those markets outside the United States where we sell in U.S. Dollars, and a weakened U.S. Dollar could increase the cost of local operating expenses and procurement of materials or service that we purchase in foreign currencies. From time to time, we hedge against currency exposure associated with anticipated foreign currency cash flows or assets and liabilities denominated in foreign currency. Such attempts to offset the impact of currency fluctuations are costly, and we cannot hedge against all foreign exchange rate volatility. Losses associated with these hedging instruments and the adverse effect of foreign currency exchange rate fluctuation may negatively affect our results of operations.

Risks Related to Our Operations and Reliance on Third Parties

We may experience delays in the development and production of our products that may negatively affect our competitive position and business.

Our hardware and software networking solutions, including our WaveLogic modem technology and the components thereof, are based on complex technology, and we can experience unanticipated delays in developing, manufacturing and introducing these solutions to market. Delays in product development efforts by us or our supply chain may affect our reputation with customers, affect our ability to capture market opportunities and impact the timing and level of demand for our products. We are regularly introducing new products and enhancements and each step in their development cycle presents serious risks of failure, rework or delay, any one of which could adversely affect the cost-effectiveness and timely development of our products. Reworks, in particular, if required, can be a very expensive and time-consuming effort. We may encounter delays relating to engineering development activities and software, design, sourcing and manufacture of critical components, and the development of prototypes. The development of new technologies may increase the complexity of supply chain management or require the acquisition, licensing or interworking with the technology of third parties. In addition, intellectual property disputes, failure of critical design elements and other execution risks may delay or even prevent the release of these products. If we do not successfully develop or produce products in a timely manner, our competitive position may suffer, and our business, financial condition and results of operations could be harmed.

We rely on third-party contract manufacturers, and our business and results of operations may be adversely affected by risks associated with their businesses, financial condition, and the geographies in which they operate.

We rely on third-party contract manufacturers, including those with facilities in Canada, Mexico, Thailand, and the United States, to perform a substantial portion of our supply chain activities, including component sourcing, manufacturing, product testing and quality, and fulfillment and logistics relating to the distribution and support of our products. There are a number of risks associated with our dependence on contract manufacturers, including:

- reduced control over delivery schedules and planning;
- reliance on the quality assurance procedures of third parties;

- potential uncertainty regarding manufacturing yields and costs;
- availability of manufacturing capability and capacity, particularly during periods of high demand;
- the impact of wage inflation and labor shortages on cost;
- the impact of supply chain constraints on our contract manufacturers' costs and business models;
- risks associated with the ability of our contract manufacturers to perform to our manufacturing needs;
- risks and uncertainties associated with the locations or countries where our products are manufactured, including manufacturing disruptions caused by social, geopolitical, environmental, or health factors, such as the COVID-19 pandemic;
- risks associated with data security incidents, including disruptions, interdiction, or cyber-attacks targeting or affecting our third-party manufacturers, including manufacturing disruptions or unauthorized access to or acquisition of information;
- changes in law or policy governing tax, trade, manufacturing, development, and investment in the countries where we currently manufacture our products, including the World Trade Organization Information Technology Agreement or other free trade agreements;
- inventory liability for excess and obsolete supply;
- limited warranties provided to us; and
- potential misappropriation of our intellectual property.

If our contract manufacturers are unable or unwilling to manufacture our products or components of our products, or if we experience a disruption in manufacturing, we may be required to identify and qualify alternative manufacturers, which could cause us to be delayed in or unable to meet our supply requirements to our customers. The process of qualifying a new contract manufacturer and commencing volume production is expensive and time-consuming, and if we are required to change or qualify a new contract manufacturer, we would likely experience significant business disruption, and could lose revenue and damage our existing customer relationships. These and other risks associated with our contract manufacturers' businesses, financial condition, and the geographies in which they operate could impair our ability to fulfill orders, harm our sales and impact our reputation with customers in ways that adversely impact our business and results of operations.

Our reliance on third-party component suppliers, including sole and limited source suppliers, exposes our business to additional risk, including risk relating to our suppliers' businesses and financial position and risks arising as a result of geopolitical events, and could limit our sales, increase our costs and harm our customer relationships.

We maintain a global sourcing strategy and depend on a diverse set of third-party suppliers in international markets that comprise our supply chain. We rely on these third parties for activities relating to product design, development and support, and in the sourcing of products, components, subcomponents and related raw materials. Our products include optical and electronic components for which reliable, high-volume supply is often available only from sole or limited sources. We do not have any guarantees of supply from our third-party suppliers, and in certain cases we have limited contractual arrangements or are relying on standard purchase orders. In recent periods, delays and lower-than-expected deliveries from a small group of our suppliers of integrated circuit components that are essential for delivering finished products had a disproportionate, adverse impact on our results of operations. There is no assurance that we will be able to secure the components or subsystems that we require, in sufficient quantity and quality, within our preferred timelines and on reasonable terms.

The loss of a source of supply, or lack of sufficient availability of key components, could require that we locate an alternate source or redesign our products, either of which could result in business interruption and increased costs. Increases in market demand or scarcity of raw materials or components have resulted, and may in the future result, in shortages in availability of important components for our solutions, supply allocation challenges, deployment delays and increased cost, lead times and delivery cycle timelines. There are a number of significant technology trends or developments underway or emerging – including the IoT, autonomous vehicles, and advances in mobile communications such as 5G technologies – that have previously resulted in, and we believe will continue to result in, increased market demand for key raw materials or components upon which we rely.

A number of our key technology vendors rely upon sales to customers, including our competitors, in China for a material portion of their revenue. Recently, there have been a number of significant geopolitical events, including trade tensions and regulatory actions, involving the governments of the United States and China. In May 2019, the U.S. Department of Commerce amended the EAR by adding Huawei and certain affiliates to the "Entity List" for actions contrary to the national security and foreign policy interests of the United States, imposing significant new restrictions on export, reexport and transfer of U.S. regulated technologies and products to Huawei. In August 2020, the U.S. Department of Commerce added additional Huawei affiliates to the Entity List, confirmed the expiration of a temporary general license applicable to Huawei and amended the foreign direct product rule in a manner that represents a significant expansion of its application to Huawei. More recently, the U.S. Department of Commerce has expanded the scope of the EAR by amending the foreign direct product rule, resulting in more products made outside the United States becoming subject to the EAR for purposes of exports or transfers to certain

countries and/or parties, which increases compliance risks and licensing obligations for companies dealing with such products. Several of our third-party component suppliers, including certain sole and limited source suppliers, sell products to Huawei and, in some cases, Huawei is a significant customer for such suppliers. At this time, there can be no assurance regarding the scope or duration of these restrictions, including the foreign direct product rule, or further actions imposed on Huawei and other companies located and operating in China, and any future impact on our suppliers. Any continued restriction on our suppliers' ability to make sales to Huawei and other companies may adversely impact their businesses and financial position. In addition, China is in the midst of executing a five-year plan to improve China's capabilities in the optoelectronics industry. There can be no assurance that this initiative, or similar efforts in China such as the Made in China 2025 initiatives (and actions taken by the U.S. government in response to such efforts), will not have an adverse impact on the business of our suppliers or our access to necessary components. These and similar industry, market and regulatory disruptions affecting our suppliers could, in turn, expose our business to loss or lack of supply or discontinuation of components that could result in lost revenue, additional product costs, increased lead times and deployment delays that could harm our business and customer relationships. Our business and results of operations would be negatively affected if we were to experience any significant disruption or difficulties with key suppliers affecting the price, quality, availability or timely delivery of required components.

We rely on third-party resellers and distribution partners to sell our solutions, and on third-party service partners for installation, maintenance and support functions, and our failure to develop and manage these relationships effectively could adversely affect our business, results of operations, and relationships with our customers.

In order to sell into new markets, diversify our customer base and broaden the application for our solutions, and to complement our global field resources, we rely on a number of third-party resellers, distribution partners and sales agents, both domestic and international, and we believe that these relationships are an important part of our business. There can be no assurance that we will successfully identify and qualify these resources or that we will realize the expected benefits of these sales relationships.

We also rely on a number of third-party service partners, both domestic and international, to complement our global service and support resources. We rely on these partners for certain installation, maintenance and support functions. In addition, as network operators increasingly seek to rely on vendors to perform additional services relating to the design, construction and operation of their networks, the scope of work performed by our support partners is likely to increase and may include areas where we have less experience providing or managing such services. We must successfully identify, assess, train and certify qualified service partners in order to ensure the proper installation, deployment and maintenance of our products, as well as to ensure the skillful performance of other services associated with expanded solutions offerings, including site assessment and construction-related services.

Certain service partners may provide similar services for other companies, including our competitors. We may not be able to manage our relationships with our service partners effectively, and we cannot be certain that they will be able to deliver services in the manner or time required, that we will be able to maintain the continuity of their services, or that they will adhere to our approach to ethical business practices. We may also be exposed to a number of risks or challenges relating to the performance of our service partners, including:

- delays in recognizing revenue;
- liability for injuries to persons, damage to property or other claims relating to the actions or omissions of our service partners;
- our services revenue and gross margin may be adversely affected; and
- our relationships with customers could suffer.

As our service offering expands and customers look to identify vendors capable of managing, integrating and optimizing multi-domain, multi-vendor networks with unified software, our relationships with third-party service partners will become increasingly important.

We must also assess and certify or qualify third-party resellers, distribution partners, sales agents and service partners in order to ensure their understanding of and willingness and ability to adhere to our standards of conduct and business ethics. Vetting and certification of these resellers, agents and distribution and service partners can be costly and time-consuming. Certain resellers, agents and distribution and service partners may not have the same operational history, financial resources and scale that we have.

If we do not effectively identify, develop and manage our relationships with third-party resellers, distribution partners, sales agents or service partners, or if they fail to perform services in the manner or time required, our financial results and relationships with customers could be adversely affected. We may also be held responsible or liable for the actions or omissions of these third parties. Actions, omissions or violations of law by our third-party sales partners or agents or service partners could have a material adverse effect on our business, operating results and financial condition.

We may be exposed to unanticipated risks and additional obligations in connection with our resale of complementary products or technology of other companies.

We have entered into agreements with strategic supply partners that permit us to distribute their products or technology. We may rely on these relationships to add complementary products or technologies, to diversify our product portfolio, or to address a particular customer or geographic market. We may enter into additional OEM, resale or similar strategic arrangements in the future. We may incur unanticipated costs or difficulties relating to our resale of third-party products. Our third-party relationships could expose us to risks associated with the business, financial condition, intellectual property rights and supply chain continuity of such partners, as well as delays in their development, manufacturing or delivery of products or technology. We may also be required by customers to assume warranty, indemnity, service and other commercial obligations, including potential liability to customers, greater than the commitments, if any, made to us by our technology partners. Some of our strategic supply partners are relatively small companies with limited financial resources. If they are unable to satisfy their obligations to us or our customers, we may have to expend our own resources to satisfy these obligations. Exposure to these risks could harm our reputation with key customers and could negatively affect our business and our results of operations.

Growth of our business is dependent on the proper functioning and scalability of our internal business processes and information systems. Adoption of new systems, modifications or interruptions of services may disrupt our business, processes and internal controls.

We rely on a number of internal business processes and information systems to support key business functions, and the efficient operation of these processes and systems is critical to managing our business. Our business processes and information systems must be sufficiently scalable to support the growth of our business and may require modifications or upgrades that expose us to a number of operational risks. We continually pursue initiatives to transform and optimize our business operations through the reengineering of certain processes, investment in automation, and engagement of strategic partners or resources to assist with certain business functions. For example, to enhance operational efficiency and modernize our supply chain operations, we are pursuing a number of digital technology transformation efforts, including advanced analytics, automation, and other digital solutions. In addition, our business may begin to operate in new markets and through new supply chain models that may require different internal processes to manage. These changes require a significant investment of capital and human resources and may be costly and disruptive to our operations, and they could impose substantial demands on management time. These changes may also require changes in our information systems, modification of internal control procedures and significant training of employees or third-party resources. Our IT systems, and those of third-party IT providers or business partners, may also be vulnerable to damage or disruption caused by circumstances beyond our control, including catastrophic events, power anomalies or outages, natural disasters (including as a result of climate change), data security related incidents, and computer system or network failures. There can be no assurance that our business systems or those of our third-party business partners will not be subject to similar incidents, exposing us to significant cost, reputational harm and disruption or damage to our business.

Restructuring activities could disrupt our business and affect our results of operations.

We have taken steps, including reductions in force, office closures, and internal reorganizations to reduce the cost of our operations, improve efficiencies, or realign our organization and staffing to better match our market opportunities and our technology development initiatives. We may take similar steps in the future as we seek to realize operating synergies, to achieve our target operating model and profitability objectives, or to reflect more closely changes in the strategic direction of our business or the evolution of our site strategy and workplace. These changes could be disruptive to our business, including our research and development efforts, and could result in significant expense, including accounting charges for inventory and technology-related write-offs, workforce reduction costs and charges relating to consolidation of excess facilities. Substantial expense or charges resulting from restructuring activities could adversely affect our results of operations and use of cash in those periods in which we undertake such actions.

If we are unable to attract and retain qualified personnel, we may be unable to manage our business effectively.

Our future success and ability to maintain a technology leadership position depends upon our ability to recruit and retain the services of executive, engineering, sales and marketing, and support personnel. Competition to attract and retain highly skilled technical, engineering and other personnel with experience in our industry is intense, and our employees have been the subject of targeted hiring by our competitors. Competition is particularly intense in certain jurisdictions where we have research and development centers, including the Silicon Valley area of northern California, and for engineering talent generally. The lasting impact of the COVID-19 pandemic has resulted in higher employee costs, increased attrition, and significant shifts in the labor market and employee expectations. We may experience difficulty retaining and motivating existing employees and attracting qualified personnel to fill key positions. In addition, labor shortages and employee mobility may make it more difficult to hire and retain employees. There can be no assurance that the programs, initiatives, rewards and recognition that are part of our annual "people strategy" will be successful in attracting and retaining the talent necessary to execute on our business plans.

Because we rely on equity awards as a significant component of compensation, particularly for our executive team, a lack of positive performance in our stock price, reduced grant levels, or changes to our compensation program may adversely affect our ability to attract and retain key employees. In addition, none of our executive officers is bound by an employment agreement for any specific term. We have a number of workforce planning initiatives underway and our failure to manage these programs effectively could result in the loss of key personnel. Similarly, the failure to properly manage the necessary knowledge transfer required from these employee transitions could impact our ability to maintain industry and innovation leadership. If we are unable to attract and retain qualified personnel, we may be unable to manage our business effectively, and our operations and financial results could suffer.

In addition, a number of our team members are foreign nationals who rely on visas or work-entry permits in order to legally work in the United States and other countries. Changes in government policy and global events such as pandemics may interfere with our ability to hire or retain personnel who require these visas or entry permits. Changes in immigration policy, including the implementation of restrictive interpretations by the U.S. Citizenship and Immigration Services of regulatory requirements for H-1B, L-1 and other U.S. work visa categories, may also adversely affect our ability to hire or retain key talent, which could have an impact on our business operations.

Risks Related to Intellectual Property, Litigation, Regulation and Government Policy

Our intellectual property rights may be difficult and costly to enforce.

We generally rely on a combination of patents, copyrights, trademarks and trade secret laws to establish and maintain proprietary rights in our products and technology. Although we have been issued numerous patents, and other patent applications are currently pending, there can be no assurance that any of these patents or other proprietary rights will not be challenged, invalidated or circumvented, or that our rights will provide us with any competitive advantage. In addition, there can be no assurance that patents will be issued for our pending applications or that claims allowed on any patents will be sufficiently broad to protect our technology. Further, the laws of some foreign countries may not protect our proprietary rights to the same extent as do the laws of the United States.

We are subject to the risk that third parties may attempt to access, divert or use our intellectual property without authorization. We are also vulnerable to third parties who illegally distribute or sell counterfeit, stolen, or unfit versions of our products, which could have a negative impact on our reputation and business. Protecting against the unauthorized use of our products, technology and other proprietary rights is difficult, time-consuming and expensive, and we cannot be certain that the steps that we are taking will detect, prevent or minimize the risks of such unauthorized use. In addition, our intellectual property strategy must continually evolve to protect our proprietary rights in new solutions, including our software solutions. Litigation may be necessary to enforce or defend our intellectual property rights or to determine the validity or scope of the proprietary rights of others. Such litigation could result in substantial cost and diversion of management time and resources, and there can be no assurance that we will obtain a successful result. Any inability to protect and enforce our intellectual property rights could harm our ability to compete effectively.

We may incur significant costs in response to claims by others that we infringe their intellectual property rights.

From time to time third parties may assert claims or initiate litigation or other proceedings related to patent, copyright, trademark and other intellectual property rights to technologies and related standards that are relevant to our business. We have been subject to several claims related to patent infringement, and we have been requested to indemnify customers pursuant to contractual indemnity obligations relating to infringement claims made by third parties. The rate of infringement assertions by patent assertion entities is increasing, particularly in the United States. Generally, these patent owners neither manufacture nor use the patented invention directly, and they seek to derive value from their ownership solely through royalties from patent licensing programs.

We could be adversely affected by litigation, other proceedings or claims against us, as well as claims against our manufacturers, suppliers or customers, alleging infringement of third-party proprietary rights by our products and technology, or components thereof. Regardless of the merit of these claims, they can be time-consuming, divert the time and attention of our technical and management personnel, and result in costly litigation or otherwise require us to incur substantial costs, including legal fees. These claims, if successful, could require us to:

- pay substantial damages or royalties;
- comply with an injunction or other court order that could prevent us from offering certain of our products;
- seek a license for the use of certain intellectual property, which may not be available on commercially reasonable terms or at all;

- develop non-infringing technology, which could require significant effort and expense and ultimately may not be successful; and
- indemnify our customers or other third parties pursuant to contractual obligations to hold them harmless or pay expenses or damages on their behalf.

Any of these events could adversely affect our business, results of operations and financial condition. Our exposure to risks associated with the use of intellectual property may increase as a result of acquisitions, as we would have a lower level of visibility into the development process with respect to the acquired technology and the steps taken to safeguard against the risks of infringing the rights of third parties.

Our products incorporate software and other technology under license from third parties, and our business would be adversely affected if this technology were no longer available to us on commercially reasonable terms.

We integrate third-party software and other technology into our operating system, network management, and intelligent automation software and other products. As a result, we may be required to license certain software or technology from third parties, including competitors. Licenses for software or other technology may not be available or may not continue to be available to us on commercially reasonable terms. Failure to obtain or maintain such licenses or other third-party intellectual property rights could affect our development efforts and market opportunities, or could require us to re-engineer our products or to obtain alternate technologies. Third-party licensors may insist on unreasonable financial or other terms in connection with our use of such technology. Our failure to comply with the terms of any license may result in our inability to continue to use such license, which may result in significant costs, harm our market opportunities and require us to obtain or develop a substitute technology.

Some of our solutions, including our operating system software, Platform Software, and Blue Planet Automation Software, utilize elements of open source or publicly available software. As network operators seek to enhance programmability and automation of networks, we expect that we and other communications networking solutions vendors will increasingly contribute to and use technology or open source software developed by standards setting bodies or other industry forums that seek to promote the integration of network layers and functions. The terms of such licenses could be construed in a manner that could impose unanticipated conditions or restrictions on our ability to commercialize our products. This increases our risks associated with our use of such software and may require us to seek licenses from third parties, to re-engineer our products or to discontinue the sale of such solutions. Difficulty obtaining and maintaining technology licenses with third parties may disrupt development of our products, increase our costs and adversely affect our business.

Data security breaches and cyber-attacks targeting our enterprise technology environment and assets could compromise our intellectual property, technology or other sensitive information and cause significant damage to our business, reputation and operational capacity.

In the ordinary course of our business, our network environment and assets, and the networks and assets of our third-party business partners, including our supply chain and other vendors, maintain certain information that is confidential, regulated, proprietary or otherwise sensitive in nature to our business. This information may include intellectual property and product information, personal data, financial information and other confidential business information relating to us and our employees, customers, suppliers and other business partners. The frequency, sophistication and unpredictability of cybersecurity events globally have increased, and can be more acute during times of geopolitical tension or instability between countries. In addition, companies in the technology industry, and in particular, manufacturers of networking and communications products, have been increasingly subjected to a wide variety of data security incidents, including cyber-attacks and other attempts to gain unauthorized access to network asset, infrastructure or sensitive information. Our network systems, devices, storage and other business applications, and the systems, storage and other business applications that we rely on and that are maintained by our third-party providers, have been in the past, and may be in the future, subjected to security incidents including attack, exploitation, intrusion, disruption and other malfeasance or attempts to gain unauthorized access or conduct other unauthorized activities. Such data security incidents may be caused by malice or negligence from either third party or internal actors. These threats arise from actions by nation states, independent hackers, hacktivist groups, organized cybercrime entities, and other third parties, as well as from malicious actors from within or supporting our organization. In some cases, it is difficult to anticipate, detect or identify indicators of such incidents and assess the damage caused thereby. If an actual or perceived data security incident affects our network or any of our third-party providers' networks, we could incur significant costs, our technology and operations could be impacted, our customers and other stakeholders could be impacted, our reputation could be harmed, and we may become involved in litigation, including with respect to allegations of breach of contract. We may also be subject to increased regulatory oversight, including governmental investigations, enforcement actions, and regulatory fines. We could also experience delays in reporting our financial results, and we may lose revenue and profits as a result of our inability to timely produce, distribute, invoice, and collect payments for our products and services. Additionally, a data security incident may result in significant remediation expenses and increased cybersecurity protection and insurance costs.

While we work to safeguard our enterprise network systems and to validate the security of our third-party providers to mitigate these potential risks, including through information security policies, employee awareness and training and other technical, procedural and administrative controls, there is no assurance that such actions will be sufficient to prevent future data security incidents or insider threats. We have been subjected in the past, and expect to be subjected in the future, to a range of incidents including phishing, emails purporting to come from a company executive or vendor seeking payment requests, malware, and communications from look-alike corporate domains, as well as security-related risks created by malicious internal actors internally and our use of third-party software and services. We have also been subject to unauthorized access and exfiltration of confidential data as a result of the exploitation of zero day vulnerabilities involving our use of third-party applications. While these types of incidents to which we have been subjected have not had a material effect on our business, technology, operations or our network security to date, future data security incidents could compromise material confidential or otherwise protected information, seize, destroy or corrupt data, or otherwise disrupt our operations or impact our customers or other stakeholders. We and our network environment may also be subject in the future to ransomware attacks, nation-state cyber attacks or other types of cyber attacks. A failure to promptly disclose such material incidents as required by law may result in additional financial or regulatory consequences. We have incurred, and will continue to incur, expenses to comply with privacy and data protection standards and protocols imposed by law, regulation, industry standards and contractual obligations. Increased regulation of data collection, use and retention practices, including self-regulation and industry standards, changes in existing laws and regulations, enactment of new laws and regulations, increased enforcement activity, and changes in interpretation of laws, could increase our cost of compliance and operation. And while we may be entitled to damages if our third-party providers fail to satisfy their security-related obligations to us, any award may be insufficient to cover our damages, or we may be unable to recover such award. While we have purchased cybersecurity insurance, there are no assurances that the coverage would be adequate in relation to any incurred losses. Moreover, as cyber-attacks increase in frequency and magnitude, we may be unable to obtain cybersecurity insurance in amounts and on terms we view as adequate for our operations.

We are a party to legal proceedings, investigations and other claims or disputes, which are costly to defend and, if determined adversely to us, could require us to pay fines or damages, undertake remedial measures, or prevent us from taking certain actions, any of which could adversely affect our business.

In the course of our business, we are, and in the future may be, a party to legal proceedings, investigations and other claims or disputes, which have related and may relate to subjects including commercial transactions, intellectual property, securities, employee relations, or compliance with applicable laws and regulations. Legal proceedings and investigations are inherently uncertain, and we cannot predict their duration, scope, outcome or consequences. There can be no assurance that these or any such matters that have been or may in the future be brought against us will be resolved favorably. In connection with any government investigations, in the event the government takes action against us or the parties resolve or settle the matter, we may be required to pay substantial fines or civil and criminal penalties and/or be subject to equitable remedies, including disgorgement or injunctive relief. Other legal or regulatory proceedings, including lawsuits filed by private litigants, may also follow as a consequence. These matters are likely to be expensive and time-consuming to defend, settle and/or resolve, and may require us to implement certain remedial measures that could prove costly or disruptive to our business and operations. They may also cause damage to our business reputation. The unfavorable resolution of one or more of these matters could have a material adverse effect on our business, results of operations, financial condition or cash flows.

Changes in trade policy, including the imposition of tariffs and other import measures, increased export control and investment restrictions, and efforts to withdraw from or materially modify international trade agreements, as well as other regulatory efforts impacting the import and sale of foreign equipment, may adversely affect our business, operations and financial condition.

The United States and various foreign governments have established certain trade and tariff requirements under which we have implemented a global approach to the sourcing and manufacture of our products, as well as distribution and fulfillment to customers around the world. From time to time, the U.S. government has indicated a willingness to revise, renegotiate, or terminate various existing multilateral trade agreements and to impose new taxes and restrictions on certain goods imported into the U.S. Because we rely on a global sourcing strategy and third-party contract manufacturers in markets outside of the U.S. to perform substantially all of the manufacturing of our products, such steps, if adopted, could adversely impact our business and operations, increase our costs, and make our products less competitive in the U.S. and other markets.

For example, our supply chain includes certain direct and indirect suppliers based in China who supply goods to us, our manufacturers or our third-party suppliers. Recently, there have been a number of significant geopolitical events, including trade tensions and regulatory actions, involving the governments of the United States and China. The U.S. government has raised tariffs, and imposed new tariffs, on a wide range of imports of Chinese products, including component elements of our solutions and certain finished goods products that we sell. U.S. tariff policy involving imports from China are slated for a broad review in 2023. The U.S. government has also introduced broad new restrictions on imports from China allegedly manufactured with

forced labor, and the EU has debated similar restrictions, while other countries are debating or have introduced similar restrictions on imports of goods produced in whole or in part with the use of forced labor. China has retaliated by raising tariffs, and imposing new tariffs, on certain exports of U.S. goods to China, as well as introducing blocking measures to restrict the ability of domestic companies to comply with U.S. trade restrictions and could take further steps to retaliate against U.S. industries or companies. In May 2020, the U.S. introduced significant further restrictions limiting access to controlled U.S. technology to additional Chinese government and commercial entities, including certain of our competitors based in China. More recently, in October 2022, the U.S. Department of Commerce imposed additional export control restrictions targeting the provision of certain semiconductors and related technology to China that could further disrupt supply chains that could adversely impact our business. In addition, the U.S. Federal Communications Commission (the "FCC") in November 2022 prohibited communications equipment deemed to pose an unacceptable risk to national security from obtaining the equipment authorization that allows the products to be imported, marketed, or sold in the U.S. This prohibition currently includes telecommunications equipment produced by Huawei and its affiliates and subsidiaries and four other Chinese companies, and additional entities may be subsequently added to this list. The situation involving U.S.-China trade relations remains volatile and uncertain, and there can be no assurance that further actions by either country will not have an adverse impact on our business, operations and access to technology, or components thereof, sourced from China. See also the risk factor with the caption beginning "Our reliance on third-party component suppliers..." above.

At this time, it remains unclear what additional actions, if any, will be taken by the U.S. or other governments with respect to international trade agreements, the imposition of tariffs on goods imported into the U.S., tax policy related to international commerce, increased export control and investment restrictions, import or use of foreign communications equipment, or other trade matters. Based on our manufacturing practices and locations, there can be no assurance that any future executive or legislative action in the United States or other countries relating to tax policy and trade regulation would not adversely affect our business, operations and financial results.

Government regulation of usage, import or export of our products, or our technology within our products, changes in that regulation, or our failure to obtain required approvals for our products, could harm our international and domestic sales and adversely affect our revenue and costs of sales. Failure to comply with such regulations could result in enforcement actions, fines, penalties or restrictions on export privileges. In addition, costly tariffs on our equipment, restrictions on importation, trade protection measures and domestic preference requirements of certain countries could limit our access to these markets and harm our sales. These regulations could adversely affect the sale or use of our products, substantially increase our cost of sales and adversely affect our business and revenue.

Changes in government regulations affecting the communications and technology industries and the businesses of our customers could harm our prospects and operating results.

The FCC has jurisdiction over many companies in the U.S. telecommunications industry, and similar agencies have jurisdiction over the communications industries in other countries. Many of our largest customers, including service providers and cable and multiservice network operators, are subject to the rules and regulations of these agencies, while others participate in and benefit from government-funded programs that encourage the deployment of network infrastructures. These regulatory requirements and funding programs are subject to changes that may adversely impact our customers, with resulting adverse impacts on our business.

In December 2017, the FCC repealed most of the net neutrality rules prohibiting blocking, degrading, or prioritizing certain types of internet traffic that it had imposed in 2015, and restored a light touch regulatory treatment of broadband service. The 2017 decision was partially upheld in October 2020 by an appellate court, although the 2020 decision vacated the specific preemption provision in the 2017 order. In October 2023, the FCC proposed to reclassify broadband internet access service ("BIAS") as a Title II telecommunications service under Title II of the Communications Act and reinstate net neutrality obligations on BIAS providers. The impact of these rules, if adopted, remains uncertain and further judicial review is likely. A number of states, including California, have also taken executive action or passed legislation seeking to reestablish net neutrality, and there are efforts within Congress to pass federal legislation to codify uniform net neutrality requirements.

Changes in regulatory requirements or uncertainty associated with the regulatory environment could delay or serve as a disincentive to investment in network infrastructures by network operators, which could adversely affect the sale of our products and services. Similarly, changes in regulatory tariff requirements or other regulations relating to pricing or terms of carriage on communications networks could slow the development or expansion of network infrastructures and adversely affect our business, operating results, and financial condition.

Separately, certain of our cloud provider customers have been the subject of regulatory and other government actions, including inquiries and investigations, formal or informal, by competition authorities in the United States, Europe and other jurisdictions. In July 2019, the U.S. Department of Justice announced that it would commence an antitrust review into significant

online technology platforms, and in September 2019, various state attorneys general announced antitrust investigations involving certain technology companies. In addition, certain committees of the U.S. Congress have recently held hearings and pursued investigations to consider the businesses associated with these platforms, their impact on competition, and their conduct. There can be no assurance that these government actions will not adversely impact the network spending, procurement strategies, or business practices of our cloud provider customers in a manner adverse to us.

Government regulations related to the environment, climate change and social initiatives could adversely affect our business and operating results.

Our operations are regulated under various federal, state, local and international laws relating to the environment and climate change. If we were to violate or become liable under these laws or regulations, we could incur fines, costs related to damage to property or personal injury and costs related to investigation or remediation activities. Our product design efforts and the manufacturing of our products are also subject to evolving requirements relating to the presence of certain materials or substances in our equipment, including regulations that make producers for such products financially responsible for the collection, treatment and recycling of certain products. For example, our operations and financial results may be negatively affected by environmental regulations, such as the WEEE and RoHS regulations that have been adopted by the EU. Compliance with these and similar environmental regulations may increase our cost of designing, manufacturing, selling and removing our products. The SEC requires disclosure regarding the use of “conflict minerals” mined from the Democratic Republic of the Congo and adjoining countries (the “DRC”) and disclosure with respect to procedures regarding a manufacturer’s efforts to prevent the sourcing of such minerals from the DRC. Certain of these minerals are present in our products. SEC rules implementing these requirements may have the effect of reducing the pool of suppliers that can supply “conflict free” components and parts, and we may not be able to obtain conflict free products or supplies in sufficient quantities for our operations. Because our supply chain is complex, we may face reputational challenges with our customers, stockholders and other stakeholders if we are unable to verify sufficiently the origins for the “conflict minerals” used in our products and cannot assert that our products are “conflict free.” Environmental or similar social initiatives may also make it difficult to obtain supply of compliant components or may require us to write off non-compliant inventory, which could have an adverse effect on our business and operating results.

Investor and other stakeholder scrutiny related to our environmental, social and governance practices, and our disclosed performance and aspirations for these practices, may increase costs and expose us to numerous risks.

Investors, business partners, employees, legislators, regulators, and other stakeholders are increasingly focused on ESG matters, including our ESG practices. As expectations have grown, we have established and communicated various initiatives, goals and aspirations related to ESG matters. Any disclosed goals and aspirations reflect our current plans and assumptions, are subject to assumptions that could change over time, and may not be achieved. In addition, the standards and laws by which ESG efforts are tracked and measured are in many cases new, have not been harmonized, and continue to evolve. Our efforts to abide by these standards and laws and to accomplish and accurately report on our initiatives, goals and aspirations present numerous operational, reputational, financial, legal, and other risks. Our processes and controls may not always align with evolving standards, our interpretation of standards may differ from others, and standards may continue to change over time, any of which could result in significant revisions to our goals, our reported progress toward those goals, or other ESG information we disclose. In addition, any failure or perceived failure to pursue or fulfill our previously stated goals, targets and objectives or to satisfy various reporting standards within the timelines we announce, or at all, could also have similar negative impacts and expose us to government enforcement actions, private litigation and reputational harm.

Changes in tax law or regulation, effective tax rates and other adverse outcomes with taxing authorities could adversely affect our results of operations.

Our future effective tax rates could be subject to volatility or adversely affected by changes in tax laws, regulations, accounting principles, or interpretations thereof. The impact of income taxes on our business can also be affected by a number of items relating to our business. These may include estimates for and the actual geographic mix of our earnings; changes in the valuation of our deferred tax assets; the use or expiration of net operating losses or research and development credit arrangements applicable to us in certain geographies; and changes in our methodology for transfer pricing, valuing developed technology or conducting intercompany arrangements.

Additionally, the Organization for Economic Co-operation and Development (the “OECD”) has introduced a framework to implement a global minimum corporate tax of 15%, referred to as Pillar Two or the minimum tax directive. Many aspects of the minimum tax directive will be effective beginning in fiscal 2025, with certain remaining impacts to be effective beginning in fiscal 2026. While it is uncertain whether the U.S. will enact legislation to adopt the minimum tax directive, certain countries in which we operate have adopted legislation, and other countries are in the process of introducing legislation to implement the minimum tax directive. While we do not currently expect the minimum tax directive to have a material impact on our effective

tax rate, our analysis is ongoing as the OECD continues to release additional guidance and countries implement legislation. To the extent additional changes take place in the countries in which we operate, it is possible that these legislative changes and efforts may increase uncertainty and have an adverse impact on our effective tax rates or operations.

We are subject to the continuous examination of our income and other tax returns by the Internal Revenue Service and other tax authorities globally, and we have a number of such reviews underway at any time. It is possible that tax authorities may disagree with certain positions we have taken, and an adverse outcome of such a review or audit could have a negative effect on our financial position and operating results. There can be no assurance that the outcomes from such examinations, or changes in tax law or regulation impacting our effective tax rates, will not have an adverse effect on our business, financial condition and results of operations.

Failure to maintain effective internal controls over financial reporting could have a material adverse effect on our business, operating results and stock price.

Section 404 of the Sarbanes-Oxley Act of 2002 requires that we include in our annual report a report containing management's assessment of the effectiveness of our internal controls over financial reporting as of the end of our fiscal year and a statement as to whether or not such internal controls are effective. Compliance with these requirements has resulted in, and is likely to continue to result in, significant costs and the commitment of time and operational resources. Certain ongoing initiatives, including efforts to transform business processes or to transition certain functions to third-party resources or providers, will necessitate modifications to our internal control systems, processes and related information systems as we optimize our business and operations. Our expansion into new regions could pose further challenges to our internal control systems. We cannot be certain that our current design for internal control over financial reporting, or any additional changes to be made, will be sufficient to enable management to determine that our internal controls are effective for any period, or on an ongoing basis. If we are unable to assert that our internal controls over financial reporting are effective, market perception of our financial condition and the trading price of our stock may be adversely affected, and customer perception of our business may suffer.

Risks Related to Our Common Stock, Indebtedness and Investments

Our stock price is volatile.

Our common stock price has experienced substantial volatility in the past and may remain volatile in the future. Volatility in our stock price can arise as a result of a number of the factors discussed in this "Risk Factors" section. From fiscal 2020 through fiscal 2023, our closing stock price ranged from a high of \$77.60 per share to a low of \$34.50 per share. The stock market has experienced significant price and volume fluctuation that has affected the market price of many technology companies, with such volatility often unrelated to the operating performance of these companies. Divergence between our actual results and our forward-looking guidance for such results, the published expectations of investment analysts, or the expectations of the market generally, can cause significant swings in our stock price. Our stock price can also be affected by market conditions in our industry as well as announcements that we, our competitors, vendors or our customers may make. These may include announcements by us or our competitors of financial results or changes in estimated financial results, technological innovations, the gain or loss of customers, or other strategic initiatives. Our common stock is also included in certain market indices, and any change in the composition of these indices to exclude our company could adversely affect our stock price. In addition, if the market for technology stocks or the broader stock market continues to experience a loss of investor confidence, the trading price of our common stock could decline for reasons unrelated to our business, financial condition or results of operations. These and other factors affecting macroeconomic conditions or financial markets may materially adversely affect the market price of our common stock in the future.

Outstanding indebtedness under our senior secured credit facilities and senior unsecured notes may adversely affect our liquidity and results of operations and could limit our business.

We are a party to credit agreements relating to a \$300.0 million senior secured revolving credit facility, an outstanding senior secured term loan with approximately \$1.2 billion due 2030, and an outstanding senior unsecured indenture pursuant to which we issued \$400.0 million in aggregate principal amount of 4.00% senior notes due 2030. The agreements governing these credit facilities contain certain covenants that limit our ability, among other things, to incur additional debt, create liens and encumbrances, pay cash dividends, redeem or repurchase stock, enter into certain acquisition transactions or transactions with affiliates, repay certain indebtedness, make investments, or dispose of assets. The agreements also include customary remedies, including the right of the lenders to take action with respect to the collateral securing the loans, that would apply should we default or otherwise be unable to satisfy our debt obligations.

Our indebtedness could have important negative consequences, including:

- increasing our vulnerability to adverse economic and industry conditions;
- limiting our ability to obtain additional financing, particularly in unfavorable capital and credit market conditions;
- debt service and repayment obligations that may adversely impact our results of operations and reduce the availability of cash resources for other business purposes;
- limiting our flexibility in planning for, or reacting to, changes in our business and the markets; and
- placing us at a possible competitive disadvantage to competitors that have better access to capital resources.

We may also enter into additional debt transactions or credit facilities, including equipment loans, working capital lines of credit, senior notes, and other long-term debt, which may increase our indebtedness and result in additional restrictions on our business. In addition, major debt rating agencies regularly evaluate our debt based on a number of factors. There can be no assurance that we will be able to maintain our existing debt ratings, and failure to do so could adversely affect our cost of funds, liquidity and access to capital markets.

Significant volatility and uncertainty in the capital markets may limit our access to funding on favorable terms or at all.

The operation of our business requires significant capital. We have accessed the capital markets in the past and have successfully raised funds, including through the issuance of equity, convertible notes and other indebtedness, to increase our cash position, support our operations and undertake strategic growth initiatives. We regularly evaluate our liquidity position, debt obligations and anticipated cash needs to fund our long-term operating plans, and we may consider it necessary or advisable to raise additional capital or incur additional indebtedness in the future. If we raise additional funds through further issuance of equity or securities convertible into equity, or undertake certain transactions intended to address our existing indebtedness, our existing stockholders could suffer dilution in their percentage ownership of our company, or our leverage and outstanding indebtedness could increase. Current capital market conditions, including the impact of inflation, have increased borrowing rates and can be expected to significantly increase our cost of capital as compared to prior periods should we seek additional funding. Moreover, global capital markets have undergone periods of significant volatility and uncertainty in the past, and there can be no assurance that such financing alternatives will be available to us on favorable terms or at all, should we determine it necessary or advisable to seek additional capital.

Item 1B. Unresolved Staff Comments

Not applicable.

Item 2. Properties

Overview. As of October 28, 2023, all of our properties are leased, and we do not own any real property. We lease facilities globally related to the ongoing operations of our business segments and related functions. Our corporate headquarters are located in one building in Hanover, Maryland.

Our largest facilities are our research and development centers located in Ottawa, Canada and Gurgaon, India. We also lease smaller engineering facilities in the United States, Canada, and Europe. In addition, we lease various smaller offices in regions throughout the world to support our sales and services operations. We believe the facilities we are now using are adequate and suitable for our business requirements.

Hanover, Maryland Headquarters Lease. We entered into an agreement dated November 3, 2011, with W2007 RDG Realty, L.L.C. relating to a 15-year lease of office space for our corporate headquarters in Hanover, Maryland, consisting of an agreed-upon rentable area of approximately 88,000 square feet.

Ottawa Leases. On October 23, 2014, Ciena Canada, Inc. entered into an 18-year lease agreement for the office building located at 5050 Innovation Drive, Ottawa, Canada, consisting of a rentable area of approximately 170,000 square feet. In addition, on April 15, 2015, Ciena Canada, Inc. entered into a 15-year lease agreement for two new office buildings adjacent to the building at 5050 Innovation Drive, located at 383 and 385 Terry Fox Drive, Ottawa, Canada, consisting of a rentable area of approximately 255,000 square feet.

Gurgaon Leases. On August 13, 2020, Ciena India Pvt. Ltd. extended our rental agreement for five years for an office building located at Plot No. 13, Echelon Institutional Sector 32, Gurgaon, which is adjacent to another building rented by Ciena India Pvt. Ltd., located at Plot No. 14, Echelon Institutional Sector 32, Gurgaon. The Gurgaon offices consist of a rentable area of approximately 282,000 square feet.

For additional information regarding our lease obligations, see Note 18 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report.

Item 3. Legal Proceedings

The information set forth under the heading “Litigation” in [Note 27](#) to our Consolidated Financial Statements included in Item 8 of Part II of this report, is incorporated herein by reference.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Stock, Related Stockholder Matters and Issuer Purchases of Equity Securities

(a) Our common stock is traded on the New York Stock Exchange under the stock symbol "CIEN."

As of December 8, 2023, there were approximately 685 holders of record of our common stock and 144,830,337 shares of common stock outstanding. We have never paid cash dividends on our capital stock. We currently intend to retain earnings for use in our business, and we do not anticipate paying any cash dividends in the foreseeable future.

Issuer Purchases of Equity Securities

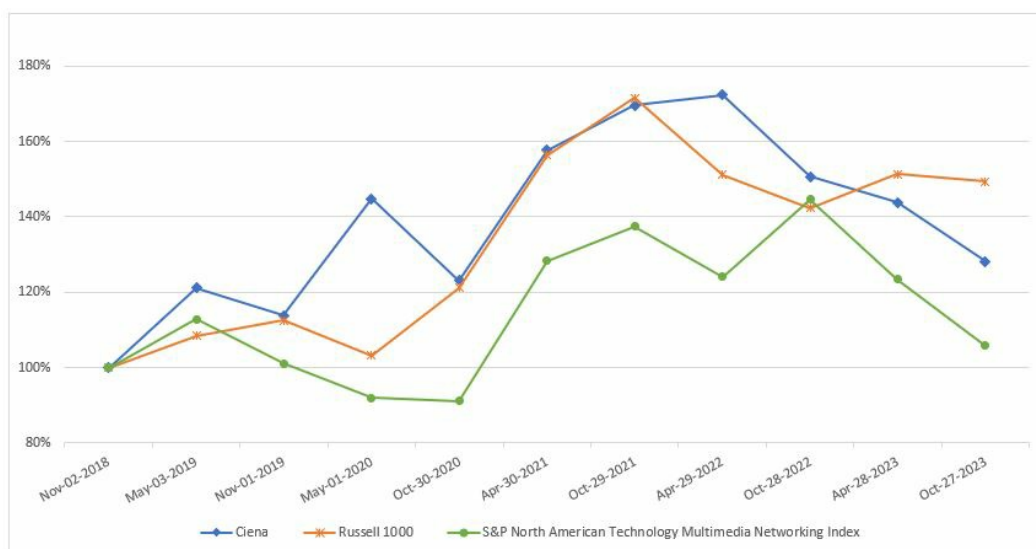
The following table provides a summary of repurchases of our common stock during the fourth quarter of fiscal 2023:

Period	Total Number of Shares Purchased (1)	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (1)	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (in Thousands)
July 30, 2023 to August 26, 2023	841,444	\$ 41.59	841,444	\$ 403,764
August 27, 2023 to September 23, 2023	1,147,400	\$ 48.03	1,147,400	\$ 348,650
September 24, 2023 to October 28, 2023	2,241,844	\$ 44.00	2,241,844	\$ 250,000
Total	4,230,688	\$ 44.62	4,230,688	

(1) On December 9, 2021, we announced that our Board of Directors had authorized a program to repurchase up to \$1.0 billion of our common stock, which replaced in its entirety our previous stock repurchase program. The program may be modified, suspended, or discontinued at any time. During the fourth quarter of fiscal 2023, we repurchased \$188.8 million of our common stock under the stock repurchase program, and we had \$250.0 million remaining under the current repurchase authorization as of October 28, 2023. See "Management's Discussion and Analysis of Financial Condition and Results of Operations— Liquidity and Capital Resources – Stock Repurchase Authorization" in Item 7 of Part II of this report and Note 22 to our Consolidated Financial Statements included in Item 8 of Part II of this report for information regarding the stock repurchase programs authorized by our Board of Directors.

Stock Performance Graph

The following graph shows a comparison of cumulative total returns for an investment in our common stock, the S&P North American Technology-Multimedia Networking Index and the Russell 1000 from November 2, 2018 to October 27, 2023. The Russell 1000 index comprises the stocks representing the 1,000 largest publicly traded American companies as measured by market capitalization. The S&P North American Technology-Multimedia Networking Index comprises stocks in the S&P Total Market Index that are classified under the Global Industry Classification Standard communications equipment sub-industry. This graph is not deemed to be "soliciting material" or "filed" with the SEC or subject to the liabilities of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the graph shall not be deemed to be incorporated by reference into any prior or subsequent filing by us under the Securities Act of 1933, as amended, or the Exchange Act.



Assumes \$100 invested in Ciena Corporation, the Russell 1000 and the S&P North American Technology-Multimedia Networking Index, respectively, on November 2, 2018 with all dividends reinvested at month-end.

(b) Not applicable.

(c) Not applicable.

Item 6. [Reserved]

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 our consolidated financial statements and notes thereto included elsewhere in this annual report.

Overview

We are a network platform, software, and services company, providing solutions that enable a wide range of network operators to deploy and manage next-generation networks that deliver services to businesses and consumers. We provide hardware, software, and services that support the delivery of video, data, and voice traffic over core, metro, aggregation, and access communications networks. Our solutions are used globally by communications service providers, cable and multiservice operators, cloud providers, submarine network operators, governments, and enterprises across multiple industry verticals. Our portfolio is designed to enable the Adaptive Network, which is our vision for a network end state that leverages a programmable and scalable network infrastructure, driven by software control and automation capabilities, that is informed by analytics and intelligence. Our solutions include Networking Platforms, including our Optical Networking and Routing and Switching portfolios, which can be applied from the network core to end-user access points, and which allow network operators to scale capacity, increase transmission speeds, allocate traffic efficiently and adapt dynamically to changing end-user service demands. To complement our Networking Platforms, we offer Platform Software, which includes our Manage, Control and Plan ("MCP") applications that deliver advanced multi-layer domain control and operations. Through our Blue Planet Software, we also enable complete service lifecycle management automation with productized operational support systems (OSS), which include inventory, orchestration and assurance solutions that help our customers to achieve closed loop automation across multi-vendor and multi-domain environments.

Order Volumes

From the second quarter of fiscal 2021 through the third quarter of fiscal 2022, we received an unprecedented volume of orders for our products and services. Our quarterly order volumes during this period significantly exceeded our revenue and historical order volumes, with concentration of orders among certain existing cloud provider and North America-based service provider customers. We believe some portion of these orders reflected customer acceleration of future orders due to lengthened lead times or the implementation of security of supply strategies to address the supply constraints described below. We also believe some portion of these orders reflected pre-pandemic design wins for which orders were delayed due to the dynamics of the COVID-19 pandemic. Our order volumes began to moderate in the fourth quarter of fiscal 2022. We continued to experience levels of orders lower than revenue during fiscal 2023, with order volumes slightly increasing in the fourth quarter of fiscal 2023 as compared to the third quarter of fiscal 2023. We believe this reduction in orders relative to revenue has been in part due to customers no longer needing to place significant advanced orders, because supply chain conditions and lead times have improved. However, over the longer term, we continue to believe that certain trends and shifts in business and consumer behaviors, including enterprise and consumer cloud network adoption, 5G, high-definition video, generative AI, and network operator focus on resilience and automation, represent positive, long-term drivers of demand and opportunities for our business.

Backlog and Order Delivery Timing

Historically, a meaningful portion of our quarterly revenue was generated from customer orders received during that same quarter (which we refer to as "book to revenue") and was therefore less predictable and subject to fluctuation. As a result of elevated order volumes during portions of fiscal 2021 and fiscal 2022, and the supply chain constraints described below, however, we generated a significant backlog of customer orders. Accordingly, our revenue has been more recently impacted by factors including availability of supply and customer delivery deferrals of existing backlog. Our backlog grew from \$1.2 billion at the end of fiscal 2020 to \$4.2 billion at the end of fiscal 2022. As supply chain conditions have improved and we have been able to increase shipment volumes and reduce lead times, our backlog decreased to \$2.6 billion as of the end of fiscal 2023. We expect our backlog to continue to reduce during fiscal 2024 as supply chain conditions continue to improve and customers place fewer advanced orders. As that happens, we expect that our reliance upon securing quarterly book to revenue orders will grow and that those orders will represent a more typical composition of our quarterly revenue and to be a critical element of future revenue growth.

The timing with which, and degree to which, we fulfill our backlog will have a significant impact on our rate of revenue growth and can be affected by factors outside of our control, including supply chain conditions and availability of components described below, and customer readiness and willingness to receive shipment against existing orders. During fiscal 2023, certain customers, including communications service providers and cable and multiservice operators in North America and cloud providers, that had earlier placed significant advanced orders, rescheduled deliveries for a portion of such orders,

including in some cases until after the end of fiscal 2023. We believe that this was the result of a number of factors, including these customers' significant order levels during a period of supply chain constraints, the recent, rapid improvement in our delivery lead times, and their capital expenditure and inventory levels. Accordingly, our results for a particular period can be difficult to predict. As a result of these and other factors, the timing of our fulfillment of backlog could cause some volatility in our results of operations and our backlog should not necessarily be viewed as an accurate indicator of revenue for any particular period. See the risk factors captioned "Our backlog may not be an accurate indicator of our level and timing of future revenues." and "Our revenue, gross margin, and operating results can fluctuate significantly and unpredictably from quarter to quarter." in Item 1A of Part I of this report for further discussion of risks related to our backlog and order delivery timing.

Supply Chain Constraints

In the face of demand across a range of industries, global supply for certain raw materials and components, including, in particular, semiconductor, integrated circuits, and other electronic components used in most of our products, experienced substantial constraint and disruption in recent prior periods. As a result, we experienced significant component shortages, extended lead times, increased costs, and unexpected cancellation or delay of previously committed supply of key components across our supplier base. During the second half of fiscal 2023, lead times, costs, and predictability of supply for semiconductors, integrated circuits, and other electronic components began to stabilize and the majority of our suppliers have been able to deliver by their promised, though extended, lead times. However, we expect that extended lead times for components and elevated component costs will persist at least through the first half of fiscal 2024. Supply constrained conditions have impacted our revenue and will continue to impact our costs of goods sold in the near term and our ability to continue to reduce the cost to produce our products in a manner consistent with prior periods. It is unclear when the supply environment will fully stabilize and what impacts it will have on our business and results of operations in future periods.

To mitigate the impact of these supply conditions on our business and customers, we have placed and continue to place advanced orders for inventory and have been accumulating components. We also expanded our manufacturing capacity to prepare us to be able to produce finished goods more quickly. As a result of this strategy, our inventory increased from \$374.3 million at the end of fiscal 2021 to \$1.1 billion at the end of fiscal 2023. Together with increased costs of supply, these mitigation strategies have impacted, and we expect them to continue to impact, our result of operations and cash from operations.

Market Opportunity

The market in which we sell our communications networking solutions is dynamic and characterized by a high rate of change, including rapid growth in bandwidth demand and network traffic, the proliferation of cloud-based services and new approaches, or "consumption models," for designing and procuring networking solutions. Emerging services and applications, including 5G mobile communications, fiber-based access networks and the Internet of Things, are further impacting or expected to impact wireline network infrastructures, particularly at the edge of networks, where increased capacity, computing power and automation are required to provide the quality of experience demanded by end users. Many network operators are under pressure to constrain their capital expenditure budgets, as they cannot grow their network spending at the rate of bandwidth growth. To address these growing service demands and manage network cost, many network operators are looking to adopt next-generation infrastructures that are more programmable and better capable of leveraging data for network insight, analytics and automation. Other network operators are pursuing a diverse range of consumption models in their design and procurement of network infrastructure solutions. Our Adaptive Network vision and our business strategy to capitalize on these changing market dynamics include the initiatives set forth in the "Strategy" section of the description of our business in Item 1 of Part I of this annual report.

Strategic and Financial Initiatives

Acquisitions. On November 17, 2022, we acquired Benu Networks, Inc. ("Benu") and its portfolio of cloud-native software solutions, including a virtual Broadband Network Gateway ((v)BNG), which complement our existing portfolio of broadband access solutions. On December 30, 2022, we acquired Tibit Communications, Inc. ("Tibit"), a provider of passive optical network solutions. See Note 4 to our Consolidated Financial Statements included in Item 8 of Part II of this report for more information on these acquisitions.

Credit Facility Refinancings. On October 24, 2023, we entered into an Incremental Amendment Agreement to our existing Credit Agreement, dated July 15, 2014, as amended (the "Credit Agreement"), pursuant to which we incurred a new single tranche of senior secured term loans in an aggregate principal amount of \$1.2 billion, maturing on October 24, 2030 (the "2030 New Term Loan"). The proceeds of the 2030 New Term Loan, together with cash on hand, were used to repay in full (i) our existing senior secured term loan with an outstanding aggregate principal amount of approximately \$668.7 million and

maturing on September 28, 2025 (the “2025 Term Loan”), and (ii) our existing senior secured term loan with an outstanding aggregate principal amount of approximately \$497.5 million and maturing on January 19, 2030 (the “2030 Term Loan”), including accrued interest, and pay transaction fees and expenses. See Note 19 to our Consolidated Financial Statements included in Item 8 of Part II of this report for more information on our term loans.

On October 24, 2023, pursuant to the above Incremental Amendment Agreement to the Credit Agreement, we entered into a new senior secured revolving credit facility of \$300 million (the “Revolving Credit Facility”), maturing on October 24, 2028, which replaces a predecessor senior secured asset-based revolving credit facility of up to \$300 million, maturing on September 25, 2025 (the “ABL Credit Facility”) under our ABL Credit Agreement, dated October 28, 2019, as amended (the “ABL Credit Agreement”). Concurrent with entering into the Revolving Credit Facility, the ABL Credit Agreement was terminated. We intend to use the Revolving Credit Facility to support the issuance of letters of credit that arise in the ordinary course of our business and for general corporate purposes. See Note 20 to our Consolidated Financial Statements included in Item 8 of Part II of this report for more information on our revolving credit facilities.

Fiscal Year-End Backlog

Generally, we make sales pursuant to purchase orders placed by customers under framework agreements that govern the general commercial terms and conditions of the sale of our products and services. These agreements do not obligate customers to purchase any minimum or guaranteed order quantities. In calculating backlog, we only include (i) customer purchase orders for products that have not been shipped and for services that have not yet been performed; and (ii) customer orders relating to products that have been delivered and services that have been performed, but are awaiting customer acceptance under the applicable contract terms. Generally, our customers may cancel, delay or change their orders with limited advance notice, or they may decide not to accept our products and services, although instances of both cancellation and non-acceptance are rare. Backlog may be fulfilled several quarters following receipt of a purchase order, or in the case of certain service obligations, may relate to multi-year support period. As a result, backlog should not necessarily be viewed as an accurate indicator of future revenue for any particular period.

Our backlog was \$2.6 billion as of October 28, 2023, as compared to \$4.2 billion as of October 29, 2022. Backlog includes product and service orders from commercial and government customers combined, and our significant annual growth reflects the demand dynamics described above. Backlog at October 28, 2023 includes approximately \$336.2 million primarily related to orders for products and maintenance and support services that are not expected to be filled or performed within fiscal 2024. Because backlog can be defined in different ways by different companies, our presentation of backlog may not be comparable with figures presented by other companies in our industry.

Consolidated Results of Operations

A discussion regarding our financial condition and results of operations for fiscal 2023 compared to fiscal 2022 is presented below. A discussion of fiscal 2022 compared to fiscal 2021 can be found under Item 7 of Part II of our Annual Report on Form 10-K for the fiscal year ended October 29, 2022, filed with the SEC on December 16, 2022, which is available free of charge on the SEC’s website at www.sec.gov and our Investor Relations website at investor.ciena.com.

Operating Segments

Our results of operations are presented based on the following operating segments: (i) Networking Platforms; (ii) Platform Software and Services; (iii) Blue Planet Automation Software and Services; and (iv) Global Services. Effective the fourth quarter of fiscal 2023, we renamed our “Converged Packet Optical” product line “Optical Networking.” This change was made on a prospective basis and does not impact comparability of previous financial results or the composition of this product line. However, references to our “Converged Packet Optical” product line in prior periods have been changed to “Optical Networking” in this report. See Notes 2 and 25 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report for more information on our segment reporting.

Fiscal 2023 Compared to Fiscal 2022

Revenue

Currency Fluctuations

During fiscal 2023, approximately 14.9% of our revenue was non-U.S. Dollar denominated, primarily including sales in Euros, Canadian Dollars and British Pounds. During fiscal 2023, as compared to fiscal 2022, the U.S. Dollar primarily strengthened against these and other currencies. Consequently, our revenue reported in U.S. Dollars was adversely impacted by approximately \$4.7 million, or 0.1%, as compared to fiscal 2022.

Operating Segment Revenue

See Notes 2 and 25 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report for more information on our segment reporting. The table below sets forth the changes in our operating segment revenue for the periods indicated (in thousands, except percentage data):

	Fiscal Year					
	2023	%*	2022	%*	Increase (decrease)	%**
Revenue:						
Networking Platforms						
Optical Networking	\$ 2,987,245	68.1	\$ 2,379,931	65.5	\$ 607,314	25.5
Routing and Switching	506,247	11.5	398,439	11.0	107,808	27.1
Total Networking Platforms	3,493,492	79.6	2,778,370	76.5	715,122	25.7
Platform Software and Services	303,873	6.9	277,191	7.6	26,682	9.6
Blue Planet Automation Software and Services	69,170	1.6	76,567	2.1	(7,397)	(9.7)
Global Services						
Maintenance Support and Training	288,334	6.6	292,375	8.1	(4,041)	(1.4)
Installation and Deployment	180,951	4.1	157,443	4.3	23,508	14.9
Consulting and Network Design	50,729	1.2	50,715	1.4	14	—
Total Global Services	520,014	11.9	500,533	13.8	19,481	3.9
Consolidated revenue	\$ 4,386,549	100.0	\$ 3,632,661	100.0	\$ 753,888	20.8

* Denotes % of total revenue

** Denotes % change from 2022 to 2023

- **Networking Platforms segment revenue** increased by \$715.1 million, reflecting product line sales increases of \$607.3 million of our Optical Networking products and \$107.8 million of our Routing and Switching products.
 - Optical Networking sales increased, primarily reflecting sales increases of \$374.3 million of our 6500 RLS products, primarily to cloud providers, and \$131.3 million of our 6500 Packet-Optical Platform, primarily to communications service providers and enterprise customers, and a sales increase of \$101.9 million of our Waveserver® modular interconnect system, primarily to cloud providers.
 - Routing and Switching sales increased, primarily reflecting a sales increase of \$81.1 million of our 3000 and 5000 families of service delivery and aggregation switches, including initial sales of our microplug OLT transceivers that are integrated in our aggregation switches or sold on a stand-alone basis, primarily to communications service providers, cable and multiservice operators and enterprise customers. Routing and Switching sales also includes an increase of \$25.3 million of our 8100 Coherent IP networking platforms to communications service providers.
- **Platform Software and Services segment revenue** increased by \$26.7 million, reflecting a sales increase of \$45.8 million in software maintenance services, offset by a decrease of \$19.1 million in sales of software platforms. The increase in our software maintenance services was primarily for our MCP software platform, sold to communications service providers. The decrease in software sales was primarily from decreased sales of our MCP software platform to communication service providers.

- **Blue Planet Automation Software and Services segment revenue** decreased by \$7.4 million, reflecting decreases of \$3.8 million in software platform sales, primarily to cable and multiservice operators, and \$3.6 million in professional software services, primarily to communication service providers.
- **Global Services segment revenue** increased by \$19.5 million, primarily reflecting a sales increase of \$23.5 million of our installation and deployment service, partially offset by a decrease of \$4.0 million of our maintenance support and training. Improved reliability of the previously constrained supply environment has benefited installation and deployment services, as described in more detail in "Overview" above.

Revenue by Geographic Region

Our operating segments engage in business and operations across three geographic regions: the United States, Canada, the Caribbean and Latin America ("Americas"); Europe, Middle East and Africa ("EMEA"); and Asia Pacific, Japan and India ("APAC"). The geographic distribution of our revenue can fluctuate significantly from period to period, and the timing of revenue recognition for large network projects, particularly outside of the United States, can result in large variations in geographic revenue results in any particular period. The increase in our Americas region revenue for fiscal 2023 was primarily driven by increased sales in the United States. The increase in our APAC region revenue for fiscal 2023 was primarily driven by increased sales in India, Australia and Singapore. The increase in our EMEA region revenue for fiscal 2023 was primarily driven by increased sales in the Netherlands. The following table reflects our geographic distribution of revenue, which is principally based on the relevant location for the delivery of our products and performance of services. The table below sets forth the changes in geographic distribution of revenue for the periods indicated (in thousands, except percentage data):

	Fiscal Year				Increase	
	2023	%*	2022	%*	(decrease)	%**
Americas	\$ 3,110,347	70.9	\$ 2,636,840	72.6	\$ 473,507	18.0
EMEA	643,142	14.7	555,215	15.3	87,927	15.8
APAC	633,060	14.4	440,606	12.1	192,454	43.7
Total	\$ 4,386,549	100.0	\$ 3,632,661	100.0	\$ 753,888	20.8

* Denotes % of total revenue

** Denotes % change from 2022 to 2023

- **Americas revenue** increased by \$473.5 million, reflecting sales increases of \$460.4 million within our Networking Platforms segment, \$17.2 million within our Platform Software and Services segment and \$5.1 million within our Global Services segment, partially offset by a sales decrease of \$9.2 million within our Blue Planet Automation Software and Services segment. Our Networking Platforms segment revenue increase reflects product line sales increases of \$395.2 million of our Optical Networking products and \$65.2 million of our Routing and Switching products. The increase within our Optical Networking revenue primarily reflects sales increases of \$286.4 million of our 6500 RLS products and \$75.9 million of our Waveserver® modular interconnect system, both primarily to cloud providers, and \$35.7 million of our 6500 Packet-Optical Platform, primarily to communication service providers and enterprise customers, partially offset by decreased sales to cable and multiservice operators. The increase within our Routing and Switching product line primarily reflects sales increases of \$40.3 million of our 3000 and 5000 families of service delivery and aggregation switches, primarily to cable and multiservice operators and enterprise customers, and \$21.4 million of our 8100 Coherent IP networking platforms, primarily to communications service providers.
- **EMEA revenue** increased by \$87.9 million, reflecting sales increases of \$68.0 million within our Networking Platforms segment, \$9.2 million within our Global Services segment, \$6.4 million within our Blue Planet Automation Software and Services segment and \$4.3 million within our Platform Software and Services segment. Our Networking Platforms segment revenue increase primarily reflects product line sales increases of \$35.1 million of our Optical Networking products and \$32.9 million of our Routing and Switching products. The increase within our Optical Networking revenue primarily reflects a sales increase of \$62.0 million of our 6500 RLS products, primarily to cloud providers, partially offset by sales decreases of \$15.0 million of our 6500 Packet-Optical Platform and \$12.3 million of our Waveserver® modular interconnect system, both primarily to cloud providers. The increase within our Routing and Switching revenue primarily reflects a sales increase of \$27.0 million of our 3000 and 5000 families of service delivery and aggregation switches, primarily to communication service providers.
- **APAC revenue** increased by \$192.5 million, reflecting sales increases of \$186.7 million within our Networking Platforms segment, \$5.2 million within our Platform Software and Services segment, and \$5.1 million of our Global Services segment, partially offset by a sales decrease of \$4.5 million within our Blue Planet Automation Software and

Services segment. Our Networking Platforms segment revenue increase reflects a product line sales increase of \$177.0 million of our Optical Networking products, primarily reflecting a sales increase of \$110.6 million of our 6500 Packet-Optical Platform, primarily to communication service providers and enterprise customers

In fiscal 2023 and fiscal 2022, our top ten customers contributed 53.7% and 56.3% of our revenue, respectively. Consequently, our financial results are closely correlated with the spending of a relatively small number of customers and can be significantly affected by market, industry or competitive dynamics affecting the businesses of those customers. Our reliance on a relatively small number of customers increases our exposure to changes in their spending levels, network priorities and purchasing strategies. The loss of a significant customer could have a material adverse effect on our business and results of operations, and our results of operations can fluctuate quarterly depending on sales volumes and purchasing priorities with these large customers. Sales to one of our cloud provider customers were \$561.4 million, or 12.8% of total revenue, in fiscal 2023. Sales to AT&T were \$464.7 million, or 10.6% of total revenue, in fiscal 2023, and \$433.4 million, or 11.9% of total revenue, in fiscal 2022. Verizon accounted for \$402.8 million, or 11.1% of total revenue, in fiscal 2022. No other customer accounted for greater than 10% of our revenue in fiscal 2023 or fiscal 2022.

While drivers of bandwidth growth and network evolution remain strong, many of our network operator customers are under pressure to constrain their capital expenditure budgets, and their businesses cannot grow their network spending at the rate of bandwidth growth. As a result, as we innovate and introduce new and more robust solutions that increase capacity or add features, there is a market expectation for solutions that are more cost-effective than existing or competing solutions and that new products consistently deliver lower price per bit performance. The combination of this regular technology-driven price compression, price competition in our markets and ongoing customer efforts to manage network costs can impact our growth rates and requires that we increase our volume of product shipments to maintain and grow revenue.

Cost of Goods Sold and Gross Profit

Product cost of goods sold consists primarily of amounts paid to third-party contract manufacturers, component costs, employee-related costs and overhead, shipping and logistics costs associated with manufacturing-related operations, warranty and other contractual obligations, royalties, license fees, amortization of intangible assets, cost of excess and obsolete inventory and, when applicable, estimated losses on committed customer contracts.

Services cost of goods sold consists primarily of direct and third-party costs associated with our provision of services including installation, deployment, maintenance support, consulting and training activities, and, when applicable, estimated losses on committed customer contracts. The majority of these costs relate to personnel, including employee and third-party contractor-related costs.

Our gross profit as a percentage of revenue, or “gross margin,” can fluctuate due to a number of factors, particularly when viewed on a quarterly basis. Our gross margin can fluctuate and be adversely impacted depending on our revenue concentration within a particular segment, product line, geography, or customer, including our success in selling software in a particular period. Our gross margin remains highly dependent on our continued ability to drive annual product cost reductions relative to the price erosion that we regularly encounter in our markets. This can be challenging, particularly within the current constrained supply environment. Moreover, we are often required to compete with aggressive pricing and commercial terms, and, to secure business with new and existing customers, we may agree to pricing or other unfavorable commercial terms that adversely affect our gross margin. Success in taking share and winning new business can result in additional pressure on gross margin from these pricing dynamics and the early stages of these network deployments. Early stages of new network builds also often include an increased concentration of lower margin “common” equipment, photonics sales and installation services, with the intent to improve margin as we sell channel cards and maintenance services to customers as they add capacity and need to monitor their networks. Gross margin can be impacted by technology-based price compression and the introduction or substitution of new platforms with improved price for performance as compared to existing solutions that carry higher margins. Gross margin can also be impacted by changes in expense for excess and obsolete inventory and warranty obligations.

Service gross margin can be affected by the mix of customers and services, particularly the mix between deployment and maintenance services, geographic mix and the timing and extent of any investments in internal resources to support this business.

The tables below set forth the changes in revenue, cost of goods sold and gross profit for the periods indicated (in thousands, except percentage data):

	Fiscal Year				Increase (decrease)	%**
	2023	%*	2022	%*		
Total revenue	\$ 4,386,549	100.0	\$ 3,632,661	100.0	\$ 753,888	20.8
Total cost of goods sold	2,507,698	57.2	2,072,317	57.0	435,381	21.0
Gross profit	<u>\$ 1,878,851</u>	<u>42.8</u>	<u>\$ 1,560,344</u>	<u>43.0</u>	<u>\$ 318,507</u>	<u>20.4</u>

* Denotes % of total revenue

** Denotes % change from 2022 to 2023

	Fiscal Year				Increase (decrease)	%**
	2023	%*	2022	%*		
Product revenue	\$ 3,581,039	100.0	\$ 2,888,848	100.0	\$ 692,191	24.0
Product cost of goods sold	2,088,440	58.3	1,699,631	58.8	388,809	22.9
Product gross profit	<u>\$ 1,492,599</u>	<u>41.7</u>	<u>\$ 1,189,217</u>	<u>41.2</u>	<u>\$ 303,382</u>	<u>25.5</u>

* Denotes % of product revenue

** Denotes % change from 2022 to 2023

	Fiscal Year				Increase (decrease)	%**
	2023	%*	2022	%*		
Services revenue	\$ 805,510	100.0	\$ 743,813	100.0	\$ 61,697	8.3
Services cost of goods sold	419,258	52.0	372,686	50.1	46,572	12.5
Services gross profit	<u>\$ 386,252</u>	<u>48.0</u>	<u>\$ 371,127</u>	<u>49.9</u>	<u>\$ 15,125</u>	<u>4.1</u>

* Denotes % of service revenue

** Denotes % change from 2022 to 2023

- **Gross profit** increased by \$318.5 million. Gross margin decreased by 20 basis points, primarily due to lower margin on services partially offset by improved margin on products.
- **Gross profit on products** increased by \$303.4 million. Product gross margin increased by 50 basis points, primarily due to improved manufacturing efficiencies and lower product costs, partially offset by a higher concentration of lower margin "common" equipment and photonics sales, as described above.
- **Gross profit on services** increased by \$15.1 million. Service gross margin decreased by 190 basis points, primarily due to higher incremental costs on maintenance related support and losses incurred on certain Blue Planet software service projects and lower margin on certain consulting projects. These decreases were partially offset by increased Platform Software services revenue.

Operating Expense

Currency Fluctuations

During fiscal 2023, approximately 49.4% of our operating expense was non-U.S. Dollar denominated, including Canadian Dollars, Indian Rupees, and Euros. During fiscal 2023 as compared to fiscal 2022, the U.S. Dollar primarily strengthened against these and other currencies. Consequently, our operating expense reported in U.S. Dollars decreased by approximately \$23.3 million, or 1.5%, net of hedging.

Operating expense increased in fiscal 2023 from the level reported for fiscal 2022, primarily due to increases in employee headcount and variable compensation costs associated with our annual cash incentive compensation plan and increases in professional services. We have also experienced, and are continuing to experience, increases in the cost of labor and other costs of doing business due to inflation, and continued inflationary pressures could have an adverse impact on our profitability. We

expect operating expense to continue to increase from the level reported in fiscal 2023 primarily due to planned investment in research and development to advance our strategy and higher employee compensation costs.

Operating expense consists of the component elements described below.

- *Research and development expense* primarily consists of salaries and related employee expense (including share-based compensation expense), prototype costs relating to design, development, product testing, depreciation expense, and third-party consulting costs.
- *Selling and marketing expense* primarily consists of salaries, commissions and related employee expense (including share-based compensation expense) and sales and marketing support expense, including travel, demonstration units, trade show expense, and third-party consulting costs.
- *General and administrative expense* primarily consists of salaries and related employee expense (including share-based compensation expense) and costs for third-party consulting and other services.
- *Significant asset impairments and restructuring costs* primarily reflect actions we have taken to improve the alignment of our workforce, facilities and operating costs with perceived market opportunities, business strategies, changes in market and business conditions, the redesign of certain business processes and significant impairments of assets.
- *Amortization of intangible assets* primarily reflects the amortization of both purchased technology and the value of customer relationships derived from our acquisitions.
- *Acquisition and integration costs* primarily consist of expenses for financial, legal and accounting advisors and severance and other employee-related costs, associated with our acquisition activity. For more information on our acquisitions, see Note 4 to our Consolidated Financial Statements included in Item 8 of Part II of this report.

The table below sets forth the changes in operating expense for the periods indicated (in thousands, except percentage data):

	Fiscal Year				Increase	
	2023	%*	2022	%*	(decrease)	%**
Research and development	\$ 750,559	17.1	\$ 624,656	17.2	\$ 125,903	20.2
Selling and marketing	490,804	11.2	466,565	12.9	24,239	5.2
General and administrative	215,284	4.9	179,382	4.9	35,902	20.0
Significant asset impairments and restructuring costs	23,834	0.5	33,824	0.9	(9,990)	(29.5)
Amortization of intangible assets	37,351	0.9	32,511	0.9	4,840	14.9
Acquisition and integration costs	3,474	0.1	598	—	2,876	480.9
Total operating expenses	\$ 1,521,306	34.7	\$ 1,337,536	36.8	\$ 183,770	13.7

* Denotes % of total revenue

** Denotes % change from 2022 to 2023

- **Research and development expense** benefited from \$16.3 million as a result of foreign exchange rates, net of hedging, primarily due to a stronger U.S. Dollar in relation to the Canadian Dollar and Indian Rupee. Including the effect of foreign exchange rates, net of hedging, research and development expenses increased by \$125.9 million. This increase primarily reflects increases in employee headcount and related compensation costs including variable compensation costs associated with our annual cash incentive compensation plan, and professional services related to design engineering, fabrication and production of ASIC chips. The increase in employee headcount was partially due to our acquisitions of Benu and Tibit.
- **Selling and marketing expense** benefited from \$5.4 million as a result of foreign exchange rates, primarily due to a stronger U.S. Dollar in relation to the Canadian Dollar and the Euro. Including the effect of foreign exchange rates, sales and marketing expense increased by \$24.2 million. This increase primarily reflects increases in travel and entertainment costs, professional services and employee-related compensation costs primarily related to higher costs associated with our annual cash incentive compensation plan.

- **General and administrative expense** benefited from \$1.6 million as a result of foreign exchange rates, primarily due to a stronger U.S. Dollar in relation to the Canadian Dollar and Indian Rupee. Including the effect of foreign exchange rates, general and administrative expense increased by \$35.9 million. This increase primarily reflects increases in employee-related compensation costs primarily related to higher costs associated with our annual cash incentive compensation plan, costs incurred as a result of the settlement of certain patent infringement claims and the resolution of related legal proceedings, and professional services.
- **Significant asset impairments and restructuring costs** decreased by \$10.0 million. This decrease primarily reflects the effect of a \$3.8 million impairment charge due to our suspended operations in Russia recorded in fiscal 2022 and lower costs on actions that we have taken with respect to our operations, global workforce, and facilities as part of a business optimization strategy to improve gross margin, constrain operating expense, redesign certain business processes, and restructure real estate facilities.
- **Amortization of intangible assets** increased by \$4.8 million reflecting additional intangibles acquired in connection with our acquisitions of Benu and Tibit during the first quarter of fiscal 2023, partially offset by certain intangible assets having reached the end of their economic lives.
- **Acquisition and integration costs** increased by \$2.9 million and primarily reflect financial, legal, and accounting advisors and employee-related costs related to our acquisitions of Benu and Tibit.

Other Items

The table below sets forth the changes in other items for the periods indicated (in thousands, except percentage data):

	Fiscal Year				Increase	
	2023	%*	2022	%*	(decrease)	%**
Interest and other income (loss), net	\$ 62,008	1.4	\$ 6,747	0.2	\$ 55,261	819.0
Interest expense	\$ (88,026)	(2.0)	\$ (47,050)	(1.3)	\$ 40,976	87.1
Loss on extinguishment and modification of debt	\$ (7,874)	(0.2)	\$ —	—	\$ 7,874	100.0
Provision (benefit) for income taxes	\$ 68,826	1.6	\$ 29,603	0.8	\$ 39,223	132.5

* Denotes % of total revenue

** Denotes % change from 2022 to 2023

- **Interest and other income (loss), net** increased by \$55.3 million, primarily resulting from higher interest income on our investments and the remeasurement of our previously held investment in Tibit to fair value, which resulted in a gain on our cost method equity investment of \$26.5 million. These increases were partially offset by foreign currency exchange gains (losses), net of foreign currency hedging impact. For more information on our acquisition of Tibit, see Note 4 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report.
- **Interest expense** increased, primarily due to additional indebtedness, including the 2030 Term Loan entered into during the first quarter of fiscal 2023, and increased interest on the unhedged portion of the 2025 Term Loan, 2030 Term Loan and 2030 New Term Loan (as defined below), primarily due to higher interest rates. For more information on our short-term and long-term debt, see Note 19 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report.
- **Loss on extinguishment and modification of debt** primarily reflects \$1.9 million of extinguishment of debt costs and \$6.0 million in debt modification costs, both related to our term loan refinancing which occurred in the fourth quarter of fiscal 2023. For more information, see Note 19 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report.
- **Provision (benefit) for income taxes** increased by \$39.2 million, primarily due to the increase in pre-tax income in fiscal 2023. The effective tax rate for fiscal 2023 was higher than the effective tax rate for fiscal 2022, primarily due to the mandatory capitalization of research and development expenses in fiscal 2023.

Segment Profit (Loss)

The table below sets forth the changes in our segment profit (loss) for the respective periods (in thousands, except percentage data):

	Fiscal Year			
	2023	2022	Increase (decrease)	%*
Segment profit (loss):				
Networking Platforms	\$ 778,641	\$ 572,305	\$ 206,336	36.1
Platform Software and Services	\$ 186,945	\$ 175,108	\$ 11,837	6.8
Blue Planet Automation Software and Services	\$ (33,669)	\$ (22,388)	\$ (11,281)	(50.4)
Global Services	\$ 196,375	\$ 210,663	\$ (14,288)	(6.8)

* Denotes % change from 2022 to 2023

- **Networking Platforms segment** profit increased by \$206.3 million, primarily due to higher sales volume as described above, and higher gross margin, partially offset by increased research and development costs.
- **Platform Software and Services segment** profit increased by \$11.8 million, primarily due to higher software-related services sales volume as described above, partially offset by lower software sales volume, increased research and development costs, and lower gross margin on software-related services.
- **Blue Planet Automation Software and Services segment** loss increased by \$11.3 million, primarily due to lower sales volume, increased research and development costs and lower gross margin on software-related services, as described above.
- **Global Services segment** profit decreased by \$14.3 million, primarily due to higher incremental costs on maintenance related support and lower maintenance support and training revenue, as described above.

Liquidity and Capital Resources

Overview. For the fiscal year ended October 28, 2023, we generated \$168.3 million of cash from operations, as our net income (adjusted for non-cash charges) of \$565.1 million exceeded our working capital requirements of \$396.8 million. For additional details on our cash used in operating activities, see the discussion below under the caption "Cash Provided by Operating Activities."

Cash, cash equivalents and investments increased by \$65.9 million during fiscal 2023. Cash from operations was partially offset by the following: (i) cash used for stock repurchases under our stock repurchase program of \$242.2 million; (ii) cash used for the acquisition of businesses of \$230.0 million, net of cash acquired; (iii) cash used to fund our investing activities for capital expenditures totaling \$106.2 million; (iv) stock repurchased upon vesting of our stock unit awards to employees relating to tax withholding of \$38.5 million; and (v) cash used for payments on our term loans of \$9.4 million. In addition to cash provided by operations, the following items also contributed to the increase in cash: (i) proceeds from the issuance of the 2030 Term Loan, which provided \$492.5 million in cash, net of paid debt issuance costs; and (ii) issuance of equity under our employee stock purchase plans which provided \$31.4 million in cash during fiscal 2023.

See Notes 4, 19, and 22 to our Consolidated Financial Statements included in Item 8 of Part II of this report for information relating to these transactions.

The following table sets forth changes in our cash and cash equivalents and investments in marketable debt securities (in thousands):

	October 28, 2023		October 29, 2022		Increase (decrease)
Cash and cash equivalents	\$	1,010,618	\$	994,352	\$ 16,266
Short-term investments in marketable debt securities		104,753		153,989	(49,236)
Long-term investments in marketable debt securities		134,278		35,385	98,893
Total cash and cash equivalents and investments in marketable debt securities	\$	1,249,649	\$	1,183,726	\$ 65,923

Principal Sources of Liquidity. Our principal sources of liquidity include our cash, cash equivalents and investments, which as of October 28, 2023 totaled \$1.2 billion, as well as the unused portion of the Revolving Credit Facility. The Revolving Credit Facility, which we and certain of our subsidiaries entered into on October 24, 2023, replaced the ABL Credit Facility and provides for a total commitment of \$300.0 million with a maturity date of October 24, 2028. We principally use the Revolving Credit Facility to support the issuance of letters of credit that arise in the ordinary course of our business and for general

corporate purposes. As of October 28, 2023, letters of credit totaling \$72.5 million were outstanding under our Revolving Credit Facility. There were no borrowings outstanding under the Revolving Credit Facility as of October 28, 2023.

Foreign Liquidity. The amount of cash, cash equivalents and short-term investments held by our foreign subsidiaries was \$308.0 million as of October 28, 2023. During the fourth quarter of fiscal 2023, we evaluated the undistributed earnings of the foreign subsidiaries and identified approximately \$222.0 million in earnings that we no longer consider to be indefinitely reinvested. We have recorded a provision of \$2.5 million that reflects the income tax effects of the repatriation of these earnings. No additional income tax expense has been provided for any remaining undistributed foreign earnings, or any additional outside basis difference inherent in our foreign subsidiaries, as these amounts continue to be indefinitely reinvested. See Note 23 to our Consolidated Financial Statements included in Item 8 of Part II of this report.

Stock Repurchase Authorization. On December 9, 2021, we announced that our Board of Directors authorized a program to repurchase up to \$1.0 billion of our common stock, which replaced in its entirety the previous stock repurchase program authorized in fiscal 2019. During fiscal 2023, we repurchased an additional \$250.0 million of our common stock under the stock repurchase program, and we had \$250.0 million remaining under the current repurchase authorization as of October 28, 2023. The amount and timing of any further repurchases under our stock repurchase program are subject to a variety of factors including liquidity, cash flow, stock price and general business and market conditions. The program may be modified, suspended, or discontinued at any time. See Note 22 to our Consolidated Financial Statements included in Item 8 of Part II of this report .

Liquidity Position. Based on past performance and current expectations, we believe that cash from operations, cash, cash equivalents, investments, and other sources of liquidity, including our Revolving Credit Facility, will satisfy our currently anticipated working capital needs, capital expenditures, and other liquidity requirements associated with our operations through the next 12 months and the reasonably foreseeable future. We regularly evaluate our liquidity position, debt obligations, and anticipated cash needs to fund our operating or investment plans, and will continue to consider capital raising and other market opportunities that may be available to us. We have historically been successful in our ability to secure such sources of financing; however, our access to these sources of capital could be materially and adversely impacted, and we may not be able to receive terms as favorable as we have historically received, whether due to inflation or other factors. We regularly evaluate alternatives to manage our capital structure and market opportunities to enhance our liquidity and provide further operational and strategic flexibility.

Cash Provided by Operating Activities

The following sections set forth the components of our \$168.3 million of cash provided by operating activities for fiscal 2023:

Net Income (adjusted for non-cash charges)

The following table sets forth our net income (adjusted for non-cash charges) during fiscal 2023 (in thousands):

	Year Ended October 28, 2023
Net income	\$ 254,827
Adjustments for non-cash charges:	
Loss on extinguishment of debt	1,864
Depreciation of equipment, building, furniture and fixtures, and amortization of leasehold improvements	92,564
Share-based compensation costs	130,455
Amortization of intangible assets	49,616
Deferred taxes	(14,852)
Provision for inventory excess and obsolescence	29,464
Provision for warranty	31,742
Gain on cost method equity investments, net	(26,368)
Other	15,771
Net income (adjusted for non-cash charges)	\$ 565,083

Working Capital

We used \$396.8 million of cash for working capital during fiscal 2023. The following table sets forth the major components of the cash used in working capital (in thousands):

	Year Ended October 28, 2023
Cash used in accounts receivable	\$ (94,565)
Cash used in inventories	(132,497)
Cash used in prepaid expenses and other	(51,965)
Cash used in accounts payable, accruals and other obligations	(138,469)
Cash provided by deferred revenue	27,412
Cash used in operating lease assets and liabilities, net	(6,667)
Total cash used for working capital	<u>\$ (396,751)</u>

As compared to the end of fiscal 2022:

- The \$94.6 million of cash used in accounts receivable during fiscal 2023 primarily reflects increased sales volume in the fourth quarter of fiscal 2023;
- The \$132.5 million of cash used in inventory during fiscal 2023 related to increases in finished goods inventories from planned fulfillment of customer advance orders for which some deliveries have since been rescheduled as described in "Overview" above;
- The \$52.0 million of cash used in prepaid expenses and other during fiscal 2023 primarily reflects increases in prepaid value added taxes;
- The \$138.5 million of cash used in accounts payable, accruals and other obligations during fiscal 2023 primarily reflects the timing of payments to suppliers, partially offset by a higher accrual rate related to Ciena's 2023 annual cash incentive compensation plan;
- The \$27.4 million of cash provided by deferred revenue during fiscal 2023 represents an increase in advanced payments received on multi-year maintenance contracts from customers prior to revenue recognition; and
- The \$6.7 million of cash used in operating lease assets and liabilities, net, during fiscal 2023 represents cash paid for operating lease payments in excess of operating lease costs. For more details, see Note 18 to our Consolidated Financial Statements included in Item 8 of Part II of this report.

Our days sales outstanding ("DSOs") were 95 for fiscal 2023, as compared to 107 for fiscal 2022. The calculation of DSOs includes accounts receivable, net and contract assets for unbilled receivables, net included in prepaid expenses and other. Our inventory turns slightly increased from 1.8 during fiscal 2022 to 2.0 during fiscal 2023 due to the supply chain beginning to stabilize as described above.

Cash Paid for Interest, Net

The following table sets forth the cash paid for interest, net during fiscal 2023 (in thousands):

	Year Ended October 28, 2023
2025 Term Loan due September 28, 2025 ⁽¹⁾	\$ 43,961
2030 Term Loan due January 19, 2030 ⁽²⁾	28,364
2030 New Term Loan due October 28, 2030 ⁽³⁾	—
2030 Senior Notes due January 31, 2030 ⁽⁴⁾	16,000
Interest rate swaps ⁽⁵⁾	(10,035)
Revolving Credit Facilities ⁽⁶⁾	2,097
Finance leases	4,078
Cash paid during period	<u>\$ 84,465</u>

- ⁽¹⁾ The 2025 Term Loan bore interest at LIBOR for the chosen borrowing period plus a spread of 1.75% subject to a minimum LIBOR rate of 0.00% prior to its amendment on January 19, 2023, and then bore interest at SOFR for the chosen borrowing period plus a spread of 1.75% subject to a minimum SOFR rate of 0.00%. The 2025 Term Loan was terminated on October 24, 2023.
- ⁽²⁾ The 2030 Term Loan bore interest at SOFR for the chosen borrowing period plus a spread of 2.50% subject to a minimum SOFR rate of 0.00%. The 2030 Term Loan was terminated on October 24, 2023.
- ⁽³⁾ Interest on the 2030 New Term Loan is payable periodically based on the interest period selected for borrowing. The 2030 New Term Loan bears interest at SOFR for the chosen borrowing period plus a spread of 2.00% subject to a minimum SOFR rate of 0.00%. At the end of fiscal 2023, the interest rate on the 2030 New Term Loan was 7.33%.
- ⁽⁴⁾ The 2030 Senior Notes bear interest at a rate of 4.00% per annum and mature on January 31, 2030. Interest on the 2030 Notes is payable semiannually on January 31 and July 31 of each year.
- ⁽⁵⁾ Our interest rate swaps fix the SOFR rate for \$350.0 million of our Term Loans at 3.47% through January 2028 and another \$350.0 million of our Term Loans at 2.968% through September 2025. In January 2023, we entered into a LIBOR to SOFR basis swap ("basis swap"). The basis swap and our LIBOR interest rate swaps, which matured in September 2023, fixed the SOFR rate for \$350.0 million of our Term Loans at 2.883% from January to September 2023.
- ⁽⁶⁾ During fiscal 2023, we issued certain standby letters of credit under the Revolving Credit Facility and its predecessor, the ABL Credit Facility and paid \$2.1 million in commitment fees, interest expense and other administrative charges primarily relating to the ABL Credit Facility. The ABL Credit Facility was terminated on October 24, 2023.

For additional information about our short-term and long-term debt, revolving credit facilities and derivative instruments, see Notes 16, 19 and 20 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report and Item 7A of Part II of this annual report.

Contractual Obligations

Debt. As of October 28, 2023, we had \$1.2 billion outstanding principal associated with our 2030 New Term Loan, with \$8.8 million maturing within 12 months. Interest payments on the 2030 New Term Loan and payments to be received under the interest rate swaps are variable and are calculated using the interest rate in effect as of the October 28, 2023. Future interest payments associated with the 2030 New Term Loan totaled \$589.7 million, with \$87.2 million payable within 12 months. As of October 28, 2023, we had \$400.0 million outstanding principal associated with the 2030 Notes payable January 31, 2030. Future interest payments associated with the 2030 Notes totaled \$104.0 million, with \$16.0 million payable within 12 months. Future interest payments to be received net of payments under the interest rate swaps totaled \$44.4 million, with \$15.1 million to be received within 12 months. For additional information about our short-term and long-term debt and interest rate swaps, see Notes 16 and 19 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report and Item 7A of Part II of this annual report.

Purchase Order Obligations. As of October 28, 2023, we had \$1.7 billion in outstanding purchase order commitments to our contract manufacturers and component suppliers for inventory. In certain instances, we are permitted to cancel, reschedule or adjust these orders. Consequently, only a portion of this amount relates to firm, non-cancelable and unconditional obligations.

Leases. We have lease arrangements for facilities including research and development centers, engineering facilities and smaller offices in regions throughout the world to support sales and services operations. Office facilities are leased under various non-cancelable operating or finance leases. As of October 28, 2023, we had fixed lease payment obligations of \$125.7 million, with \$25.8 million payable within 12 months. See Note 18 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report.

Off-Balance Sheet Arrangements

We do not engage in any off-balance sheet financing arrangements. In particular, we do not have any equity interests in so-called limited purpose entities, which include special purpose entities (SPEs) and structured finance entities.

Critical Accounting Policies and Estimates

The preparation of our consolidated financial statements requires that we make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expense, and related disclosure of contingent assets and liabilities. Note 1 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report describes the significant accounting

policies and methods used in the preparation of the Consolidated Financial Statements. By their nature, these estimates and judgments are subject to an inherent degree of uncertainty. On an ongoing basis, we reevaluate our estimates, including those related to revenue recognition, share-based compensation, bad debts, inventories, intangible and other long-lived assets, goodwill, income taxes, warranty obligations, restructuring, derivatives and hedging, and contingencies and litigation. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable. Among other things, these estimates form the basis for judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from these estimates under different assumptions or conditions. To the extent that there are material differences between our estimates and actual results, our consolidated financial statements will be affected.

We believe that the following critical accounting policies reflect those areas where significant judgments and estimates are used in the preparation of our consolidated financial statements.

Revenue Recognition

Revenue is allocated among performance obligations based on standalone selling price ("SSP"). SSP reflects the price at which we would expect to sell that product or service on a stand-alone basis at contract inception and that we would expect to be entitled to receive for the promised products or services. SSP is estimated for each distinct performance obligation and judgment may be required in its determination. The best evidence of SSP is the observable price of a product or service when we sell the products separately in similar circumstances and to similar customers. In instances where SSP is not directly observable, we determine SSP using information that may include market conditions and other observable inputs.

We apply judgment in determining the transaction price, as we may be required to estimate variable consideration when determining the amount of revenue to recognize. Variable consideration can include various rebate, cooperative marketing, and other incentive programs that we offer to our distributors, partners and customers. When determining the amount of revenue to recognize, we estimate the expected usage of these programs, applying the expected value or most likely estimate and updates the estimate at each reporting period as actual utilization data becomes available. We also consider any customer right of return and any actual or potential payment of liquidated damages, contractual or similar penalties, or other claims for performance failures or delays in determining the transaction price, where applicable.

When transfer of control is judged to be over time for installation and professional service arrangements, we apply the input method to determine the amount of revenue to be recognized in a given period. Utilizing the input method, we recognize revenue based on the ratio of actual costs incurred to date to the total estimated costs expected to be incurred. Revenue for software subscription and maintenance is recognized ratably over the period during which the services are performed.

Our total deferred revenue for products was \$28.4 million and \$19.8 million as of October 28, 2023 and October 29, 2022, respectively. Our services revenue is deferred and recognized ratably over the period during which the services are to be performed. Our total deferred revenue for services was \$200.1 million and \$180.4 million as of October 28, 2023 and October 29, 2022, respectively.

Business Combinations

We record acquisitions using the purchase method of accounting. All of the assets acquired, liabilities assumed, contractual contingencies and contingent consideration are recognized at their fair value as of the acquisition date. The excess of the purchase price over the estimated fair values of the net tangible and net intangible assets acquired is recorded as goodwill. The application of the purchase method of accounting for business combinations requires management to make significant estimates and assumptions in the determination of the fair value of assets acquired and liabilities assumed in order to allocate purchase price consideration properly between assets that are depreciated and amortized from goodwill. These assumptions and estimates include a market participant's use of the asset and the appropriate discount rates for a market participant. Our estimates are based on historical experience, information obtained from the management of the acquired companies and, when appropriate, include assistance from independent third-party appraisal firms. Our significant assumptions and estimates can include, but are not limited to, the cash flows that an asset is expected to generate in the future, the appropriate weighted-average cost of capital, and the cost savings expected to be derived from acquiring an asset. These estimates are inherently uncertain and unpredictable. In addition, unanticipated events and circumstances may occur that may affect the accuracy or validity of such estimates. During fiscal 2022, we completed the acquisitions of AT&T's Vyatta Software Technology ("Vyatta") and Xelic, Inc. ("Xelic") for an aggregate purchase price of \$64.1 million. During fiscal 2023, we completed the acquisitions of Benu and Tibit for an aggregate purchase price of \$291.7 million. See Note 4 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report for more information regarding these transactions.

Share-Based Compensation

We estimate the fair value of our restricted stock unit awards based on the fair value of our common stock on the date of grant. Our outstanding restricted stock unit awards are subject to service-based vesting conditions and/or performance-based vesting conditions. We recognize the estimated fair value of service-based awards as share-based expense ratably over the vesting period on a straight-line basis. Awards with performance-based vesting conditions require the achievement of certain financial or other performance criteria or targets as a condition to the vesting, or acceleration of vesting. We recognize the estimated fair value of performance-based awards as share-based expense over the performance period, using graded vesting, which considers each performance period or tranche separately, based on our determination of whether it is probable that the performance targets will be achieved. At the end of each reporting period, we reassess the probability of achieving the performance targets and the performance period required to meet those targets, and the expense is adjusted accordingly. Determining whether the performance targets will be achieved involves judgment, and the estimate of expense may be revised periodically based on changes in the probability of achieving the performance targets. Revisions are reflected in the period in which the estimate is changed. If any performance goals are not met, no compensation cost is ultimately recognized against that goal and, to the extent previously recognized, compensation cost is reversed.

Share-based compensation expense is taken into account based on awards granted. In the event of a forfeiture of an award, the expense related to the unvested portion of that award is reversed. Reversal of share-based compensation expense based on forfeitures can materially affect the measurement of estimated fair value of our share-based compensation. See Note 24 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report for information regarding our assumptions related to share-based compensation and the amount of share-based compensation expense we incurred for the periods covered in this report. As of October 28, 2023, total unrecognized compensation expense was \$201.0 million, which relates to unvested restricted stock units and is expected to be recognized over a weighted-average period of 1.39 years.

We are required to record excess tax benefits or tax deficiencies related to stock-based compensation as income tax benefit or expense when share-based awards vest or are settled.

Reserve for Inventory Obsolescence

We make estimates about future customer demand for our products when establishing the appropriate reserve for excess and obsolete inventory. For fiscal 2023, future demand was calculated using both customer backlog and future forecasted sales. For fiscal 2022, future demand was calculated primarily based on customer backlog. Generally, our customers may cancel or change their orders with limited advance notice, or they may decide not to accept our products and services, although instances of both cancellation and non-acceptance are rare. We write down inventory that has become obsolete or unmarketable by an amount equal to the difference between the cost of inventory and the estimated net realizable value based on assumptions about future demand, which are affected by changes in our strategic direction, discontinuance of a product or introduction of newer versions of our products, declines in the sales of or forecasted demand for certain products, and general market conditions. Inventory write downs are a component of our product cost of goods sold. Upon recognition of the write down, a new lower cost basis for that inventory is established, and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis. In an effort to limit our exposure to delivery delays and to satisfy customer needs, we purchase inventory based on forecasted sales across our product lines. Beginning in the second half of fiscal 2021, we started placing significant, advanced orders for supply of certain long lead time components to address our expected customer demand for fiscal 2022 and the then-emerging supply chain challenges. During the second half of fiscal 2023, supply for certain long lead time components began to stabilize and the need to place advance orders decreased for these components. As of October 28, 2023 and October 29, 2022, we had \$1.7 billion and \$2.6 billion, respectively, in outstanding purchase order commitments to our contract manufacturers and component suppliers for inventory. In addition, part of our research and development strategy is to promote the convergence of similar features and functionalities across our product lines. Each of these practices exposes us to the risk that our customers will not order products for which we have forecasted sales, or will purchase less than we have forecasted.

We recorded charges for excess and obsolete inventory of \$29.5 million, \$16.2 million and \$17.9 million in fiscal 2023, 2022 and 2021, respectively. Our inventory, net of allowance for excess and obsolescence, was \$1.1 billion and \$946.7 million as of October 28, 2023 and October 29, 2022, respectively.

Allowance for Credit Losses for Accounts Receivable and Contract Assets

We estimate our allowances for credit losses using relevant available information from internal and external sources. This information is related to past events, current conditions and reasonable and supportable forecasts. Historical credit loss experience provides the basis for the estimation of expected credit losses. When assessing for credit losses, we determine

collectability by pooling assets with similar characteristics. The allowances for credit losses are each measured on a collective basis when similar risk characteristics exist. The allowances for credit losses are each measured by multiplying the exposure probability of default (the probability that the asset will default within a given time frame) by the loss given default rate (the percentage of the asset not expected to be collected due to default) based on the pool of assets.

Probability of default rates is published by third-party credit rating agencies. Adjustments to our exposure probability may take into account a number of factors, including, but not limited to, various customer-specific factors, the potential sovereign risk of the geographic locations in which the customer is operating and macroeconomic conditions. These factors are updated regularly or when facts and circumstances indicate that an update is deemed necessary.

Our accounts receivable, net of allowance for credit losses, was \$1.0 billion and \$920.8 million as of October 28, 2023 and October 29, 2022, respectively. Our allowance for credit losses was \$11.7 million and \$11.0 million as of October 28, 2023 and October 29, 2022, respectively.

Our contract assets for unbilled accounts receivable, net of allowance for credit losses, was \$150.3 million and \$156.0 million as of October 28, 2023 and October 29, 2022, respectively. Our allowance for credit losses was \$0.1 million and \$0.2 million as of October 28, 2023 and October 29, 2022, respectively.

Goodwill

Our goodwill was generated from the acquisitions of (i) Cyan, Inc. during fiscal 2015, (ii) the high-speed photonics components assets of TeraXion, Inc. during fiscal 2016, (iii) Packet Design, LLC and DonRiver Holdings, LLC during fiscal 2019, (iv) Centina Systems, Inc. during fiscal 2020, (v) Vyatta and Xelic during fiscal 2022 and (vi) Benu and Tibit during fiscal 2023. The goodwill from these acquisitions is primarily related to expected economic synergies. Goodwill is the excess of the purchase price over the fair values assigned to the net assets acquired in a business combination. We test goodwill for impairment on an annual basis, which we have determined to be as of the last business day of fiscal September each year. We also test goodwill for impairment between annual tests if an event occurs or circumstances change that would, more likely than not, reduce the fair value of the reporting unit below its carrying value.

We test goodwill impairment by comparing the fair value of the reporting unit with the unit's carrying amount, including goodwill. Goodwill is allocated to reporting units based on relative fair value using a discounted cash flow model. If this test indicates that the fair value is less than the carrying value, then an impairment loss is recognized limited to the total amount of goodwill allocated to that reporting unit. A non-cash goodwill impairment charge would have the effect of decreasing earnings or increasing losses in such period. If we are required to take a substantial impairment charge, our operating results would be materially adversely affected in such period. As of October 28, 2023 and October 29, 2022, the goodwill balance was \$444.8 million and \$328.3 million, respectively. There were no goodwill impairments resulting from our fiscal 2023 and 2022 impairment tests and no reporting unit was determined to be at risk of failing the goodwill impairment test. See Note 14 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report.

Long-lived Assets

Our long-lived assets include equipment, building, furniture and fixtures, operating right-of-use assets, finite-lived intangible assets and maintenance spares. As of October 28, 2023 and October 29, 2022, these assets totaled \$575.0 million and \$427.2 million, net, respectively. We test long-lived assets for impairment whenever triggering events or changes in circumstances indicate that the assets' carrying amount is not recoverable from its undiscounted cash flows. Our long-lived assets are assigned to asset groups which represent the lowest level for which we identify cash flows. We measure impairment loss as the amount by which the carrying amount of the asset or asset group exceeds its fair value.

Deferred Tax Assets

Pursuant to ASC Topic 740, Income Taxes, we maintain a valuation allowance for a deferred tax asset when it is deemed to be more likely than not that some or all of the deferred tax asset will not be realized. The ultimate realization of deferred tax assets is dependent on the generation of future taxable income (including the reversals of deferred tax liabilities) during the periods in which those deferred tax assets will become deductible. In evaluating whether a valuation allowance is required under such rules, we consider all available positive and negative evidence, including prior operating results, the nature and reason for any losses, our forecast of future taxable income, utilization of tax planning strategies, and the dates on which any deferred tax assets are expected to expire. These assumptions and estimates require a significant amount of judgment and are made based on current and projected circumstances and conditions.

Quarterly, we perform an analysis to determine the likelihood of realizing our deferred tax assets and whether sufficient evidence exists to support reversal of all or a portion of the valuation allowance. The valuation allowance balances at October 28, 2023 and October 29, 2022 were \$189.9 million and \$162.1 million, respectively. The corresponding net deferred tax assets were \$809.3 million and \$824.0 million, respectively. We will continue to evaluate future financial performance to determine whether such performance is both sustained and significant enough to provide sufficient evidence to support reversal of all or a portion of the remaining valuation allowance. The value of our net deferred tax asset may be subject to change in the future, depending on our generation or projections of future taxable income, as well as changes in tax policy or our tax planning strategy.

During fiscal 2021, we completed an internal transfer of certain of our non-U.S. intangible assets, which created amortizable tax basis resulting in the discrete recognition of a \$119.3 million deferred tax asset with a corresponding tax benefit. The recognition of the deferred tax asset from the internal transfer of the non-U.S. intangible assets requires management to make estimates and assumptions to determine the fair value of the intangible assets transferred and significant judgments in evaluating the application of tax laws in the applicable jurisdictions, including where the deferred tax asset will be recovered. Estimates in valuing the intangible assets include, but are not limited to, internal revenue and expense forecasts, the estimated life of the intangible assets, and discount rates, which are affected by expectations about future market or economic conditions. Although we believe the assumptions and estimates that we have made are reasonable and appropriate, they are based, in part, on historical experience and are inherently uncertain.

For further discussion, see Note 23 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report.

Warranty

Our liability for product warranties, included in accrued liabilities and other short-term obligations, was \$57.1 million and \$45.5 million as of October 28, 2023 and October 29, 2022, respectively. Our products are generally covered by a warranty for periods ranging from one to five years. We accrue for warranty costs as part of our cost of goods sold based on associated material costs, technical support labor costs and associated overhead. Material cost is estimated based primarily on historical trends in the volume of product returns within the warranty period and the cost to repair or replace the equipment. Technical support labor cost is estimated based primarily on historical trends and the cost to support customer repairs within the warranty period. The provision for product warranties, net of adjustments for previous years' provisions, was \$31.7 million, \$17.4 million and \$17.1 million for fiscal 2023, 2022 and 2021, respectively. The provision for warranty claims may fluctuate on a quarterly basis depending on the mix of products and customers in that period. If actual product failure rates, material replacement costs, service or labor costs differ from our estimates, revisions to the estimated warranty provision would be required. See Note 15 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report.

Effects of Recent Accounting Pronouncements

See Note 1 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report for information relating to our discussion of the effects of recent accounting pronouncements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risk related to changes in interest rates and foreign currency exchange rates. The following discussion about these market risks includes forward-looking statements. Actual results could differ materially from those projected in these forward-looking statements.

Interest Rate Sensitivity. We maintain an investment portfolio of various holdings, types, and maturities. See Notes 7 and 8 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report for information relating to investments and fair value. These investments are sensitive to interest rate movements, and their fair value will decline as interest rates rise and increase as interest rates decline. The estimated impact on these investments of a 100 basis point (1.0%) increase in interest rates across the yield curve from rates in effect as of the balance sheet date would be a \$2.3 million decline in value.

Our earnings and cash flows from operations would be exposed to changes in interest rates because of the floating rate of interest on our 2030 New Term Loan if such loan were not hedged using floating-to-fixed rate interest rate swaps. See Note 16 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report. We have entered into interest rate swaps that fix the floating rate for \$350.0 million of our floating rate debt at 2.968% from September 2023 through September 2025, and another \$350.0 million of our floating rate debt at 3.47% from January 2023 through January 2028. As such, a 100 basis point (1.0%) increase in the SOFR rate as of our most recent SOFR rate setting would increase our annualized interest expense by approximately \$4.7 million on the unhedged portion of our 2030 New Term Loan as recognized in our Consolidated Financial Statements. See Notes 16 and 19 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report for information relating to our 2030 New Term Loan.

Foreign Currency Exchange Risk. As a global concern, our business and results of operations are exposed to and can be impacted by movements in foreign currency exchange rates. Because we sell globally, some of our sales transactions and revenue are non-U.S. Dollar denominated, with the Euro, Canadian Dollar and British Pound being our most significant foreign currency revenue exposures. If the U.S. Dollar strengthens against these currencies, our revenue for these transactions reported in U.S. Dollars would decline. For our U.S. Dollar denominated sales, an increase in the value of the U.S. Dollar would increase the real costs of our products to customers in markets outside the United States, which could impact our competitive position. During fiscal 2023, approximately 14.9% of revenue was non-U.S. Dollar denominated. During fiscal 2023 as compared to fiscal 2022, the U.S. Dollar primarily strengthened against a number of foreign currencies. Consequently, our revenue reported in U.S. Dollars was adversely impacted by approximately \$4.7 million or 0.1%. As it relates to costs of goods sold, employee-related and facilities costs associated with certain manufacturing-related operations in Canada represent our primary exposure to foreign currency exchange risk.

With regard to operating expense, our primary exposure to foreign currency exchange risk relates to the Canadian Dollar, Indian Rupee and Euro. During fiscal 2023, approximately 49.4% of our operating expense was non-U.S. Dollar denominated. If these foreign currencies strengthen against the U.S. Dollar, costs reported in U.S. Dollars will increase. During fiscal 2023 as compared to fiscal 2022, the U.S. Dollar primarily strengthened against these and other currencies. Consequently, our operating expense reported in U.S. Dollars decreased by approximately \$23.3 million, or 1.5%, net of hedging impact.

From time to time, we use foreign currency forward contracts to reduce variability in certain forecasted non-U.S. Dollar denominated cash flows. Generally, these derivatives have maturities of 24 months or less and are designated as cash flow hedges. At the inception of the cash flow hedge, and on an ongoing basis, we assess whether the forward contract has been effective in offsetting changes in cash flows attributable to the hedged risk during the hedging period. The derivative's net gain or loss is initially reported as a component of accumulated other comprehensive loss and, upon the occurrence of the forecasted transaction, is subsequently reclassified to the line item in the Consolidated Statements of Operations to which the hedged transaction relates.

During fiscal 2023, we recorded \$0.4 million in foreign currency exchange losses, as a result of monetary assets and liabilities that were transacted in a currency other than the entity's functional currency, and the re-measurement adjustments were recorded in interest and other income (loss), net on our Consolidated Statements of Operations. From time to time, we use foreign currency forwards to hedge these balance sheet exposures. These forwards are not designated as hedges for accounting purposes, and any net gain or loss associated with these derivatives is reported in interest and other income (loss), net. During fiscal 2023, we recorded losses on non-hedge designated foreign currency forward contracts of \$3.9 million. See Notes 1, 6 and 16 to our Consolidated Financial Statements included in Item 8 of Part II of this annual report.

Item 8. Financial Statements and Supplementary Data

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Ciena Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Ciena Corporation and its subsidiaries (the "Company") as of October 28, 2023 and October 29, 2022, and the related consolidated statements of operations, of comprehensive income, of changes in stockholders' equity and of cash flows for each of the three years in the period ended October 28, 2023, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of October 28, 2023, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of October 28, 2023 and October 29, 2022, and the results of its operations and its cash flows for each of the three years in the period ended October 28, 2023 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of October 28, 2023, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the Report of Management on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that

(i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Reserve for Excess and Obsolete Inventory

As described in Notes 1 and 10 to the consolidated financial statements, the Company's consolidated inventory balance, net of the allowance for excess and obsolescence, was \$1.1 billion as of October 28, 2023. Management records a provision for excess and obsolete inventory when an impairment has been identified and has a reserve for excess and obsolete inventory of \$50.0 million as of October 28, 2023. Management writes down its inventory for estimated obsolescence or unmarketable inventory by an amount equal to the difference between the cost of inventory and the estimated net realizable value based on assumptions about future demand, which are affected by changes in the Company's strategic direction, discontinuance of a product or introduction of newer versions of products, declines in the sales of or forecasted demand for certain products, and general market conditions.

The principal considerations for our determination that performing procedures relating to the reserve for excess and obsolete inventory is a critical audit matter are the significant judgment by management when developing their estimate, which in turn led to a high degree of auditor judgment, subjectivity, and effort to perform procedures and evaluate the audit evidence obtained relating to the assumptions regarding future demand.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the Company's evaluation of the reserve for excess and obsolete inventory, including controls over the assumptions used within the model. These procedures also included, among others, testing management's process for determining the reserve for excess and obsolete inventory. This included evaluating the appropriateness of the inventory reserve model and the reasonableness of the significant assumptions relating to the future demand. Evaluating the assumptions related to future demand involved evaluating whether the assumptions used were reasonable considering historical sales and expectations regarding future sales. Testing management's process for determining future demand included procedures to evaluate the reliability, completeness and relevance of management's data used in the future demand assumption. Testing the relevance and reliability of the data included evaluating the reasonableness of the long-term sales forecasts and historical activity.

/s/ PricewaterhouseCoopers LLP
Baltimore, Maryland
December 15, 2023

We have served as the Company's auditor since 1992.

CIENA CORPORATION
CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

	October 28, 2023	October 29, 2022
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 1,010,618	\$ 994,352
Short-term investments	104,753	153,989
Accounts receivable, net	1,003,876	920,772
Inventories, net	1,050,838	946,730
Prepaid expenses and other	405,694	370,053
Total current assets	3,575,779	3,385,896
Long-term investments	134,278	35,385
Equipment, building, furniture and fixtures, net	280,147	267,779
Operating right-of-use assets	35,140	45,108
Goodwill	444,765	328,322
Other intangible assets, net	205,627	69,517
Deferred tax asset, net	809,306	824,008
Other long-term assets	116,453	113,617
Total assets	\$ 5,601,495	\$ 5,069,632
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 317,828	\$ 516,047
Accrued liabilities and other short-term obligations	431,419	360,782
Deferred revenue	154,419	137,899
Operating lease liabilities	16,655	18,925
Current portion of long-term debt	11,700	6,930
Total current liabilities	932,021	1,040,583
Long-term deferred revenue	74,041	62,336
Other long-term obligations	170,407	150,335
Long-term operating lease liabilities	33,259	42,392
Long-term debt, net	1,543,406	1,061,125
Total liabilities	2,753,134	2,356,771
Commitments and contingencies (Note 27)		
Stockholders' equity:		
Preferred stock — par value \$ 0.01 ; 20,000,000 shares authorized; zero shares issued and outstanding	—	—
Common stock — par value \$ 0.01 ; 290,000,000 shares authorized; 144,829,938 and 148,412,943 shares issued and outstanding	1,448	1,484
Additional paid-in capital	6,262,083	6,390,252
Accumulated other comprehensive loss	(37,767)	(46,645)
Accumulated deficit	(3,377,403)	(3,632,230)
Total stockholders' equity	2,848,361	2,712,861
Total liabilities and stockholders' equity	\$ 5,601,495	\$ 5,069,632

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

CIENA CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
Revenue:			
Products	\$ 3,581,039	\$ 2,888,848	\$ 2,932,602
Services	805,510	743,813	688,082
Total revenue	4,386,549	3,632,661	3,620,684
Cost of goods sold:			
Products	2,088,440	1,699,631	1,545,269
Services	419,258	372,686	353,436
Total cost of goods sold	2,507,698	2,072,317	1,898,705
Gross profit	1,878,851	1,560,344	1,721,979
Operating expenses:			
Research and development	750,559	624,656	536,666
Selling and marketing	490,804	466,565	452,214
General and administrative	215,284	179,382	181,874
Significant asset impairments and restructuring costs	23,834	33,824	29,565
Amortization of intangible assets	37,351	32,511	23,732
Acquisition and integration costs	3,474	598	2,572
Total operating expenses	1,521,306	1,337,536	1,226,623
Income from operations	357,545	222,808	495,356
Interest and other income (loss), net	62,008	6,747	(1,768)
Interest expense	(88,026)	(47,050)	(30,837)
Loss on extinguishment and modification of debt	(7,874)	—	—
Income before income taxes	323,653	182,505	462,751
Provision (benefit) for income taxes	68,826	29,603	(37,445)
Net income	\$ 254,827	\$ 152,902	\$ 500,196
Basic net income per common share	\$ 1.71	\$ 1.01	\$ 3.22
Diluted net income per potential common share	\$ 1.71	\$ 1.00	\$ 3.19
Weighted average basic common shares outstanding	148,971	151,208	155,279
Weighted average diluted potential common shares outstanding	149,380	152,193	156,743

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

CIENA CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
Net income	\$ 254,827	\$ 152,902	\$ 500,196
Change in unrealized gain (loss) on available-for-sale securities, net of tax	2,593	(2,801)	(209)
Change in unrealized gain (loss) on foreign currency forward contracts, net of tax	2,041	(16,413)	6,435
Change in unrealized gain on interest rate swaps, net of tax	9,565	21,576	9,356
Change in cumulative translation adjustments	(5,321)	(49,446)	20,215
Other comprehensive income gain (loss)	8,878	(47,084)	35,797
Total comprehensive income	<u>\$ 263,705</u>	<u>\$ 105,818</u>	<u>\$ 535,993</u>

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

CIENA CORPORATION
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY
(in thousands, except share data)

	Common Stock Shares	Par Value	Additional Paid-in- Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
Balance at October 31, 2020	154,563,005	\$ 1,546	\$ 6,826,531	\$ (35,358)	\$ 4,283,122	\$ 2,509,597
Net income	—	—	—	—	500,196	500,196
Other comprehensive income	—	—	—	35,797	—	35,797
Repurchases of common stock - repurchase program, net	(1,696,949)	(17)	(92,071)	—	—	(92,088)
Issuance of shares from employee equity plans	2,826,399	28	28,429	—	—	28,457
Share-based compensation expense	—	—	84,336	—	—	84,336
Shares repurchased for tax withholdings on vesting of stock unit awards	(833,474)	(8)	(44,063)	—	—	(44,071)
Effect of adoption of new accounting standard	—	—	—	—	(2,206)	(2,206)
Balance at October 30, 2021	154,858,981	1,549	6,803,162	439	(3,785,132)	3,020,018
Net income	—	—	—	—	152,902	152,902
Other comprehensive loss	—	—	—	(47,084)	—	(47,084)
Repurchases of common stock - repurchase program, net	(8,433,957)	(84)	(499,916)	—	—	(500,000)
Issuance of shares from employee equity plans	2,807,123	27	30,321	—	—	30,348
Share-based compensation expense	—	—	105,131	—	—	105,131
Shares repurchased for tax withholdings on vesting of stock unit awards	(819,204)	(8)	(48,446)	—	—	(48,454)
Balance at October 29, 2022	148,412,943	1,484	6,390,252	(46,645)	(3,632,230)	2,712,861
Net income	—	—	—	—	254,827	254,827
Other comprehensive income	—	—	—	8,878	—	8,878
Repurchases of common stock - repurchase program, net	(5,672,123)	(57)	(251,454)	—	—	(251,511)
Issuance of shares from employee equity plans	2,900,038	29	31,328	—	—	31,357
Share-based compensation expense	—	—	130,455	—	—	130,455
Shares repurchased for tax withholdings on vesting of stock unit awards	(810,920)	(8)	(38,498)	—	—	(38,506)
Balance at October 28, 2023	144,829,938	\$ 1,448	\$ 6,262,083	\$ (37,767)	\$ 3,377,403	\$ 2,848,361

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

CIENA CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
Cash flows provided by (used in) operating activities:			
Net income	\$ 254,827	\$ 152,902	\$ 500,196
Adjustments to reconcile net income to net cash provided by (used in) operating activities:			
Loss on extinguishment of debt	1,864	—	—
Depreciation of equipment, building, furniture and fixtures, and amortization of leasehold improvements	92,564	95,922	96,233
Share-based compensation costs	130,455	105,131	84,336
Amortization of intangible assets	49,616	44,281	36,033
Deferred taxes	(14,852)	(27,502)	(156,469)
Provision for inventory excess and obsolescence	29,464	16,184	17,850
Provision for warranty	31,742	17,440	17,093
Gain on cost method equity investments, net	(26,368)	(4,120)	(164)
Other	15,771	4,120	14,689
Changes in assets and liabilities:			
Accounts receivable	(94,565)	(47,069)	(174,377)
Inventories	(132,497)	(589,113)	(47,567)
Prepaid expenses and other	(51,965)	(58,996)	(19,691)
Operating lease right-of-use assets	14,190	16,453	16,632
Accounts payable, accruals and other obligations	(138,469)	100,327	162,134
Deferred revenue	27,412	26,380	16,822
Short and long-term operating lease liabilities	(20,857)	(20,096)	(22,104)
Net cash provided by (used in) operating activities	168,332	(167,756)	541,646
Cash flows used in investing activities:			
Payments for equipment, furniture, fixtures and intellectual property	(106,197)	(90,818)	(79,550)
Purchases of investments	(252,329)	(647,526)	(170,525)
Proceeds from sales and maturities of investments	208,104	702,197	150,000
Proceeds from sale of cost method equity investment	—	—	4,678
Purchase of cost method equity investment	—	(8,000)	—
Settlement of foreign currency forward contracts, net	(2,984)	4,942	4,680
Acquisition of businesses, net of cash acquired	(230,048)	(62,043)	—
Net cash used in investing activities	(383,454)	(101,248)	(90,717)
Cash flows provided by (used in) financing activities:			
Proceeds from issuance of senior notes	—	400,000	—
Proceeds from issuance of term loan, net	497,500	—	—
Payment of long-term debt	(9,430)	(5,197)	(6,929)
Proceeds from modification of term loan	830	—	—
Payment of debt issuance costs	(6,379)	(5,484)	—
Payment of finance lease obligations	(3,791)	(3,468)	(3,004)
Shares repurchased for tax withholdings on vesting of stock unit awards	(38,506)	(48,454)	(44,071)
Repurchases of common stock - repurchase program, net	(242,201)	(500,800)	(91,288)
Proceeds from issuance of common stock	31,357	30,348	28,457
Net cash provided by (used in) financing activities	229,380	(133,055)	(116,835)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	2,150	(26,167)	(198)
Net increase (decrease) in cash, cash equivalents and restricted cash	16,408	(428,226)	333,896
Cash, cash equivalents and restricted cash at beginning of fiscal year	994,378	1,422,604	1,088,708
Cash, cash equivalents and restricted cash at end of fiscal year	\$ 1,010,786	\$ 994,378	\$ 1,422,604
Supplemental disclosure of cash flow information			
Cash paid during the fiscal year for interest	\$ 84,465	\$ 42,812	\$ 29,864
Cash paid during the fiscal year for income taxes, net	\$ 78,242	\$ 34,967	\$ 73,127
Operating lease payments	\$ 22,782	\$ 21,661	\$ 24,058

Operating lease payments	\$	22,702	\$	22,902	\$	22,902
Non-cash investing and financing activities						
Purchase of equipment in accounts payable	\$	6,990	\$	12,373	\$	10,138
Repurchase of common stock in accrued liabilities from repurchase program	\$	9,310	\$	—	\$	800
Operating lease right-of-use assets subject to lease liability	\$	10,236	\$	23,242	\$	4,356
Gain on cost method equity investment	\$	26,368	\$	4,120	\$	164

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

CIENA CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) CIENA CORPORATION AND SIGNIFICANT ACCOUNTING POLICIES AND ESTIMATES

Description of Business

Ciena Corporation ("Ciena" or the "Company") is a network platform, software, and services company, providing solutions that enable a wide range of network operators to deploy and manage next-generation networks that deliver services to businesses and consumers. Ciena provides hardware, software and services that support the delivery of video, data and voice traffic over core, metro, aggregation and access communications networks. Ciena's solutions are used globally by communications service providers, cable and multiservice operators, cloud providers, submarine network operators, governments, and enterprises across multiple industry verticals.

Ciena's portfolio is designed to enable the Adaptive Network™, Ciena's vision for a network end state that leverages a programmable and scalable network infrastructure, driven by software control and automation capabilities, that is informed by network analytics and intelligence. By transforming network infrastructures into dynamic, programmable environments driven by automation and analytics, network operators can realize greater business agility, adapt dynamically to changing end-user service demands and rapidly introduce new revenue-generating services. They can also gain valuable real-time network insights, allowing them to optimize network performance and maximize the return on their network infrastructure investment.

Ciena's solutions include Networking Platforms, including its Optical Networking portfolio and Routing and Switching portfolio, which can be applied from the network core to end-user access points, and which allow network operators to scale capacity, increase transmission speeds, allocate traffic efficiently and adapt dynamically to changing end-user service demands. Ciena's Optical Networking portfolio, which was previously referred to as Ciena's Converged Packet Optical portfolio, includes products that support long haul and regional networks, submarine and data center interconnect networks, and metro and edge networks. Ciena's Routing and Switching portfolio includes products and solutions that enable efficient internet protocol ("IP") transport in next-generation metro, core, aggregation, and access networks, including in enterprise edge and broadband access applications.

To complement its Networking Platforms, Ciena offers Platform Software, which includes its Manage, Control and Plan ("MCP") applications that deliver advanced multi-layer domain control and operations. Ciena, through its Blue Planet® Software, also enables complete service lifecycle management automation with productized operational support systems ("OSS"), which include inventory, orchestration and assurance solutions that help its customers to achieve closed loop automation across multi-vendor and multi-domain environments.

In addition to its systems and software, Ciena also offers a broad range of services that help its customers build, operate and improve their networks and associated operational environments. These include network transformation, consulting, implementation, systems integration, maintenance, network operations center ("NOC") management, learning, and optimization services.

Basis of Presentation

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

Ciena has a 52 or 53-week fiscal year, which ends on the Saturday nearest to the last day of October in each year (October 28, 2023, October 29, 2022, and October 30, 2021, for the periods reported). Fiscal 2023, fiscal 2022 and fiscal 2021 each consisted of a 52-week fiscal year.

Business Combinations

Ciena records acquisitions using the purchase method of accounting. All of the assets acquired, liabilities assumed, contractual contingencies and contingent consideration are recognized at their fair value as of the acquisition date. The excess of the purchase price over the estimated fair values of the net tangible and net intangible assets acquired is recorded as goodwill. The application of the purchase method of accounting for business combinations requires management to make significant estimates and assumptions in the determination of the fair value of assets acquired and liabilities assumed, in order to properly allocate purchase price consideration between assets that are depreciated and amortized from goodwill. These assumptions and estimates include a market participant's use of the asset and the appropriate discount rates for a market participant. Ciena's estimates are based on historical experience, information obtained from the management of the acquired companies and, when appropriate, include assistance from independent third-party appraisal firms. Significant assumptions and

estimates can include, but are not limited to, the cash flows that an asset is expected to generate in the future, the appropriate weighted-average cost of capital and the cost savings expected to be derived from acquiring an asset. These estimates are inherently uncertain and unpredictable. In addition, unanticipated events and circumstances may occur which may affect the accuracy or validity of such estimates.

Use of Estimates

The preparation of the financial statements and related disclosures in conformity with Generally Accepted Accounting Principles ("GAAP") requires management to make estimates and judgments that affect the amounts reported in the consolidated financial statements and accompanying notes. Estimates are used for selling prices for multiple element arrangements, shared-based compensation, bad debts, valuation of inventories and investments, recoverability of intangible assets, other long-lived assets and goodwill, income taxes, warranty obligations, restructuring liabilities, derivatives, contingencies and litigation. Ciena bases its estimates on historical experience and assumptions that it believes are reasonable. Actual results may differ materially from management's estimates.

Cash and Cash Equivalents

Ciena considers all highly liquid investments purchased with original maturities of three months or less to be cash equivalents. Any restricted cash collateralizing letters of credit is included in other current assets and other long-term assets depending on the duration of the restriction.

Investments

Ciena's investments in debt securities are classified as available-for-sale and reported at fair value, with unrealized gains and losses recorded in accumulated other comprehensive loss. Ciena recognizes losses in the income statement when it determines that declines in the fair value of its investments below their cost basis are other-than-temporary. In determining whether a decline in fair value is other-than-temporary, Ciena considers various factors, including market price (when available), investment ratings, the financial condition and near-term prospects of the investee, the length of time and the extent to which the fair value has been less than Ciena's cost basis, and Ciena's intent and ability to hold the investment until maturity or for a period of time sufficient to allow for any anticipated recovery in market value. Ciena considers all marketable debt securities that it expects to convert to cash within one year or less to be short-term investments, with all others considered to be long-term investments.

Ciena has minority equity investments in privately held technology companies that are classified in other long-term assets. These investments are carried at cost because Ciena owns less than 20% of the voting equity and does not have the ability to exercise significant influence over the company. Ciena monitors these investments for impairment and makes appropriate reductions to the carrying value when necessary. As of October 28, 2023, the combined carrying value of these investments was minimal. Ciena elects to estimate the fair value at cost minus impairment, if any, plus or minus observable price changes in orderly transactions for identical or similar investments of the same issuer. Ciena evaluates these investments for impairment or observable price changes quarterly and records adjustments to interest and other income (loss), net on the Consolidated Statements of Operations.

Inventories

Inventories are stated at the lower of cost or market, with cost computed using standard cost, which approximates actual cost, on a first-in, first-out basis. Ciena records a provision for excess and obsolete inventory when an impairment has been identified.

Segment Reporting

Ciena's chief operating decision maker, its chief executive officer, evaluates the Company's performance and allocates resources based on multiple factors, including measures of segment profit (loss). Operating segments are defined as components of an enterprise that engage in business activities that may earn revenue and incur expense, for which discrete financial information is available, and for which such information is evaluated regularly by the chief operating decision maker for purposes of allocating resources and assessing performance. Ciena has the following operating segments for reporting purposes: (i) Networking Platforms; (ii) Platform Software and Services; (iii) Blue Planet Automation Software and Services; and (iv) Global Services. See Note 25 below.

Goodwill

Goodwill is the excess of the purchase price over the fair values assigned to the net assets acquired in a business combination. Ciena tests goodwill for impairment on an annual basis, which it has determined to be the last business day of fiscal September each year. Ciena also tests goodwill for impairment between annual tests if an event occurs or circumstances change that would, more likely than not, reduce the fair value of the reporting unit below its carrying value.

Annually, Ciena tests goodwill impairment qualitatively, or quantitatively by comparing the fair value of the reporting unit with the unit's carrying amount, including goodwill. If this test indicates that the fair value is less than the carrying value, then an impairment loss is recognized limited to the total amount of goodwill allocated to that reporting unit. A non-cash goodwill impairment charge would have the effect of decreasing earnings or increasing losses in such period. If Ciena is required to take a substantial impairment charge, its operating results would be materially adversely affected in such period.

Long-lived Assets

Long-lived assets include equipment, building, furniture and fixtures, operating right-of-use ("ROU") assets, finite-lived intangible assets and maintenance spares. Ciena tests long-lived assets for impairment whenever triggering events or changes in circumstances indicate that the asset's carrying amount is not recoverable from its undiscounted cash flows. An impairment loss is measured as the amount by which the carrying amount of the asset or asset group exceeds its fair value. Ciena's long-lived assets are assigned to asset groups that represent the lowest level for which cash flows can be identified.

Equipment, Building, Furniture and Fixtures and Internal Use Software

Equipment, building, furniture and fixtures are recorded at cost. Depreciation and amortization are computed using the straight-line method, generally over useful lives of three years to five years for equipment and furniture and fixtures and the shorter of useful life or lease term for leasehold improvements.

Qualifying internal use software and website development costs incurred during the application development stage, which consist primarily of outside services and purchased software license costs, are capitalized and amortized straight-line over the estimated useful lives of two years to five years.

Leases

At the inception of a contract, Ciena must determine whether the contract is or contains a lease. The contract is or contains a lease if the contract conveys the right to control the use of the property, plant, or equipment for a designated term in exchange for consideration. Ciena's evaluation of its contracts follows the assessment of whether there is a right to obtain substantially all of the economic benefits from the use and the right to direct the use of the identified asset in the contract. Operating leases are included in the Operating ROU assets, Operating lease liabilities and Long-term operating lease liabilities in the Consolidated Balance Sheets. Finance leases are included in Equipment, building, furniture and fixtures, net ("Finance ROU assets"), Accrued liabilities and other short-term obligations and Other long-term obligations in the Consolidated Balance Sheets.

Ciena has operating and finance leases that primarily relate to real property. Ciena has elected not to capitalize leases with a term of 12 months or less without a purchase option that it is likely to exercise. Ciena has elected not to separate lease and non-lease components of operating and finance leases. Lease components are payment items directly attributable to the use of the underlying asset, while non-lease components are explicit elements of a contract not directly related to the use of the underlying asset, including pass-through operating expenses like common area maintenance and utilities.

Operating ROU assets and lease liabilities and Finance ROU assets and lease liabilities are recognized on the Consolidated Balance Sheets at the present value of the future lease payments over the life of the lease term. Ciena uses discount rates based on incremental borrowing rates, on a collateralized basis, for the respective underlying assets, for terms similar to the respective leases when implicit rates for leases are not determinable. Operating lease costs are included as rent expense in the Consolidated Statements of Operations. Fixed base payments on operating leases paid directly to the lessor are recorded as lease expense on a straight-line basis. Related variable payments based on usage, changes in an index, or market rate are expensed as incurred. Finance ROU assets are generally amortized on a straight-line basis over the lease term with the interest expense on the lease liability recorded using the interest method. The amortization and interest expense are recorded separately in the Consolidated Statements of Operations.

Intangible Assets

Ciena has recorded finite-lived intangible assets as a result of several acquisitions. Finite-lived intangible assets are carried at cost less accumulated amortization. Amortization is computed using the straight-line method over the expected economic lives of the respective assets, up to seven years , which approximates the use of intangible assets.

Cloud Computing Arrangements

Ciena capitalizes certain costs related to hosting arrangements that are service contracts (cloud computing arrangements). Capitalized costs are included in Other long-term assets in the Consolidated Balance Sheets and are amortized on a straight-line basis over the estimated useful life.

Maintenance Spares

Maintenance spares are recorded at cost. Ciena depreciates spares ratably over four years .

Concentrations

Substantially all of Ciena's cash and cash equivalents are maintained at a small number of major U.S. financial institutions. The majority of Ciena's cash equivalents consist of money market funds. Deposits held with banks may exceed the amount of insurance provided on such deposits. Because these deposits generally may be redeemed upon demand, management believes that they bear minimal risk.

Historically, a significant percentage of Ciena's revenue has been concentrated among sales to a small number of large communications service providers and cloud providers. Consolidation among Ciena's customers has increased this concentration. Consequently, Ciena's accounts receivable are concentrated among these customers. See Note 2 below.

Additionally, Ciena's access to certain materials or components is dependent on sole or limited source suppliers. The inability of any of these suppliers to fulfill Ciena's supply requirements, or significant changes in supply cost, could affect future results. Ciena relies on a small number of contract manufacturers to perform the majority of the manufacturing for its products. If Ciena cannot effectively manage these manufacturers or forecast future demand, or if these manufacturers fail to deliver products or components on time, Ciena's business and results of operations may suffer.

Revenue Recognition

Ciena recognizes revenue when control of the promised products or services is transferred to its customer, in an amount that reflects the consideration to which Ciena expects to be entitled in exchange for those products or services.

Ciena determines revenue recognition by applying the following five-step approach:

- identification of the contract, or contracts, with a customer;
- identification of the performance obligations in the contract;
- determination of the transaction price;
- allocation of the transaction price to the performance obligations in the contract; and
- recognition of revenue when, or as, Ciena satisfies a performance obligation.

Generally, Ciena makes sales pursuant to purchase orders placed by customers under framework agreements that govern the general commercial terms and conditions of the sale of Ciena's products and services. These purchase orders under framework agreements are used to determine the identification of the contract or contracts with this customer. Purchase orders typically include the description, quantity, and price of each product or service purchased. Purchase orders may include one-line bundled pricing for both products and services. Accordingly, purchase orders can include various combinations of products and services that are generally distinct and accounted for as separate performance obligations. Ciena evaluates each promised product and service offering to determine whether it represents a distinct performance obligation. In doing so, Ciena considers, among other things, customary business practices, whether the customer can benefit from the product or service on its own or together with other resources that are readily available, and whether Ciena's commitment to transfer the product or service to the customer is separately identifiable from other obligations in the purchase order. For transactions where Ciena delivers the product or services, Ciena is typically the principal and records revenue and costs of goods sold on a gross basis.

Purchase orders are invoiced based on the terms set forth either in the purchase order or the framework agreement, as applicable. Generally, sales of products and software licenses are invoiced upon shipment or delivery. Maintenance and

software subscription services are invoiced quarterly or annually in advance of the service term. Ciena's other service offerings are generally invoiced upon completion of the service. Payment terms and cash received typically range from 30 to 90 days from the invoicing date. Historically, Ciena has not provided any material financing arrangements to its customers. As a practical expedient, Ciena does not adjust the amount of consideration it will receive for the effects of a significant financing component as it expects, at contract inception, that the period between Ciena's transfer of the products or services to the customer and customer payment for the products or services will be one year or less. Shipping and handling fees invoiced to customers are included in revenue, with the associated expense included in product cost of goods sold. Ciena records revenue net of any associated sales taxes.

Ciena recognizes revenue upon the transfer of control of promised products or services to a customer. Transfer of control occurs once the customer has the contractual right to use the product, generally upon shipment or delivery to the customer. Transfer of control can also occur over time for services such as software subscription, maintenance, installation, and various professional services as the customer receives the benefit over the contract term.

Significant Judgments

Revenue is allocated among performance obligations based on standalone selling price ("SSP"). SSP reflects the price at which Ciena would expect to sell that product or service on a stand-alone basis at contract inception and that Ciena would expect to be entitled to receive for the promised products or services. SSP is estimated for each distinct performance obligation, and judgment may be required in its determination. The best evidence of SSP is the observable price of a product or service when Ciena sells the products separately in similar circumstances and to similar customers. In instances where SSP is not directly observable, Ciena determines SSP using information that may include market conditions and other observable inputs.

Ciena applies judgment in determining the transaction price, as Ciena may be required to estimate variable consideration when determining the amount of revenue to recognize. Variable consideration can include various rebate, cooperative marketing, and other incentive programs that Ciena offers to its distributors, partners and customers. When determining the amount of revenue to recognize, Ciena estimates the expected usage of these programs, applying the expected value or most likely estimate and updates the estimate at each reporting period as actual utilization data becomes available. Ciena also considers any customer right of return and any actual or potential payment of liquidated damages, contractual or similar penalties, or other claims for performance failures or delays in determining the transaction price, where applicable.

When transfer of control is judged to be over time for installation and professional service arrangements, Ciena applies the input method to determine the amount of revenue to be recognized in a given period. Utilizing the input method, Ciena recognizes revenue based on the ratio of actual costs incurred to date to the total estimated costs expected to be incurred. Revenue for software subscription and maintenance is recognized ratably over the period during which the services are performed.

Capitalized Contract Acquisition Costs

Ciena has considered the impact of the guidance in Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 340-40, *Other Assets and Deferred Costs; Contracts with Customers*, and the interpretations of the FASB Transition Resource Group for Revenue Recognition with respect to capitalization and amortization of incremental costs of obtaining a contract. In conjunction with this interpretation, Ciena considers each customer purchase in combination with the corresponding framework agreement, if applicable, as a contract. Ciena has elected to implement the practical expedient, which allows for incremental costs to be recognized as an expense when incurred if the period of the asset recognition is one year or less. If the period of the asset recognition is greater than one year, Ciena amortizes these costs over the period of performance. Ciena considers sales commissions incurred upon receipt of purchase orders placed by customers as incremental costs to obtain such purchase orders. The practical expedient method is applied to the purchase order as a whole and thus the capitalized costs of obtaining a purchase order is applied even if the purchase order contains more than one performance obligation. In cases where a purchase order includes various distinct products or services with both short-term (one year or less) and long-term (more than a year) performance periods, the cost of commissions incurred for the total value of the purchase order is capitalized and subsequently amortized as each performance obligation is recognized.

For the additional disclosures on capitalized contract acquisition costs, see Note 2 below.

Warranty Accruals

Ciena provides for the estimated costs to fulfill customer warranty obligations upon recognition of the related revenue. Estimated warranty costs include estimates for material costs, technical support labor costs and associated overhead. Warranty

is included in cost of goods sold and is determined based on actual warranty cost experience, estimates of component failure rates and management's industry experience. Ciena's sales contracts do not permit the right of return of the product by the customer after the product has been accepted.

Allowance for Credit Losses for Accounts Receivable and Contract Assets

Ciena estimates its allowances for credit losses using relevant available information from internal and external sources, related to past events, current conditions and reasonable and supportable forecasts. Historical credit loss experience provides the basis for the estimation of expected credit losses. When assessing for credit losses, Ciena determines collectability by pooling assets with similar characteristics. The allowances for credit losses are each measured on a collective basis when similar risk characteristics exist. The allowances for credit losses are each measured by multiplying the exposure probability of default (the probability that the asset will default within a given time frame) by the loss given default rate (the percentage of the asset not expected to be collected due to default) based on the pool of assets.

Probability of default rates are published by third-party credit rating agencies. Adjustments to Ciena's exposure probability may take into account a number of factors, including, but not limited to, various customer-specific factors, the potential sovereign risk of the geographic locations in which the customer is operating and macroeconomic conditions. These factors are updated regularly or when facts and circumstances indicate that an update is deemed necessary.

Accounts Receivable Factoring

Ciena has entered into factoring agreements to sell certain receivables to unrelated third-party financial institution on a non-recourse basis. These transactions are accounted for in accordance with ASC Topic 860, "Transfers and Servicing" and result in a reduction in accounts receivable because the agreements transfer effective control over, and risk related to, the receivables to the buyers. Ciena's factoring agreements do not allow for recourse in the event of uncollectability, and Ciena does not retain any interest in the underlying accounts receivable once sold. Trade accounts receivables balances sold are removed from the consolidated balance sheets and cash received is reflected as cash provided by (used in) operating activities in the Consolidated Statements of Cash Flow. Factoring related interest expense is recorded to interest and other income (loss), net on the Consolidated Statements of Operations. See Note 9 below.

Research and Development

Ciena charges all research and development costs to expense as incurred. Types of expense incurred in research and development include employee compensation, prototype equipment, consulting and third-party services, depreciation, facility costs and information technology.

Government Grants

Ciena accounts for proceeds from government grants as a reduction of expense when there is reasonable assurance that Ciena has met the required conditions associated with the grant and that grant proceeds will be received. Grant benefits are recorded to the particular line item of the Consolidated Statement of Operations to which the grant activity relates. See Notes 3 below.

Advertising Costs

Ciena expenses all advertising costs as incurred.

Legal Costs

Ciena expenses legal costs associated with litigation as incurred.

Share-Based Compensation Expense

Ciena measures and recognizes compensation expense for share-based awards and employee stock purchases related to its Amended and Restated 2003 Employee Stock Purchase Plan (the "ESPP") based on estimated fair values on the date of grant. Ciena estimates the fair value of employee stock purchases related to the ESPP using the Black-Scholes option-pricing model. Ciena recognizes the estimated fair value of restricted stock units subject only to service-based vesting conditions by multiplying the number of shares underlying the award by the closing price per share of Ciena common stock on the grant date. In each case, Ciena only recognizes expense in its Consolidated Statements of Operations for those restricted stock units that ultimately vest. Awards with performance-based vesting conditions (i) require the achievement of certain operational, financial or other performance criteria or targets or (ii) vest based on Ciena's total stockholder return as compared to an index of peer companies, in whole or in part. Ciena recognizes the estimated fair value of restricted stock units subject to performance-based vesting conditions other than total stockholder return by assuming the satisfaction of any performance-based objectives at the "target" level and multiplying the corresponding number of shares earned based upon such achievement by the closing price per share of Ciena common stock on the grant date. Ciena recognizes the estimated fair value of performance based awards subject to total stockholder return as compared to an index of peer companies using a Monte Carlo simulation valuation model on the date of grant. At the end of each reporting period, Ciena reassesses the probability of achieving the performance targets and the performance period required to meet those targets. See Note 24 below.

Stock Repurchase Program

Shares repurchased pursuant to Ciena's stock repurchase program are immediately retired upon purchase. Repurchased common stock is reflected as a reduction of stockholders' equity. Ciena's accounting policy related to its share repurchases is to reduce its common stock based on the par value of the shares and to reduce its capital surplus for the excess of the repurchase price over the par value. Since the inception of its stock repurchase programs, Ciena has had an accumulated deficit balance; therefore, the excess over the par value has been applied to additional paid-in capital. Once Ciena has retained earnings, the excess will be charged entirely to retained earnings.

Income Taxes

Ciena accounts for income taxes using an asset and liability approach. This approach recognizes deferred tax assets and liabilities ("DTA") 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, Ciena considers all expected future events other than the enactment of changes in tax laws or rates. Valuation allowances are provided if, based on the weight of the available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

In the ordinary course of business, transactions occur for which the ultimate outcome may be uncertain. In addition, tax authorities periodically audit Ciena's income tax returns. These audits examine significant tax filing positions, including the timing and amounts of deductions and the allocation of income tax expenses among tax jurisdictions. Ciena is currently under audit in India for 2018 through 2021, in Canada for 2014, and in the United Kingdom for 2016 through 2021. Management does not expect the outcome of these audits to have a material adverse effect on Ciena's consolidated financial position, results of operations or cash flows. Ciena's major tax jurisdictions and the earliest open tax years are as follows: United States (2020), United Kingdom (2016), Canada (2014), and India (2018). Limited adjustments can be made to federal U.S. tax returns in earlier years in order to reduce net operating loss carryforwards. Ciena classifies interest and penalties related to uncertain tax positions as a component of income tax expense.

Ciena is required to record excess tax benefits or tax deficiencies related to stock-based compensation as income tax benefit or expense when share-based awards vest or are settled.

The Tax Cuts and Jobs Act (the "Tax Act") includes provisions that affected Ciena starting in fiscal 2019, including a provision designed to tax global intangible low-taxed income ("GILTI"). An accounting policy choice is allowed to either treat taxes due on future U.S. inclusions related to GILTI in taxable income as a current-period expense when incurred (the "period cost method") or factor such amounts into the measurement of deferred taxes (the "deferred method"). The calculation of the deferred balance with respect to the GILTI tax provisions will depend, in part, on analyzing global income to determine whether future U.S. inclusions in taxable income are expected related to GILTI and, if so, what the impact is expected to be. Ciena is electing to use the period cost method for future GILTI inclusions. Additionally, Ciena is electing to use the incremental cash tax savings approach when determining whether a valuation allowance needs to be recorded against the U.S. net operating loss ("NOL") due to the GILTI inclusions.

The Tax Act also introduced an alternative tax known as the base erosion and anti-abuse tax ("BEAT"). An accounting policy choice has been made to consider BEAT as a period cost when incurred.

Loss Contingencies

Ciena is subject to the possibility of various losses arising in the ordinary course of business. These may relate to disputes, litigation and other legal actions. Ciena considers the likelihood of loss or the incurrence of a liability, as well as Ciena's ability to estimate the amount of loss reasonably, in determining loss contingencies. An estimated loss contingency is accrued when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. Ciena regularly evaluates current information available to it in order to determine whether any accruals should be adjusted and whether new accruals are required.

Fair Value of Financial Instruments

The carrying value of Ciena's cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximates fair market value due to the relatively short period of time to maturity. For information related to the fair value of Ciena's short-term and long-term debt, see Note 19 below.

Fair value for the measurement of financial assets and liabilities is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. Ciena utilizes a valuation hierarchy for disclosure of the inputs for fair value measurement. This hierarchy prioritizes the inputs into three broad levels as follows:

- Level 1 inputs are unadjusted quoted prices in active markets for identical assets or liabilities;
- Level 2 inputs are quoted prices for identical or similar assets or liabilities in less active markets or model-derived valuations in which significant inputs are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument; and
- Level 3 inputs are unobservable inputs based on Ciena's assumptions used to measure assets and liabilities at fair value. The fair values are determined based on model-based techniques using inputs Ciena could not corroborated with market data.

By distinguishing between inputs that are observable in the marketplace, and therefore more objective, and those that are unobservable, and therefore more subjective, the hierarchy is designed to indicate the relative reliability of the fair value measurements. A financial asset's or liability's classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

Restructuring

From time to time, Ciena takes actions to align its workforce, facilities and operating costs with perceived market opportunities, business strategies and changes in market and business conditions and redesign business processes. Ciena recognizes a liability for the cost associated with an exit or disposal activity in the period in which the liability is incurred, except for one-time employee termination benefits related to a service period, typically of more than 60 days, which are accrued over the service period. See Note 5 below.

Foreign Currency

Certain of Ciena's foreign branch offices and subsidiaries use the U.S. Dollar as their functional currency because Ciena Corporation, as the U.S. parent entity, exclusively funds the operations of these branch offices and subsidiaries. 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, and the statement of operations is translated at a monthly average rate. Resulting translation adjustments are recorded directly to a separate component of stockholders' equity. Where the monetary assets and liabilities are transacted in a currency other than the entity's functional currency, re-measurement adjustments are recorded in interest and other income (loss), net on the Consolidated Statements of Operations. See Note 6 below.

Derivatives

From time to time, Ciena uses foreign currency forward contracts to reduce variability in certain forecasted non-U.S. Dollar denominated cash flows. Generally, these derivatives have maturities of 24 months or less. Ciena also has interest rate swap arrangements to reduce variability in certain forecasted interest expense associated with its term loans. All of these derivatives are designated as cash flow hedges. Ciena also uses foreign currency forward contracts to minimize the effect of foreign exchange rate movements on its net investments in foreign operations. Generally, these derivatives have maturities of 24 months or less. These derivatives are designated as net investment hedges. At the inception of these hedges, and on an ongoing basis, Ciena assesses whether the derivative has been effective in offsetting changes attributable to the hedged risk during the hedging period. The derivative's net gain or loss is initially reported as a component of accumulated other comprehensive loss, and upon occurrence of the forecasted transaction, is subsequently reclassified to the line item in the Consolidated Statements of Operations to which the hedged transaction relates.

Ciena records derivative instruments in the Consolidated Statements of Cash Flows within operating, investing, or financing activities consistent with the cash flows of the hedged items.

From time to time, Ciena uses foreign currency forward contracts to hedge certain balance sheet foreign exchange exposures. These forward contracts are not designated as hedges for accounting purposes, and any net gain or loss associated with these derivatives is reported in interest and other income (loss), net on the Consolidated Statements of Operations.

See Notes 8 and 16 below.

Computation of Net Income per Share

Ciena calculates basic net income per common share ("Basic EPS") by dividing earnings attributable to common stock by the weighted average number of common shares outstanding for the period. Diluted net income per potential common share ("Diluted EPS") includes other potential dilutive shares that would be outstanding if securities or other contracts to issue common stock were exercised or converted into common stock. Ciena uses a dual presentation of Basic EPS and Diluted EPS on the face of its income statement. A reconciliation of the numerator and denominator used for the Basic EPS and Diluted EPS computations is set forth in Note 21 below.

Software Development Costs

Ciena develops software for sale to its customers. GAAP requires the capitalization of certain software development costs that are 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 using the straight-line method over the estimated life of the product. Ciena defines technological feasibility as being attained at the time a working model is completed. To date, the period between Ciena achieving technological feasibility and the general availability of such software has been short, and software development costs qualifying for capitalization have been insignificant. Accordingly, Ciena has not capitalized any software development costs.

Newly Issued Accounting Standards - Not Yet Effective

In October 2021, the FASB issued ASU No. 2021-08 ("ASU 2021-08"), *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* to improve the accounting for acquired revenue contracts with customers in a business combination to address recognition of an acquired contract liability and payment terms and their effect on subsequent revenue recognized by the acquirer. ASU 2021-08 is effective for annual periods beginning after December 15, 2022 on a prospective basis. Early adoption is permitted. Ciena does not expect adoption of ASU 2021-08 to have a material impact on its consolidated financial statements and related disclosures.

In November 2023, the FASB issued ASU No. 2023-07 ("ASU 2023-07"), *Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures* to improve reportable segment disclosure requirements, primarily through enhanced disclosures about significant segment expenses. ASU 2023-07 is effective for fiscal years beginning after December 15, 2023 on a retrospective basis. Early adoption is permitted. Ciena is currently evaluating the impact of this accounting standard update on its consolidated financial statements and related disclosures.

In December 2023, the FASB issued ASU No. 2023-09 ("ASU 2023-09"), *Income Taxes (Topic 740): Improvement to Income Tax Disclosures* to enhance the transparency and decision usefulness of income tax disclosures. ASU 2023-09 is effective for annual periods beginning after December 15, 2024 on a prospective basis. Early adoption is permitted. Ciena is currently evaluating the impact of this accounting standard update on its consolidated financial statements and related disclosures.

(2) REVENUE

Disaggregation of Revenue

Ciena's disaggregated revenue as presented below depicts the nature, amount, and timing of revenue and cash flows for similar groupings of Ciena's various offerings. The sales cycle, contractual obligations, customer requirements, and go-to-market strategies may differ for each of its product categories, resulting in different economic risk profiles for each category. Effective as of the fourth quarter of fiscal 2023, Ciena renamed its "Converged Packet Optical" product line to "Optical Networking." This change, affecting only the presentation of such information, was made on a prospective basis and does not impact comparability of previous financial results. However, references to prior reported "Converged Packet Optical" product line have been changed herein to "Optical Networking."

The tables below set forth Ciena's disaggregated revenue for the respective period (in thousands):

	Year Ended October 28, 2023				
	Networking Platforms	Platform Software and Services	Blue Planet Automation Software and Services	Global Services	Total
Product lines:					
Optical Networking	\$ 2,987,245	\$ —	\$ —	\$ —	\$ 2,987,245
Routing and Switching	506,247	—	—	—	506,247
Platform Software and Services	—	303,873	—	—	303,873
Blue Planet Automation Software and Services	—	—	69,170	—	69,170
Maintenance Support and Training	—	—	—	288,334	288,334
Installation and Deployment	—	—	—	180,951	180,951
Consulting and Network Design	—	—	—	50,729	50,729
Total revenue by product line	<u>\$ 3,493,492</u>	<u>\$ 303,873</u>	<u>\$ 69,170</u>	<u>\$ 520,014</u>	<u>\$ 4,386,549</u>
Timing of revenue recognition:					
Products and services at a point in time	\$ 3,493,492	\$ 67,013	\$ 21,842	\$ 55,036	\$ 3,637,383
Products and services transferred over time	—	236,860	47,328	464,978	749,166
Total revenue by timing of revenue recognition	<u>\$ 3,493,492</u>	<u>\$ 303,873</u>	<u>\$ 69,170</u>	<u>\$ 520,014</u>	<u>\$ 4,386,549</u>

Year Ended October 29, 2022					
	Networking Platforms	Platform Software and Services	Blue Planet Automation Software and Services	Global Services	Total
Product lines:					
Optical Networking	\$ 2,379,931	\$ —	\$ —	\$ —	\$ 2,379,931
Routing and Switching	398,439	—	—	—	398,439
Platform Software and Services	—	277,191	—	—	277,191
Blue Planet Automation Software and Services	—	—	76,567	—	76,567
Maintenance Support and Training	—	—	—	292,375	292,375
Installation and Deployment	—	—	—	157,443	157,443
Consulting and Network Design	—	—	—	50,715	50,715
Total revenue by product line	<u>\$ 2,778,370</u>	<u>\$ 277,191</u>	<u>\$ 76,567</u>	<u>\$ 500,533</u>	<u>\$ 3,632,661</u>
Timing of revenue recognition:					
Products and services at a point in time	\$ 2,778,370	\$ 85,691	\$ 25,540	\$ 44,091	\$ 2,933,692
Products and services transferred over time	—	191,500	51,027	456,442	698,969
Total revenue by timing of revenue recognition	<u>\$ 2,778,370</u>	<u>\$ 277,191</u>	<u>\$ 76,567</u>	<u>\$ 500,533</u>	<u>\$ 3,632,661</u>

Year Ended October 30, 2021					
	Networking Platforms	Platform Software and Services	Blue Planet Automation Software and Services	Global Services	Total
Product lines:					
Optical Networking	\$ 2,553,509	\$ —	\$ —	\$ —	\$ 2,553,509
Routing and Switching	271,796	—	—	—	271,796
Platform Software and Services	—	229,588	—	—	229,588
Blue Planet Automation Software and Services	—	—	77,247	—	77,247
Maintenance Support and Training	—	—	—	283,350	283,350
Installation and Deployment	—	—	—	171,489	171,489
Consulting and Network Design	—	—	—	33,705	33,705
Total revenue by product line	<u>\$ 2,825,305</u>	<u>\$ 229,588</u>	<u>\$ 77,247</u>	<u>\$ 488,544</u>	<u>\$ 3,620,684</u>
Timing of revenue recognition:					
Products and services at a point in time	\$ 2,825,305	\$ 80,359	\$ 27,621	\$ 14,923	\$ 2,948,208
Products and services transferred over time	—	149,229	49,626	473,621	672,476
Total revenue by timing of revenue recognition	<u>\$ 2,825,305</u>	<u>\$ 229,588</u>	<u>\$ 77,247</u>	<u>\$ 488,544</u>	<u>\$ 3,620,684</u>

Ciena reports its sales geographically around the following markets: (i) the United States, Canada, the Caribbean and Latin America ("Americas"); (ii) Europe, Middle East and Africa ("EMEA"); and (iii) Asia Pacific, Japan and India ("APAC"). Within each geographic area, Ciena maintains specific teams or personnel that focus on a particular region, country, customer or market vertical. These teams include sales management, account salespersons and sales engineers, as well as services professionals and commercial management personnel. The following table reflects Ciena's geographic distribution of revenue principally based on the relevant location for Ciena's delivery of products and performance of services.

For the periods below, Ciena's geographic distribution of revenue was as follows (in thousands):

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
Geographic distribution:			
Americas	\$ 3,110,347	\$ 2,636,840	\$ 2,525,619
EMEA	643,142	555,215	670,462
APAC	633,060	440,606	424,603
Total revenue by geographic distribution	\$ 4,386,549	\$ 3,632,661	\$ 3,620,684

Ciena's revenue includes United States revenue of \$ 2.8 billion for fiscal 2023, \$ 2.4 billion for fiscal 2022 and \$ 2.3 billion for fiscal 2021. No other country accounted for 10% or more of total revenue for the periods presented above.

For the periods below, the only customers that accounted for at least 10% of Ciena's revenue were as follows (in thousands):

	October 28, 2023	October 29, 2022	October 30, 2021
Cloud Provider	\$ 561,397	n/a	n/a
AT&T	464,662	\$ 433,418	\$ 447,403
Verizon	n/a	402,787	n/a
Total	\$ 1,026,059	\$ 836,205	\$ 447,403

n/a Denotes revenue representing less than 10% of total revenue for the period

The cloud provider noted in the above table purchased products from each of Ciena's operating segments, excluding Blue Planet[®] Automation Software and Services, for each of the periods presented. The other customers identified above purchased products and services from each of Ciena's operating segments for each of the periods presented.

While Ciena has benefited from the diversification of its business and customer base, its ten largest customers contributed 53.7 % of fiscal 2023 revenue, 56.3 % of fiscal 2022 revenue and 55.5 % of fiscal 2021 revenue.

- *Networking Platforms* revenue reflects sales of Ciena's Optical Networking and Routing and Switching product lines .
 - Optical Networking - includes the 6500 Packet-Optical Platform, the Waveserver[®] modular interconnect system, the 6500 Reconfigurable Line System (RLS), the 5400 family of Packet-Optical Platforms, and the Coherent ELS open line system (OLS). This product line also includes the WaveLogic 5 Nano (WL5n) 100G-400G coherent pluggable transceivers.
 - Routing and Switching - includes the 3000 family of service delivery platforms and the 5000 family of service aggregation. This product line also includes the 6500 Packet Transport System (PTS), which combines packet switching, control plane operation, and integrated optics, the 8100 Coherent IP networking platforms, the 8700 Packetwave Platform, and virtualization software. This product line also includes SD-Edge software and our microplug Optical Line Terminal (OLT) transceiver, from our recent acquisitions of Benu Networks, Inc. ("Benu") and Tibit Communications, Inc. ("Tibit") respectively, during the first quarter of fiscal 2023. This product line also includes Ciena's WaveRouter[™] product, which was introduced during the second quarter of fiscal 2023, for which there have been no sales to date.

The Networking Platforms segment also includes sales of operating system software and enhanced software features embedded in each of the product lines above. Revenue from this segment is included in product revenue on the Consolidated Statements of Operations. Operating system software and enhanced software features embedded in Ciena hardware are each considered distinct performance obligations for which the revenue is generally recognized upfront at a point in time upon transfer of control.

- *Platform Software and Services* offerings provide domain control management, analytics, data and planning tools and applications to assist customers in managing their networks, including by creating more efficient operations and more proactive visibility into their networks. Ciena's platform software includes its MCP domain controller solution, its suite of MCP applications, and its OneControl Unified Management System, as well as planning tools and a number of legacy software solutions that support Ciena's installed base of network solutions. Platform software-related services

revenue includes sales of subscription, installation, support, and consulting services related to Ciena's software platforms, operating system software and enhanced software features embedded in each of the Networking Platforms product lines above. Revenue from the software portion of this segment is included in product revenue on the Consolidated Statements of Operations. Revenue from services portions of this segment is included in services revenue on the Consolidated Statements of Operations.

- *Blue Planet® Automation Software and Services* is a comprehensive, cloud native, and standards-based software portfolio, together with related services, that enables customers to realize digital transformation through the automation of the services lifecycle. Ciena's Blue Planet Automation Platform includes multi-domain service orchestration (MDSO), inventory management (BPI), route optimization and analysis (ROA), multi-cloud orchestration (MCO), and unified assurance and analytics (UAA). Services revenue includes sales of subscription, installation, support, consulting and design services related to Ciena's Blue Planet Automation Platform. Revenue from the software portion of this segment is included in product revenue on the Consolidated Statements of Operations. Revenue from services portions of this segment is included in services revenue on the Consolidated Statements of Operations.

Ciena's software platform revenue typically reflects either perpetual or term-based software licenses, and these sales are considered distinct performance obligations where revenue is generally recognized upfront at a point in time upon transfer of control. Revenue from software subscription and support is recognized ratably over the period during which the services are performed. Revenue from professional services for solution customization, software and solution support services, consulting and design, and build-operate-transfer services relating to Ciena's software offerings is recognized over time with Ciena applying the input method to determine the amount of revenue to be recognized in a given period.

- *Global Services* revenue reflects sales of a broad range of Ciena's services for maintenance support and training, installation and deployment, and consulting and network design activities. Revenue from this segment is included in services revenue on the Consolidated Statements of Operations.

Ciena's Global Services are considered a distinct performance obligation where revenue is generally recognized over time. Revenue from maintenance support is recognized ratably over the period during which the services are performed. Revenue from installation and deployment services and consulting and network design services is recognized over time with Ciena applying the input method to determine the amount of revenue to be recognized in a given period. Revenue from training services is generally recognized at a point in time upon completion of the service.

Contract Balances

The following table provides information about receivables, contract assets and contract liabilities (deferred revenue) from contracts with customers (in thousands):

	Balance at October 28, 2023		Balance at October 29, 2022	
Accounts receivable, net	\$	1,003,876	\$	920,772
Contract assets for unbilled accounts receivable, net	\$	150,312	\$	156,039
Deferred revenue	\$	228,460	\$	200,235

Ciena's contract assets represent unbilled accounts receivable, net, where transfer of a product or service has occurred but invoicing is conditional upon completion of future performance obligations. These amounts are primarily related to installation and deployment and professional services arrangements where transfer of control has occurred, but Ciena has not yet invoiced the customer. Contract assets are included in prepaid expenses and other in the Consolidated Balance Sheets. See Note 11 below.

Contract liabilities consist of deferred revenue and represent advanced payments received from customers against non-cancelable customer orders received prior to revenue recognition. Ciena recognized approximately \$ 135.5 million and \$ 111.3 million of revenue during fiscal 2023 and 2022, respectively, that was included in the deferred revenue balance at October 28, 2023 and October 29, 2022, respectively. Revenue recognized due to changes in transaction price from performance obligations satisfied or partially satisfied in previous periods was immaterial during fiscal 2023 and 2022.

Capitalized Contract Acquisition Costs

Capitalized contract acquisition costs consist of deferred sales commissions and were \$ 30.2 million and \$ 39.7 million as of October 28, 2023 and October 29, 2022, respectively, and are included in (i) prepaid expenses and other and (ii) other long-term assets. The amortization expense associated with these costs was \$ 34.2 million and \$ 27.3 million during fiscal 2023 and fiscal 2022, respectively, and are included in selling and marketing expense on the Consolidated Statements of Operations.

Remaining Performance Obligations

Remaining Performance Obligations ("RPO") are comprised of non-cancelable customer purchase orders for products and services that are awaiting transfer of control for revenue recognition under the applicable contract terms. As of October 28, 2023, the aggregate amount of RPO was \$ 1.8 billion. As of October 28, 2023, Ciena expects approximately 81 % of the RPO to be recognized as revenue within the next twelve months .

(3) CANADIAN EMERGENCY WAGE SUBSIDY

In April 2020, the Canadian government introduced the Canada Emergency Wage Subsidy ("CEWS") to help employers offset a portion of their employee wages for a limited period in response to the COVID-19 outbreak, retroactive to March 15, 2020. The CEWS program expired in October 2021. The subsidy covered employers of all sizes and across all sectors.

Ciena accounts for proceeds from government grants as a reduction of expense when there is reasonable assurance that Ciena has met the required conditions associated with the grant and that grant proceeds will be received. Grant benefits are recorded to the particular line item of the Consolidated Statements of Operations to which the grant activity relates. Amounts from the CEWS program positively impacted Ciena's operating expense and measures of profit in the year ended October 30, 2021. For the fiscal year ended October 30, 2021, Ciena recorded a CAD\$ 52.2 million (\$ 41.3 million) benefit, net of certain fees, related to CEWS for claim periods beginning March 15, 2020, including CAD\$ 43.9 million (\$ 35.4 million) related to employee wages during fiscal 2020. There was no CEWS activity in fiscal 2023 or 2022.

The following table summarizes CEWS for the period indicated (in thousands):

	Year Ended October 30, 2021
Product	\$ 4,283
Service	2,667
CEWS benefit in cost of goods sold	6,950
Research and development	29,519
Sales and marketing	2,604
General and administrative	2,207
CEWS benefit in operating expense	34,330
Total CEWS benefit	\$ 41,280

(4) BUSINESS COMBINATIONS

Fiscal 2023 Acquisitions: Benu and Tibit

On November 17, 2022, Ciena acquired Benu, a portfolio of cloud-native software solutions, including a virtual Broadband Network Gateway ((v)BNG), that complements Ciena's existing portfolio of broadband access solutions. On December 30, 2022, Ciena acquired Tibit, a provider and developer of passive optical network ("PON")-specific hardware and operating software that can be integrated into a carrier-grade Ethernet switch and will strengthen Ciena's portfolio of next-generation PON solutions that support residential, enterprise, and mobility use cases. These businesses were acquired for an aggregate of approximately \$ 291.7 million, of which \$ 244.7 million was paid in cash, and \$ 47.0 million represents the fair value of Ciena's previously held cost method equity investment in Tibit. The acquisition of Tibit triggered the remeasurement of Ciena's previously held investment in Tibit to fair value, which resulted in Ciena recognizing a gain on its cost method equity investment of \$ 26.5 million. Each of these transactions has been accounted for as the acquisition of a business.

Ciena incurred approximately \$ 3.4 million in acquisition-related costs associated with these acquisitions. These costs and expenses primarily include fees associated with financial, legal, and accounting advisors and employment-related costs. These costs were recorded in acquisition and integration costs on the Consolidated Statements of Operations.

The following table summarizes the final purchase price allocation related to the acquisitions based on the estimated fair value of the acquired assets and assumed liabilities (in thousands):

	Amount
Cash and cash equivalents	\$ 14,634
Accounts receivable, net	443
Inventories, net	1,406
Prepaid expenses and other	810
Equipment, furniture and fixtures	1,090
Goodwill	116,644
Developed technology	75,400
In-process technology	89,100
Customer relationships and contracts	18,400
Order backlog	2,480
Deferred tax asset, net	(26,429)
Accounts payable	(420)
Accrued liabilities and other short-term obligations	(874)
Deferred revenue	(851)
Other long-term obligations	(144)
Total purchase consideration	<u>\$ 291,689</u>

Developed technology represents purchased technology that has reached technological feasibility and for which the acquired companies had substantially completed development as of the date of acquisition. Fair value was determined using future discounted cash flows related to the projected income stream of the developed technology for a discrete projection period. Cash flows were discounted to their present value as of the closing date. Developed technology is amortized on a straight-line basis over its estimated useful life of five years .

In-process technology represents purchased technology that had not reached technological feasibility as of the date of acquisition. Fair value was determined using future discounted cash flows related to the projected income stream of the in-process technology for a discrete projection period. Cash flows were discounted to their present value as of the closing date. Upon completion of the in-process technology, it will be amortized on a straight line basis over its estimated useful life, which will be determined on that date.

Customer relationships and contracts represent agreements with existing Tibit customers and have an estimated useful life of three years . Order backlog is amortized over the fulfillment period.

The goodwill generated from these acquisitions is primarily related to expected economic synergies. The total goodwill amount was recorded in the Networking Platforms segment. The goodwill is not deductible for income tax purposes.

Pro forma disclosures have not been included due to immateriality. The amounts of revenue and earnings for these acquisitions since the acquisition dates, which are included on the Consolidated Statements of Operations for the reporting period, are immaterial.

Fiscal 2022 Acquisitions: Vyatta and Xelic

On November 1, 2021, Ciena acquired AT&T's Vyatta Software Technology ("Vyatta"), a provider of software-based virtual routing and switching technology. AT&T is a customer of Ciena; see Note 2 above. On March 9, 2022, Ciena acquired Xelic, Inc., a provider and developer of field programmable gate array (FPGA) and application-specific integrated circuit (ASIC) technology and optical networking IP cores. These businesses were acquired for an aggregate of approximately \$ 64.1 million, of which \$ 63.3 million was paid in cash and \$ 0.8 million represents a future payable arrangement. These transactions have each been accounted for as the acquisition of a business.

Ciena incurred approximately \$ 1.7 million in acquisition-related costs associated with these acquisitions. These costs and expenses primarily include fees associated with financial, legal and accounting advisors. These costs were recorded in acquisition and integration costs in the Consolidated Statements of Operations.

The following table summarizes the final purchase price allocation related to the acquisitions based on the estimated fair value of the acquired assets and assumed liabilities (in thousands):

	Amount
Cash and cash equivalents	\$ 201
Prepaid expenses and other	1,614
Equipment, furniture and fixtures	694
Customer relationships and contracts	15,800
Developed technology	32,491
Goodwill	17,698
Accrued liabilities	(4,434)
Total purchase consideration	\$ 64,064

Customer relationships and contracts represent agreements with existing Vyatta customers and have an estimated useful life of two years .

Developed technology represents purchased technology that has reached technological feasibility and for which the acquired companies had substantially completed development as of the date of acquisition. Fair value was determined using future discounted cash flows related to the projected income stream of the developed technology for a discrete projection period. Cash flows were discounted to their present value as of the closing date. Developed technology is amortized on a straight-line basis over its estimated useful life of five years .

The goodwill generated from these acquisitions are primarily related to expected economic synergies. The total goodwill amount was recorded in the Networking Platforms segment. The goodwill is not deductible for income tax purposes.

Pro forma disclosures have not been included due to immateriality. The amounts of revenue and earnings for these acquisitions since the acquisition dates, which are included in the Consolidated Statements of Operations for the reporting period, are immaterial.

(5) SIGNIFICANT ASSET IMPAIRMENT AND RESTRUCTURING COSTS

Ciena has undertaken a number of restructuring activities intended to reduce expense and align its workforce and costs with market opportunities, product development and business strategies. The following table sets forth the restructuring activity and balance of the restructuring liability accounts, which are included in accrued liabilities and other short-term obligations on Ciena's Consolidated Balance Sheets, for the fiscal years indicated (in thousands):

	Workforce reduction	Other restructuring activities	Total
Balance at October 31, 2020	\$ 2,915	\$ —	\$ 2,915
Charges	5,938 ⁽¹⁾	23,627 ⁽²⁾	29,565
Cash payments	(8,072)	(23,627)	(31,699)
Balance at October 30, 2021	781	—	781
Charges	3,156 ⁽¹⁾	26,814 ⁽²⁾	29,970
Cash payments	(2,722)	(22,194)	(24,916)
Balance at October 29, 2022	1,215	4,620	5,835
Charges	6,885 ⁽¹⁾	16,949 ⁽²⁾	23,834
Cash payments	(6,187)	(21,569)	(27,756)
Balance at October 28, 2023	\$ 1,913	\$ —	\$ 1,913
Current restructuring liabilities	\$ 1,913	\$ —	\$ 1,913

⁽¹⁾ Reflects employee costs associated with workforce reductions as part of a business optimization strategy to improve gross margin, constrain operating expense and redesign certain business processes.

⁽²⁾ Primarily represents the redesign of certain business processes associated with Ciena's supply chain and distribution structure reorganization and costs related to restructured real estate facilities.

Significant Asset Impairments

In February 2022, armed conflict escalated between Russia and Ukraine. The United States and certain other countries have imposed sanctions on Russia and could impose further sanctions. On March 7, 2022, Ciena announced its decision to suspend its business operations in Russia immediately. As a result, Ciena recorded impairment charges of approximately \$ 3.8 million of which \$ 1.8 million was a provision for credit losses.

(6) INTEREST AND OTHER INCOME (LOSS), NET

The components of interest and other income (loss), net, were as follows (in thousands):

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
Interest income	\$ 45,011	\$ 10,060	\$ 2,051
Gains (losses) on non-hedge designated foreign currency forward contracts	(3,896)	(4,018)	11,172
Foreign currency exchange gains (losses)	(427)	2,501	(14,622)
Gain on cost method equity investments, net	26,368	4,120	164
Other	(5,048)	(5,916)	(533)
Interest and other income (loss), net	<u>\$ 62,008</u>	<u>\$ 6,747</u>	<u>\$ (1,768)</u>

During the first quarter of fiscal 2023, the acquisition of Tibit triggered the remeasurement of Ciena's previously held investment in Tibit to fair value, which resulted in Ciena recognizing a gain on its cost method equity investment of \$ 26.5 million. See Note 4 above. During fiscal 2023 and fiscal 2022, Ciena recorded a net gain of \$ 26.4 million and \$ 4.1 million, respectively, on its cost method equity investments.

Ciena Corporation, as the U.S. parent entity, uses the U.S. Dollar as its functional currency; however, some of its foreign branch offices and subsidiaries use the local currency as their functional currency. During fiscal 2023 and 2021, Ciena recorded \$ 0.4 million and \$ 14.6 million, respectively, in exchange rate losses as a result of monetary assets and liabilities that were transacted in a currency other than the entity's functional currency. During fiscal 2022, Ciena recorded \$ 2.5 million in exchange rate gains as a result of monetary assets and liabilities that were transacted in a currency other than the entity's functional currency. The related remeasurement adjustments were recorded in interest and other income (loss), net on the Consolidated Statements of Operations. From time to time, Ciena uses foreign currency forwards to hedge certain of these balance sheet exposures. These forwards are not designated as hedges for accounting purposes, and any net gain or loss associated with these derivatives is also reported in interest and other income (loss), net on the Consolidated Statements of Operations. During fiscal 2023 and 2022, Ciena recorded losses of \$ 3.9 million and \$ 4.0 million, respectively, from non-hedge designated foreign currency forward contracts. During fiscal 2021, Ciena recorded a gain of \$ 11.2 million from non-hedge designated foreign currency forward contracts.

(7) CASH EQUIVALENT, SHORT-TERM AND LONG-TERM INVESTMENTS

As of the dates indicated, investments classified as available-for-sale are comprised of the following (in thousands):

	October 28, 2023			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
U.S. government obligations	\$ 170,260	\$ 28	\$ (379)	\$ 169,909
Corporate debt securities	59,683	1	(115)	59,569
Time deposits	138,830	4	(5)	138,829
	<u>\$ 368,773</u>	<u>\$ 33</u>	<u>\$ (499)</u>	<u>\$ 368,307</u>
Included in cash equivalents	\$ 129,276	\$ —	\$ —	\$ 129,276
Included in short-term investments	105,042	4	(293)	104,753
Included in long-term investments	134,455	29	(206)	134,278
	<u>\$ 368,773</u>	<u>\$ 33</u>	<u>\$ (499)</u>	<u>\$ 368,307</u>

	October 29, 2022			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
U.S. government obligations	\$ 137,963	\$ —	\$ (3,379)	\$ 134,584
Corporate debt securities	54,899	1	(405)	54,495
Time deposits	55,889	—	(64)	55,825
	<u>\$ 248,751</u>	<u>\$ 1</u>	<u>\$ (3,848)</u>	<u>\$ 244,904</u>
Included in cash equivalents	\$ 55,530	\$ —	\$ —	\$ 55,530
Included in short-term investments	156,430	1	(2,442)	153,989
Included in long-term investments	36,791	—	(1,406)	35,385
	<u>\$ 248,751</u>	<u>\$ 1</u>	<u>\$ (3,848)</u>	<u>\$ 244,904</u>

The following table summarizes the legal maturities of debt investments at October 28, 2023 (in thousands):

	October 28, 2023	
	Amortized Cost	Estimated Fair Value
Less than one year	\$ 234,318	\$ 234,029
Due in 1-2 years	134,455	134,278
	<u>\$ 368,773</u>	<u>\$ 368,307</u>

(8) FAIR VALUE MEASUREMENTS

As of the dates indicated, the following tables summarize the fair value of assets and liabilities that were recorded at fair value on a recurring basis (in thousands):

	October 28, 2023			
	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds	\$ 661,101	\$ —	\$ —	\$ 661,101
Bond mutual fund	104,171	—	—	104,171
Time deposits	138,829	—	—	138,829
Deferred compensation plan assets	11,456	—	—	11,456
U.S. government obligations	—	169,909	—	169,909
Corporate debt securities	—	59,569	—	59,569
Foreign currency forward contracts	—	1,119	—	1,119
Interest rate swaps	—	24,953	—	24,953
Total assets measured at fair value	<u>\$ 915,557</u>	<u>\$ 255,550</u>	<u>\$ —</u>	<u>\$ 1,171,107</u>
Liabilities:				
Foreign currency forward contracts	\$ —	\$ 14,509	\$ —	\$ 14,509
Total liabilities measured at fair value	<u>\$ —</u>	<u>\$ 14,509</u>	<u>\$ —</u>	<u>\$ 14,509</u>

October 29, 2022				
	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds	\$ 639,024	\$ —	\$ —	\$ 639,024
Bond mutual fund	71,145	—	—	71,145
Time deposits	55,825	—	—	55,825
Deferred compensation plan assets	12,751	—	—	12,751
U.S. government obligations	—	134,584	—	134,584
Commercial paper	—	54,495	—	54,495
Foreign currency forward contracts	—	251	—	251
Interest rate swaps	—	12,306	—	12,306
Total assets measured at fair value	<u>\$ 778,745</u>	<u>\$ 201,636</u>	<u>\$ —</u>	<u>\$ 980,381</u>
Liabilities:				
Foreign currency forward contracts	\$ —	\$ 15,605	\$ —	\$ 15,605
Total liabilities measured at fair value	<u>\$ —</u>	<u>\$ 15,605</u>	<u>\$ —</u>	<u>\$ 15,605</u>

As of the dates indicated, the assets and liabilities above were presented on Ciena's Consolidated Balance Sheets as follows (in thousands):

October 28, 2023				
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents	\$ 891,788	\$ 2,760	\$ —	\$ 894,548
Short-term investments	12,313	92,440	—	104,753
Prepaid expenses and other	—	1,119	—	1,119
Long-term investments	—	134,278	—	134,278
Other long-term assets	11,456	24,953	—	36,409
Total assets measured at fair value	<u>\$ 915,557</u>	<u>\$ 255,550</u>	<u>\$ —</u>	<u>\$ 1,171,107</u>
Liabilities:				
Accrued liabilities and other short-term obligations	\$ —	\$ 14,509	\$ —	\$ 14,509
Total liabilities measured at fair value	<u>\$ —</u>	<u>\$ 14,509</u>	<u>\$ —</u>	<u>\$ 14,509</u>

October 29, 2022				
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents	\$ 757,725	\$ 7,974	\$ —	\$ 765,699
Short-term investments	8,269	145,720	—	153,989
Prepaid expenses and other	—	251	—	251
Long-term investments	—	35,385	—	35,385
Other long-term assets	12,751	12,306	—	25,057
Total assets measured at fair value	<u>\$ 778,745</u>	<u>\$ 201,636</u>	<u>\$ —</u>	<u>\$ 980,381</u>
Liabilities:				
Accrued liabilities and other short-term obligations	\$ —	\$ 15,605	\$ —	\$ 15,605
Total liabilities measured at fair value	<u>\$ —</u>	<u>\$ 15,605</u>	<u>\$ —</u>	<u>\$ 15,605</u>

Ciena did not have any transfers between Level 1 and Level 2 fair value measurements during the periods presented.

(9) ACCOUNTS RECEIVABLE

As of October 28, 2023, two customers accounted for 11.0 % and 10.0 % of net accounts receivable, respectively. As of October 29, 2022, two customers accounted for 13.0 % and 11.0 % of net accounts receivable, respectively. Ciena has not historically experienced a significant amount of bad debt expense. The following table summarizes the activity in Ciena's allowance for credit losses for the fiscal years indicated (in thousands):

Year Ended	Beginning Balance	Effect of adoption of new accounting standard	Provisions	Net Deductions	Ending Balance
October 30, 2021	\$ 10,598	\$ 2,206	\$ 2,346	\$ 4,238	\$ 10,912
October 29, 2022 ⁽¹⁾	\$ 10,912	\$ —	\$ 4,199	\$ 4,153	\$ 10,958
October 28, 2023	\$ 10,958	\$ —	\$ 5,718	\$ 5,022	\$ 11,654

⁽¹⁾ On March 7, 2022, Ciena announced its decision to suspend its business operations in Russia immediately. As a result, Ciena's allowance for doubtful accounts includes a provision for a significant asset impairment of \$ 1.8 million for a trade receivable related to this decision.

Accounts Receivable Factoring

During fiscal 2023 and 2022, the gross amount of trade accounts receivables sold totaled approximately \$ 60.3 million and \$ 11.8 million, respectively. Prior to the start of fiscal 2022, Ciena had not entered into any factoring arrangements. Factoring related expense recorded to interest and other income (loss), net was \$ 3.1 million and \$ 0.6 million for fiscal 2023 and fiscal 2022, respectively.

(10) INVENTORIES

As of the dates indicated, inventories are comprised of the following (in thousands):

	October 28, 2023	October 29, 2022
Raw materials	\$ 664,797	\$ 664,916
Work-in-process	55,242	18,232
Finished goods	314,168	258,584
Deferred cost of goods sold	66,634	41,084
Gross inventories	1,100,841	982,816
Reserve for excess and obsolescence	(50,003)	(36,086)
Inventories, net	\$ 1,050,838	\$ 946,730

Ciena has been expanding its manufacturing capacity and accumulating raw materials inventory of components that are available, in some cases with expanded lead times, in an effort to prepare Ciena to produce finished goods more quickly when supply constraints ease for certain common components, including integrated circuit components, for which delivery continues to be delayed. Raw materials inventory is related to the steps Ciena has taken to mitigate the impact of supply chain constraints on its business and customers in recent prior periods and the global market shortage of semiconductor parts. The increase in finished goods inventories resulted primarily from planned fulfillment of customer advance orders for which some deliveries have been rescheduled outside of fiscal 2023.

Ciena makes estimates about future customer demand for its products when establishing the appropriate reserve for excess and obsolete inventory. For fiscal 2023, future demand was calculated using both customer backlog and future forecasted sales. For fiscal 2022, future demand was calculated primarily based on customer backlog. Generally, Ciena's customers may cancel or change their orders with limited advance notice, or they may decide not to accept its products and services, although instances of both cancellation and non-acceptance are rare. Ciena writes down its inventory for estimated obsolescence or unmarketable inventory by an amount equal to the difference between the cost of inventory and the estimated net realizable value based on assumptions about future demand, which are affected by changes in Ciena's strategic direction, discontinuance of a product or introduction of newer versions of products, declines in the sales of or forecasted demand for certain products,

and general market conditions. During fiscal 2023, fiscal 2022 and fiscal 2021, Ciena recorded a provision for excess and obsolescence of \$ 29.5 million, \$ 16.2 million, and \$ 17.9 million, respectively, primarily related to a decrease in the forecasted demand for certain Networking Platforms products. Deductions from the provision for excess and obsolete inventory relate primarily to the sale of previously reserved items and disposal activities.

The following table summarizes the activity in Ciena's reserve for excess and obsolete inventory for the fiscal years indicated (in thousands):

Year Ended	Beginning Balance	Provisions	Disposals	Ending Balance
October 30, 2021	\$ 39,637	\$ 17,850	\$ 20,528	\$ 36,959
October 29, 2022	\$ 36,959	\$ 16,184	\$ 17,057	\$ 36,086
October 28, 2023	\$ 36,086	\$ 29,464	\$ 15,547	\$ 50,003

(11) PREPAID EXPENSES AND OTHER

As of the dates indicated, prepaid expenses and other are comprised of the following (in thousands):

	October 28, 2023	October 29, 2022
Contract assets for unbilled accounts receivable, net	\$ 150,312	\$ 156,039
Prepaid VAT and other taxes	96,724	63,975
Prepaid expenses	58,954	55,440
Product demonstration equipment, net	40,682	35,929
Capitalized contract acquisition costs	23,326	33,516
Other non-trade receivables	33,408	24,026
Deferred deployment expense	1,170	877
Derivative assets	1,118	251
	<u>\$ 405,694</u>	<u>\$ 370,053</u>

Depreciation of product demonstration equipment was \$ 8.0 million, \$ 8.7 million and \$ 9.8 million for fiscal 2023, 2022 and 2021, respectively.

For further discussion on contract assets and capitalized contract acquisition costs, see Note 2 above.

(12) EQUIPMENT, BUILDING, FURNITURE AND FIXTURES

As of the dates indicated, equipment, building, furniture and fixtures are comprised of the following (in thousands):

	October 28, 2023	October 29, 2022
Equipment, furniture and fixtures	\$ 676,485	\$ 619,160
Building subject to finance lease	67,904	69,247
Leasehold improvements	74,391	80,415
Equipment, building, furniture and fixtures	818,780	768,822
Accumulated depreciation and amortization	(538,633)	(501,043)
Equipment, building, furniture and fixtures, net	<u>\$ 280,147</u>	<u>\$ 267,779</u>

During fiscal 2023, fiscal 2022 and fiscal 2021, Ciena recorded depreciation of equipment, building, furniture and fixtures, and amortization of leasehold improvements of \$ 84.6 million, \$ 87.2 million and \$ 86.5 million, respectively.

(13) INTANGIBLE ASSETS

As of the dates indicated, intangible assets are comprised of the following (in thousands):

	October 28, 2023			October 29, 2022		
	Gross Intangible	Accumulated Amortization	Net Intangible	Gross Intangible	Accumulated Amortization	Net Intangible
Developed technology	\$ 503,618	\$ (414,941)	\$ 88,677	\$ 428,218	\$ (386,300)	\$ 41,918
In-process research and development	89,100	—	89,100	—	—	—
Patents and licenses	8,795	(5,203)	3,592	8,415	(4,228)	4,187
Customer relationships, covenants not to compete, outstanding purchase orders and contracts	410,983	(386,725)	24,258	390,271	(366,859)	23,412
Total intangible assets	<u>\$ 1,012,496</u>	<u>\$ (806,869)</u>	<u>\$ 205,627</u>	<u>\$ 826,904</u>	<u>\$ (757,387)</u>	<u>\$ 69,517</u>

The aggregate amortization expense of intangible assets was \$ 49.6 million, \$ 44.3 million and \$ 36.0 million for fiscal 2023, fiscal 2022 and fiscal 2021, respectively. Expected future amortization of intangible assets for the fiscal years indicated is as follows (in thousands):

Fiscal Year	Amount
2024	\$ 40,601
2025	34,582
2026	23,348
2027	15,843
2028	1,991
Thereafter	162 ⁽¹⁾
	<u>\$ 116,527</u>

⁽¹⁾ Does not include amortization of in-process technology, as estimation of the timing of future amortization expense would be impractical.

(14) GOODWILL

The following table presents the goodwill allocated to Ciena's operating segments as of October 28, 2023 and October 29, 2022, as well as the changes to goodwill during fiscal 2023 (in thousands):

	Balance at October		Acquisitions	Translation	Balance at October
	29, 2022				28, 2023
Platform Software and Services	\$ 156,191	\$ —	\$ —	\$ —	\$ 156,191
Blue Planet Automation Software and Services	89,049	—	—	—	89,049
Networking Platforms	83,082	116,644	(201)		199,525
Total	<u>\$ 328,322</u>	<u>\$ 116,644</u>	<u>\$ (201)</u>		<u>\$ 444,765</u>

(15) OTHER BALANCE SHEET DETAILS

As of the dates indicated, other long-term assets are comprised of the following (in thousands):

	October 28, 2023	October 29, 2022
Maintenance spares inventory, net	\$ 54,042	\$ 44,815
Interest rate swaps	24,953	12,306
Deferred compensation plan assets	11,456	12,751
Cloud computing arrangements ⁽¹⁾	8,589	6,050
Capitalized contract acquisition costs	6,879	6,151
Deferred debt issuance costs, net ⁽²⁾	1,956	781
Restricted cash	168	26
Cost method equity investments ⁽³⁾	48	20,698
Other	8,362	10,039
	<u>\$ 116,453</u>	<u>\$ 113,617</u>

⁽¹⁾ During fiscal 2023, fiscal 2022 and fiscal 2021, Ciena recorded amortization of cloud computing arrangements of \$ 2.6 million, \$ 2.8 million and \$ 2.4 million, respectively.

⁽²⁾ Deferred debt issuance costs relate to Ciena's senior secured revolving credit facility (the "Revolving Credit Facility") entered into during fiscal 2023 and its predecessor asset-backed credit facility (described in Note 20 below). The amortization of deferred debt issuance costs for the Revolving Credit Facility and its predecessor is included in interest expense, and was \$ 0.4 million for fiscal 2023, fiscal 2022 and fiscal 2021.

⁽³⁾ During the first quarter of fiscal 2023, Ciena acquired its previously held cost method equity investment in Tibit in a business combination, see Note 4 above.

As of the dates indicated, accrued liabilities and other short-term obligations are comprised of the following (in thousands):

	October 28, 2023	October 29, 2022
Compensation, payroll related tax and benefits ⁽¹⁾	\$ 159,530	\$ 126,338
Warranty	57,089	45,503
Vacation	29,503	26,396
Income taxes payable	16,341	11,472
Foreign currency forward contracts	14,509	15,604
Interest payable	4,514	4,793
Finance lease liabilities	3,953	3,758
Other	145,980	126,918
	<u>\$ 431,419</u>	<u>\$ 360,782</u>

⁽¹⁾ Increase is primarily due to a higher accrual rate related to Ciena's 2023 annual cash incentive compensation plan.

The following table summarizes the activity in Ciena's accrued warranty for the fiscal years indicated (in thousands):

Year Ended	Beginning Balance	Current Year Provisions	Settlements	Ending Balance
October 30, 2021	\$ 49,868	\$ 17,093	\$ (18,942)	\$ 48,019
October 29, 2022	\$ 48,019	\$ 17,440	\$ (19,956)	\$ 45,503
October 28, 2023	\$ 45,503	\$ 31,742	\$ (20,156)	\$ 57,089

As of the dates indicated, deferred revenue is comprised of the following (in thousands):

	October 28, 2023	October 29, 2022
Products	\$ 28,353	\$ 19,814
Services	200,107	180,421
Total deferred revenue	228,460	200,235
Less current portion	(154,419)	(137,899)
Long-term deferred revenue	\$ 74,041	\$ 62,336

As of the dates indicated, other long-term obligations are comprised of the following (in thousands):

	October 28, 2023	October 29, 2022
Finance lease liabilities	\$ 48,192	\$ 53,176
Income tax liability	98,259	72,644
Deferred compensation plan liability	11,444	12,535
Other	12,512	11,980
	\$ 170,407	\$ 150,335

(16) DERIVATIVE INSTRUMENTS

Foreign Currency Derivatives

Ciena conducts business globally in many currencies, and thus is exposed to adverse foreign currency exchange rate changes. To limit this exposure, Ciena entered into foreign currency contracts. Ciena does not enter into such contracts for speculative purposes.

As of October 28, 2023 and October 29, 2022, Ciena had forward contracts to hedge its foreign exchange exposure in order to reduce variability that is principally related to research and development activities. The notional amount of these contracts was approximately \$ 367.3 million and \$ 272.2 million as of October 28, 2023 and October 29, 2022, respectively. These foreign exchange contracts have maturities of 24 months or less and have been designated as cash flow hedges.

In May 2023, Ciena entered into forward contracts designated as net investment hedges to minimize the effect of foreign exchange rate movements on its net investments in foreign operations. The notional amount of these contracts was approximately \$ 48.0 million as of October 28, 2023. These foreign exchange contracts have maturities of 24 months or less and have been designated as net investment hedges.

As of October 28, 2023 and October 29, 2022, Ciena had forward contracts to hedge its foreign exchange exposure in order to reduce the variability in various currencies of certain balance sheet items. The notional amount of these contracts was approximately \$ 226.3 million and \$ 108.0 million as of October 28, 2023 and October 29, 2022, respectively. These foreign exchange contracts have maturities of 12 months or less and have not been designated as hedges for accounting purposes.

Interest Rate Derivatives

Ciena is exposed to floating rates of interest on its term loan borrowings (see Note 19 below) and has hedged such risk by entering into floating-to-fixed interest rate swap arrangements ("interest rate swaps").

Prior to amending our term loan due September 28, 2025 (the "2025 Term Loan") in January 2023, to replace LIBOR with the Secured Overnight Financing Rate ("SOFR"), Ciena was exposed to floating rates of LIBOR interest on its 2025 Term Loan borrowings. In October 2018, Ciena hedged this risk by entering into interest rate swaps to fix the LIBOR rate for the first \$ 350.0 million of its floating rate debt at 2.957 % through September 2023. In January 2023, Ciena entered into a LIBOR to SOFR basis swap ("basis swap") to hedge its exposure to SOFR rate. The basis swap offset the LIBOR exposure risk of the interest rate swaps and effectively fixed the SOFR rate for the first \$ 350.0 million of its floating rate debt at 2.883 % through September 2023. These swaps expired in September 2023. In April 2022, Ciena entered into forward starting interest rate swaps to fix the SOFR rate for the first \$ 350.0 million its floating rate debt at 2.968 % from September 2023 through September 2025 ("2025 interest rate swaps"). The total notional amount of the 2025 interest swaps was \$ 350.0 million as of October 28, 2023.

In January 2023, Ciena entered into interest rate swaps to fix the SOFR rate for an additional \$ 350.0 million of its floating rate debt at 3.47 % through January 2028 ("2028 interest rate swaps"). The total notional amount of the 2028 interest rate swaps in effect as of October 28, 2023 was \$ 350.0 million.

Ciena expects the variable rate payments to be received under the terms interest rate swaps to offset exactly the forecasted variable rate payments on the equivalent notional amount of the 2030 New Term Loan (as defined in Note 19 below). These derivative contracts have been designated as cash flow hedges.

Other information regarding Ciena's derivatives is immaterial for separate financial statement presentation. See Notes 6 and 8 above.

(17) ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The following table summarizes the changes in accumulated balances of other comprehensive income ("AOCI"), net of tax (in thousands):

	Unrealized Gain (Loss) on			Cumulative Translation Adjustment	Total
	Available-for-Sale Securities	Foreign Currency Forward Contracts	Interest Rate Swaps		
Balance at October 31, 2020	\$ 45	\$ (219)	\$ (21,535)	\$ (13,649)	\$ (35,358)
Other comprehensive gain (loss) before reclassifications	(209)	16,856	(261)	20,215	36,601
Amounts reclassified from AOCI	—	(10,421)	9,617	—	(804)
Balance at October 30, 2021	(164)	6,216	(12,179)	6,566	439
Other comprehensive gain (loss) before reclassifications	(2,801)	(16,299)	14,512	(49,446)	(54,034)
Amounts reclassified from AOCI	—	(114)	7,064	—	6,950
Balance at October 29, 2022	(2,965)	(10,197)	9,397	(42,880)	(46,645)
Other comprehensive gain (loss) before reclassifications	2,593	(8,455)	19,600	(5,321)	8,417
Amounts reclassified from AOCI	—	10,496	(10,035)	—	461
Balance at October 28, 2023	\$ (372)	\$ (8,156)	\$ 18,962	\$ (48,201)	\$ (37,767)

All amounts reclassified from AOCI related to settlement (gains) losses on foreign currency forward contracts designated as cash flow hedges impacted research and development expense on the Consolidated Statements of Operations. All amounts reclassified from AOCI related to settlement (gains) losses on interest rate swaps designated as cash flow hedges impacted interest and other income (loss), net on the Consolidated Statements of Operations.

(18) LEASES

Ciena leases over 1.1 million square feet of facilities globally. Ciena's corporate headquarters are located in Hanover, Maryland. Ciena's largest facilities are research and development centers located in Ottawa, Canada and Gurgaon, India. Ciena also leases smaller engineering facilities in the United States, Canada, and Europe. In addition, Ciena leases various smaller offices in regions throughout the world to support sales and services operations. Office facilities are leased under various non-cancelable operating or finance leases. Ciena's current leases have remaining terms that vary up to 9 years. Certain leases provide for options to extend up to 10 years and/or options to terminate within 4 years.

Leases included in the Consolidated Balance Sheets for the fiscal periods indicated were as follows (in thousands):

	Classification	Balance at October 28, 2023	Balance at October 29, 2022
Operating leases:			
Operating ROU Assets	Operating right-of-use assets	\$ 35,140	\$ 45,108
Operating lease liabilities	Operating lease liabilities and Long-term operating lease liabilities	\$ 49,914	\$ 61,317
Finance leases:			
Buildings, gross	Equipment, building, furniture and fixtures, net	\$ 67,904	\$ 69,247
Less: accumulated depreciation	Equipment, building, furniture and fixtures, net	(30,079)	(26,266)
Buildings, net		\$ 37,825	\$ 42,981
Finance lease liabilities	Accrued liabilities and other short-term obligations and other long-term obligations	\$ 52,145	\$ 56,934

ROU assets that involve subleased or vacant space aggregate \$ 7.5 million as of October 28, 2023. Finance lease buildings, net, that involve subleased or vacant space aggregate \$ 6.0 million as of October 28, 2023. These assets may become impaired if tenants are unable to service their obligations under the sublease, and/or if the estimates as to occupancy are not realized.

For the periods indicated, the components of lease expense included in the Consolidated Statements of Operations were as follows (in thousands):

	Classification	Year Ended October 28, 2023	Year Ended October 29, 2022	Year Ended October 30, 2021
Operating lease costs	Operating expense	\$ 16,080	\$ 17,966	\$ 16,602
Finance lease cost:				
Amortization of finance ROU asset	Operating expense	4,448	4,592	4,773
Interest on finance lease liabilities	Interest expense	4,069	4,601	4,882
Total finance lease cost		8,517	9,193	9,655
Non-capitalized lease cost	Operating expense	910	917	1,152
Variable lease cost ⁽¹⁾	Operating expense	3,421	5,898	5,690
Net lease cost ⁽²⁾		\$ 28,928	\$ 33,974	\$ 33,099

⁽¹⁾ Variable lease costs include expenses relating to insurance, taxes, maintenance and other costs required by the applicable operating lease. Variable lease costs are determined by whether they are to be included in base rent and if amounts are based on a consumer price index.

⁽²⁾ Excludes other operating expense of \$ 6.5 million, \$ 12.8 million, and \$ 8.8 million for the fiscal years ended October 28, 2023, October 29, 2022, and October 30, 2021, respectively, related to amortization of leasehold improvements.

Future minimum lease payments and the present value of minimum lease payments related to operating and finance leases as of October 28, 2023 were as follows (in thousands):

	Operating Leases	Finance Leases	Total
2024	\$ 18,126	\$ 7,640	\$ 25,766
2025	13,568	7,793	21,361
2026	9,951	7,824	17,775
2027	5,563	8,095	13,658
2028	1,516	8,367	9,883
Thereafter	5,796	31,435	37,231
Total lease payments	54,520	71,154	125,674
Less: Imputed interest	(4,606)	(19,009)	(23,615)
Present value of lease liabilities	49,914	52,145	102,059
Less: Current portion of present value of minimum lease payments	16,655	3,953	20,608
Long-term portion of present value of minimum lease payments	\$ 33,259	\$ 48,192	\$ 81,451

The weighted average remaining lease terms and weighted average discount rates for operating and finance leases were as follows (in thousands):

Weighted-average remaining lease term in years:	As of October 28, 2023	As of October 29, 2022
Operating leases	4.07	3.85
Finance leases	8.71	9.71
Weighted-average discount rates:		
Operating leases	3.88 %	2.97 %
Finance leases	7.56 %	7.56 %

(19) SHORT-TERM AND LONG-TERM DEBT

2030 New Term Loan

On October 24, 2023, Ciena, together with certain of its domestic subsidiaries as guarantors, entered into an Incremental Amendment Agreement (the "Amendment") to its Credit Agreement, dated July 15, 2014, as amended (the "Credit Agreement"), by and among Ciena, certain of its subsidiaries, the lenders party thereto, and Bank of America, N.A., as administrative agent ("Bank of America"), to which Ciena incurred a new tranche of senior secured term loans in an aggregate principal amount of \$ 1.2 billion (the "2030 New Term Loan") and a new senior secured revolving credit facility of \$ 300 million (the "Revolving Credit Facility" as defined in Note 20 below).

The proceeds of the 2030 New Term Loan, net of original issuance discount, replaced, in full, \$ 668.7 million of outstanding principal of the 2025 Term Loan and \$ 497.5 million of outstanding principal of the 2030 Term Loan (as defined below) ("Refinanced Term Loans"), including accrued interest, and pay transaction fees and expenses, resulting in proceeds of \$ 0.8 million. The 2030 New Term Loan requires Ciena to make installment payments of \$ 2.9 million on a quarterly basis.

Based on the continuation of existing lenders and the addition of new lenders, this arrangement was primarily accounted for as a modification of debt and, as such, \$ 6.0 million of debt issuance costs associated with the 2030 New Term Loan were expensed. The aggregate balance of approximately \$ 4.4 million of debt issuance costs and approximately \$ 2.2 million of original discount from the 2025 Term Loan and 2030 Term Loan, \$ 0.1 million of debt issuance costs associated with new lenders for the 2030 New Term Loan, and approximately \$ 2.9 million of original discount from the 2030 New Term Loan, were included in the carrying value of the 2030 New Term Loan.

The Amendment amends the Credit Agreement and provides that the 2030 New Term Loan will, among other things:

- mature on October 24, 2030;
- amortize in equal quarterly installments in aggregate amounts equal to 0.25 % of the principal amount of the 2030 New Term Loan as of January 19, 2023, or \$ 2.9 million, or \$ 11.7 million annually, with the balance payable at maturity;

- be subject to mandatory prepayment upon the occurrence of certain specified events substantially similar to the Refinanced Term Loans, including upon the occurrence of certain specified events such as asset sales, debt issuances, and receipt of annual Excess Cash Flow (as defined in the Credit Agreement);
- bear interest, at Ciena's election, at a per annum rate equal to (a) SOFR (subject to a floor of 0.00 %) plus an applicable margin of 2.00 %, or (b) a base rate (subject to a floor of 1.00 %) plus an applicable margin of 1.00 %; and
- be repayable at any time at Ciena's election, provided that repayment of the 2030 New Term Loan with proceeds of certain indebtedness prior to April 24, 2024 will require a prepayment premium of 1.00 % of the aggregate principal amount of such prepayment.

Among other things, the Amendment also amends the Credit Agreement by (i) modifying the "accordion" feature to provide for incremental term loan facilities (the "Incremental Term Loans") in an aggregate amount not to exceed the sum of (A) the greater of (1) \$ 640 million and (2) an amount equal to consolidated EBITDA on a pro forma basis for the most recently ended four-quarter period and (B) an amount (1) in the case of secured incremental term facilities that rank pari passu with or junior to the 2030 New Term Loan, such that the Total Secured Net Leverage Ratio (as defined in the Credit Agreement) would not be greater than 3.00 to 1.00 at the time of incurrence and (2) in the case of unsecured incremental term facilities, such that the Interest Coverage Ratio (as defined in the Credit Agreement) would not be less than 2.00 to 1.00 at the time of incurrence, subject to certain conditions, including obtaining commitments from any one or more lenders, whether or not currently party to the Credit Agreement, to provide such increased amounts and (ii) amending certain negative covenants.

The net carrying value of the 2030 New Term Loan was comprised of the following as of the date indicated (in thousands):

	October 28, 2023			
	Principal Balance	Unamortized Discount	Deferred Debt Issuance Costs	Net Carrying Value
2030 New Term Loan	\$ 1,170,000	\$ (5,122)	\$ (5,507)	\$ 1,159,371

Deferred debt issuance costs that were deducted from the carrying amount of the 2030 New Term Loan totaled \$ 5.5 million as of October 28, 2023. Deferred debt issuance costs are amortized using the straight-line method, which approximates the effect of the effective interest rate, through the maturity of the 2030 New Term Loan. The amortization of deferred debt issuance costs for the 2030 New Term Loan is included in interest expense, and was \$ 0.1 million during fiscal 2023.

As of October 28, 2023, the estimated fair value of the 2030 New Term Loan was \$ 1.2 billion. The 2030 New Term Loan is categorized as Level 2 in the fair value hierarchy. Ciena estimated the fair value of its 2030 New Term Loan using a market approach based on observable inputs, such as current market transactions involving comparable securities.

Refinanced Term Loans

The proceeds of the 2030 New Term Loan, net of original issuance discount, was used to repay in full \$ 1.2 billion of outstanding principal of the Refinanced Term Loans, including accrued interest.

2025 Term Loan

On January 19, 2023, in connection with the Incremental Agreement (as defined below) to the Credit Agreement (as defined below), the Credit Agreement was amended to replace LIBOR with SOFR for the 2025 Term Loan in response to pending impact of FASB Accounting Standards Codification 848, Reference Rate Reform. The net carrying value of the 2025 Term Loan as of October 29, 2022 was \$ 673.0 million. Deferred debt issuance costs are amortized using the straight-line method, which approximates the effect of the effective interest rate method, through the maturity of the 2025 Term Loan. The amortization of deferred debt issuance costs for the 2025 Term Loan is included in interest expense, and was \$ 0.6 million for fiscal 2023 and fiscal 2022.

2030 Term Loan

On January 19, 2023, Ciena entered into an Incremental Joinder and Amendment Agreement (the "Incremental Agreement") to its Credit Agreement, dated July 15, 2014, as amended, by and among Ciena, the lenders party thereto and Bank of America, N.A., as administrative agent, pursuant to which Ciena incurred a new tranche of senior secured term loans in an aggregate principal amount of \$ 500.0 million and maturing on January 19, 2030 (the "2030 Term Loan"). Net of original issue discount and debt issuance costs, the \$ 492.5 million in proceeds from the 2030 Term Loan were intended to be used for general corporate purposes.

The Incremental Agreement amended the Credit Agreement and provided that the 2030 Term Loan would, among other things:

- mature on January 19, 2030;
- amortize in equal quarterly installments in aggregate amounts equal to 0.25 % of the principal amount of the 2030 Term Loan as of January 19, 2023, or \$ 1.25 million, with the balance payable at maturity;
- be subject to mandatory prepayment on the same basis as the 2025 Term Loan, including on the occurrence of certain specified events such as asset sales, debt issuances, and receipt of annual Excess Cash Flow (as defined in the Credit Agreement);
- bear interest, at Ciena's election, at a per annum rate equal to (a) SOFR (subject to a floor of 0.00 %) plus an applicable margin of 2.50 %, or (b) a base rate (subject to a floor of 1.00 %) plus an applicable margin of 1.50 %; and
- be repayable at any time at Ciena's election, provided that repayment of the 2030 Term Loan with proceeds of certain indebtedness prior to July 19, 2023 will require a prepayment premium of 1.00 % of the aggregate principal amount of such prepayment.

Except as amended by the Incremental Agreement, the remaining terms of the Credit Agreement remained in full force and effect.

Deferred debt issuance costs are amortized using the straight-line method, which approximates the effect of the effective interest rate, through the maturity of the 2030 Term Loan. The amortization of deferred debt issuance costs for the 2030 Term Loan is included in interest expense and was \$ 0.5 million for fiscal 2023.

2030 Notes

On January 18, 2022, Ciena entered into an Indenture (the "Indenture") among Ciena, as issuer, certain domestic subsidiaries of Ciena, as guarantors (collectively, the "Guarantors"), and U.S. Bank National Association, as trustee (the "Trustee"), pursuant to which Ciena issued \$ 400.0 million in aggregate principal amount of 4.00 % senior notes due 2030 (the "2030 Notes").

The net carrying value of the 2030 Notes was comprised of the following for the period indicated (in thousands):

	October 28, 2023			October 29, 2022
	Principal Balance	Deferred Debt Issuance Costs	Net Carrying Value	Net Carrying Value
2030 Senior Notes 4.00 % fixed-rate	\$ 400,000	\$ (4,265)	\$ 395,735	\$ 395,045

Deferred debt issuance costs that were deducted from the carrying amount of the 2030 Notes totaled \$ 4.3 million as of October 28, 2023 and \$ 5.0 million as of October 29, 2022. Deferred debt issuance costs are amortized using the straight-line method, which approximates the effect of the effective interest rate, through the maturity of the 2030 Notes. The amortization of deferred debt issuance costs for the 2030 Notes is included in interest expense, and was \$ 0.7 million during fiscal 2023 and \$ 0.5 million during fiscal 2022.

As of October 28, 2023, the estimated fair value of the 2030 Notes was \$ 330.5 million. The 2030 Notes are categorized as Level 2 in the fair value hierarchy. Ciena estimated the fair value of its 2030 Notes using a market approach based on observable inputs, such as current market transactions involving comparable securities.

(20) REVOLVING CREDIT FACILITY

On February 10, 2023, pursuant to an ABL Credit Agreement dated October 28, 2019, as amended (the "ABL Credit Agreement"), by and among Ciena, certain of its subsidiaries, the lenders party thereto (the "ABL Lenders"), and Bank of America, as administrative agent, Ciena modified its senior secured asset-backed revolving credit facility (the "ABL Credit Facility"), which provided for a total commitment of \$ 300.0 million to extend its maturity date to September 28, 2025.

On October 24, 2023 (the "Closing Date"), pursuant to the Incremental Amendment Agreement to the Credit Agreement (as defined in Note 19 above), Ciena incurred a new senior secured revolving credit facility of \$ 300.0 million (the "Revolving Credit Facility"), which replaced the ABL Credit Facility. Ciena has the option to increase the total revolving commitments under the Revolving Credit Facility to \$ 450.0 million, subject to certain conditions, including obtaining commitments from one or more lenders. The Credit Agreement provides that \$ 200.0 million of the Revolving Credit Facility is available for issuances

of letters of credit and allows for swingline loans in an amount not to exceed \$ 50.0 million. On or about the Closing Date, Ciena transferred to the Revolving Credit Facility certain outstanding letters of credit initially issued under the ABL Credit Facility with an undrawn amount of approximately \$ 65.1 million. There were no borrowings outstanding under the ABL Credit Facility as of the Closing Date. Ciena expects to use the Revolving Credit Facility to support the issuance of letters of credit that arise in the ordinary course of its business and for general corporate purposes.

The Credit Agreement provides that the Revolving Credit Facility will, among other things:

- mature on October 24, 2028;
- bear interest on outstanding borrowings, at Ciena's election, at a per annum rate equal to (a) SOFR (subject to a floor of 0.00 %) plus a credit spread adjustment of 0.10 % plus an applicable margin ranging from 1.375 % to 2.00 %, or (b) a base rate (subject to a floor of 1.00 %) plus an applicable margin ranging from 0.375 % to 1.00 %, in each case, with the actual margin determined according to the Total Net Leverage Ratio (as defined in the Credit Agreement above);
- have a commitment fee payable on the unused portion of the Revolving Credit Facility at a per annum rate ranging from 0.225 % to 0.300 %, with the actual rate determined according to the Total Net Leverage Ratio; and
- include a restriction on the aggregate amount of Incremental Term Loans and certain other indebtedness that can be incurred in the future equal to an amount that would not result in the Total Net Leverage Ratio exceeding 5.00 to 1.00 at the time of incurrence.

The obligations under the Revolving Credit Facility are guaranteed by all of Ciena's subsidiaries that currently, or in the future are required to, guarantee the obligations of the 2030 New Term Loan, including, as of the Closing Date, Ciena Communications, Inc., Ciena Government Solutions, Inc., Ciena Communications International, LLC and Blue Planet Software, Inc., and are secured on a pari passu basis with the 2030 New Term Loan by a pledge of substantially all of the assets of Ciena and the guarantors. Upon the occurrence of certain events related to the improvement of Ciena's credit rating and repayment of all secured term loans ("Investment Grade Events"), all collateral securing the obligations under the Revolving Credit Facility will be released at Ciena's election.

Under the Revolving Credit Facility, Ciena is also required to maintain certain financial maintenance covenants, including:

- prior to an Investment Grade Event, a maximum Total Secured Net Leverage Ratio of no greater than 3.50 to 1.00 as of the end of any period of four fiscal quarters (provided, that in the event Ciena consummates a qualifying acquisition, Ciena can elect to increase the maximum Total Secured Net Leverage Ratio level to 4.00 to 1.00 for the fiscal quarter in which such qualifying acquisition is consummated and for the next five consecutive fiscal quarters);
- on or after an Investment Grade Event, a maximum Total Net Leverage Ratio of no greater than 4.00 to 1.00 as of the end of any period of four fiscal quarters; and
- a minimum Interest Coverage Ratio of no less than 3.00 to 1.00 as of the end of any period of four fiscal quarters.

Except as amended by the Amendment, the remaining terms of the Credit Agreement remain in full force and effect.

As of October 28, 2023, Ciena was in compliance with the above financial maintenance covenants. As of October 28, 2023, letters of credit totaling \$ 72.5 million were issued under our Revolving Credit Facility. There were no borrowings outstanding under the Revolving Credit Facility as of October 28, 2023.

(21) EARNINGS PER SHARE CALCULATION

Basic net income per common share ("Basic EPS") is computed using the weighted average number of common shares outstanding. Diluted net income per potential common share ("Diluted EPS") is computed using the weighted average number of the following, in each case, to the extent the effect is not anti-dilutive: (i) common shares outstanding, (ii) shares issuable upon vesting of stock unit awards; and (iii) shares issuable under Ciena's employee stock purchase plan and upon exercise of outstanding stock options, using the treasury stock method.

The following table presents the calculation of Basic and Diluted EPS (in thousands except per share amounts):

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
Net income	\$ 254,827	\$ 152,902	\$ 500,196
Basic weighted average shares outstanding	148,971	151,208	155,279
Effect of dilutive potential common shares	409	985	1,464
Diluted weighted average shares outstanding	149,380	152,193	156,743
Basic EPS	\$ 1.71	\$ 1.01	\$ 3.22
Diluted EPS	\$ 1.71	\$ 1.00	\$ 3.19
Antidilutive employee share-based awards, excluded	2,675	1,370	110

(22) STOCKHOLDERS' EQUITY

Stock Repurchase Program and Accelerated Share Repurchase Agreement

On December 13, 2018, Ciena announced that its Board of Directors authorized a program to repurchase up to \$ 500 million of Ciena's common stock. During fiscal 2021, Ciena repurchased 1.7 million shares of its common stock, for an aggregate purchase price of \$ 92.1 million at an average price of \$ 54.27 per share. Under this program, Ciena repurchased a total of 7.4 million shares of its common stock, for an aggregate purchase price of \$ 316.7 million at an average price of \$ 42.75 per share.

On December 9, 2021, Ciena announced that its Board of Directors replaced its previously authorized program, as described above, with a program to repurchase up to \$ 1.0 billion of its common stock. On December 13, 2021, Ciena entered into an accelerated share repurchase agreement (the "ASR Agreement") with Goldman, Sachs & Co. LLC ("Goldman") to repurchase \$ 250.0 million (the "Repurchase Price") of its common stock as part of the repurchase program. Under the terms of the ASR Agreement, Ciena paid the Repurchase Price to Goldman, and received approximately 3.6 million shares of its common stock from Goldman, calculated based on the average of the volume-weighted average prices of Ciena's common stock of \$ 69.78 for the period from December 14, 2021 to February 11, 2022, less a discount, which completed the repurchases contemplated by the ASR Agreement. Shares repurchased pursuant to the ASR Agreement were immediately retired upon receipt. During the remainder of fiscal 2022, Ciena repurchased an additional 4.8 million shares of its common stock, for an aggregate purchase price of \$ 250.0 million at an average price of \$ 51.53 per share.

During fiscal 2023, Ciena repurchased an additional 5.7 million shares of its common stock, for an aggregate purchase price of \$ 250.0 million at an average price of \$ 44.08 per share. As of October 28, 2023, Ciena has repurchased an aggregate of 14.1 million shares for an aggregate purchase price of \$ 750.0 million at an average price of \$ 53.17 per share and has an aggregate of \$ 250.0 million of authorized funds remaining under its stock repurchase program.

The purchase price for the shares of Ciena's stock repurchased is reflected as a reduction of common stock and additional paid-in capital.

Impact of Inflation Reduction Act 1% Excise Tax on Share Repurchases

Beginning fiscal 2023, a 1% excise tax on the market value of shares repurchased offset by 1% of the market value of shares issued was implemented. During fiscal 2023, a net excise tax of \$ 1.5 million was recorded to additional paid-in capital on the Consolidated Balance Sheets.

Stock Repurchases Related to Restricted Stock Unit Tax Withholdings

Ciena repurchases shares of common stock to satisfy employee tax withholding obligations due upon vesting of stock unit awards. The related purchase price of \$ 38.5 million for the shares of Ciena's stock repurchased during fiscal 2023 is reflected as a reduction to stockholders' equity. Ciena is required to allocate the purchase price of the repurchased shares as a reduction of common stock and additional paid-in capital.

(23) INCOME TAXES

For the periods indicated, the provision (benefit) for income taxes consists of the following (in thousands):

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
Provision (benefit) for income taxes:			
Current:			
Federal	\$ 36,537	\$ 27,479	\$ 72,603
State	18,860	10,289	21,400
Foreign	28,281	19,337	25,021
Total current	83,678	57,105	119,024
Deferred:			
Federal	(8,010)	(30,032)	(21,942)
State	(17,354)	520	(11,546)
Foreign	10,512	2,010	(122,981)
Total deferred	(14,852)	(27,502)	(156,469)
Provision (benefit) for income taxes	\$ 68,826	\$ 29,603	\$ (37,445)

For the periods indicated, income before provision (benefit) for income taxes consists of the following (in thousands):

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
United States	\$ 93,682	\$ 28,784	\$ 298,514
Foreign	229,971	153,721	164,237
Total	\$ 323,653	\$ 182,505	\$ 462,751

Ciena's foreign income tax as a percentage of foreign income may appear disproportionate compared to the expected tax based on the U.S. federal statutory rate and is dependent on the mix of earnings and tax rates in foreign jurisdictions.

For the periods indicated, the tax provision reconciles to the amount computed by multiplying income before income taxes by the U.S. federal statutory rate of 21% for fiscal 2023, fiscal 2022 and fiscal 2021 as follows:

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
Provision at statutory rate	21.00 %	21.00 %	21.00 %
Intercompany IP Restructuring Transaction	— %	— %	(25.85)%
State taxes	1.65 %	2.31 %	3.73 %
Withholding and other foreign taxes	(0.09)%	(1.37)%	2.76 %
Research and development credit	(16.78)%	(23.66)%	(7.99)%
Non-deductible compensation	5.29 %	5.26 %	1.68 %
Foreign derived intangible income	— %	— %	(1.82)%
US Taxation on foreign activity	5.08 %	1.73 %	— %
Foreign Nontaxable interest	(1.06)%	(1.90)%	— %
Taxation on foreign inflation	1.34 %	1.41 %	0.16 %
Rate change	(3.71)%	1.27 %	(4.33)%
Valuation allowance	9.44 %	8.35 %	1.77 %
Loss on equity transactions	(1.72)%	— %	— %
Uncertain tax positions	1.72 %	1.62 %	0.63 %
Other	(0.89)%	0.20 %	0.17 %
Effective income tax rate	21.27 %	16.22 %	(8.09)%

Our future income tax provisions and deferred tax balances may be affected by the amount of pre-tax income, the jurisdictions where it is earned, the existence and ability to utilize tax attributes and changes in tax laws and business reorganizations.

In fiscal 2021, Ciena began implementation of a plan to reorganize its global supply chain and distribution structure more substantially, which included a legal entity reorganization and related system upgrade. Ciena completed the first phase of this plan in fiscal 2021, and substantially completed the reorganization during fiscal 2022. As part of this reorganization, Ciena completed an internal transfer of certain of its non-U.S. intangible assets, which created amortizable tax basis resulting in the discrete recognition of a \$ 119.3 million deferred tax asset with a corresponding tax benefit. The impact of this transfer is reflected in Ciena's effective tax rate for the year ended October 30, 2021, which had a significant, one-time impact on its net income for the period.

Ciena is also required to make accounting policy elections as a result of the Tax Act. These include whether a valuation allowance is recorded for the estimated effect of the application of GILTI and BEAT or if these will be treated as period costs when incurred. Ciena had made the incremental cash tax cost policy election with respect to analyzing the impact of GILTI on the assessment of the realizability of net operating losses. The realizability of U.S. tax carryforwards is not impacted by the BEAT, and the BEAT is a period cost when incurred. Ciena is also required to elect to treat taxes due on future GILTI inclusions in U.S. taxable income either as a current period expense when incurred or reflect such portion of the future GILTI inclusions in U.S. taxable income that relate to existing basis differences in Ciena's current measurement of deferred taxes. Ciena's accounting policy election is to treat the taxes due on future U.S. inclusions in taxable income under GILTI as a period cost when incurred.

The significant components of deferred tax assets are as follows (in thousands):

	Year Ended	
	October 28, 2023	October 29, 2022
Deferred tax assets:		
Reserves and accrued liabilities	\$ 82,160	\$ 76,839
Depreciation and amortization	712,098	690,636
NOL and credit carry forward	197,984	154,707
Other	6,934	63,902
Gross deferred tax assets	999,176	986,084
Valuation allowance	(189,870)	(162,076)
Deferred tax asset, net of valuation allowance	\$ 809,306	\$ 824,008

A reconciliation of the beginning and ending amount of unrecognized tax benefits, excluding interest and penalties, is as follows (in thousands):

	Amount
Unrecognized tax benefits at October 31, 2020	\$ 95,748
Decrease related to positions taken in prior period	(22,854)
Reductions related to settlements with taxing authorities	(654)
Increase related to positions taken in current period	5,510
Reductions related to expiration of statute of limitations	(659)
Unrecognized tax benefits at October 30, 2021	77,091
Increase related to positions taken in prior period	4,732
Reductions related to settlements with taxing authorities	(3,229)
Increase related to positions taken in current period	2,959
Reductions related to expiration of statute of limitations	(1,039)
Unrecognized tax benefits at October 29, 2022	80,514
Increase related to positions taken in prior period	9,940
Reductions related to settlements with taxing authorities	(625)
Increase related to positions taken in current period	4,960
Reductions related to expiration of statute of limitations	(869)
Unrecognized tax benefits at October 28, 2023	\$ 93,920

As of October 28, 2023 and October 29, 2022, Ciena had accrued \$ 7.9 million and \$ 5.2 million of interest and penalties, respectively, related to unrecognized tax benefits included in other long-term obligations in the Consolidated Balance Sheets. Interest and penalties of \$ 2.7 million and \$ 1.7 million were recorded as a net expense to the provision for income taxes during fiscal 2023 and 2022, respectively. During fiscal 2021, Ciena recorded a net benefit to the provision for interest and penalties in its provision for income taxes of \$ 0.1 million. If recognized, the entire balance of unrecognized tax benefits would impact the effective tax rate. Over the next 12 months, Ciena does not estimate any material changes in unrecognized income tax benefits.

During the fourth quarter of fiscal 2023, Ciena evaluated the undistributed earnings of its foreign subsidiaries and identified approximately \$ 222.0 million in earnings that are no longer considered to be indefinitely reinvested. Ciena recorded a provision of \$ 2.5 million that reflects the income tax effects of the repatriation of these earnings. No additional income tax expense has been provided for any remaining undistributed foreign earnings, or any additional outside basis difference from investments in the foreign subsidiaries, as these amounts continue to be indefinitely reinvested. If the remaining undistributed foreign earnings and profits of \$ 381.0 million were repatriated to the U.S., the provisional amount of unrecognized deferred tax liability, which is primarily related to foreign withholding taxes, is an estimated \$ 30.0 million; however, the amount may be lower depending on Ciena's ability to utilize tax credits associated with the distribution. Additionally, there are no other significant temporary differences for which a deferred tax liability or asset has not been recognized.

As of October 28, 2023, Ciena continues to maintain a valuation allowance of \$ 189.9 million against its gross deferred tax assets primarily. The valuation allowance is primarily related to state and foreign net operating losses and credits that Ciena estimates it will not be able to use.

The following table summarizes the activity in Ciena's valuation allowance against its gross deferred tax assets (in thousands):

Year Ended	Beginning Balance	Additions	Deductions	Ending Balance
October 30, 2021	\$ 151,427	\$ 17,897	\$ 9,690	\$ 159,634
October 29, 2022	\$ 159,634	\$ 15,245	\$ 12,803	\$ 162,076
October 28, 2023	\$ 162,076	\$ 28,746	\$ 952	\$ 189,870

(24) SHARE-BASED COMPENSATION EXPENSE

Ciena has outstanding equity awards issued under its 2017 Omnibus Incentive Plan (the "2017 Plan"), its 2008 Omnibus Incentive Plan, and certain legacy equity plans and equity plans assumed as a result of previous acquisitions. All equity awards granted on or after March 23, 2017 are made exclusively from the 2017 Plan. Ciena also makes shares of its common stock available for purchase under the ESPP. Each of the 2017 Plan and the ESPP are described below.

2017 Plan

The 2017 Plan has a ten-year term and authorizes the issuance of awards including stock options, restricted stock units (RSUs), restricted stock, unrestricted stock, stock appreciation rights (SARs) and other equity and/or cash performance incentive awards to employees, directors and consultants of Ciena. Subject to certain restrictions, the Compensation Committee of the Board of Directors has broad discretion to establish the terms and conditions for awards under the 2017 Plan, including the number of shares, vesting conditions, and the required service or performance criteria. Options and SARs have a maximum term of ten years, and their exercise price may not be less than 100 % of fair market value on the date of grant. Repricing of stock options and SARs is prohibited without stockholder approval. Certain change in control transactions may cause awards granted under the 2017 Plan to vest, unless the awards are continued or substituted for in connection with the transaction.

The 2017 Plan authorizes and reserves 21.1 million shares for issuance. The number of shares available under the 2017 Plan are also increased from time to time by: (i) the number of shares subject to outstanding awards granted under Ciena's prior equity compensation plans that are forfeited, expire or are canceled without delivery of common stock following the effective date of the 2017 Plan, and (ii) the number of shares subject to awards assumed or substituted in connection with the acquisition of another company. As of October 28, 2023, the total number of shares authorized for issuance under the 2017 Plan was 21.1 million and approximately 5.6 million shares remained available for issuance thereunder.

Stock Options

There were no stock options granted by Ciena during fiscal 2023, fiscal 2022 or fiscal 2021. Outstanding stock option awards granted to employees in prior periods are generally subject to service-based vesting conditions and vest over a four-year period. The following table is a summary of Ciena's stock option activity for the periods indicated (shares in thousands):

	Shares Underlying Options Outstanding	Weighted Average Exercise Price
Balance at October 29, 2022	32	\$ 30.98
Granted	—	—
Exercised	(22)	\$ 33.98
Canceled	(3)	\$ 45.32
Balance at October 28, 2023	7	\$ 16.94

The total intrinsic value of options exercised during fiscal 2023, fiscal 2022 and fiscal 2021 was \$ 0.3 million, \$ 1.6 million and \$ 0.5 million, respectively.

The following table summarizes information with respect to stock options outstanding at October 28, 2023, based on Ciena's closing stock price on the last trading day of Ciena's fiscal 2023 (shares and intrinsic value in thousands):

					Options Outstanding and Vested at October 28, 2023		
Range of Exercise Price		Number of Underlying Shares			Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Aggregate Intrinsic Value
\$ 14.38	—	\$ 18.22	7	0.36	\$ 16.94	\$ 178	

Assumptions for Option-Based Awards

Ciena recognizes the fair value of stock options as share-based compensation expense on a straight-line basis over the requisite service period. Ciena did not grant any option-based awards during fiscal 2023, fiscal 2022 or fiscal 2021.

Restricted Stock Units

A restricted stock unit is a stock award that entitles the holder to receive shares of Ciena common stock as the unit vests. Ciena's outstanding restricted stock unit awards are subject to service-based vesting conditions and/or performance-based vesting conditions. Awards subject to service-based conditions typically vest in increments over a three or four-year period.

However, the 2017 Plan permits Ciena to grant service-based stock awards with a minimum one-year vesting period. Awards with performance-based vesting conditions (i) require the achievement of certain operational, financial or other performance criteria or targets or (ii) vest based on Ciena's total stockholder return as compared to an index of peer companies, in whole or in part.

During fiscal 2023, Ciena introduced a benefit pursuant to which, upon completion of ten years of service and reaching age 60, executive officers who are residents of the United States, the United Kingdom, or Canada and who provide 12 months' notice of their retirement will receive continued vesting of all of their granted but unvested restricted stock unit ("RSU") awards and a pro-rated amount of their performance stock unit awards and market stock unit awards. Other employees in these countries will be subject to the same eligibility and notice requirements, but will receive acceleration of their granted but unvested RSU awards upon retirement. This program accelerates the recognition of share-based compensation expense.

Assumptions for Restricted Stock Unit Awards

Ciena recognizes the estimated fair value of restricted stock units subject only to service-based vesting conditions by multiplying the number of shares underlying the award by the closing price per share of Ciena common stock on the grant date. Share-based expense for service-based restricted stock unit awards is recognized ratably over the vesting period on a straight-line basis.

Ciena recognizes the estimated fair value of restricted stock units subject to performance-based vesting conditions other than total stockholder return, by assuming the satisfaction of any performance-based objectives at the "target" level and multiplying the corresponding number of shares earned based upon such achievement by the closing price per share of Ciena common stock on the grant date. Share-based compensation expense is recognized over the performance period, using graded vesting, which considers each performance period or tranche separately, based on Ciena's determination of whether it is probable that the performance targets will be achieved. At the end of each reporting period, Ciena reassesses the probability of achieving the performance targets and the performance period required to meet those targets. The estimation of whether the performance targets will be achieved involves judgment. Revisions are reflected in the period in which the estimate is changed. If any performance goals are not met, no compensation cost is ultimately recognized against that goal and, to the extent previously recognized, compensation expense is reversed.

Share-based compensation expense for restricted stock units subject only to service-based vesting conditions and restricted stock units subject to performance-based vesting conditions other than total stockholder return, is recognized only for those awards that ultimately vest. In the event of a forfeiture of an award, the expense related to the unvested portion of that award is reversed. Reversal of share-based compensation expense based on forfeitures can materially affect the measurement of estimated fair value of Ciena's share-based compensation.

Ciena recognizes the estimated fair value of performance based awards subject to total stockholder return as compared to an index of peer companies using a Monte Carlo simulation valuation model. Ciena reverses share-based compensation expense on performance based awards subject to total shareholder return only when the requisite service period is not reached. Assumptions for awards granted during fiscal 2023, fiscal 2022 and fiscal 2021 included the following:

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
Expected volatility of Ciena common stock, which is a weighted average of implied volatility and historical volatility	40.37 %	38.27 %	41.00 %
Historical volatility of Ciena common stock	43.11 %	42.17 %	42.80 %
Historical volatility of S&P Networking Index	30.93 %	27.22 %	27.30 %
Correlation coefficient	0.7781	0.7049	0.6800
Expected life in years	2.89	2.89	2.87
Risk-free interest rate	3.95 %	0.94 %	0.17 %
Expected dividend yield	0.0 %	0.0 %	0.0 %

The following table is a summary of Ciena's restricted stock unit activity for the period indicated, with the aggregate fair value of the balance outstanding at the end of each period, based on Ciena's closing stock price on the last trading day of the relevant period (shares and aggregate fair value in thousands):

	Restricted Stock Units Outstanding	Weighted Average Grant Date Fair Value Per Share	Aggregate Fair Value
Balance at October 29, 2022	4,103	\$ 55.16	\$ 197,960
Granted	3,301		
Vested	(2,067)		
Canceled or forfeited	(415)		
Balance at October 28, 2023	4,922	\$ 53.42	\$ 201,916

As of October 28, 2023 and October 29, 2022, 0.3 million of the total restricted stock units outstanding are performance based awards subject to total stockholder return. The total fair value of restricted stock units that vested and were converted into common stock during fiscal 2023, fiscal 2022 and fiscal 2021 was \$ 98.2 million, \$ 119.0 million and \$ 110.0 million, respectively. The weighted average fair value of each restricted stock unit granted by Ciena during fiscal 2023, fiscal 2022 and fiscal 2021 was \$ 50.48 , \$ 67.03 and \$ 48.70 , respectively.

Amended and Restated ESPP

Ciena makes shares of its common stock available for purchase under the ESPP, under which eligible employees may enroll in a twelve-month offer period that begins in December and June of each year. Each offer period includes two six-month purchase periods. Employees may purchase a limited number of shares of Ciena common stock at 85 % of the fair market value on either the day immediately preceding the offer date or the purchase date, whichever is lower. The ESPP is considered compensatory for purposes of share-based compensation expense. Unless earlier terminated, the ESPP will terminate on April 1, 2031.

During fiscal 2023, Ciena issued 0.8 million shares and during both fiscal 2022 and fiscal 2021, Ciena issued 0.7 million shares, respectively, under the ESPP. At October 28, 2023, 11.3 million shares remained available for issuance under the ESPP.

Share-Based Compensation Expense

The following table summarizes share-based compensation expense for the periods indicated (in thousands):

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
Products	\$ 4,518	\$ 3,867	\$ 3,408
Services	10,470	7,533	5,181
Share-based compensation expense included in cost of goods sold	14,988	11,400	8,589
Research and development	42,331	31,879	21,863
Sales and marketing	35,136	31,280	25,152
General and administrative	37,587	30,435	28,804
Share-based compensation expense included in operating expense	115,054	93,594	75,819
Share-based compensation expense capitalized in inventory, net	413	137	(72)
Total share-based compensation	\$ 130,455	\$ 105,131	\$ 84,336

As of October 28, 2023, total unrecognized share-based compensation expense was \$ 201.0 million which relates to unvested restricted stock units and is expected to be recognized over a weighted-average period of 1.39 years.

(25) SEGMENT AND ENTITY WIDE DISCLOSURES

Segment Reporting

Ciena has the following operating segments for reporting purposes: (i) Networking Platforms; (ii) Platform Software and Services; (iii) Blue Planet Automation Software and Services; and (iv) Global Services.

Ciena's long-lived assets, including equipment, building, furniture and fixtures, operating ROU assets, finite-lived intangible assets, and maintenance spares, are not reviewed by Ciena's chief operating decision maker for purposes of evaluating performance and allocating resources. As of October 28, 2023, equipment, building, furniture and fixtures, net,

totalled \$ 280.1 million, and operating ROU assets totalled \$ 35.1 million both of which support asset groups within Ciena's four operating segments and unallocated selling and general and administrative activities. As of October 28, 2023 , finite-lived intangible assets, goodwill and maintenance spares are assigned to asset groups within the following segments (in thousands):

	October 28, 2023				
	Networking Platforms	Platform Software and Services	Blue Planet Automation Software and Services	Global Services	Total
Other intangible assets, net	\$ 188,383	\$ —	\$ 17,244	\$ —	\$ 205,627
Goodwill	\$ 199,525	\$ 156,191	\$ 89,049	\$ —	\$ 444,765
Maintenance spares, net	\$ —	\$ —	\$ —	\$ 54,042	\$ 54,042

Segment Profit (Loss)

Segment profit (loss) is determined based on internal performance measures used by Ciena's chief executive officer to assess the performance of each operating segment in a given period. In connection with that assessment, the chief executive officer excludes the following items: selling and marketing costs; general and administrative costs; significant asset impairments and restructuring costs; amortization of intangible assets; acquisition and integration costs; interest and other income (loss), net; interest expense; loss on extinguishment and modification of debt and provision (benefit) for income taxes.

The table below sets forth Ciena's segment profit (loss) and the reconciliation to consolidated net income for the respective periods indicated (in thousands):

	Year Ended		
	October 28, 2023	October 29, 2022	October 30, 2021
Segment profit (loss):			
Networking Platforms	\$ 778,641	\$ 572,305	\$ 850,901
Platform Software and Services	186,945	175,108	136,602
Blue Planet Automation Software and Services	(33,669)	(22,388)	(711)
Global Services	196,375	210,663	198,521
Total segment profit	1,128,292	935,688	1,185,313
Less: non-performance operating expenses			
Selling and marketing	490,804	466,565	452,214
General and administrative	215,284	179,382	181,874
Significant asset impairments and restructuring costs	23,834	33,824	29,565
Amortization of intangible assets	37,351	32,511	23,732
Acquisition and integration costs	3,474	598	2,572
Add: other non-performance financial items			
Interest and other income (loss), net	62,008	6,747	(1,768)
Interest expense	(88,026)	(47,050)	(30,837)
Loss on extinguishment and modification of debt	(7,874)	—	—
Less: Provision (benefit) for income taxes	68,826	29,603	(37,445)
Consolidated net income	\$ 254,827	\$ 152,902	\$ 500,196

Entity Wide Reporting

The following table reflects Ciena's geographic distribution of equipment, building, furniture and fixtures, net, and operating ROU assets, with any country accounting for at least 10% of total equipment, building, furniture and fixtures, net, and operating ROU assets specifically identified. Equipment, building, furniture and fixtures, net, and operating ROU assets attributable to geographic regions outside of the United States and Canada are reflected as "Other International." For the periods below, Ciena's geographic distribution of equipment, building, furniture and fixtures, net, and operating ROU assets was as follows (in thousands):

	October 28, 2023	October 29, 2022
Canada	\$ 229,707	\$ 226,451
United States	46,933	47,515
Other International	38,647	38,921
Total	<u>\$ 315,287</u>	<u>\$ 312,887</u>

(26) OTHER EMPLOYEE BENEFIT PLANS

Ciena has a Defined Contribution Pension Plan that covers a majority of its Canada-based employees. The plan covers all Canada-based employees who are not part of an excluded group. Total contributions (employee and employer) cannot exceed the lesser of 18 % of participant earnings and an annual dollar limit of CAD\$ 31,560 (approximately \$ 25,748 for 2023). This plan includes a required employer contribution of 1 % for all participants and an employer matching contribution equal to 50 % of the first 6 % an employee contributes each pay period. During fiscal 2023, 2022 and 2021, Ciena made matching contributions of approximately CAD\$ 10.6 million (approximately \$ 7.6 million), CAD\$ 10.1 million (approximately \$ 7.3 million) and CAD\$ 8.3 million (approximately \$ 6.0 million), respectively.

Ciena has a 401(k) defined contribution profit sharing plan that covers a majority of its United States-based employees. Participants may contribute up to 60 % of base pay through pre-tax or Roth contributions, subject to certain limitations. The plan includes an employer matching contribution equal to 50 % of the first 8 % an employee contributes each pay period. Ciena may also make discretionary annual profit contributions up to the IRS regulated limit. Ciena has made no profit sharing contributions to date. During fiscal 2023, 2022 and 2021, Ciena made matching contributions of approximately \$ 10.4 million, \$ 9.2 million and \$ 8.4 million, respectively.

(27) COMMITMENTS AND CONTINGENCIES

Tax Contingencies

Ciena is subject to various tax liabilities arising in the ordinary course of business. Ciena does not expect that the ultimate settlement of these tax liabilities will have a material effect on its results of operations, financial position or cash flows.

Litigation

Ciena is subject to various legal proceedings, claims and other matters arising in the ordinary course of business, including those that relate to employment, commercial, tax and other regulatory matters. Ciena is also subject to intellectual property related claims, including claims against third parties that may involve contractual indemnification obligations on the part of Ciena. Ciena does not expect that the ultimate costs to resolve such matters will have a material effect on its results of operations, financial position or cash flows.

Purchase Order Obligations

Ciena has certain advanced orders for supply of certain long lead time components. As of October 28, 2023, Ciena had \$ 1.7 billion in outstanding purchase order commitments to contract manufacturers and component suppliers for inventory. In certain instances, Ciena is permitted to cancel, reschedule or adjust these orders. Consequently, only a portion of this amount relates to firm, non-cancelable and unconditional obligations.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

As of the end of the period covered by this report, we carried out an evaluation under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended) during the most recently completed fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Report of Management on Internal Control Over Financial Reporting

The management of Ciena Corporation is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934).

The internal control over financial reporting at Ciena Corporation was designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of Ciena Corporation;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America;
- provide reasonable assurance that receipts and expenditures of Ciena Corporation are being made only in accordance with authorization of management and directors of Ciena Corporation; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of assets that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements.

Management of Ciena Corporation assessed the effectiveness of the Company's internal control over financial reporting as of October 28, 2023. Management based this assessment on criteria for effective internal control over financial reporting described in "COSO 2013 Internal Control — Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, management determined that, as of October 28, 2023, Ciena Corporation maintained effective internal control over financial reporting. Management reviewed the results of its assessment with the Audit Committee of our Board of Directors.

PricewaterhouseCoopers LLP, independent registered public accounting firm, who audited and reported on the consolidated financial statements of Ciena Corporation included in this annual report, has also audited the effectiveness of Ciena Corporation's internal control over financial reporting as of October 28, 2023, as stated in its report appearing in Item 8 of Part II of this annual report.

/s/ Gary B. Smith

Gary B. Smith

President and Chief Executive Officer

December 15, 2023

/s/ James E. Moylan, Jr.

James E. Moylan, Jr.

Senior Vice President and Chief Financial Officer

December 15, 2023

Item 9B. Other Information

Rule 10b5-1 Trading Arrangements

The following table describes, for the quarter ended October 28, 2023, each trading arrangement for the sale or purchase of our securities adopted, terminated or for which the amount, pricing or timing provisions were modified by our directors and officers

(as defined in Rule 16a-1(f) of the Exchange Act) that is either (1) a contract, instruction or written plan intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) (a “Rule 10b5-1 trading arrangement”) or (2) a “non-Rule 10b5-1 trading arrangement” (as defined in Item 408(c) of Regulation S-K):

Name (Title)	Action Taken (Date of Action)	Type of Trading Arrangement	Nature of Trading Arrangement	Duration of Trading Arrangement	Aggregate Number of Securities to be Purchased or Sold
David Rothenstein (Senior Vice President, Chief Strategy Officer and Secretary)	Adoption (September 22, 2023)	Rule 10b5-1 trading arrangement	Sales	Until January 14, 2025, or such earlier date upon which all transactions are completed or expire without execution	Up to 42,000 shares of common stock
Scott McFeely (former Senior Vice President, Global Products and Services)	Adoption (October 12, 2023)	Rule 10b5-1 trading arrangement	Sales	Until December 31, 2024, or such earlier date upon which all transactions are completed or expire without execution	Up to 38,500 shares of common stock

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspection

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information relating to our directors and executive officers is set forth in Part I of this annual report under the caption “Item 1. Business—Information About Our Executive Officers and Directors.”

Additional information responsive to this item concerning our Audit Committee and regarding compliance with Section 16(a) of the Exchange Act is incorporated herein by reference from our definitive proxy statement with respect to our 2024 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K.

As part of our system of corporate governance, our board of directors has adopted a code of ethics that is specifically applicable to our chief executive officer and senior financial officers. This Code of Ethics for Senior Financial Officers, as well as our Code of Business Conduct and Ethics, applicable to all directors, officers and employees, are available on the “Corporate Governance” page of our website at www.ciena.com. We intend to satisfy any disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of the Code of Ethics for Senior Financial Officers by posting such information on our website at the address above.

Item 11. Executive Compensation

Information responsive to this item is incorporated herein by reference from our definitive proxy statement with respect to our 2024 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information responsive to this item is incorporated herein by reference from our definitive proxy statement with respect to our 2024 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Information responsive to this item is incorporated herein by reference from our definitive proxy statement with respect to our 2024 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K.

Item 14. Principal Accountant Fees and Services

Information responsive to this item is incorporated herein by reference from our definitive proxy statement with respect to our 2024 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K.

PART IV

Item 15. Exhibits and Financial Statement Schedules

- (a)
 - 1. The information required by this item is included in Item 8 of Part II of this annual report.
 - 2. The information required by this item is included in Item 8 of Part II of this annual report.
 - 3. Exhibits: See Index to Exhibits, which is incorporated by reference in this Item. The Exhibits listed in the accompanying Index to Exhibits are filed herewith or incorporated by reference as part of this annual report.
- (b) Exhibits. See Index to Exhibits, which is incorporated by reference in this Item. The Exhibits listed in the accompanying Index to Exhibits are filed herewith or incorporated by reference as part of this annual report.
- (c) Not applicable.

Item 16. Form 10-K Summary

None.

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 on the 15th day of December 2023.

Ciena Corporation

By: /s/ Gary B. Smith

Gary B. Smith

President, Chief Executive Officer and Director

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

Signatures	Title	Date
<u>/s/ Patrick H. Nettles, Ph.D.</u>	Executive Chairman of the Board of Directors	December 15, 2023
Patrick H. Nettles, Ph.D.		
<u>/s/ Gary B. Smith</u>	President, Chief Executive Officer and Director	December 15, 2023
Gary B. Smith (Principal Executive Officer)		
<u>/s/ James E. Moylan, Jr.</u>	Sr. Vice President, Finance and Chief Financial Officer	December 15, 2023
James E. Moylan, Jr. (Principal Financial Officer)		
<u>/s/ Andrew C. Petrik</u>	Vice President, Controller	December 15, 2023
Andrew C. Petrik (Principal Accounting Officer)		
<u>/s/ Hassan M. Ahmed, Ph.D.</u>	Director	December 15, 2023
Hassan M. Ahmed, Ph.D.		
<u>/s/ Bruce L. Claflin</u>	Director	December 15, 2023
Bruce L. Claflin		
<u>/s/ Lawton W. Fitt</u>	Director	December 15, 2023
Lawton W. Fitt		
<u>/s/ Patrick T. Gallagher</u>	Director	December 15, 2023
Patrick T. Gallagher		
<u>/s/ Devinder Kumar</u>	Director	December 15, 2023
Devinder Kumar		
<u>/s/ T. Michael Nevens</u>	Director	December 15, 2023
T. Michael Nevens		
<u>/s/ Joanne B. Olsen</u>	Director	December 15, 2023
Joanne B. Olsen		
<u>/s/ Mary G. Puma</u>	Director	December 15, 2023
Mary G. Puma		

INDEX TO EXHIBITS

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Here- with (X)
		Form and Registration or Commission No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation of Ciena Corporation	8-K (000-21969)	3.1	3/27/2008	
3.2	Amended and Restated Bylaws of Ciena Corporation	8-K (001-36250)	3.1	1/27/2023	
4.1	Specimen Stock Certificate	10-K (000-21969)	4.1	12/27/2007	
4.2	Description of Securities Registered Under Section 12 of the Securities Exchange Act of 1934	10-K (001-36250)	4.2	12/18/2020	
4.3	Indenture, dated as of January 18, 2022, by and among Ciena Corporation, the subsidiary guarantors party thereto and U.S. Bank National Association, as trustee, including the Form of 4.00% Senior Notes due 2030 attached as Exhibit A thereto	8-K (001-36250)	4.1	1/18/2022	
10.1	Ciena Corporation 2017 Omnibus Incentive Plan*	8-K (001-36250)	10.1	3/29/2017	
10.2	Amendment to Ciena Corporation 2017 Omnibus Incentive Plan dated April 2, 2020*	8-K (001-36250)	10.1	4/6/2020	
10.3	Form of Employee Restricted Stock Unit Agreement for Ciena Corporation 2017 Omnibus Incentive Plan (revised 2023)*	—	—	X	
10.4	Form of Performance Stock Unit Agreement for Ciena Corporation 2017 Omnibus Incentive Plan (revised 2023)*	10-Q (001-36250)	10.2	9/6/2023	
10.5	Form of Market Stock Unit Agreement for Ciena Corporation 2017 Omnibus Incentive Plan (revised 2023)*	10-Q (001-36250)	10.3	9/6/2023	
10.6	Form of Employee Restricted Stock Unit Agreement for Ciena Corporation 2017 Omnibus Incentive Plan*	10-K (001-36250)	10.3	12/18/2020	
10.7	Form of Director Restricted Stock Unit Agreement for Ciena Corporation 2017 Omnibus Incentive Plan*	10-Q (001-36250)	10.2	6/7/2023	
10.8	Form of Performance Stock Unit Agreement for Ciena Corporation 2017 Omnibus Incentive Plan*	10-K (001-36250)	10.5	12/18/2020	
10.9	Form of Market Stock Unit Agreement for Ciena Corporation 2017 Omnibus Incentive Plan*	10-K (001-36250)	10.6	12/18/2020	
10.10	Form of Employee Restricted Stock Unit Agreement for Ciena Corporation 2017 Omnibus Incentive Plan (revised 2022)*	10-K (001-36250)	10.7	12/16/2022	
10.11	Form of Performance Stock Unit Agreement for Ciena Corporation 2017 Omnibus Incentive Plan (revised 2022)*	10-K (001-36250)	10.8	12/16/2022	
10.12	Form of Market Stock Unit Agreement for Ciena Corporation 2017 Omnibus Incentive Plan (revised 2022)*	10-K (001-36250)	10.9	12/16/2022	
10.13	Ciena Corporation 2008 Omnibus Incentive Plan*	8-K (000-21969)	10.1	3/27/2008	
10.14	Amendment (No. 1) to Ciena Corporation 2008 Omnibus Incentive Plan dated April 14, 2010*	8-K (000-21969)	10.1	4/15/2010	
10.15	Amendment (No. 2) to Ciena Corporation 2008 Omnibus Incentive Plan dated March 21, 2012*	8-K (000-21969)	10.1	3/23/2012	
10.16	Amendment (No. 3) to Ciena Corporation 2008 Omnibus Incentive Plan dated April 10, 2014*	10-Q (001-36250)	10.1	6/11/2014	
10.17	Amendment (No. 4) to Ciena Corporation 2008 Omnibus Incentive Plan dated March 24, 2016*	10-Q (001-36250)	10.2	6/8/2016	

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Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Here- with (X)
		Form and Registration or Commission No.	Exhibit	Filing Date	
10.22	Cyan, Inc. 2013 Equity Incentive Plan*	S-1 (333-187732)	10.3.1	4/4/2013	
10.23	Ciena Corporation 2000 Equity Incentive Plan (Amended and Restated ONI Systems Corp. 2000 Equity Incentive Plan)*	10-K (000-21969)	10.37	12/11/2003	
10.24	Form of Restricted Stock Unit Award Agreement for directors under Ciena Corporation 2000 Equity Incentive Plan*	8-K (000-21969)	10.5	11/4/2005	
10.25	Ciena Corporation Amended and Restated Incentive Bonus Plan, as amended August 22, 2023*	10-Q (000-36250)	10.4	9/26/2023	
10.26	Ciena Corporation U.S. Executive Severance Benefit Plan*	10-Q (000-21969)	10.1	6/9/2011	
10.27	Form of Indemnification Agreement with Directors and Executive Officers*	10-Q (000-21969)	10.1	3/3/2006	
10.28	Change in Control Severance Agreement dated November 30, 2019, between Ciena Corporation and Gary B. Smith*	10-K (000-36250)	10.23	12/20/2019	
10.29	Change in Control Severance Agreement dated November 30, 2019, between Ciena Corporation and Executive Officers*	10-K (000-36250)	10.24	12/20/2019	
10.30	Lease Agreement by and between Ciena Canada, Inc. and Innovation Blvd. II Limited dated as of October 23, 2014++	10-K (001-36250)	10.36	12/19/2014	
10.31	Amendment No. 1 to the Lease Agreement dated October 23, 2014, between Ciena Canada, Inc. and Innovations Blvd II Limited, dated April 15, 2015	8-K (001-36250)	10.3	6/3/2015	
10.32	Lease Agreement between Ciena Canada, Inc. and Innovation Blvd. II Limited, dated April 15, 2015	8-K (001-36250)	10.4	6/3/2015	
10.33	Lease Agreement dated November 3, 2011 between Ciena Corporation and W2007 RDG Realty, L.L.C.++	10-K (000-21969)	10.34	12/22/2011	
10.34	Incremental Amendment Agreement, dated October 24, 2023, by and among Ciena Corporation, Ciena Communications, Inc., Ciena Government Solutions, Inc., Ciena Communications International, LLC, Blue Planet Software, Inc., Bank of America, N.A., as administrative agent, and the lenders party thereto.++	8-K (001-36250)	10.1	10/25/2023	
10.35	Incremental Joinder and Amendment Agreement, dated January 19, 2023, by and among Ciena Corporation, Ciena Communications, Inc., Ciena Government Solutions, Inc., Ciena Communications International, LLC, Blue Planet Software, Inc., Bank of America, N.A., as administrative agent, and the lenders party thereto.++	8-K (001-36250)	10.1	1/23/2023	
10.38	Third Amendment to Credit Agreement, dated July 15, 2015, by and among Ciena Corporation, the lenders party thereto, and Bank of America, N.A., as Administrative Agent., dated June 29, 2017++	10-Q (001-36250)	10.3	9/7/2017	
10.39	Incremental Joinder and Amendment Agreement under the Credit Agreement and Related Agreements dated as of April 25, 2016 by and between Ciena Corporation, Bank of America, N.A. as Administrative Agent, Ciena Communications, Inc. and Ciena Government Solutions, Inc.	10-Q (001-36250)	10.1	6/8/2016	

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Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Here- with (X)
		Form and Registration or Commission No.	Exhibit	Filing Date	
10.43	Guaranty, dated July 15, 2014, by and among Ciena Communications, Inc., Ciena Government Solutions, Inc. and Bank of America, N.A., as Administrative Agent++	10-Q (001-36250)	10.6	9/9/2014	
10.44	Term Loan Security Agreement, dated July 15, 2014, by and among Ciena Corporation, Ciena Communications, Inc., Ciena Government Solutions, Inc., and Bank of America, N.A., as Collateral Agent++	10-Q (001-36250)	10.7	9/9/2014	
10.45	Omnibus Amendment to Security Agreement and Pledge Agreement, dated September 28, 2018, by and among Ciena Corporation, Ciena Communications, Inc., Ciena Government Solutions, Inc., and Bank of America, N.A., as Administrative Agent++	10-K (001-36250)	10.56	12/21/2018	
10.46	Term Loan Pledge Agreement, dated July 15, 2014, by and among Ciena Corporation, Ciena Communications, Inc., Ciena Government Solutions, Inc., and Bank of America, N.A., as Pledgee++	10-Q (001-36250)	10.8	9/9/2014	
10.47	Guaranty Supplement dated as of April 19, 2019, by Ciena Communications International, LLC, in favor of Bank of America, N.A., as Administrative Agent++	10-Q (001-36250)	10.3	6/12/2019	
10.48	Guaranty Supplement dated as of April 19, 2019, by Blue Planet Software, Inc., in favor of Bank of America, N.A., as Administrative Agent++	10-Q (001-36250)	10.4	6/12/2019	
10.49	Intellectual Property License Agreement dated as of March 19, 2010 between Ciena Luxembourg S.a.r.l. and Nortel Networks Limited#	10-Q (000-21969)	10.3	6/10/2010	
21.1	Subsidiaries of registrant	—	—	—	X
23.1	Consent of Independent Registered Public Accounting Firm	—	—	—	X
31.1	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934 as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	—	—	—	X
31.2	Certification of Chief Financial Officer Pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934 as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	—	—	—	X
32.1	Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	—	—	—	X
32.2	Certification of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	—	—	—	X
97.1	Ciena Corporation Executive Compensation Clawback Policy	—	—	—	X
101.INS	Inline XBRL Instance Document - The instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.	—	—	—	X
101.SCH	Inline XBRL Taxonomy Extension Schema Document	—	—	—	X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	—	—	—	X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	—	—	—	X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	—	—	—	X

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Here- with (X)
		Form and Registration or Commission No.	Exhibit	Filing Date	
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	—	—	—	X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)	—	—	—	X

* Represents management contract or compensatory plan or arrangement

++ Representations and warranties included in these agreements, as amended, were made by the parties to one another in connection with a negotiated transaction. These representations and warranties were made as of specific dates, only for purposes of these agreements and for the benefit of the parties thereto. These representations and warranties were subject to important exceptions and limitations agreed upon by the parties, including being qualified by confidential disclosures, made for the purposes of allocating contractual risk between the parties rather than establishing these matters as facts. These agreements are filed with this report only to provide investors with information regarding its terms and conditions, and not to provide any other factual information regarding Ciena or any other party thereto. Accordingly, investors should not rely on the representations and warranties contained in these agreements or any description thereof as characterizations of the actual state of facts or condition of any party, its subsidiaries or affiliates. The information in these agreements should be considered together with Ciena's public reports filed with the SEC.

Certain portions of this document have been omitted based on a request for confidential treatment submitted to the SEC. The non-public information that has been omitted from this document has been separately filed with the SEC. Each redacted portion of this document is indicated by a "[*]" and is subject to the request for confidential treatment submitted to the SEC. The redacted information is confidential information of Ciena.

**CIENA CORPORATION
2017 OMNIBUS INCENTIVE PLAN**

RESTRICTED STOCK UNIT AGREEMENT

Ciena Corporation, a Delaware corporation, (the "Company"), hereby grants restricted stock units ("Restricted Stock Units") relating to shares of its common stock, \$0.01 par value (the "Stock"), to the individual named below as the Grantee, subject to the vesting and other terms and conditions set forth in this Restricted Stock Unit Agreement, including the attached terms and conditions and any appendix attached hereto (with supplemental or distinct terms or notices applicable for non-U.S. employees) (together, the "Agreement"). This grant is subject to the terms and conditions set forth in (i) this Agreement, (ii) the Ciena Corporation 2017 Omnibus Incentive Plan (as it may be amended from time to time, the "Plan"), and (iii) the grant details for this award contained in Grantee's account with the Company's selected broker. Capitalized terms not defined in this Agreement are defined in the Plan and have the meaning set forth in the Plan.

Grant Date: _____

Grant Number: _____

Name of Grantee: _____

Grantee's Employee Identification Number: _____

Number of Restricted Stock Units Covered by Grant: _____

Vesting Schedule: _____

[One-fourth of the number of Restricted Stock Units subject to this Award will vest on the first March 20, June 20, September 20, or December 20 following the first anniversary of the Grant Date and, one-sixteenth of the number of Restricted Stock Units subject to this Award will vest on each March 20, June 20, September 20, and December 20 thereafter, provided you remain in Service on each applicable vesting date, unless otherwise provided in this Agreement.]

[OR]

[One-sixteenth of the number of Restricted Stock Units subject to this Award will vest on March 20, June 20, September 20 and December 20 of each calendar year following the Grant Date, provided that (i) the initial vesting date above shall be at least 30 days from the Grant Date, and (ii) you must remain in Service on each applicable vesting date unless otherwise provided in this Agreement.]

By accepting this grant (whether by signing this Agreement or accepting the grant electronically via the website of the Company's selected broker), you agree to the terms and conditions in this Agreement and in the Plan and agree that the Plan will control in the event any provision of this Agreement should appear to be inconsistent unless otherwise stated herein.

Grantee: _____

(Signature)

Ciena Corporation: _____

Name: Sheela Kosaraju

Title: Senior Vice President, General Counsel and Assistant Secretary

**CIENA CORPORATION
2017 OMNIBUS INCENTIVE PLAN**

**RESTRICTED STOCK UNIT AGREEMENT
TERMS AND CONDITIONS**

Restricted Stock Unit Transferability

This grant is an award of the number of Restricted Stock Units set forth on the first page of this Agreement (or, in the case of electronic delivery, as set forth in the grant details for this Award set forth in the Company's selected broker's website), subject to the vesting conditions described in this Agreement. Your Restricted Stock Units may not be transferred, assigned, pledged, or hypothecated, whether by operation of Applicable Law or otherwise, nor may the Restricted Stock Units be made subject to execution, attachment, or similar process.

Vesting

Your Restricted Stock Units will vest as indicated on the first page of this Agreement (or, in the case of electronic delivery, in accordance with the grant details for this award set forth the Company's selected broker's website), provided you meet any applicable vesting requirements set forth in this Agreement. Any resulting fractional shares shall be rounded up to the nearest whole share; provided, that you may not vest in more than the number of Restricted Stock Units set forth on the cover sheet of this Agreement. Except as provided in this Agreement, or in any other agreement between you and the Company, no additional Restricted Stock Units will vest after your Service has terminated.

Share Delivery; Vested Restricted Stock Units; Tax-Related Items

Shares of Stock underlying the vested portion of the Restricted Stock Units will be delivered to you by the Company as soon as practicable following the applicable vesting date for those shares of Stock, but in no event beyond 2½ months after the end of the calendar year in which the shares would have been otherwise delivered or otherwise in accordance with the terms of any deferral election validly made under the Ciena Corporation Deferred Compensation Plan or any successor plan. Upon settlement of the Restricted Stock Units, a brokerage account in your name will be credited with shares of Stock representing the number of shares that vested under this grant (the "Vested Shares") net of any Tax-Related Items (as defined below), as applicable. If the vesting date is not a trading day, the Vested Shares will be delivered on the next trading day (or as soon as practicable thereafter).

Regardless of any action the Company or the Affiliate to whom you provide Services (the "Employer") takes with respect to any or all income tax, social insurance, payroll tax, payment on account or other tax-related items related to the Restricted Stock Units and/or your participation in the Plan and legally applicable or deemed to be applicable to you ("Tax-Related Items"), you acknowledge that the ultimate liability for all Tax-Related Items is and remains your responsibility and may exceed the amount actually withheld by the Company or the Employer, if any. You further acknowledge that the Company and/or the Employer (1) make no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Restricted Stock Units, including, but not limited to, the grant or vesting of the Restricted Stock Units, the issuance of shares of Stock upon settlement of the Restricted Stock Units, the subsequent sale of shares of Stock acquired pursuant to such issuance and the receipt of any dividends and/or any dividend equivalents; and (2) do not commit to and are under no obligation to structure the terms of the award or any aspect of the Restricted Stock Units to reduce or eliminate your liability for Tax-Related Items or achieve any particular tax result. Further, if you have become subject to tax in more than one jurisdiction, you acknowledge that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

By accepting this award, you authorize the Company and/or the Employer, or their respective agents, at their discretion, to satisfy any applicable withholding obligations with regard to all Tax-Related Items by one or a combination of the following: (a) requiring your payment in cash or other immediately available funds to the Company and/or the Employer; (b) withholding from your wages or other cash compensation paid to you by the Company and/or the Employer; (c) withholding from proceeds of the sale of Vested Shares either through a voluntary sale or through a mandatory sale arranged by the Company (on your behalf pursuant to this authorization without further consent) (an "Automatic Sale"); (d) withholding shares of Stock to be issued upon vesting of the Restricted Stock Units; or (e) any other method of withholding determined by the Company and permitted by applicable law.

You further acknowledge that, in the event of an Automatic Sale, this irrevocable written instruction is intended to constitute an instruction pursuant to Rule 10b5-1 of the Exchange Act with the Automatic Sale intended to comply with these requirements. As such, all provisions hereof shall be interpreted consistent with Rule 10b5-1 and shall be automatically modified to the extent necessary to comply therewith. The Company shall be responsible for the payment of any brokerage commissions relating to any Automatic Sale.

Depending on the withholding method, the Company may withhold or account for Tax-Related Items by considering applicable minimum statutory withholding rates or other applicable withholding rates, including maximum applicable rates in your jurisdiction(s) to the extent permitted by the Plan. In the event of over-withholding, you may receive a refund of any over-withheld amount in cash and will have no entitlement to the equivalent in Stock, or if not refunded, you may seek a refund from the local tax authorities. In the event of under-withholding, you may be required to pay any additional Tax-Related Items directly to the applicable tax authority or to the Company and/or the Employer. If the obligation for Tax-Related Items is satisfied by withholding in shares of Stock, for tax purposes, you are deemed to have been issued the full number of shares of Stock subject to the Vested Shares, notwithstanding that a number of the shares of Stock are held back solely for the purpose of paying the Tax-Related Items due as a result of any aspect of your participation in the Plan.

The Company may refuse to issue or deliver the shares of Stock or the proceeds of the sale of shares of Stock, if you fail to comply with your obligations in connection with the Tax-Related Items.

Forfeiture of Unvested Restricted Stock Units

Except as specifically provided in this Agreement or as may be provided in other agreements between you and the Company, no additional Restricted Stock Units will vest after your Service with the Company, the Employer, or any Affiliate has terminated for any reason, and you will forfeit to the Company all of the Restricted Stock Units that have not yet vested or with respect to which all applicable restrictions and conditions have not lapsed upon such date of termination of your Service.

Deferral of Compensation

Delivery of shares underlying any award of Restricted Stock Units and treatment hereunder shall be subject to any deferral election validly made by eligible participants under the Ciena Corporation Deferred Compensation Plan or any successor plan.

Death

If your Service terminates because of your death prior to your Retirement, the unvested Restricted Stock Units granted under this Agreement will automatically vest as to the number of Restricted Stock Units that would have vested had you remained in Service for the 12-month period immediately following your death.

Disability

If your Service terminates because of your Disability prior to your Retirement, the unvested Restricted Stock Units granted under this Agreement will automatically vest as to the number of Restricted Stock Units that would have vested had you remained in Service for the 12-month period immediately following your termination on account of Disability.

Retirement (Applicable only to residents of a country listed on Appendix A at time of Grant)

If you are a resident of a country listed on Appendix A on the Grant Date and your Service terminates because of your Retirement, the unvested Restricted Stock Units granted under this Agreement and outstanding as of the date of your Retirement will (i) for eligible Grantees who are not Executive Officers or Senior Vice Presidents who report directly to the CEO, vest with respect to 100% of the underlying Stock on the first scheduled vesting date following the date of your Retirement; or (ii) for eligible Grantees who are Executive Officers or Senior Vice Presidents who report directly to the CEO, continue to vest as indicated on the first page of this Agreement (or, in the case of electronic delivery, in accordance with the grant details for this award set forth the Company's selected broker's website); in each case notwithstanding such termination of Service.

For purposes of this Agreement, "Retirement" means your voluntary termination of Service following:

(i) your completion of 10 years of Service (which need not have been consecutive), including up to six years of prior employment or service to any entity acquired by the Company or its Affiliates (provided you have completed four years of Service following the most recent of such acquisitions); and

(ii) your attainment of age 60;

provided, however, that in order to receive any vesting benefit under this section, you must provide the Company with 12 months (the "Notice Period") irrevocable advance written notice of your termination of Service, which notice can only be delivered after meeting the above eligibility requirements (the "Notice Requirement").

If your Service terminates for any reason after you have submitted notice of Retirement to the Company pursuant to the preceding sentence but prior to the last day of the Notice Period for any reason other than (A) by the Company without Cause (as defined in the Executive Severance Benefit Plan, or if you are not a participant in such plan, as defined in the Plan) or (B) due to your death or Disability, you will forfeit to the Company all of the Restricted Stock Units that have not yet vested or with respect to which all applicable restrictions and conditions have not lapsed upon such termination of your Service. If at any time after you have submitted notice of Retirement your Service is terminated by the Company without Cause, or your Service terminates because of your death or Disability, then the Notice Requirement will be deemed to have been satisfied.

You understand and agree that you will no longer be eligible to receive additional equity grants following submission of your notice of Retirement to the Company.

Termination For Cause

If your Service is terminated for Cause, then you shall immediately forfeit all rights to your Restricted Stock Units, and this award shall immediately terminate, effective as of the date of termination.

Leaves of Absence

For purposes of this grant, your Service does not terminate when you go on a bona fide leave of absence approved by the Company, if the terms of your leave provide for continued Service crediting, or when continued Service crediting is required by Applicable Law. The Company will determine, in its sole discretion, and in accordance with applicable laws, whether and when a leave of absence constitutes a termination of Service under the Plan.

Retention Rights

Neither your Restricted Stock Units nor this Agreement give you the right to be retained by the Company, the Employer, or any Affiliate in any capacity, and your Service may be terminated at any time and for any reason.

Shareholder Rights

You have no rights as a shareholder unless and until the shares of Stock relating to the Restricted Stock Units have been issued to you (or an appropriate book entry has been made). Except as described in the Plan or herein, no adjustments are made for dividends or other rights if the applicable record date occurs before your shares of Stock are issued (or an appropriate book entry has been made).

If the Company pays a dividend on its shares of Stock, you will, however, be entitled to receive a cash payment equal to the per-share dividend paid on the shares of Stock times the number of Restricted Stock Units that you hold as of the record date for the dividend; provided, however, such Dividend Equivalents Rights shall not vest or become payable unless and until the Restricted Stock Units to which the Dividend Equivalent Rights correspond become vested and nonforfeitable pursuant to this Agreement or the Plan.

Section 409A

The Restricted Stock Units are intended to be exempt from, or compliant with, Section 409A of the Code and any ambiguities herein will be interpreted in accordance with that intent. Each payment under this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2). Notwithstanding the foregoing or any provision of the Plan or this Agreement, if any provision of the Plan or this Agreement contravenes Section 409A of the Code or could cause you to incur any tax, interest or penalties under Section 409A of the Code, the Company may, in its sole reasonable discretion and without your consent, modify such provision to (i) comply with, or avoid being subject to, Section 409A of the Code, or to avoid the incurrence of taxes, interest and penalties under Section 409A of the Code, and (ii) maintain, to the maximum extent practicable, the original intent and economic benefit to you of the applicable provision without materially increasing the cost to the Company or contravening the provisions of Section 409A of the Code. This Section does not create an obligation on the part of the Company to modify the Plan or this Agreement and does not guarantee that the Restricted Stock Units or the Shares underlying the Restricted Stock Units will not be subject to interest and penalties under Section 409A of the Code.

Notwithstanding anything to the contrary in the Plan or this Agreement, to the extent that you are a "specified employee" (within the meaning of the Company's established methodology for determining "specified employees" for purposes of Section 409A of the Code), payment or distribution of any amounts with respect to any Restricted Stock Unit that is subject to Section 409A of the Code will be made as soon as practicable following the first business day of the seventh month following your "separation from service" (within the meaning of Section 409A of the Code) from the Company and its Affiliates, or, if earlier, the date of your death.

Nature of Grant

In accepting the award and the Restricted Stock Units, you acknowledge, understand, and agree that:

(1) the Plan is established voluntarily by the Company, it is discretionary in nature, and it may be modified, amended, suspended, or terminated by the Company at any time;

(2) the grant of the Restricted Stock Units is voluntary and occasional and does not create any contractual or other right to receive future grants of Restricted Stock Units, or benefits in lieu of Restricted Stock Units, even if Restricted Stock Units have been granted in the past;

(3) all decisions with respect to future Restricted Stock Unit grants, if any, will be at the sole discretion of the Company;

(4) your participation in the Plan is voluntary;

(5) the Restricted Stock Units and the shares of Stock subject to the Restricted Stock Units, and the income from and value of such Restricted Stock Units, are not intended to replace any pension rights;

(6) the Restricted Stock Units and the shares of Stock subject to the Restricted Stock Units, and the income from and value of such Restricted Stock Units, are not part of normal or expected compensation for purposes of calculating any severance, resignation, termination, redundancy, dismissal, end of Service payments, bonuses, holiday pay, long-service awards, pension or retirement or welfare benefits, or similar payments, except if and as explicitly required by applicable law;

(7) the Restricted Stock Unit grant and your participation in the Plan will not be interpreted to form or amend a Service contract or relationship with the Company, the Employer, or any Affiliate;

(8) the future value of the underlying shares of Stock is unknown and cannot be predicted with certainty;

(9) no claim or entitlement to compensation or damages shall arise from forfeiture of the Restricted Stock Units resulting from termination of your Service relationship with the Company or the Employer except as otherwise set forth in this Agreement (whether or not in breach of contract or local employment laws in the country where you reside, even if otherwise applicable to your employment benefits from the Employer, and/or later found to be invalid), and in consideration of the grant of the Restricted Stock Units, you irrevocably agree never to institute any claim against the Company, the Employer, or any Affiliate, waive your ability, if any, to bring any such claim, and release the Company, the Employer, and any Affiliate from any such claim; if, notwithstanding the foregoing, any such claim is allowed by a court of competent jurisdiction, then, by accepting this award of Restricted Stock Units, you shall be deemed irrevocably to have agreed not to pursue such claim and agree to execute any and all documents necessary to request dismissal or withdrawal of such claims;

(10) except as otherwise set forth in this Agreement, in the event of termination of your Service relationship (whether or not in breach of contract or local employment laws in the country where you reside, even if otherwise applicable to your employment benefits from the Employer, and/or later found to be invalid), your right to vest in the Restricted Stock Units under the Plan, if any, will terminate effective as of the date that you are no longer actively providing Services to the Company, the Employer, or any Affiliate as a Service Provider and will not be extended by any notice period mandated under local law (e.g., active Service as a Service Provider would not include a period of "garden leave" or similar period); the Committee shall have the exclusive discretion to determine when you are no longer actively providing Services for purposes of your Restricted Stock Units grant;

(11) the Restricted Stock Units and the benefits evidenced by this Agreement do not create any entitlement, not otherwise specifically provided for in the Plan or by the Company in its discretion, to have the Restricted Stock Units or any such benefits transferred to, or assumed by, another company, nor to be exchanged, cashed out, or substituted for, in connection with any corporate transaction affecting the Stock (including a Corporate Transaction);

(12) unless otherwise agreed with the Company, the Restricted Stock Units and the shares of Stock subject to the Restricted Stock Units, and the income from and value of same, are not granted as consideration for, or in connection with, the service you may provide as a director of an Affiliate of the Company; and

(13) the following provisions apply only if you are providing Services outside the United States:

(A) the Restricted Stock Units and the shares of Stock subject to the Restricted Stock Units, and the income from and value of such Restricted Stock Units, are not part of normal or expected compensation or salary for any purpose and in no event should be considered as compensation for, or relating in any way to, past Services for the Company, the Employer, or any Affiliate; and

(B) you acknowledge and agree that neither the Company, the Employer, nor any Affiliate shall be liable for any foreign exchange rate fluctuation between the Employer's local currency and the United States dollar that may affect the value of any proceeds from the sale of shares of Stock acquired under the Plan.

Forfeiture; Recoupment

This Award shall be subject to mandatory repayment by the Grantee to the Company (i) to the extent set forth in the Plan or this Agreement or (ii) to the extent the Grantee is, or in the future becomes, subject to (A) any Company or Affiliate "clawback" or recoupment policy that is adopted by the Company, including to comply with the requirements of Applicable Law, or (B) any Applicable Law that imposes mandatory recoupment, under circumstances set forth in such Applicable Law.

Data Privacy

(a) Declaration of Consent. If you would like to participate in the Plan, you understand that you need to review the following information about the processing of your personal data by or on behalf of the Company, the Employer, and/or any Affiliate as described in this Agreement and any other Plan materials (the "Personal Data") and declare your consent. As regards the processing of your Personal Data in connection with the Plan and the Agreement, you understand that the Company is the controller of your Personal Data.

(b) Data Processing and Legal Basis. The Company collects, uses, and otherwise processes Personal Data about you for the purposes of allocating shares of Stock and implementing, administering, and managing the Plan. You understand that this Personal Data may include, without limitation, your name, home address and telephone number, email address, date of birth, social insurance number, passport number or other identification number (e.g., resident registration number), salary, nationality, job title, any shares of stock or directorships held in the Company or its Affiliates, details of all Restricted Stock Units or any other entitlement to shares of stock awarded, canceled, purchased, vested, unvested or outstanding in your favor. The legal basis for the processing of the Personal Data will be your consent.

(c) Stock Plan Administration Service Provider. You understand that the Company transfers your Personal Data, or parts thereof, to E*TRADE Financial Corporate Services, Inc. (and its affiliated companies), an independent service provider based in the United States, which assists the Company with the implementation, administration, and management of the Plan. In the future, the Company may select a different service provider and share your Personal Data with such different service provider that serves the Company in a similar manner. You understand and acknowledge that the Company's service provider will open an account for you to receive and trade shares purchased under the Plan and that you will be asked to agree on separate terms and data processing practices with the service provider, which is a condition of your ability to participate in the Plan.

(d) International Data Transfers. You understand that the Company and any third parties assisting in the implementation, administration, and management of the Plan, such as the Company's service providers, are based in the United States as of the date hereof. If you are located outside the United States, you understand and acknowledge that your country has enacted data privacy laws that are different from the laws of the United States. The Company's legal basis for the transfer of your Personal Data is your consent.

(e) Data Retention. You understand that the Company will use your Personal Data only as long as is necessary to implement, administer, and manage your participation in the Plan, or to comply with legal or regulatory obligations, including under tax and securities laws. In the latter case, you understand and acknowledge that the Company's legal basis for the processing of your Personal Data would be compliance with the relevant laws or regulations or the pursuit by the Company of respective legitimate interests not outweighed by your interests, rights, or freedoms. When the Company no longer needs your Personal Data for any of the above purposes, you understand the Company will remove it from its systems.

(f) Voluntariness and Consequences of Denial/Withdrawal of Consent. You understand that your participation in the Plan and your grant of consent is purely voluntary. You may deny or later withdraw your consent at any time, with future effect, and for any or no reason. If you deny or later withdraw your consent, the Company can no longer offer participation in the Plan or offer other awards to you or administer or maintain such awards, and you would no longer be able to participate in the Plan. You further understand that denial or withdrawal of your consent would not affect your status or salary as an employee or your career and that you would merely forfeit the opportunities associated with the Plan.

(g) Data Subject Rights. You understand that data subject rights regarding the processing of Personal Data vary depending on the applicable law and that, depending on where you are based and subject to the conditions set out in the applicable law, you may have, without limitation, the right to (i) inquire whether and about what kind of Personal Data the Company holds about you and how it is processed, and to access or request copies of such Personal Data; (ii) request the correction or supplementation of Personal Data about you that is inaccurate, incomplete, or out-of-date in light of the purposes underlying the processing; (iii) request the erasure of Personal Data that is (A) no longer necessary for the purposes underlying the processing, (B) processed based on withdrawn consent, (C) processed for legitimate interests that, in the context of your objection, do not prove to be compelling, or (D) processed in non-compliance with applicable legal requirements; (iv) request the Company to restrict the processing of your Personal Data in certain situations where you feel its processing is inappropriate; (v) object, in certain circumstances, to the processing of Personal Data for legitimate interests; and (vi) request

portability of your Personal Data that you have actively or passively provided to the Company (which does not include data derived or inferred from the collected data), where the processing of such Personal Data is based on consent or your employment or service contract and is carried out by automated means. In case of concerns, you understand that you may also have the right to lodge a complaint with the competent local data protection authority. Further, to receive clarification of or to exercise any of your rights, you understand that you should contact your local People & Culture representative or Ciena's stock administration department.

By signing this Agreement or, in case this information is presented electronically, by clicking the "Accept" or similar button implemented into the relevant web page or platform, you declare, without limitation, your consent to the data processing operations described in this Agreement. You understand that you may withdraw your consent at any time with future effect for any or no reason as described in this section.

No Advice Regarding Grant

The Company is not providing any tax, legal, or financial advice, nor is the Company making any recommendations regarding your participation in the Plan, or your acquisition or sale of the Stock underlying your Restricted Stock Units. You are hereby advised to consult with your own personal tax, legal, and financial advisors regarding your participation in the Plan before taking any action related to the Plan.

Applicable Law and Venue

The Restricted Stock Units and the provisions of this Agreement are governed by, and subject to, the laws of the State of Delaware, without regard to the conflict of law provisions.

For purposes of litigating any dispute that arises under this award or the Agreement, the parties hereby submit to and consent to the jurisdiction of the State of Delaware, and agree that such litigation shall be conducted in the state courts of Delaware, or the federal courts for the District of Delaware, and no other courts, where this grant is made and/or to be performed. ***You agree to waive your rights to a jury trial for any claim or cause of action based upon or arising out of this Agreement or the Plan.***

Language

You acknowledge that you are sufficiently proficient in the English language, or have consulted with an advisor who is sufficiently proficient in English, so as to allow you to understand the terms and conditions of this Agreement. Further, if you have received this Agreement, or any other document related to this Award and/or the Plan translated into a language other than English and if the meaning of the translated version is different than the English version, the English version will control. You acknowledge that you are sufficiently proficient in English to understand the terms and conditions of this Agreement.

Electronic Delivery and Acceptance

The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means or request your consent to participate in the Plan by electronic means. You hereby consent to receive such documents by electronic delivery and agree to participate in the Plan through an on-line or electronic system established and maintained by the Company, the Company's designated broker, or their respective third parties. If you fail to submit a written rejection of this award to the Company's Stock Administration Department prior to the date on which this award initially vests, this award shall be deemed accepted by you and the terms of this award and the Plan shall apply to the same extent as if you had accepted your award electronically via the website of the Company's selected broker.

Severability; Integration

The provisions of this Agreement are severable, and if any one or more provisions are determined to be illegal or otherwise unenforceable, in whole or in part, the remaining provisions shall nevertheless be binding and enforceable. This Agreement contains the entire agreement with regard to the Restricted Stock Units awarded hereby; provided that in the event you are eligible to receive vesting benefits pursuant to an individual agreement with the Company that are more favorable than the vesting benefits provided hereunder, you will receive the vesting benefits under such agreement.

Waiver

You acknowledge that a waiver by the Company of breach of any provision of this Agreement shall not operate or be construed as a waiver of any other provision of this Agreement, or of any subsequent breach of this Agreement.

Country-Specific Provisions: Appendix B

Notwithstanding any provisions in this Agreement, this award of Restricted Stock Units shall be subject to any additional terms and conditions set forth in Appendix B to this Agreement for your country. Moreover, if you relocate to one of the countries included in Appendix B, the terms and conditions for such country will apply to you, to the extent the Company determines that the application of such terms and conditions is necessary or advisable for legal or administrative reasons.

Foreign Account / Assets Reporting and Exchange Controls

Depending upon the country to which laws you are subject, you may have certain foreign asset and/or account reporting requirements and exchange controls which may affect your ability to acquire or hold shares of Stock under the Plan or cash received from participating in the Plan (including from any dividends received or sale proceeds arising from the sale of shares of Stock) in a brokerage or bank account outside your country of residence. Your country may require that you report such accounts, assets or transactions to the applicable authorities in your country. You may be required to repatriate sale proceeds or other funds received as a result of your participation in the Plan to your country through a designated bank or broker within a certain time after receipt. You are responsible for knowledge of and compliance with any such regulations and should speak with your own personal tax, legal and financial advisors regarding the same.

Insider Trading / Market Abuse Laws

You acknowledge that, depending on your country, you may be subject to insider trading restrictions and/or market abuse laws, which may affect your ability to acquire or sell shares of Stock or rights to shares of Stock (e.g., Restricted Stock Units) under the Plan during such times as you are considered to have “inside information” regarding the Company (as defined by the laws in your country). Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable insider trading policy of the Company. You acknowledge that it is your responsibility to comply with any applicable restrictions, and you should consult with your own personal legal and financial advisors on this matter.

Imposition of Other Requirements

The Company reserves the right to impose other requirements on your participation in the Plan, on the award, on the Restricted Stock Units, and on any shares of Stock acquired under the Plan, to the extent the Company determines it is necessary or advisable for legal or administrative reasons, and to require you to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

This Agreement is not a stock certificate or a negotiable instrument.

**APPENDIX A
TO
RESTRICTED STOCK UNIT AGREEMENT**

1. Australia
 2. Brazil
 3. Canada
 4. Colombia
 5. France
 6. Germany
 7. Greece
 8. India
 9. Israel
 10. Korea
 11. New Zealand
 12. Portugal
 13. Singapore
 14. Spain
 15. Switzerland
 16. United Arab Emirates
 17. United States
 18. United Kingdom
-

**APPENDIX B
TO
RESTRICTED STOCK UNIT AGREEMENT
FOR GRANTEES LOCATED OUTSIDE THE UNITED STATES**

Terms and Conditions

This Appendix B includes additional terms and conditions that govern the Restricted Stock Units granted to Grantees who reside in the countries listed herein. These terms and conditions are in addition to or, if so indicated, in replacement of the terms and conditions set forth in the Agreement. Any capitalized term used in this Appendix B without definition shall have the meaning ascribed to such term in the Plan or the main body of this Agreement, as applicable.

Notifications

This Appendix B also includes information regarding exchange control, foreign asset and/or account, securities and other laws in effect in the respective countries as of December 2023. Such laws are often complex and change frequently. As a result, the Company strongly recommends that you not rely on the information herein as the only source of information relating to the consequences of your participation in the Plan because the information may be out of date at the time your Restricted Stock Units vest or you sell shares of Stock. In addition, the information is general in nature and might not apply to your particular situation, and the Company is not in a position to assure you of any particular result. Accordingly, you are advised to seek appropriate professional advice as to how the relevant laws in your country may apply to your situation.

Finally, note that if you are a citizen or resident of a country other than the one in which you are currently working and/or residing, or are considered a resident of another country for local law purposes or if you transfer employment and/or residency to another country after the Grant Date, the information contained herein may not be applicable to you in the same manner. In addition, the Company shall, in its sole discretion, determine to what extent the additional terms and conditions included herein will apply to you under these circumstances.

ALL COUNTRIES

Retirement. The following provision supplements the Retirement section of the Agreement:

Notwithstanding the foregoing, if the Company receives a legal opinion that there has been a legal judgment and/or legal development in your jurisdiction that likely would result in the treatment that applies to this award in the event of your Retirement, or when you become Retirement eligible, being deemed unlawful and/or discriminatory, and/or result in adverse tax treatment, the provisions of the Retirement section of the Agreement regarding the treatment of this Award in the event of your Retirement, or when you become Retirement eligible, shall not be applicable to you.

ARGENTINA

Terms and Conditions

Acknowledgment of Nature of Grant. The following provision supplements the Nature of Grant section of the Agreement:

In accepting the grant of the Award, you acknowledge and agree that the grant of the Award is made by the Company (not the Employer) in its sole discretion and that the value of any Awards or shares of Stock acquired under the Plan shall not constitute salary or wages for any purpose under Argentine labor law, including the calculation of (i) any labor benefits including, but not limited to, vacation pay, thirteenth salary, compensation in lieu of notice, annual bonus, disability, and leave of absence payments, or (ii) any termination or severance

indemnities.

If, notwithstanding the foregoing, any benefits under the Plan are considered for purposes of calculating any termination or severance indemnities, you acknowledge and agree that such benefits shall not accrue more frequently than on an annual basis.

Notifications

Securities Law Information. Neither the Restricted Stock Units nor the underlying shares of Stock are publicly offered or listed on any stock exchange in Argentina. The offer is private and not subject to the supervision of any Argentine governmental authority.

Exchange Control Information. Exchange control regulations in Argentina are subject to frequent change. You are solely responsible for complying with any exchange control obligations that you may have in connection with participation in the Plan and should consult with your personal legal advisor regarding same.

AUSTRALIA

Notifications

Securities Law Information. This offer is being made under Division 1A, Part 7.12 of the Corporations Act 2001 (Cth).

Please note that if you offer shares of Stock for sale to a person or entity resident in Australia, the offer may be subject to disclosure requirements under Australian law. You should obtain legal advice regarding any relevant disclosure obligations prior to making any such offer.

Tax Information. Subdivision 83A-C of the Income Tax Assessment Act, 1997, applies to Restricted Stock Units granted under the Plan, such that the Restricted Stock Units are intended to be subject to deferred taxation.

AUSTRIA

Notifications

Exchange Control Information. You understand that if you hold shares of Stock acquired under the Plan outside of Austria, you will be required to submit reports to the Austrian National Bank on a quarterly basis if the value of the shares of Stock as of any given quarter meets or exceeds €5,000,000. If quarterly reporting is required, the reports must be filed on or before the 15th day of the month following the last day of the respective quarter.

When shares of Stock are sold or a dividend is paid on the shares of Stock, you understand that you may have exchange control obligations if you hold the cash proceeds outside Austria. If the transaction volume of all of your accounts abroad meets or exceeds €10,000,000, you understand that you must report the movements and balances of all accounts on a monthly basis, as of the last day of the month, on or before the 15th day of the following month.

BELGIUM

Notifications

Foreign Account / Assets Reporting Information. If you are a Belgian resident, you are required to report any taxable income attributable to the grant of the Restricted Stock Units on your annual tax return. In addition, you are required to report any security (e.g., shares of Stock acquired under the Plan) or bank accounts (including brokerage accounts) opened and maintained outside Belgium on your annual tax return. You also are required to complete a separate report providing the Central Contact Point of the National Bank of Belgium with details regarding any such

account, including the account number, the name of the bank in which such account is held and the country in which such account is located the first time you report the foreign security and/or bank account on your annual tax return. The forms to complete this report are available on the website of the National Bank of Belgium.

BRAZIL

Terms and Conditions

Compliance with the Law. In accepting the grant of the Restricted Stock Units, you acknowledge your agreement to comply with applicable Brazilian laws and to pay any and all applicable tax associated with the vesting of the Restricted Stock Units and the sale of any shares of Stock acquired under the Plan and the receipt of any dividends.

Acknowledgment of Nature of Grant. The following provision supplements the Nature of Grant section of the Agreement:

By participating in the Plan, you acknowledge, understand and agree that (i) you are making an investment decision and (ii) the value of the shares of Stock is not fixed and may increase or decrease in value without compensation to you.

Notifications

Exchange Control Information. If you hold assets and rights outside Brazil with an aggregate value exceeding a certain threshold, you will be required to prepare and submit to the Central Bank of Brazil an annual declaration of such assets and rights, including: (i) bank deposits; (ii) loans; (iii) financing transactions; (iv) leases; (v) direct investments; (vi) portfolio investments, including shares of Stock acquired under the Plan; (vii) financial derivatives investments; and (viii) other investments, including real estate and other assets. Please note that foreign individuals holding Brazilian visas are considered Brazilian residents for purposes of this reporting requirement and must declare at least the assets held abroad that were acquired subsequent to the date of admittance as a resident of Brazil. Individuals holding assets and rights outside Brazil valued at less than the relevant threshold are not required to submit a declaration.

CANADA

Terms and Conditions

Restricted Stock Units Payable Only in Shares of Stock. Notwithstanding any discretion in the Plan or the Agreement to the contrary, Restricted Stock Units granted in Canada shall be paid in shares of Stock only and do not provide any right for you to receive a cash payment.

Canadian Securities Laws

You acknowledge and confirm that your participation in the Plan and entering into of this Agreement is voluntary and not induced by expectation of (a) employment or continued employment, if you are an employee, (b) employment or appointment or continued employment or appointment, if you are an officer, or (c) engagement to provide services or continued engagement to provide services, if you are a consultant. Furthermore, if you are a consultant you also acknowledge and confirm that you are engaged to provide services to the Company or an Affiliate under a written contract with the Company or an Affiliate and spend or will spend a significant amount of time and attention on the business and affairs of the Company or an Affiliate.

Termination Date

Notwithstanding the terms of the Plan or Agreement, for the purposes of determining the date your Service with the Company, the Employer, or any Affiliate terminates (whether for cause or not, or due to death, disability or

otherwise) and your entitlements thereafter, termination of Service shall mean the date at the end of the applicable statutory notice period (if any), but shall not include any period of notice at common law.

The following provisions will apply if you are a resident of Quebec:

Language Consent. The parties acknowledge that it is their express wish that the Agreement, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English.

Les parties reconnaissent avoir exigé la rédaction en anglais de cette convention, ainsi que de tous documents, avis et procédures judiciaires, exécutés, donnés ou intentés en vertu de, ou liés directement ou indirectement à, la présente convention.

Data Privacy. This provision supplements the Data Privacy section of the Agreement:

You hereby authorize the Company and the Company's representatives to discuss with and obtain all relevant information from all personnel, professional or not, involved in the administration and operation of the Plan. You further authorize the Company, the Employer, any Affiliate and the administrator of the Plan to disclose and discuss the Plan with their advisors. You further authorize the Company, the Employer, any Affiliate and the administrator of the Plan to record such information and to keep such information in your employee file. Please note that the governments or law enforcement agencies of a foreign jurisdiction where the Company processes, stores or transfers data may be able to access your data through the laws of that jurisdiction. You acknowledge and agree that your personal information, including any sensitive personal information, may be transferred or disclosed outside the province of Quebec, including to the U.S. If applicable, you also acknowledge and authorize the Company, the Company's subsidiaries and affiliates, the administrator of the Plan and any third-party brokers/administrators that are assisting the Company with the operation and administration of the Plan to use technology for profiling purposes and to make automated decisions that may have an impact on you or the administration of the Plan.

Notifications

Securities Law Information. You are permitted to sell shares of Stock acquired through the Plan through the designated broker appointed under the Plan, if any, provided the resale of shares of Stock acquired under the Plan takes place outside of Canada through the facilities of a stock exchange on which the Stock is listed. Currently, the Stock is listed on the New York Stock Exchange.

Foreign Account / Assets Reporting Information. Foreign property, including Restricted Stock Units, shares of Stock acquired under the Plan and other rights to receive shares (e.g., Restricted Stock Units) of a non-Canadian company held by a Canadian resident must generally be reported annually on a Form T1135 (Foreign Income Verification Statement) if the total cost of the foreign property exceeds C\$100,000 at any time during the year. Thus, such Restricted Stock Units must be reported - generally at a nil cost - if the C\$100,000 cost threshold is exceeded because other foreign property is held by you. When shares of Stock are acquired, their cost generally is the adjusted cost base ("ACB") of the shares. The ACB would ordinarily equal the fair market value of the shares at the time of acquisition, but if you own other shares of the same company, this ACB may have to be averaged with the ACB of the other shares. You should consult with your personal tax advisor to determine your reporting requirements.

COLOMBIA

Terms and Conditions

Acknowledgment of Nature of Grant. The following provision supplements the Nature of Grant section of the Agreement:

You acknowledge that pursuant to Article 128 of the Colombian Labor Code, the Plan and related benefits do not constitute a component of your “salary” for any legal purpose. To this extent, they will not be included and/or considered for purposes of calculating any and all labor benefits, such as legal/fringe benefits, vacations, indemnities, payroll taxes, social insurance contributions and/or any other labor-related amount which may be payable.

Notifications

Exchange Control Information. Investments in assets located abroad (including shares of Stock) are subject to registration with the Central Bank (Banco de la República) if your aggregate investments held abroad (as of December 31 of the applicable calendar year) equal or exceed US\$500,000. Further, when shares of Stock (or other investments) held abroad are sold, you may either choose to keep the resulting sums abroad, or to repatriate them to Colombia. If you choose to repatriate funds to Colombia and have not registered the investment with Banco de la República, you will need to file with Banco de la República Form No. 5 upon conversion of funds into local currency, which should be duly completed to reflect the nature of the transaction. If you have registered the investment with Banco de la República, then you will need to file with Banco de la República Form No. 4 upon conversion of funds into local currency, which should be duly completed to reflect the nature of the transaction. You should obtain proper legal advice in order to ensure compliance with applicable Colombian regulations.

DENMARK

Terms and Conditions

Stock Options Act. You acknowledge that you received an Employer Statement in Danish which sets forth the terms of your Restricted Stock Units under the Act on Stock Options.

FRANCE

Terms and Conditions

Tax Information. The Restricted Stock Units are not intended to be French tax-qualified Awards.

Language Consent. By signing and returning this Agreement, you confirm having read and understood the documents relating to the Plan which were provided to you in the English language. You accept the terms of those documents accordingly.

En signant et renvoyant ce Contrat vous confirmez ainsi avoir lu et compris les documents relatifs au Plan qui vous ont été communiqués en langue anglaise. Vous en acceptez les termes en connaissance de cause.

Notifications

Foreign Account / Assets Reporting Information. You may hold shares of Stock acquired under the Plan outside of France provided that you declare all foreign accounts, whether open, current, or closed in your income tax return. Failure to comply could trigger significant penalties.

GERMANY

Exchange Control Information. Cross-border payments in excess of €12,500 in connection with the sale of securities (including shares of Stock acquired under the Plan) must be reported to the German Federal Bank (*Bundesbank*) by the fifth day of the month following the month in which the payment is received or made. If you acquire shares of Stock with a value in excess of €12,500, the Employer will report the acquisition of such shares of Stock to the German Federal Bank. If you otherwise make or receive a payment in excess of €12,500, and/or if the Company withholds shares of Stock with a value in excess of €12,500 to recover taxes due by you in connection

with your Award, you must report the payment and/or the value of the shares of Stock received and/or withheld to Bundesbank electronically using the "General Statistics Reporting Portal" ("*Allgemeines Meldeportal Statistik*") available via Bundesbank's website (www.bundesbank.de). You should consult with your personal advisor(s) regarding any personal legal, regulatory or foreign exchange obligations you may have in connection with your participation in the Plan.

Notifications

Foreign Account / Assets Reporting Information. If your acquisition of shares of Stock under the Plan leads to a "qualified participation" at any point during the calendar year, you will need to report the acquisition of shares of Stock when you file your tax return for the relevant year. A qualified participation is attained if (i) the shares held exceed 1% of the Company's total Stock and the value of the shares acquired exceeds €150,000 or (ii) the shares held exceed 10% of the Company's total Stock. You should consult with your personal tax advisor to ensure you comply with applicable reporting obligations.

GREECE

There are no country-specific provisions.

HONG KONG

Terms and Conditions

Sale of Shares. Shares of Stock received at vesting are accepted as a personal investment. If the Award vests within six months of the Grant Date, you agree that you will not dispose of the shares of Stock acquired prior to the six-month anniversary of the Grant Date.

Securities Law Information. Warning: The contents of this document have not been reviewed by any regulatory authority in Hong Kong. You are advised to exercise caution in relation to the offer. If you are in any doubt about any of the contents of the Agreement or the Plan, you should obtain independent professional advice. Neither the grant of the Restricted Stock Units nor the issuance of shares of Stock upon vesting constitutes a public offering of securities under Hong Kong law and are available only to employees, directors or consultants of the Company, the Employer or an Affiliate. The Agreement, the Plan and other incidental communication materials (i) have not been prepared in accordance with and are not intended to constitute a "prospectus" for a public offering of securities under the applicable securities legislation in Hong Kong and (ii) are intended only for the personal use of each eligible employee, director or consultant of the Company, the Employer or an Affiliate and may not be distributed to any other person.

Notifications

Nature of Scheme. The Company specifically intends that the Plan will not be an occupational retirement scheme for purposes of the Occupational Retirement Schemes Ordinance ("ORSO"). Notwithstanding the foregoing, if the Plan is deemed to constitute an occupational retirement scheme for the purposes of ORSO, the grant of the Restricted Stock Units shall be void.

INDIA

Notifications

Exchange Control Information. You understand that you must repatriate any cash dividends paid on shares of Stock acquired under the Plan and any proceeds from the sale of such shares to India within a certain period of time after receipt of the proceeds. You will receive a foreign inward remittance certificate ("FIRC") from the bank where you

deposit the foreign currency. You should maintain the FIRC as evidence of the repatriation of funds in the event the Reserve Bank of India or your Employer requests proof of repatriation. You may be required to provide information regarding funds received from participation in the Plan to the Company and/or the Employer to enable them to comply with their filing requirements under exchange control laws in India. You are personally responsible for complying with exchange control laws in India, and neither the Company nor the Employer will be liable for any fines or penalties resulting from your failure to comply with applicable laws.

Foreign Asset / Account Reporting. You are required to declare the following items in your annual tax return: (i) any foreign assets held by you (including shares of Stock acquired under the Plan), and (ii) any foreign bank accounts for which you have signing authority. It is your responsibility to comply with applicable tax laws in India. You should consult with your personal tax advisor to ensure that you are properly reporting your foreign assets and bank accounts.

INDONESIA

Terms and Conditions

Language Consent. By accepting the Award, you (i) confirm having read and understood the documents relating to the Award (i.e., the Plan and the Agreement) which were provided in the English language, (ii) accept the terms of those documents accordingly, and (iii) agree not to challenge the validity of this document based on Law No. 24 of 2009 on National Flag, Language, Coat of Arms and National Anthem or the implementing Presidential Regulation (when issued).

Persetujuan Bahasa. Dengan menerima Pemberian, anda (i) memberikan konfirmasi bahwa anda telah membaca dan memahami dokumen-dokumen berkaitan dengan Pemberian ini (yaitu, Program dan Perjanjian) yang disediakan dalam Bahasa Inggris, (ii) menerima persyaratan di dalam dokumen-dokumen tersebut, dan (iii) setuju untuk tidak mengajukan keberatan atas keberlakuan dari dokumen ini berdasarkan Undang-Undang No. 24 Tahun 2009 tentang Bendera, Bahasa dan Lambang Negara serta Lagu Kebangsaan ataupun Peraturan Presiden sebagai pelaksanaannya (ketika diterbitkan).

Notifications

Exchange Control Information. For foreign currency transactions exceeding US\$25,000, the document(s) underlying that transaction will have to be submitted to the relevant local bank. If Indonesian residents repatriate funds (e.g., proceeds from the sale of shares of Stock acquired under the Plan) into Indonesia, the Indonesian bank through which the transaction is made will submit a report of the transaction to the Bank of Indonesia. For transactions of US\$10,000 or more (or its equivalent in other currency), a more detailed description of the transaction must be included in the report and Indonesian residents may be required to provide information about the transaction to the bank in order to complete the transaction.

In addition, if there is a change of position (i.e., sale of shares) in any foreign assets you holds (including shares of Stock acquired under the Plan), Indonesian residents must report this change to the Bank of Indonesia no later than the 15th day of the month following the change in position.

Foreign Account / Assets Reporting Information. Indonesian residents have the obligation to report worldwide assets (including foreign accounts and shares of Stock acquired under the Plan) in their annual individual income tax return.

IRELAND

Notifications

Director Notification Information. If you are a director, shadow director, or secretary of an Irish Affiliate, pursuant to the Companies Act 2014, you must (a) notify that Affiliate in writing if you receive or dispose of an interest exceeding in the aggregate 1% of the share capital of the Company (e.g., Restricted Stock Units, shares of Stock or debenture), (b) if you become aware of the event giving rise to the notification requirement, or (c) if you become a director or secretary if such an interest exceeding 1% in the aggregate of the share capital of the Company exists at the time. This notification requirement also applies with respect to the interests of a spouse, civil partner, or minor children (whose interests will be attributed to the director, shadow director, or secretary). You should consult your personal legal advisor to ensure compliance with the applicable requirements.

ISRAEL

Terms and Conditions

The following provisions apply to Grantees who are in Israel on the Grant Date.

Trustee Arrangement. You understand and agree that the grant of Restricted Stock Units is offered subject to and in accordance with the terms of the Plan, the Israeli Subplan to the Plan (the "Subplan"), a copy of which is attached to the end of this Appendix B, under the 102 Capital Gains Track (as defined in the Subplan), the Trust Agreement among the trustee appointed by the Company or its Israeli Subsidiary, and the Agreement, including this Appendix B. You understand that the rights and the Restricted Stock Units granted under the Agreement are subject to the terms and provisions of Section 102(b)(2) of the Israel Tax Ordinance and its related rules and hereby accept such rights and the Restricted Stock Units subject to such terms and provisions. You acknowledge that your holding, sale and transfer of shares of Stock to be issued upon settlement, as well as any additional rights are therefore subject to various restrictions and limitations that are imposed by such section and its related rules, of which you are aware and with which you agree to comply.

Nature of Award. By accepting the Restricted Stock Units, you understand and agree that the grant of Restricted Stock Units is offered subject to and in accordance with the Subplan and is intended to be a 102 Capital Gains Track Grant (as defined in the Subplan). Notwithstanding the foregoing, the Company does not undertake to maintain the qualified status of the Restricted Stock Units and you acknowledge that you will not be entitled to damages of any kind if the Restricted Stock Units become disqualified and no longer qualify as a 102 Capital Gains Track Grant. Notwithstanding any provision of the Award Agreement, in the event of any inconsistencies between the Subplan, the Agreement and/or the Plan, the terms of the Subplan will govern. Further, to the extent requested by the Company or the Employer, you agree to execute any letter or other agreement in connection with the grant of the Restricted Stock Units or any future grants under the Subplan. If you fail to comply with such request, the Restricted Stock Units may not qualify as a 102 Capital Gains Track Grant.

Confirmation Letter. In connection with the grants made under the Israeli Subplan to the Plan, you must acknowledge having read and specifically accepted the terms and conditions of the Section 102 Capital Gains Award Confirmation Letter provided on the following page.

Vesting. You understand and agree that you will not require the Trustee to release or sell the shares of Stock during the Required Holding Period (as defined in the Subplan), unless permitted under Israeli tax law.

Restriction on Transfer. The Trustee shall not alienate, sell, exchange, transfer, assign, pledge, or otherwise encumber the Restricted Stock Units or the shares of Stock for you except as permitted under the Subplan and the terms of Section 102, or in the case of death, your heirs, except by will or by laws of descent and distribution.

The following provisions apply to Participants who transfer into Israel after the Grant Date.

Mandatory Sale Restriction. To facilitate compliance with local tax requirements, you agree to the sale of any shares of Stock to be issued to you upon vesting. The sale will occur (i) immediately upon vesting, (ii) following your termination of Service, or (iii) within any other time frame as the Company determines to be necessary to comply with local tax requirements. You further agree that the Company is authorized to instruct its designated broker to assist with the mandatory sale of such shares of Stock (on your behalf pursuant to this authorization) and you expressly authorize the Company's designated broker to complete the sale of such shares of Stock. You acknowledge that the Company's designated broker is under no obligation to arrange for the sale of the shares of Stock at any particular price. Upon the sale of the shares of Stock, the Company agrees to pay you the cash proceeds from the sale, less any brokerage fees or commissions and subject to any obligation to satisfy the Tax-Related Items.

You further agree that any shares of Stock to be issued to you shall be deposited directly into an account with the Company's designated broker. The deposited shares of Stock shall not be transferable (either electronically or in certificate form) from the brokerage account. This limitation shall apply both to transfers to different accounts with the same broker and to transfers to other brokerage firms. The limitation shall apply to all shares of Stock issued to you under the Plan, whether or not you remain in Service.

Notifications

Securities Law Information. This grant does not constitute a public offering under the Securities Law, 1968.

Confirmation Letter- 102 Capital Gains Awards

You undertake and confirm the following, pursuant to the Capital Gain Track under Section 102(b)(2) or 102(b)(3) of the Israeli Income Tax Ordinance and any regulations and rules promulgated thereunder ("Section 102"), with respect to any Restricted Stock Units granted pursuant to this Agreement under the Plan.

1. You understand and accept the provisions of Section 102 in general, and the tax arrangement under the Capital Gain Track in particular, and its tax consequences, as they apply to the Restricted Stock Units.
2. You agree that the Restricted Stock Units and any shares of Stock or rights that may be issued upon vesting of the Restricted Stock Units (or otherwise in relation to the Restricted Stock Units), will be held by a trustee appointed pursuant to Section 102 (the "Trustee") for at least the duration of the Holding Period, as defined in Section 102, and you hereby confirm that you shall not release from trust and/or sell such Restricted Stock Units, shares of Stock or rights, before the end of the Holding Period. You understand that any release of such Restricted Stock Units, shares of Stock or rights from trust, or any sale of any of them prior to the termination of the Holding Period, will result in taxation at marginal tax rates, in addition to deductions of appropriate social security, health tax contributions or other compulsory payments.
3. You understand that the grant of the Restricted Stock Units is subject to the receipt of all required approvals from the Israeli Tax Authority and compliance with the requirements of Section 102.
4. You agree to be bound by the provisions of the Company's trust agreement with the Trustee, ESOP Management and Trust Services Ltd., which holds the Restricted Stock Units for your benefit.
5. You hereby confirm that you have: (i) read and understood this letter; (ii) received all the clarifications and explanations that you requested; and (iii) had the opportunity to consult with your advisers before accepting the Restricted Stock Units.

Acceptance by Grantee

You acknowledge that, as a condition of accepting the award of Restricted Stock Units and/or participating in the Plan, by electronically accepting the Restricted Stock Units, you agree to be bound by the terms of this letter.

ITALY

Terms and Conditions

Plan Document Acknowledgment. By accepting the Restricted Stock Units, you acknowledge that you have received and reviewed a copy of the Plan, the Agreement and this Appendix B in their entirety and fully accept all provisions thereof. You further acknowledge that you have read and specifically and expressly approve the following provisions of the Agreement: Restricted Stock Unit Transferability; Vesting; Share Delivery; Vested Restricted Stock Units; Tax-Related Items; Forfeiture of Unvested Restricted Stock Units; Retention Rights; Shareholder Rights; Nature of Grant; Applicable Law and Venue; Language; Electronic Delivery and Acceptance; Severability; Imposition of Other Requirements and the Data Privacy section included in this Appendix B.

Notifications

Foreign Account / Assets Reporting Information. If you are an Italian resident and hold investments or financial assets outside of Italy (e.g., cash, Restricted Stock Units, shares of Stock) during any fiscal year which may generate income taxable in Italy (or if you are the beneficial owner of such an investment or asset even if you do not directly hold the investment or asset), you are required to report such investments or assets on your annual tax return for such fiscal year (on UNICO Form, RW Schedule, or on a special form if you are not required to file a tax return).

JAPAN

Notifications

Foreign Account / Assets Reporting Information. You are required to report details of any assets held outside of Japan as of December 31st (including shares of Stock acquired under the Plan), to the extent such assets have a total net fair market value exceeding ¥50 million. Such report will be due by March 15th each year. You should consult with your personal tax advisor as to whether the reporting obligation applies to you and whether you will be required to report details of your outstanding Restricted Stock Units, as well as shares of Stock, in the report.

KOREA

Notifications

Domestic Broker Requirement for Selling Shares. Korean residents are not permitted to sell foreign securities (including shares of Stock) through non-Korean brokers (such as E*TRADE Financial Corporate Services) or deposit funds resulting from the sale of shares of Stock in an account with an overseas financial institution. If you wish to sell shares of Stock acquired under the Plan, you may be required to transfer the shares of Stock to a domestic investment broker in Korea and to effect the sale through such broker. You are solely responsible for engaging the domestic broker in Korea, and non-compliance with the requirement to sell shares of Stock through a domestic broker can result in significant penalties. You should consult with your personal advisor(s) regarding any personal legal, regulatory or foreign exchange obligations you may have in connection with your participation in the Plan.

Foreign Asset / Account Reporting. Korean residents must declare all foreign financial accounts (e.g., non-Korean bank accounts, brokerage accounts holding shares of Stock, etc.) in countries that have not entered into an "inter-governmental agreement for automatic exchange of tax information" with Korea to the Korean tax authority and file a report with respect to such accounts if the value of such accounts exceeds KRW 500 million (or an equivalent amount in foreign currency). You should consult your personal tax advisor regarding reporting requirements in

Korea, including whether or not there is an applicable inter-governmental agreement between Korea and any other country where you may hold shares of Stock or cash acquired in connection with the Plan.

MALAYSIA

Notifications

Director Notification Obligation. If you are a director of the Company's Malaysian Affiliate, you are subject to certain notification requirements under the Malaysian Companies Act. Among these requirements is an obligation to notify the Malaysian Subsidiary in writing when you receives or disposes of an interest (e.g., Restricted Stock Units or shares of Stock) in the Company or any related company. Such notifications must be made within fourteen (14) days of receiving or disposing of any interest in the Company or any related company.

MEXICO

Terms and Conditions

Acknowledgement of the Agreement. By accepting the Restricted Stock Units, you acknowledge that you have received a copy of the Plan and the Agreement, including this Appendix B, which you have reviewed. You further acknowledge that you accept all the provisions of the Plan and the Agreement, including this Appendix B. You also acknowledge that you have read and specifically and expressly approve the terms and conditions set forth in the "Nature of Grant" section of the agreement, which clearly provide as follows:

- (1) Your participation in the Plan does not constitute an acquired right;
- (2) The Plan and your participation in the Plan are offered by the Company on a wholly discretionary basis;
- (3) Your participation in the Plan is voluntary; and
- (4) The Company and its Affiliates are not responsible for any decrease in the value of any shares of Stock acquired at vesting of the Restricted Stock Units.

Labor Law Acknowledgement and Policy Statement. By accepting the Restricted Stock Units, you acknowledge that Ciena Corporation, with registered offices at 7035 Ridge Road, Hanover, Maryland 21076, U.S.A., is solely responsible for the administration of the Plan. You further acknowledge that your participation in the Plan, the grant of Restricted Stock Units and any acquisition of shares of Stock under the Plan do not constitute a Service relationship between you and the Company because you are participating in the Plan on a wholly commercial basis and your sole employer is Ciena Communications Mexico S.A. de C.V. or Ciena Mexico S.A. de C.V. ("Ciena-Mexico"). Based on the foregoing, you expressly acknowledge that the Plan and the benefits that you may derive from participation in the Plan do not establish any rights between you and Ciena-Mexico, and do not form part of the employment conditions and/or benefits provided by Ciena-Mexico, and any modification of the Plan or its termination shall not constitute a change or impairment of the terms and conditions of the Service relationship between you and the Employer.

You further understand that your participation in the Plan is the result of a unilateral and discretionary decision of the Company, therefore, the Company reserves the absolute right to amend and/or discontinue your participation in the Plan at any time, without any liability to you.

Finally, you hereby declare that you do not reserve any action or right to bring any claim against the Company or any Affiliate for any compensation or damages regarding any provision of the Plan or the benefits derived under the Plan, and that you therefore grant a full and broad release to the Company, its Affiliates, branches, representation offices, shareholders, officers, agents and legal representatives, with respect to any claim that may arise.

Términos y Condiciones.

Reconocimiento del Contrato. Al aceptar las Acciones usted reconoce que ha recibido una copia del Plan y del Contrato, incluyendo el presente Anexo A, el cuál ha sido revisado por usted. Asimismo usted acepta todas y cada una de las condiciones del Plan y del Contrato, así como del presente Anexo A. Usted también acepta que ha leído y aprobado en todos y cada uno de sus términos lo establecido en el apartado de "Naturaleza del Otorgamiento" del Contrato, el cuál claramente establece que:

(1) Su participación en el Plan no constituye un derecho adquirido;

(2) El Plan y su participación en el mismo son ofrecidos por la Empresa sobre una base enteramente discrecional;

(3) Su participación en el Plan es voluntaria; y

(4) La Empresa y sus Afiliadas no son responsables por cualquier descenso en el valor de las Acciones adquiridas al momento de maduración de dichas Acciones.

Reconocimiento de la Ley Laboral y Condiciones de la Política. Al aceptar las Acciones, usted reconoce que Ciena Corporation, con oficinas registradas en 7035 Ridge Road, Hanover, Maryland 21076, E.E.U.U., es la única responsable de la administración del Plan. Asimismo usted reconoce que su participación en el Plan, el otorgamiento de Acciones y cualquier adquisición de Capital bajo el Plan no constituye una relación de Servicios entre usted y la Empresa, ya que usted está participando en el Plan sobre una base netamente comercial, y su único y exclusivo patrón lo es Ciena Communications México, S.A. de C.V. ó Ciena México, S.A. de C.V. ("Ciena-México").

En relación con lo anterior, usted expresamente reconoce que el Plan y los beneficios que deriven de su participación en el mismo no establecen o constituyen ningún derecho entre usted y Ciena-México, y tampoco forman parte de sus condiciones de trabajo y/o beneficios o prestaciones otorgadas por Ciena-México, y cualquier modificación al Plan o la terminación del mismo no generarán cambios o impedimentos a los términos y condiciones de la relación de Servicios entre usted y su Patrón.

Asimismo usted acepta que su participación en el Plan es el resultado de una decisión unilateral y discrecional de la Empresa, por lo tanto la Empresa se reserva el derecho para modificar y/o discontinuar su participación en el Plan en cualquier momento, y sin que lo anterior le ocasione un perjuicio a usted.

Finalmente, usted declara y acepta que no se reserva acción o derecho alguno que ejercitar con posterioridad en contra de la Empresa o cualquier Afiliada por alguna compensación o daños y perjuicios relacionado con alguna cláusula del Plan o de los beneficios derivados del mismo, por lo que en este acto usted otorga el más amplio finiquito que en derecho proceda en favor de la Empresa, sus Afiliadas, sucursales, oficinas de representación, accionistas, agentes y representantes legales, en relación con cualquier posible contingencia que pudiera derivarse del presente.

Notifications

Securities Law Information. The Restricted Stock Units and any shares of Stock acquired under the Plan have not been registered with the National Register of Securities maintained by the Mexican National Banking and Securities Commission and cannot be offered or sold publicly in Mexico. In addition, the Plan, the Agreement and any other document relating to the Restricted Stock Units may not be publicly distributed in Mexico. These materials are addressed to you because of your existing relationship with the Company or an Affiliate,

and these materials should not be reproduced or copied in any form. The offer contained in these materials does not constitute a public offering of securities, but rather constitutes a private placement of securities addressed specifically to individuals who are present employees of Ciena-Mexico made in accordance with the provisions of the Mexican Securities Market Law, and any rights under such offering shall not be assigned or transferred.

NETHERLANDS

There are no country-specific provisions.

NEW ZEALAND

Notifications

Securities Law Information. Warning: This is an offer of rights to receive shares of Stock underlying the Restricted Stock Units. Restricted Stock Units give employees a stake in the ownership of the Company. You may receive a return if dividends are paid on the shares of Stock.

If the Company runs into financial difficulties and is wound up, you will be paid only after all creditors and holders of preferred shares have been paid. You may lose some or all of your investment.

New Zealand law normally requires people who offer financial products to give information to investors before they invest. This information is designed to help investors to make an informed decision. The usual rules do not apply to this offer because it is made under an employee share scheme. As a result, you may not be given all the information usually required. You will also have fewer other legal protections for this investment.

You should ask questions, read all documents carefully, and seek independent financial advice before committing himself or herself.

In addition, you are hereby notified that the documents listed below are available for review on the Company's "Investor Relations" website at <http://investor.ciena.com>, in your online E*TRADE account, as applicable:

- (i) this Agreement, which together with the Plan sets forth the terms and conditions of participation in the Plan;
- (ii) a copy of the Company's most recent annual report (i.e., Form 10-K);
- (iii) a copy of the Company's most recent published financial statements;
- (iv) a copy of the Plan; and
- (v) a copy of the Plan Prospectus.

A copy of the above documents will be sent to you free of charge on written request to People & Culture.

As noted above, you should carefully read the materials provided before making a decision whether to participate in the Plan. In addition, you should contact your tax advisor for specific information concerning your personal tax situation with regard to Plan participation.

NORWAY

There are no country-specific provisions.

POLAND

Notifications

Exchange Control Information. Polish residents are obligated to transfer funds via bank accounts if the transferred amount in a particular transaction exceeds PLN 15,000. Polish residents are required to store the documents connected with foreign exchange transactions for a period of five years, as measured from the end of the year in which such transaction occurred.

Polish residents holding foreign securities (including shares of Stock) and/or maintaining accounts abroad must report information to the National Bank of Poland. Polish residents holding foreign securities will be required to file quarterly reports with information on transactions and balances regarding foreign securities if the value (calculated individually or together with other assets/liabilities possessed abroad) exceeds PLN 7 million. The reports must be filed on special forms available on the website of the National Bank of Poland. You are responsible for complying with all applicable exchange control regulations.

PORTUGAL

Terms and Conditions

Language Consent. You hereby expressly declare that you have full knowledge of the English language and have read, understood and fully accepted and agreed with the terms and conditions established in the Plan and the Agreement.

Conhecimento da Lingua. Você pelo presente instrumento, declara expressamente que tem pleno conhecimento da língua inglesa e que leu, compreendeu e livremente aceitou e concordou com os termos e condições estabelecidas no Plano e no Acordo.

SAUDI ARABIA

Notifications

Securities Law Information. This Appendix B, the Agreement and any other Plan materials related to the grant of Restricted Stock Units under the Plan, may not be distributed in the Kingdom except to such persons as are permitted under the Offers of Securities Regulations issued by the Capital Market Authority.

The Capital Market Authority does not make any representation as to the accuracy or completeness of the Agreement including this Appendix B, the Plan or any other document relating to the offer of Restricted Stock Units under the Plan, and expressly disclaims any liability whatsoever for any loss arising from, or incurred in reliance upon, any part of the Agreement including this Appendix B, the Plan or any other document relating to the offer of Restricted Stock Units under the Plan. You are hereby advised to conduct your own due diligence on the accuracy of the information relating to the securities. If you do not understand the contents of the Agreement including this Appendix B or any other document relating to the offer of Restricted Stock Units under the Plan, you should consult an authorized financial advisor.

SINGAPORE

Terms and Conditions

Restrictions on Sale and Transferability. You hereby agree that any shares of Stock acquired pursuant to the Restricted Stock Units will not be offered for sale in Singapore prior to the six-month anniversary of the Grant Date,

unless such sale or offer is made pursuant to the exemption under Part XIII Division I Subdivision (4) (other than section 280) of the Securities and Futures Act (Chap. 289, 2006 Ed.) (“SFA”).

Notifications

Securities Law Information. The grant of the Restricted Stock Units is being made pursuant to the “Qualifying Person” exemption” under section 273(1)(f) of the SFA on which basis it is exempt from the prospectus and registration requirements under the SFA and the grant of the Restricted Stock Units is not made to you with a view to the shares of Stock being subsequently offered for sale to any other party. The Plan has not been lodged or registered as a prospectus with the Monetary Authority of Singapore.

Director Notification Requirement. The directors, associate directors or shadow directors of a Singapore Affiliate are subject to certain notification requirements under the Singapore Companies Act. Specifically, such directors must notify the Singapore Affiliate in writing of an interest (e.g., Restricted Stock Units, shares of Stock, etc.) in the Company or any related company within two business days of (i) its acquisition or disposal, (ii) any change in a previously-disclosed interest (e.g., upon vesting of Restricted Stock Units or when shares of Stock acquired under the Plan are subsequently sold), or (iii) becoming a director.

SPAIN

Terms and Conditions

Acknowledgment of Nature of Grant. The following provision supplements the Nature of Grant section of the Agreement:

In accepting the Restricted Stock Units, you consent to participate in the Plan and acknowledge that you have received a copy of the Plan, the Agreement and this Appendix B.

You understand that the Company has unilaterally, gratuitously and in its sole discretion decided to grant Restricted Stock Units under the Plan to individuals who may be Service Providers of the Company or any Affiliate throughout the world. The decision is a limited decision that is entered into upon the express assumption and condition that any grant will not economically or otherwise bind the Company or any Affiliate. Consequently, you understand that the Restricted Stock Units are granted on the assumption and condition that the Restricted Stock Units and any shares of Stock issued upon vesting of the Restricted Stock Units are not part of any employment contract (either with the Company or any Affiliate) and shall not be considered a mandatory benefit, salary for any purposes (including severance compensation) or any other right whatsoever. Further, you understand that the Restricted Stock Units would not be granted to you but for the assumptions and conditions referred to herein; thus, you acknowledge and freely accept that should any or all of the assumptions be mistaken or should any of the conditions not be met for any reason, then the grant of the Restricted Stock Units and any right to the Restricted Stock Units shall be null and void.

You understand and agree that, as a condition of the grant of the Restricted Stock Units and unless otherwise provided for in the Agreement, the termination of your status as a Service Provider for any reason (including the reasons below) will automatically result in the loss of the Restricted Stock Units to the extent the Restricted Stock Units have not vested as of the date you are no longer actively providing Service to the Company or the Employer. In particular, you understand and agree that, except in the case of termination of Service due to death, disability or Retirement, any unvested Restricted Stock Units as of the date you are no longer actively providing Service will be forfeited without entitlement to the underlying shares of Stock or to any amount of indemnification in the event of a termination of your status as a Service Provider by reason of, but not limited to, resignation, disciplinary dismissal adjudged to be with cause, disciplinary dismissal adjudged or recognized to be without cause (i.e., subject to a “despido improcedente”), individual or collective dismissal adjudged or recognized to be without cause, individual or collective dismissal on objective grounds, whether adjudged or recognized to be with or without cause, material modification of the terms of employment under Article 41 of the Workers’ Statute, relocation under Article 40 of

the Workers' Statute, Article 50 of the Workers' Statute, unilateral withdrawal by the Employer and under Article 10.3 of the Royal Decree 1382/1985. You acknowledge that you have read and specifically accept the conditions referred to in the following provisions of the Agreement: Vesting, Share Delivery; Vested Restricted Stock Units, Tax-Related Items and Nature of Grant.

Notifications

Exchange Control Information. To participate in the Plan, you agree to comply with exchange control regulations in Spain. If you hold 10% or more of the share capital of the Company or such other amount that would entitle you to join the Board, the acquisition of shares of Stock under the Plan must be declared for statistical purposes to the Dirección General de Comercio e Inversiones (the "DGCI"). Because you will not acquire the shares of Stock through the use of a Spanish financial institution, you agree to make the declaration by filing a D-6 form with the DGCI. Generally, the D-6 form must be filed each January while the shares of Stock are owned. In addition, the sale of shares of Stock must also be declared on D-6 form filed with the DGCI in January, unless the sale proceeds exceed the applicable threshold (currently €1,502,530), in which case, the filing is due within one month after the sale.

In addition, you may be required to electronically declare to the Bank of Spain any foreign accounts (including brokerage accounts held abroad), any foreign instruments (including shares of Stock acquired under the Plan), and any transactions with non-Spanish residents (including any payments of shares of Stock made pursuant to the Plan), depending on the balances in such accounts together with the value of such instruments as of December 31 of the relevant year, or the volume of transactions with non-Spanish residents during the relevant year.

Foreign Account / Assets Reporting Information. To the extent that you hold rights or assets (e.g., cash or shares of Stock held in a bank or brokerage account) outside of Spain with a value in excess of €50,000 per type of right or asset (e.g., shares of Stock, cash, etc.) as of December 31 each year, you are required to report information on such rights and assets on your tax return for such year. After such rights or assets are initially reported, the reporting obligation will only apply for subsequent years if the value of any previously-reported rights or assets increases by more than €20,000 or if you transfer or dispose of any previously-reported rights or assets. The reporting must be completed by March 31. Failure to comply with this reporting requirement may result in penalties. Accordingly, you are advised to consult with your personal tax and legal advisors to ensure that you are properly complying with your reporting obligations.

SWEDEN

Terms and Conditions

Authorization to Withhold. This provision supplements the Share Delivery; Vested Restricted Stock Units, Tax-Related Items section of the Agreement:

Without limiting the authority of the Company and/or the Employer to satisfy their withholding obligations for Tax-Related Items as set forth in the Share Delivery; Vested Restricted Stock Units, Tax-Related Items section of the Agreement, by participating in the Plan, you authorize the Company to withhold shares or arrange for the sale of shares of Stock otherwise deliverable to you upon vesting/settlement of the Restricted Stock Units to satisfy Tax-Related Items, regardless of whether the Company and/or the Employer have an obligation to withhold such Tax-Related Items.

SWITZERLAND

Notifications

Securities Law Information. Neither this document nor any other materials relating to the Plan (i) constitutes a prospectus according to articles 35 et seq. of the Swiss Federal Act on Financial Services ("FinSA"), (ii) may be publicly distributed or otherwise made publicly available in Switzerland to any person other than an employee of the Company or one of its Affiliates or (iii) has been or will be filed with, approved or supervised by any Swiss reviewing body according to article 51 of FinSA or any Swiss regulatory authority, including the Swiss Financial Market Supervisory Authority.

THAILAND

Notifications

Exchange Control Information. If the proceeds from the sale of shares of Stock and any cash dividends received in relation to the shares of Stock realized in a single transaction exceed U.S.\$1,000,000, you must immediately repatriate such proceeds to Thailand and then convert such proceeds to Thai Baht within 360 days of repatriation. In addition, you will be required to provide details of the transaction (*i.e.*, identification information and purpose of the transaction) to the receiving bank. You should consult your personal advisor before remitting proceeds into Thailand. You is responsible for ensuring compliance with all exchange control laws in Thailand.

UNITED ARAB EMIRATES

Notifications

Securities Law Information. The Restricted Stock Units are only being offered to employees and are in the nature of providing equity incentives to employees of the Company's Affiliates in the United Arab Emirates. Any documents related to the Restricted Stock Units, including the Plan, the Agreement and other grant documents ("Restricted Stock Unit Documents"), are intended for distribution only to such employees and must not be delivered to, or relied on by, any other person. Neither the Ministry of Economy nor the Dubai Department of Economic Development have approved the Plan or the Agreement nor taken steps to verify the information set out therein, and have no responsibility for such documents. You, as a prospective stockholder, should conduct your own due diligence on the securities. If you do not understand the contents of the Restricted Stock Unit Documents, you should consult an authorized financial advisor.

UNITED KINGDOM

Terms and Conditions

Restricted Stock Units Payable Only in Shares of Stock. Notwithstanding any discretion in the Plan or the Agreement to the contrary, Restricted Stock Units granted in the United Kingdom shall be paid in shares of Stock only and do not provide any right for you to receive a cash payment.

Taxes. This section supplements the Share Delivery; Vested Restricted Stock Units, Tax-Related Items section of the Agreement:

Without limitation to the provisions contained in the Share Delivery; Vested Restricted Stock Units, Tax-Related Items section of the Agreement, you agree that you are liable for all Tax-Related Items and hereby covenant to pay all such Tax-Related Items as and when requested by the Company or the Employer or by HM Revenue and Customs ("HMRC") (or any other tax authority or any other relevant authority). You also agree to indemnify and keep indemnified the Company and the Employer against any Tax-Related Items that they are required to pay or withhold on your behalf or have paid or will pay to HMRC (or any other tax authority or any other relevant authority).

Joint Election. As a condition of your participation in the Plan and of the vesting of the Restricted Stock Units, you agree to accept any liability for secondary Class 1 National Insurance Contributions which may be payable by the Company and/or the Employer with respect to the vesting of the Restricted Stock Units or otherwise payable in connection with the shares of Stock and the right to acquire shares of Stock ("Employer NICs").

Without limitation to the foregoing, you agree to execute a joint election with the Company or the Employer, the form of such joint election being formally approved by HMRC (the "Joint Election"), and any other required consents or elections as provided to you by the Company or the Employer. You further agree to execute such other joint elections as may be required between you and any successor to the Company or the Employer.

If you do not enter into a Joint Election, or if the Joint Election is revoked at any time by HMRC, the Restricted Stock Units shall cease vesting and become null and void, and no shares of Stock shall be acquired under the Plan, without any liability to the Company, the Employer and/or any Affiliate.

You further agree that the Company and/or the Employer may collect the Employer NICs by any of the means set forth in the Share Delivery; Vested Restricted Stock Units, Tax-Related Items section of the Agreement, as supplemented above.

EXHIBIT 21.1

Subsidiary

Ciena Communications, Inc.
Ciena Global Products Company, LTD
Ciena Canada ULC
Ciena Switzerland GMBH
Ciena Global Holding, LP

Jurisdiction of Incorporation or Organization

Delaware
United Kingdom
Canada
Switzerland
Scotland

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-255410, 333-237673, 333-217001, 333-91294, 333-103328, 333-123509, 333-123510, 333-149929, 333-166125, 333-180332, 333-180333, 333-195498 and 333-214594) and on Post Effective Amendment No.1 on Form S-8 to Form S-4 (No. 333-204732) of Ciena Corporation of our report dated December 15, 2023 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/PricewaterhouseCoopers LLP
Baltimore, Maryland
December 15, 2023

CIENA CORPORATION
CERTIFICATION OF CHIEF EXECUTIVE OFFICER

I, Gary B. Smith, certify that:

1. I have reviewed this annual report of Ciena Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: December 15, 2023

/s/ Gary B. Smith

Gary B. Smith

President and Chief Executive Officer

CIENA CORPORATION
CERTIFICATION OF CHIEF FINANCIAL OFFICER

I, James E. Moylan Jr., certify that:

1. I have reviewed this annual report of Ciena Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: December 15, 2023

/s/ James E. Moylan Jr.

James E. Moylan Jr.

Senior Vice President and Chief Financial Officer

CIENA CORPORATION

**Written Statement of Chief Executive Officer
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**

The undersigned, the Chief Executive Officer of Ciena Corporation (the "Company"), hereby certifies that, to his knowledge, on the date hereof:

(a) the Report on Form 10-K of the Company for the year ended October 28, 2023 filed on the date hereof with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(b) information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Gary B. Smith

Gary B. Smith

President and Chief Executive Officer

December 15, 2023

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to Ciena Corporation and will be retained by Ciena Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

CIENA CORPORATION

**Written Statement of Chief Financial Officer
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**

The undersigned, the Chief Financial Officer of Ciena Corporation (the "Company"), hereby certifies that, to his knowledge, on the date hereof:

- (a) the Report on Form 10-K of the Company for the year ended October 28, 2023 filed on the date hereof with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (b) information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ James E. Moylan Jr.

Senior Vice President and Chief Financial Officer

December 15, 2023

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to Ciena Corporation and will be retained by Ciena Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

CIENA CORPORATION
EXECUTIVE COMPENSATION CLAWBACK POLICY

1. **Purpose.** The purpose of this Policy is to set forth the circumstances under which Executive Officers of the Company will be required to repay or return certain Excess Awarded Compensation to one or more members of the Company Group. The Board of Directors has adopted this Policy in accordance with the Clawback Rule and the Listing Rule and it is intended to comply with, and shall be interpreted to be consistent with, each of the foregoing. Each Executive Officer shall be required to sign and return to the Company the Acknowledgement Form, attached hereto as Exhibit A, pursuant to which such Executive Officer will agree to be bound by the terms and to comply with this Policy.
 2. **Definitions.** As used in this Policy, the following words and phrases have the meanings specified below:
 - a. **"Accounting Restatement"** means an accounting restatement (i) due to the material noncompliance of the Company with any financial reporting requirement under applicable securities laws, including any required accounting restatement to correct an error in previously issued financial statements of the Company that is material to the previously issued financial statements of the Company, or (ii) that corrects an error that is not material to previously issued financial statements of the Company, but would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period.
 - b. **"Board"** means the Board of Directors of the Company.
 - c. **"Clawback Rule"** means Section 10D of the Exchange Act and the rules and regulations promulgated thereunder, each as may be amended from time to time.
 - d. **"Commission"** means the U.S. Securities and Exchange Commission.
 - e. **"Committee"** means the Compensation Committee of the Board, or if so, designated by the Board, any other committee of the Board (or group of Board members) consisting entirely of independent directors, in which case references herein to the Committee shall be deemed to be references to such committee of the Board.
 - f. **"Company"** means Ciena Corporation, a Delaware corporation.
 - g. **"Company Group"** means the Company, together with each of its direct and indirect subsidiaries.
 - h. **"Covered Executive Officer"** means, with respect to any Performance-Based Compensation, each current and former Executive Officer who serves, or served,
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as an Executive Officer at any time during the performance period in respect of which such Performance-Based Compensation is Received by such Executive Officer.

- i. **"Covered Period"** means, with respect to any Accounting Restatement, the three (3) completed Fiscal Years of the Company immediately preceding the Restatement Date and any Transition Period of less than nine (9) months within or immediately following those three (3) completed Fiscal Years.
 - j. **"Effective Date"** means the date on which the Exchange formally adopts the Listing Rule.
 - k. **"Excess Awarded Compensation"** means, with respect to a Covered Executive Officer, the amount of Performance-Based Compensation Received by the Covered Executive Officer (after the Covered Executive Officer became an Executive Officer) during a Covered Period that exceeds the amount of Performance-Based Compensation that the Covered Executive Officer would have Received had it been determined based on the Accounting Restatement, and computed without regard to any taxes paid by the Covered Executive; provided that, for Performance-Based Compensation that is based on or otherwise derived from the Company's stock price or total shareholder return where the amount of Excess Awarded Compensation is not subject to mathematical recalculation directly from information in the applicable Accounting Restatement, the amount that would have been Received shall be determined by the Committee based on a reasonable estimate of the effect of the Accounting Restatement on the stock price or total shareholder return, as applicable, upon which the Performance-Based Compensation was Received (in which case, the Company shall maintain documentation of such determination of that reasonable estimate and provide such documentation to the Exchange). Notwithstanding the foregoing, compensation amounts shall only be considered "Excess Awarded Compensation" for purposes of the Policy if such compensation is Received (i) while the Company has a class of securities listed on a national securities exchange or a national securities association and (ii) on or after the Effective Date.
 - l. **"Exchange"** means the New York Stock Exchange.
 - m. **"Exchange Act"** means the U.S. Securities Exchange Act of 1934, as amended.
 - n. **"Executive Officer"** means the Company's president, principal financial officer, principal accounting officer (or if there is no such accounting officer, the controller), any vice-president of the Company in charge of a principal business unit, division, or function (such as sales, administration, or finance), any other officer who performs a policy-making function, or any other person who performs similar policymaking functions for the Company, including any employee or service provider of the Company who is subject to Section 16 of the Exchange Act. Executive officers of the Company's parent(s) or subsidiaries shall be deemed executive officers of the Company if they perform such policy making functions for the Company.
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- o. **"Financial Reporting Measure"** means any measure that is determined and presented in accordance with the accounting principles used in preparing the Company's financial statements, and any other measure that is derived wholly or in part from such measure (in each case, regardless of whether such measure is presented within the Company's financial statements or included in a filing with the Commission).
 - p. **"Fiscal Year"** means the Company's fiscal year; provided that a Transition Period between the last day of the Company's previous fiscal year end and the first day of its new fiscal year that comprises a period of nine (9) to twelve (12) months will be deemed a completed fiscal year.
 - q. **"Listing Rule"** means Section 303A.14 of the New York Stock Exchange Listed Company Manual, as such section may be amended from time to time.
 - r. **"Performance-Based Compensation"** means any compensation (whether cash or equity-based) that is granted, earned, or vested based wholly or in part upon the attainment of a Financial Reporting Measure, and may include, but shall not be limited to, performance bonuses, commissions, or long-term incentive awards such as stock options, stock appreciation rights, restricted stock, restricted stock units, performance shares, performance stock units or other equity-based awards, whether or not granted under the Company's equity incentive plans. For the avoidance of doubt, Performance-Based Compensation does not include any compensation to the extent that is (i) granted, earned, or vested exclusively upon completion of a specified employment period, without any performance condition, (ii) discretionary, or (iii) based on subjective goals or goals that do not constitute Financial Reporting Measures.
 - s. **"Policy"** means this Ciena Corporation Executive Compensation Clawback Policy, as may be amended from time to time.
 - t. **"Received"** means, with respect to Performance-Based Compensation, the date of deemed receipt, and for purposes of the foregoing, Performance-Based Compensation shall be deemed Received in the Fiscal Year during which the applicable Financial Reporting Measure is attained, even if payment or grant of the Performance-Based Compensation occurs after the end of that period.
 - u. **"Restatement Date"** means the earlier to occur of (i) the date that the Board, a committee of the Board, or an officer or officers of the Company authorized to take such action if Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an Accounting Restatement or (ii) the date a court, regulator, or other legally authorized body directs the Company to prepare an Accounting Restatement.
 - v. **"Transition Period"** means any transition period that results from a change in the Company's Fiscal Year within or immediately following the three (3) completed Fiscal Years immediately preceding the Restatement Date.
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3. **Administration.** This Policy shall be administered by the Committee. The Committee is authorized to interpret and construe this Policy and to make all determinations necessary, appropriate, or advisable for the administration of this Policy. Any determinations made by the Committee shall be final, conclusive and binding on all interested parties and need not be uniform with respect to each individual covered by this Policy. Any members of the Committee, and any other members of the Board who assist in the administration of this Policy, shall not be personally liable for any action, determination or interpretation made with respect to this Policy and shall be fully indemnified by the Company to the fullest extent under applicable law and Company policy with respect to any such action, determination or interpretation. The foregoing sentence shall not limit any other rights to indemnification of the members of the Board under applicable law or Company policy.

4. **Recovery of Excess Awarded Compensation.**

- a. *Recovery of Excess Awarded Compensation.* In the event of an Accounting Restatement, the Committee shall in a reasonably prompt manner (and, except as determined necessary by the Committee, no later than ninety (90) days after the date the Company files its Accounting Restatement with the Commission) determine the amount of any Excess Awarded Compensation for each Covered Executive Officer in connection with such Accounting Restatement and shall promptly thereafter provide each Covered Executive Officer with a written notice identifying the amount of Excess Awarded Compensation and a demand for repayment or return, as applicable.
 - b. *Forms of Recovery.* The Committee shall determine, in its sole discretion, and in a manner that effectuates the purpose of the Clawback Rule and the Listing Rule, the method(s) for recovering any Excess Awarded Compensation hereunder in accordance with Section 4(a) above, that may include: (i) requiring cash reimbursement; (ii) seeking recovery or forfeiture of any gain realized on the vesting, exercise, settlement, sale, transfer or other disposition of any equity-based awards; (iii) offsetting the amount to be recouped from any compensation otherwise owed by the Company to the applicable Covered Executive Officer; (iv) cancelling outstanding vested or unvested equity awards; or (v) taking any other remedial and recovery action permitted by law, as determined by the Committee. Any reduction, cancellation or forfeiture of any compensation shall be done in compliance with Section 409A of the Internal Revenue Code of 1986, as amended. For the avoidance of doubt, except as set forth in Section 4(e) below, in no event may the Company Group accept an amount that is less than the amount of Excess Awarded Compensation in satisfaction of a Covered Executive Officer's obligations hereunder.
 - c. *Executive Officer's Failure to Repay.* If a Covered Executive Officer fails to repay all Excess Awarded Compensation to the Company Group when due (as determined in accordance with Section 4(b) above), the Company shall, or shall cause one or more other members of the Company Group to, take all actions reasonable and appropriate to recover such Excess Awarded Compensation from the applicable Covered Executive Officer (including suing for repayment and/or
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enforcing such Covered Executive Officer's obligation to make payment through the reduction or cancellation of outstanding and future compensation). The applicable Covered Executive Officer shall be required to reimburse the Company Group for any and all expenses reasonably incurred (including legal fees) by the Company Group in recovering such Excess Awarded Compensation in accordance with the immediately preceding sentence.

- d. *No Indemnification.* No member of the Company Group shall be permitted to indemnify any Covered Executive Officer against (i) the loss of any Excess Awarded Compensation that is repaid, returned or recovered pursuant to the terms of this Policy, or (ii) any claims relating to the Company's enforcement of its rights under this Policy (including, for the avoidance of doubt, any advancement of costs related to such enforcement). Further, no member of the Company Group shall enter into any agreement that exempts any Performance-Based Compensation from the application of this Policy or that waives the Company's right to recovery of any Excess Awarded Compensation and this Policy shall supersede any such agreement (whether entered into before, on or after the Effective Date).
 - e. *Exceptions to Recovery.* Notwithstanding anything herein to the contrary, the Company shall not be required to take the actions contemplated by Section 4(b) above if the following conditions are met and the Committee determines that recovery would be impracticable:
 - i. The direct expenses paid to a third party to assist in enforcing the Policy against a Covered Executive Officer would exceed the amount to be recovered, after the Company has made a reasonable attempt to recover the applicable Excess Awarded Compensation, and the Committee has documented such attempt(s) and provided such documentation to the Exchange;
 - ii. Recovery would violate the home country law of the Company, where that law was adopted prior to November 28, 2022, provided that, before determining that it would be impracticable to recover any amount of Excess Awarded Compensation based on violation of home country law, the Company has obtained an opinion of home country counsel, acceptable to the Exchange, that recovery would result in such a violation and a copy of the opinion is provided to the Exchange; or
 - iii. Recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company Group, to fail to meet the requirements of 26 U.S.C. 401(a)(13), and the regulations thereunder, or 26 U.S.C. 411(a), and the regulations thereunder.
5. **Amendment; Termination.** The Committee shall amend this Policy as it deems necessary, including as and when it determines that it is legally required by any federal securities laws (including the Clawback Rule), Commission rule or the Listing Rule. The
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Committee may terminate this Policy at any time in its discretion. Notwithstanding anything in this ~~Section 5~~ to the contrary, no amendment or termination of this Policy shall be effective if such amendment or termination would (after taking into account any actions taken by the Company contemporaneously with such amendment or termination) cause the Company to violate any United States securities laws (including the Clawback Rule), Commission rule or the Listing Rule. This Policy automatically shall terminate upon a "Corporate Transaction" (as defined in the Company's 2017 Omnibus Incentive Plan), which results in the Company's securities no longer being traded on an established securities exchange.

6. **Inducement of Executive Officers.** The Committee may require that any employment agreement, equity award agreement, or any other agreement entered into on or after the Effective Date shall, as a condition to the grant of any benefit thereunder, require an Executive Officer to agree to abide by the terms of this Policy.
7. **Filing Requirements.** The Company shall file all disclosures with respect to this Policy in accordance with the requirements of the U.S. federal securities laws, including disclosures required by Commission filings.
8. **Non-Exclusivity.** Any right of recoupment under this Policy is in addition to, and not in lieu of, any other remedies or rights of recoupment that may be available to the Company Group under applicable law, regulation or rule or pursuant to the terms of any similar policy or term or condition set forth in any compensation plan, employment agreement, equity or other award agreement, or similar agreement or plan, and any other legal remedies available to the Company Group; *provided, however*, that any amounts recouped under any other policy, plan or agreement that are subject to clawback under this Policy shall be considered recovered by the Company Group for purposes of this Policy and vice versa.
9. **Successors.** This Policy shall be binding and enforceable against all Covered Executive Officers and their beneficiaries, heirs, executors, administrators or other legal representatives.
10. **Governing Law; Venue.** This Policy and all rights and obligations hereunder are governed by and construed in accordance with the internal laws of the State of Delaware, excluding any choice of law rules or principles that may direct the application of the laws of another jurisdiction. All actions arising out of or relating to this Policy shall be heard and determined exclusively in the Court of Chancery of the State of Delaware or, if such court declines to exercise jurisdiction or if subject matter jurisdiction over the matter that is the subject of any such legal action or proceeding is vested exclusively in the U.S. federal courts, the U.S. District Court for the District of Delaware.

Exhibit A

CIENA CORPORATION EXECUTIVE COMPENSATION CLAWBACK POLICY

ACKNOWLEDGEMENT FORM

By signing below, the undersigned acknowledges and confirms that they have received and reviewed a copy of the Ciena Corporation Executive Compensation Clawback Policy (as may be amended, restated, supplemented or otherwise modified from time to time, the "**Policy**"). Capitalized terms used but not otherwise defined in this Acknowledgement Form (this "**Acknowledgement Form**") shall have the meanings ascribed to such terms in the Policy.

By signing this Acknowledgement Form, the undersigned acknowledges and agrees that they are and will continue to be subject to the Policy and that the Policy will apply both during and after the undersigned's employment with the Company Group. Further, by signing below, the undersigned agrees to abide by the terms of the Policy, including by returning any Excess Awarded Compensation (as defined in the Policy) to the Company Group to the extent required by, and in a manner permitted by, the Policy.

In the event of any inconsistency between the Policy and the terms of any employment agreement to which the undersigned is a party, or the terms of any compensation plan, program or agreement under which any compensation has been granted, awarded, earned or paid to or by the undersigned, the terms of the Policy shall govern.

This Acknowledgement Form must be signed and returned to the Company's General Counsel within thirty (30) calendar days following the later of the Effective Date or the date the individual first becomes an Executive Officer.

Signature

Print Name

Date