UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-Q

(Mark one)

☑ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the quarterly period ended July 31, 2019

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 Corporation

(Exact name of registrant as specified in its charter)

Delaware	**23-2725311**
(State or other jurisdiction of incorporation)	(IRS Employer Identification No.)
7035 Ridge Road, Hanover, MD	**21076**
(Address of principal executive offices)	(Zip Code)

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

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

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

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 during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☑ No ☐

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date:

Class	Outstanding at September 6, 2019
common stock, $0.01 par value	154,696,211

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PART I – FINANCIAL INFORMATION

Item 1. Financial Statements

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

	Quarter Ended July 31,		Nine Months Ended July 31,	
	2019	2018	2019	2018
Revenue:				
Products	$ 810,588	$ 691,758	$ 2,163,808	$ 1,821,593
Services	150,018	127,059	440,336	373,337
Total revenue	960,606	818,817	2,604,144	2,194,930
Cost of goods sold:				
Products	454,921	399,886	1,246,413	1,085,574
Services	81,333	67,388	235,361	192,741
Total cost of goods sold	536,254	467,274	1,481,774	1,278,315
Gross profit	424,352	351,543	1,122,370	916,615
Operating expenses:				
Research and development	139,880	121,133	406,482	356,581
Selling and marketing	104,230	95,395	305,845	281,269
General and administrative	42,695	38,212	124,092	115,594
Amortization of intangible assets	5,529	3,837	16,586	11,083
Significant asset impairments and restructuring costs	5,355	6,359	11,696	16,679
Acquisition and integration costs	1,362	1,333	4,105	1,333
Total operating expenses	299,051	266,269	868,806	782,539
Income from operations	125,301	85,274	253,564	134,076
Interest and other income (loss), net	1,050	(1,543)	5,059	1,328
Interest expense	(9,404)	(13,611)	(28,316)	(40,376)
Income before income taxes	116,947	70,120	230,307	95,028
Provision for income taxes	30,198	19,280	57,204	503,695
Net income (loss)	$ 86,749	$ 50,840	$ 173,103	$ (408,667)
Basic net income (loss) per common share	$ 0.56	$ 0.35	$ 1.11	$ (2.84)
Diluted net income (loss) per potential common share	$ 0.55	$ 0.34	$ 1.10	$ (2.84)
Weighted average basic common shares outstanding	155,488	143,400	156,013	143,766
Weighted average dilutive potential common shares outstanding	157,455	159,998	157,949	143,766

The accompanying notes are an integral part of these Condensed Consolidated Financial Statements.

CIENA CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(in thousands)
(unaudited)

	Quarter Ended July 31,		Nine Months Ended July 31,	
	2019	2018	2019	2018
Net income (loss)	$ 86,749	$ 50,840	$ 173,103	$ (408,667)
Change in unrealized gain (loss) on available-for-sale securities, net of tax	168	279	581	(59)
Change in unrealized gain (loss) on foreign currency forward contracts, net of tax	2,047	(1,032)	2,751	(1,067)
Change in unrealized gain (loss) on forward starting interest rate swap, net of tax	(8,716)	350	(19,413)	5,599
Change in cumulative translation adjustments	1,943	(3,230)	(1,903)	(2,161)
Other comprehensive income (loss)	(4,558)	(3,633)	(17,984)	2,312
Total comprehensive income (loss)	$ 82,191	$ 47,207	$ 155,119	$ (406,355)

The accompanying notes are an integral part of these Condensed Consolidated Financial Statements.

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

	July 31, 2019	October 31, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 723,229	$ 745,423
Short-term investments	119,670	148,981
Accounts receivable, net of allowance for doubtful accounts of $16.3 million and $17.4 million as of July 31, 2019 and October 31, 2018, respectively.	798,884	786,502
Inventories	356,818	262,751
Prepaid expenses and other	292,631	198,945
Total current assets	2,291,232	2,142,602
Long-term investments	—	58,970
Equipment, building, furniture and fixtures, net	280,630	292,067
Goodwill	297,884	297,968
Other intangible assets, net	121,270	148,225
Deferred tax asset, net	700,206	745,039
Other long-term assets	84,486	71,652
Total assets	$ 3,775,708	$ 3,756,523
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 356,716	$ 340,582
Accrued liabilities and other short-term obligations	325,137	340,075
Deferred revenue	102,182	111,134
Current portion of long-term debt	7,000	7,000
Debt conversion liability	—	164,212
Total current liabilities	791,035	963,003
Long-term deferred revenue	42,848	58,323
Other long-term obligations	140,523	119,413
Long-term debt, net	681,918	686,450
Total liabilities	$ 1,656,324	$ 1,827,189
Commitments and contingencies (Note 20)		
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; 155,113,012 and 154,318,531 shares issued and outstanding	1,551	1,543
Additional paid-in capital	6,866,341	6,881,223
Accumulated other comprehensive loss	(23,764)	(5,780)
Accumulated deficit	(4,724,744)	(4,947,652)
Total stockholders' equity	2,119,384	1,929,334
Total liabilities and stockholders' equity	$ 3,775,708	$ 3,756,523

The accompanying notes are an integral part of these Condensed Consolidated Financial Statements.

CIENA CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)
(unaudited)

	Nine Months Ended July 31,	
	2019	2018
Cash flows provided by operating activities:		
Net income (loss)	$ 173,103	$ (408,667)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation of equipment, building, furniture and fixtures, and amortization of leasehold improvements	65,071	63,104
Share-based compensation costs	44,446	38,896
Amortization of intangible assets	26,610	18,196
Deferred taxes	35,949	491,863
Provision for inventory excess and obsolescence	18,833	19,942
Provision for warranty	15,933	15,715
Other	743	18,164
Changes in assets and liabilities:		
Accounts receivable	(2,517)	(112,696)
Inventories	(115,427)	17,751
Prepaid expenses and other	(85,039)	(11,163)
Accounts payable, accruals and other obligations	(9,005)	14,840
Deferred revenue	4,427	(4,710)
Net cash provided by operating activities	173,127	161,235
Cash flows provided by (used in) investing activities:		
Payments for equipment, furniture, fixtures and intellectual property	(49,063)	(50,386)
Purchase of available for sale securities	(127,601)	(217,715)
Proceeds from maturities of available for sale securities	120,000	290,000
Proceeds from sales of available for sale securities	98,263	—
Settlement of foreign currency forward contracts, net	(3,155)	4,759
Acquisition of business, net of cash acquired	—	(40,412)
Purchase of equity investment	(2,667)	(1,433)
Net cash provided by (used in) investing activities	35,777	(15,187)
Cash flows used in financing activities:		
Payment of long-term debt	(5,250)	(3,000)
Payment of capital lease obligations	(2,599)	(2,811)
Payment for debt conversion liability	(111,268)	—
Shares repurchased for tax withholdings on vesting of stock unit awards	(23,234)	—
Repurchases of common stock - repurchase program	(110,484)	(73,512)
Proceeds from issuance of common stock	22,895	22,735
Net cash used in financing activities	(229,940)	(56,588)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	392	(3,759)
Net increase (decrease) in cash, cash equivalents and restricted cash	(20,644)	85,701
Cash, cash equivalents and restricted cash at beginning of period	745,434	640,513
Cash, cash equivalents and restricted cash at end of period	$ 724,790	$ 726,214
Supplemental disclosure of cash flow information		
Cash paid during the period for interest	$ 29,921	$ 31,561
Cash paid during the period for income taxes, net	$ 21,573	$ 20,099
Non-cash investing activities		
Purchase of equipment in accounts payable	$ 4,328	$ 5,677
Non-cash financing activities		
Repurchase of common stock in accrued liabilities from repurchase program	$ 1,441	$ 1,275
Conversion of debt conversion liability into 1,585,140 shares of common stock	$ 52,944	$ —

The accompanying notes are an integral part of these Condensed Consolidated Financial Statements.

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

	Common Stock Shares	Par Value	Additional Paid-in-Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
Balance at October 31, 2018	154,318,531	$ 1,543	$ 6,881,223	$ (5,780)	$ (4,947,652)	$ 1,929,334
Effect of adoption of new accounting standard (Note 2)	—	—	—	—	49,805	49,805
Net income	—	—	—	—	173,103	173,103
Other comprehensive loss	—	—	—	(17,984)	—	(17,984)
Repurchase of common stock - repurchase program	(2,881,564)	(29)	(111,896)	—	—	(111,925)
Issuance of shares from employee equity plans	2,717,534	27	22,868	—	—	22,895
Share-based compensation expense	—	—	44,446	—	—	44,446
Settlement of debt conversion liability	1,585,140	16	52,928	—	—	52,944
Shares repurchased for tax withholdings on vesting of stock unit awards	(626,629)	(6)	(23,228)	—	—	(23,234)
Balance at July 31, 2019	155,113,012	$ 1,551	$ 6,866,341	$ (23,764)	$ (4,724,744)	$ 2,119,384

	Common Stock Shares	Par Value	Additional Paid-in-Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
Balance at October 31, 2017	143,043,227	$ 1,430	$ 6,810,182	$ (11,017)	$ (4,664,253)	$ 2,136,342
Effect of adoption of new accounting standards	—	—	832	—	61,291	62,123
Net loss	—	—	—	—	(408,667)	(408,667)
Other comprehensive income	—	—	—	2,312	—	2,312
Repurchase of common stock	(3,028,118)	(30)	(74,757)	—	—	(74,787)
Issuance of shares from employee equity plans	3,035,071	31	22,704	—	—	22,735
Share-based compensation expense	—	—	38,896	—	—	38,896
Balance at July 31, 2018	143,050,180	$ 1,431	$ 6,797,857	$ (8,705)	$ (5,011,629)	$ 1,778,954

The accompanying notes are an integral part of these Condensed Consolidated Financial Statements.

CIENA CORPORATION
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(unaudited)

(1) INTERIM FINANCIAL STATEMENTS

The interim financial statements included herein for Ciena Corporation and its wholly owned subsidiaries ("Ciena") have been prepared by Ciena, without audit, pursuant to the rules and regulations of the U.S. Securities and Exchange Commission (the "SEC"). In the opinion of management, the financial statements included in this report reflect all normal recurring adjustments that Ciena considers necessary for the fair statement of the results of operations of Ciena for the interim periods covered and of the financial position of Ciena at the date of the interim balance sheets. Certain information and footnote disclosures normally included in the annual financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") have been condensed or omitted pursuant to such rules and regulations. The Condensed Consolidated Balance Sheet as of October 31, 2018 was derived from audited financial statements, but does not include all disclosures required by GAAP. However, Ciena believes that the disclosures are adequate to understand the information presented herein. The operating results for interim periods are not necessarily indicative of the operating results for the entire year. These financial statements should be read in conjunction with Ciena's audited consolidated financial statements and the notes thereto included in Ciena's annual report on Form 10-K for the fiscal year ended October 31, 2018.

Ciena has a 52 or 53-week fiscal year, with quarters ending on the Saturday nearest to the last day of January, April, July and October, respectively, of each year. Fiscal 2019 is a 52-week fiscal year. Fiscal 2018 was a 53-week fiscal year with the additional week occurring in the fourth quarter. For purposes of financial statement presentation, each fiscal year is described as having ended on October 31, and the fiscal quarters are described as having ended on January 31, April 30 and July 31 of each fiscal year.

(2) SIGNIFICANT ACCOUNTING POLICIES

Except for the changes in certain policies described below, there have been no material changes to Ciena's significant accounting policies, compared to the accounting policies described in Note 1, Ciena Corporation and Significant Accounting Policies and Estimates, in Notes to Consolidated Financial Statements in Item 8 of Part II of Ciena's annual report on Form 10-K for the fiscal year ended October 31, 2018.

Newly Issued Accounting Standards - Effective

Revenue Recognition

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Codification ("ASC") 606, *Revenue from Contracts with Customers*, a new accounting standard related to revenue recognition. ASC 606 supersedes nearly all U.S. GAAP standards on revenue recognition and eliminates industry-specific guidance. The underlying principle of ASC 606 is to recognize revenue when a customer obtains control of the promised products or services at an amount that reflects the consideration that is expected to be received in exchange for those products or services. ASC 606 also requires additional disclosures regarding the nature, amount, timing, and uncertainty of revenues and cash flows related to contracts with customers.

ASC 606 allows two methods of adoption: (i) retrospectively to each prior period presented ("full retrospective method"), or (ii) retrospectively with the cumulative effect recognized in retained earnings as of the date of adoption ("modified retrospective method"). Effective upon the start of its first quarter of fiscal 2019, Ciena adopted ASC 606 using the modified retrospective method and accordingly recognized the cumulative effect in accumulated deficit for those contracts that were not completed as of October 31, 2018. Accordingly, results for the reporting periods after October 31, 2018 are presented under ASC 606, while prior periods have not been adjusted and continue to be reported in accordance with Ciena's historical revenue recognition practices. Refer to *Opening Balance Adjustments* below for the impact of ASC 606 adoption on Ciena's Condensed Consolidated Financial Statements. In connection with its adoption of ASC 606, Ciena has implemented new accounting policies and processes, and incorporated such into its existing internal control environment as necessary to support the requirements of ASC 606.

Revenue Recognition Timing Differences

The adoption of ASC 606 requires Ciena to recognize revenue when the customer obtains control of promised products or services in an amount that reflects the consideration that Ciena would expect to receive in exchange for those products or services. Under the prior revenue standard, the timing of revenue recognition for delivered products or services was limited to such amount not contingent upon future delivery of products or service or future performance obligations, or subject to customer-specified return or privileges. In the case of multiple element software arrangements for which vendor-specific objective evidence (“VSOE”) of undelivered maintenance did not exist, under the prior revenue standard, Ciena recognized revenue for the entire arrangement over the maintenance term. The adoption of ASC 606 requires Ciena to determine the stand-alone selling price for each of the software and software-related deliverables of such multiple element arrangements at contract inception. Consequently, under ASC 606, certain software deliverables will be recognized at a point in time rather than over a period of time. In addition, under ASC 606, certain installation and deployment, and consulting and network design services, will be recognized over a period of time rather than at a point in time.

Revenue Recognition Policy Under ASC 606

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 upon 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 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 ASC 340-40, *Other Assets and Deferred Costs; Contracts with Customers*, and the interpretations of the FASB Transition Resource Group for Revenue Recognition (“TRG”) 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 required as part of ASC 606, see Note 3 below.

Impact of ASC 606 Adoption

The following table summarizes the impact of adopting ASC 606 on Ciena’s Condensed Consolidated Statements of Operations (in millions):

	Quarter Ended July 31, 2019		
	As Reported	Adjustments	Balances without adoption of ASC 606
Total revenue	$ 960,606	$ (2,413)	$ 958,193
Total cost of goods sold	$ 536,254	$ 1,789	$ 538,043
Net income	$ 86,749	$ (3,879)	$ 82,870
Diluted net income per potential common share	$ 0.55	$ (0.02)	$ 0.53

	Nine Months Ended July 31, 2019		
	As Reported	Adjustments	Balances without adoption of ASC 606
Total revenue	$ 2,604,144	$ (27,533)	$ 2,576,611
Total cost of goods sold	$ 1,481,774	$ (20,776)	$ 1,460,998
Net income	$ 173,103	$ (4,781)	$ 168,322
Diluted net income per potential common share	$ 1.10	$ (0.03)	$ 1.07

For the third quarter and first nine months of fiscal 2019, the increase in revenue from adoption of ASC 606 was primarily the result of installation and deployment services revenue that was recognized over a period of time rather than at a point in time under the prior revenue recognition standard. The adoption of ASC 606 did not have a material impact to Ciena's Condensed Consolidated Balance Sheets or any impact on net cash provided by operating activities as of July 31, 2019. See "*Revenue Recognition Timing Differences*" above. For additional information regarding ASC 606, see Note 3 below.

Opening Balance Adjustments

The following table summarizes the cumulative effect of the changes made to Ciena's Condensed Consolidated Balance Sheets in connection with the adoption of ASC 606 (in millions):

	Balance at October 31, 2018		New Revenue Recognition Standard			Adjusted Balance at November 1, 2018	
ASSETS:							
Accounts receivable, net	$	786,502	$	12,509	(1)	$	799,011
Inventories	$	262,751		(2,486)	(2)	$	260,265
Prepaid expenses and other	$	198,945		21,470	(3)	$	220,415
Deferred tax asset, net	$	745,039		(14,439)	(4)	$	730,600
Other long-term assets	$	71,652		3,998	(5)	$	75,650
Total assets	$	3,756,523	$	21,052		$	3,777,575
LIABILITIES AND STOCKHOLDERS' EQUITY:							
Deferred revenue	$	111,134	$	(14,403)	(6)	$	96,731
Long-term deferred revenue	$	58,323		(14,350)	(7)	$	43,973
Accumulated deficit	$	(4,947,652)		49,805	(8)	$	(4,897,847)
Total liabilities and stockholders' equity	$	3,756,523	$	21,052		$	3,777,575

(1) Unpaid accounts receivable and related deferred revenue related to rights and obligations in a contract are interdependent and therefore recorded net within Ciena's balance sheet. This represents an increase of $12.5 million from the reversal of certain net unpaid accounts receivable and related deferred revenue.

(2) Represents a decrease of $2.5 million in deferred costs of goods sold due to change in revenue recognition for certain product sales.

(3) Represents increases of $27.5 million in unbilled accounts receivable for change in recognizing revenue for installation services, $3.9 million in unbilled accounts receivable from change in recognizing revenue for certain product sales and $9.6 million related to short-term capitalized acquisition costs (e.g., commissions) and a decrease of $19.5 million related to prepaid cost of installation services.

(4) Represents a decrease of $14.4 million in deferred tax asset, net, related to the unrecognized income tax effects of the net adjustments from the new revenue recognition standard.

(5) Represents an increase of $4.0 million related to long-term capitalized acquisition costs (e.g., commissions).

(6) Represents decreases of $23.6 million in deferred revenue, primarily due to a change in revenue recognition for certain multiple-element software arrangements and $1.7 million in deferred revenue, primarily due to a change in revenue recognition for certain product sales, and increases of $2.7 million for a change in revenue recognition from certain maintenance services and $8.2 million from the reversal of balance sheet netting for certain unpaid invoices included in accounts receivable, net and deferred revenue.

(7) Represents a decrease of $18.6 million in long-term deferred revenue, primarily due to a change in revenue recognition for certain multiple-element software arrangements and an increase of $4.3 million from the reversal of balance sheet netting for certain unpaid invoices included in accounts receivable, net and long-term deferred revenue.

(8) Accumulated deficit impact from the adjustments noted above.

Intangibles

In August 2018, the FASB issued ASU No. 2018-15 ("*ASU 2018-15*"), *Intangibles - Goodwill and Other-Internal-Use Software*, which aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software.

Ciena adopted ASU 2018-15 during the first quarter of fiscal 2019. The application of this accounting standard did not have a material impact on Ciena's Condensed Consolidated Financial Statements.

Restricted Cash in Statement of Cash Flows

In November 2016, the FASB issued ASU 2016-18 *("ASU 2016-18")*, *Statement of Cash Flows (Topic 230): Restricted Cash*, which broadens the classification and presentation of changes in restricted cash in the statement of cash flows. Ciena adopted ASU 2016-18 during the first quarter of fiscal 2019. The application of this accounting standard update did not have a material impact on Ciena's Condensed Consolidated Statements of Cash Flows. Prior period information has been retrospectively adjusted due to the adoption of ASU 2016-18, Statement of Cash Flows, Restricted Cash at the beginning of the first quarter of fiscal 2019.

Newly Issued Accounting Standards - Not Yet Effective

In February 2016, the FASB issued ASU No. 2016-02 *("ASU 2016-02")*, *Leases*, which requires an entity to recognize assets and liabilities on the balance sheet for the rights and obligations created by leased assets and to provide additional disclosures. Under current GAAP, the majority of Ciena's leases for its properties are considered operating leases, and Ciena expects that the adoption of this ASU will require these leases to be recognized as assets and liabilities on Ciena's balance sheet. ASU 2016-02 is effective for Ciena beginning in the first quarter of fiscal 2020. Ciena is continuing to evaluate other possible impacts of the adoption of ASU 2016-02 on its Consolidated Financial Statements and disclosures.

In June 2016, the FASB issued ASU No. 2016-13 (*"ASU 2016-13"*), *Financial Instruments - Credit Losses*, which requires measurement and recognition of expected credit losses for financial assets held based on historical experience, current conditions, and reasonable and supportable forecasts that affect the collectibility of the reported amount. ASU 2016-13 is effective for Ciena beginning in the first quarter of fiscal 2021 and early adoption is permitted. Ciena is currently evaluating the impact of this accounting standard update on its Consolidated Financial Statements and disclosures.

In August 2018, the FASB issued ASU No. 2018-13 (*"ASU 2018-13"*), *Fair Value Measurement (Topic 820): Disclosure Framework* which modifies the disclosure requirements on fair value measurements. ASU 2018-13 is effective for Ciena beginning in the first quarter of fiscal year 2020 and early adoption is permitted. Ciena is currently evaluating this guidance to determine the impact on its disclosures.

(3) REVENUE

Disaggregation of Revenue

Ciena’s disaggregated revenue represents similar groups that depict the nature, amount, and timing of revenue and cash flows for 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.

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

	Quarter Ended July 31, 2019			
	Networking Platforms	Software and Software-Related Services	Global Services	Total
Product lines:				
Converged Packet Optical	$ 724,245	$ —	$ —	$ 724,245
Packet Networking	71,823	—	—	71,823
Platform Software and Services	—	37,312	—	37,312
Blue Planet Automation Software and Services	—	10,530	—	10,530
Maintenance Support and Training	—	—	65,936	65,936
Installation and Deployment	—	—	39,802	39,802
Consulting and Network Design	—	—	10,958	10,958
Total revenue by product line	$ 796,068	$ 47,842	$ 116,696	$ 960,606
Timing of revenue recognition:				
Products and services at a point in time	$ 796,068	$ 14,598	$ 4,804	$ 815,470
Services transferred over time	—	33,244	111,892	145,136
Total revenue by timing of revenue recognition	$ 796,068	$ 47,842	$ 116,696	$ 960,606

	Nine Months Ended July 31, 2019			
	Networking Platforms	Software and Software-Related Services	Global Services	Total
Product lines:				
Converged Packet Optical	$ 1,897,080	$ —	$ —	$ 1,897,080
Packet Networking	216,529	—	—	216,529
Platform Software and Services	—	114,139	—	114,139
Blue Planet Automation Software and Services	—	37,977	—	37,977
Maintenance Support and Training	—	—	196,002	196,002
Installation and Deployment	—	—	111,746	111,746
Consulting and Network Design	—	—	30,671	30,671
Total revenue by product line	$ 2,113,609	$ 152,116	$ 338,419	$ 2,604,144
Timing of revenue recognition:				
Products and services at a point in time	$ 2,113,609	$ 51,017	$ 13,945	$ 2,178,571
Products and services transferred over time	—	101,099	324,474	425,573
Total revenue by timing of revenue recognition	$ 2,113,609	$ 152,116	$ 338,419	$ 2,604,144

	Quarter Ended July 31, 2019	Nine Months Ended July 31, 2019
Geographic distribution:		
North America	$ 617,000	$ 1,678,599
EMEA	169,532	413,715
CALA	39,261	109,635
APAC	134,813	402,195
Total revenue by geographic distribution	$ 960,606	$ 2,604,144

- *Networking Platforms* reflects sales of Ciena's Converged Packet Optical and Packet Networking product lines.
  - Converged Packet Optical - includes the 6500 Packet-Optical Platform, 5430 Reconfigurable Switching System, Waveserver® stackable interconnect system, the family of CoreDirector® Multiservice Optical Switches and the OTN configuration for the 5410 Reconfigurable Switching System. This product line also includes sales of the Z-Series Packet-Optical Platform.
  - Packet Networking - includes the 3000 family of service delivery switches and service aggregation switches and the 5000 family of service aggregation switches. This product line also includes the 8700 Packetwave Platform, the Ethernet packet configuration for the 5410 Service Aggregation Switch, and the 6500 Packet Transport System (PTS), which combines packet switching, control plane operation, and integrated optics.

  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 Condensed Consolidated Statements of Operations. Ciena's hardware with the embedded operating system software and enhanced software features are considered distinct performance obligations for which the revenue is generally recognized upfront at a point in time upon transfer of control.

- *Software and Software-Related Services* reflects sales of the following:
  - Ciena's Blue Planet Automation Software and Services, which is a comprehensive, open software suite that allows customers to use enhanced knowledge about their networks to drive adaptive optimization of their services and operations. Ciena's Blue Planet Automation Platform includes multi-domain service orchestration (MDSO), network function virtualization (NFV), management and orchestration (NFV MANO), analytics, network health predictor (NHP), route optimization and assurance (ROA), inventory management and Ciena's SDN Multilayer Controller and virtual wide area network (V-WAN) application. Ciena acquired the NHP and ROA software solutions as a part of its acquisition of Packet Design, LLC ("Packet Design"). Ciena acquired the inventory management software solution as a part of its acquisition of DonRiver Holdings, LLC ("DonRiver"). Services revenue includes sales of subscription, installation, support, consulting and design services related to Ciena's Blue Planet Automation Platform.
  - Ciena's Platform Software and Services provides analytics, data, and planning tools to assist customers in managing Ciena's Networking Platforms products in their networks. Ciena's platform software includes its Manage, Control and Plan (MCP) domain controller solution, OneControl Unified Management System, ON-Center® Network and Service Management Suite, Ethernet Services Manager, Optical Suite Release and Planet Operate. As Ciena seeks further adoption of its MCP software platform and transitions features, functionality and customers to this platform, Ciena expects revenue declines for its other platform software 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 portions of this segment is included in product revenue on the Condensed Consolidated Statements of Operations. Revenue from services portions of this segment is included in services revenue on the Condensed Consolidated Statements of Operations.

  Ciena's software platform revenue typically reflects either perpetual or term-based software licenses, and these sales are considered a distinct performance obligation where revenue is generally recognized upfront at a point in time upon transfer of control. Revenue from software subscription and support are 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 are recognized over time with Ciena applying the input method to determine the amount of revenue to be recognized in a given period.

- *Global Services* 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 Condensed 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 are 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 July 31, 2019	Adjusted Balance at November 1, 2018
Accounts receivable, net	$ 798,884	$ 799,011
Contract assets	$ 74,348	$ 31,380
Deferred revenue	$ 145,030	$ 140,704

Our contract assets represent unbilled accounts receivable 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 liabilities consist of deferred revenue and represent advanced payments against non-cancelable customer orders received prior to revenue recognition. Ciena recognized approximately $77.4 million of revenue during the first nine months of fiscal 2019 that was included in the deferred revenue balance at November 1, 2018. Revenue recognized due to changes in transaction price from performance obligations satisfied or partially satisfied in previous periods was immaterial during the nine months ended July 31, 2019.

Capitalized Contract Acquisition Costs

Capitalized contract acquisition costs consist of deferred sales commissions and were $13.2 million and $13.6 million as of July 31, 2019 and November 1, 2018, respectively, and were included in other current assets and other assets. The amortization expense associated with these costs was $12.5 million during the first nine months of fiscal 2019 and was included in sales and marketing expense.

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 July 31, 2019, the aggregate amount of RPO was $1.15 billion. As of July 31, 2019, Ciena expects approximately 83% of the RPO to be recognized as revenue within the next twelve months.

(4) BUSINESS COMBINATIONS

Packet Design, LLC Acquisition

On July 2, 2018, Ciena acquired Packet Design, LLC ("Packet Design"), a provider of network performance management software focused on Layer 3 network optimization, topology and route analytics, for approximately $41 million in cash. This transaction has been accounted for as the acquisition of a business.

During the third quarter of fiscal 2018, Ciena incurred approximately $1.3 million of acquisition-related costs associated with this transaction. These costs and expenses included fees associated with financial, legal and accounting advisors and severance and other employment-related costs, including payments to certain former Packet Design employees.

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

	Amount
Cash and cash equivalents	$ 642
Accounts receivable	1,525
Prepaid expenses and other	450
Equipment, furniture and fixtures	31
Goodwill	20,304
Customer relationships and contracts	2,200
Developed technology	21,900
Accounts payable	(165)
Accrued liabilities	(657)
Deferred revenue	(5,176)
Total purchase consideration	$ 41,054

Customer relationships and contracts represent agreements with existing Packet Design customers and have an estimated useful life of three years.

Developed technology represents purchased technology that had reached technological feasibility and for which Packet Design 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 the acquisition of Packet Design is primarily related to expected synergies. The total goodwill amount was recorded in the Software and Software-Related Services segment.

Pro forma disclosures have not been included due to immateriality.

(5) RESTRUCTURING COSTS

Ciena has undertaken a number of restructuring activities intended to reduce expense and to better 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 for the nine months ended July 31, 2019 (in thousands):

	Workforce reduction	Consolidation of excess facilities	Total
Balance at October 31, 2018	$ 2,108	$ 1,739	$ 3,847
Additional liability recorded	10,309 (1)	1,387 (2)	11,696
Cash payments	(10,021)	(1,631)	(11,652)
Balance at July 31, 2019	$ 2,396	$ 1,495	$ 3,891
Current restructuring liabilities	$ 2,396	$ 348	$ 2,744
Non-current restructuring liabilities	$ —	$ 1,147	$ 1,147

(1) Reflects a global workforce reduction of approximately 225 employees during the nine months ended July 31, 2019 as part of a business optimization strategy to improve gross margin, constrain operating expense and redesign certain business processes.

(2) Reflects unfavorable lease commitments in connection with a portion of the facilities for certain locations in the United States and India where Ciena has vacated unused space.

The following table sets forth the restructuring activity and balance of the restructuring liability accounts for the nine months ended July 31, 2018 (in thousands):

	Workforce reduction		Consolidation of excess facilities		Total
Balance at October 31, 2017	$ 1,291		$ 1,648		$ 2,939
Additional liability recorded	12,876	(1)	3,803	(2)	16,679
Cash payments	(10,987)		(3,084)		(14,071)
Balance at July 31, 2018	$ 3,180		$ 2,367		$ 5,547
Current restructuring liabilities	$ 3,180		$ 1,076		$ 4,256
Non-current restructuring liabilities	$ —		$ 1,291		$ 1,291

(1) Reflects a global workforce reduction of approximately 230 employees during the nine months ended July 31, 2018 as part of a business optimization strategy to improve gross margin, constrain operating expense and redesign certain business processes.

(2) Reflects unfavorable lease commitments in connection with a portion of facilities located in Petaluma, California and Gurgaon, India.

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

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

	Quarter Ended July 31,		Nine Months Ended July 31,	
	2019	2018	2019	2018
Interest income	$ 3,475	$ 3,620	$ 10,866	$ 9,276
Gains (losses) on non-hedge designated foreign currency forward contracts	119	2,182	(757)	4,351
Foreign currency exchange losses	(2,373)	(6,879)	(4,585)	(11,670)
Other	(171)	(466)	(465)	(629)
Interest and other income (loss), net	$ 1,050	$ (1,543)	$ 5,059	$ 1,328

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 local currencies as their functional currencies. Ciena recorded $4.6 million and $11.7 million in foreign currency exchange rate losses during the first nine months of fiscal 2019 and fiscal 2018, respectively, as a result of monetary assets and liabilities that were transacted in a currency other than the entity's functional currency, and the remeasurement adjustments were recorded in interest and other income (loss), net on the Condensed Consolidated Statements of Operations. From time to time, Ciena uses foreign currency forwards to hedge this type of balance sheet exposure. 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 on the Condensed Consolidated Statements of Operations. During the first nine months of fiscal 2019, Ciena recorded losses of $0.8 million from non-hedge designated foreign currency forward contracts. During the first nine months of fiscal 2018, Ciena recorded gains of $4.4 million from non-hedge designated foreign currency forward contracts.

(7) INCOME TAXES

On December 22, 2017, the Tax Cuts and Jobs Act (the "Tax Act") was enacted. The Tax Act significantly revised the U.S. corporate income tax laws by, among other things, lowering the statutory corporate income tax rate from 35% to 21% effective January 1, 2018, implementing a modified territorial tax system, and imposing a mandatory one-time transition tax on accumulated earnings of foreign subsidiaries. The enactment of the Tax Act resulted in Ciena recording a provisional tax expense of $472.8 million in fiscal 2018.

The effective tax rate for the third quarter and nine months ended July 31, 2019 was lower than the effective tax rate for the third quarter and nine months ended July 31, 2018, primarily due to the impact of the Tax Act. The reduction of the U.S. federal corporate income tax rate from 35% to 21% effective January 1, 2018, required the remeasurement of net deferred tax assets and liabilities ("DTA"). Ciena also recorded U.S. transition tax in the nine months ended July 31, 2018.

As of July 31, 2019, Ciena continues to maintain a valuation allowance primarily related to state and foreign net operating losses and credits that Ciena estimates it will not be able to use. Ciena will continue to monitor its forecasts and results and may adjust the valuation allowance as conditions change.

(8) SHORT-TERM AND LONG-TERM INVESTMENTS

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

	July 31, 2019			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
U.S. government obligations:				
Included in short-term investments	$ 119,490	$ 180	$ —	$ 119,670
	$ 119,490	$ 180	$ —	$ 119,670

	October 31, 2018			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
U.S. government obligations:				
Included in short-term investments	$ 139,365	$ —	$ (347)	$ 139,018
Included in long-term investments	59,029	—	(59)	58,970
	$ 198,394	$ —	$ (406)	$ 197,988
Commercial paper:				
Included in short-term investments	$ 9,963	$ —	$ —	$ 9,963
	$ 9,963	$ —	$ —	$ 9,963

The following table summarizes the final legal maturities of debt investments at July 31, 2019 (in thousands):

	Amortized Cost	Estimated Fair Value
Less than one year	$ 119,490	$ 119,670

(9) FAIR VALUE MEASUREMENTS

As of the date indicated, the following table summarizes the assets and liabilities that are recorded at fair value on a recurring basis (in thousands):

	July 31, 2019			
	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds	$ 595,556	$ —	$ —	$ 595,556
U.S. government obligations	—	119,670	—	119,670
Foreign currency forward contracts	—	882	—	882
Total assets measured at fair value	$ 595,556	$ 120,552	$ —	$ 716,108
Liabilities:				
Foreign currency forward contracts	$ —	$ 1,029	$ —	$ 1,029
Forward starting interest rate swap	—	20,963	—	20,963
Contingent consideration	—	—	10,900	10,900
Total liabilities measured at fair value	$ —	$ 21,992	$ 10,900	$ 32,892

	October 31, 2018			
	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds	$ 590,684	$ —	$ —	$ 590,684
U.S. government obligations	—	197,988	—	197,988
Commercial paper	—	69,888	—	69,888
Foreign currency forward contracts	—	133	—	133
Forward starting interest rate swaps	—	779	—	779
Total assets measured at fair value	$ 590,684	$ 268,788	$ —	$ 859,472
Liabilities:				
Foreign currency forward contracts	$ —	$ 3,231	$ —	$ 3,231
Debt conversion liability	—	164,212	—	164,212
Contingent consideration	—	—	10,900	10,900
Total liabilities measured at fair value	$ —	$ 167,443	$ 10,900	$ 178,343

As of the date indicated, the assets and liabilities above are presented on Ciena’s Condensed Consolidated Balance Sheets as follows (in thousands):

	July 31, 2019			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents	$ 595,556	$ —	$ —	$ 595,556
Short-term investments	—	119,670	—	119,670
Prepaid expenses and other	—	882	—	882
Total assets measured at fair value	$ 595,556	$ 120,552	$ —	$ 716,108
Liabilities:				
Accrued liabilities	$ —	$ 1,029	$ 7,491	$ 8,520
Other long-term obligations	—	20,963	3,409	24,372
Total liabilities measured at fair value	$ —	$ 21,992	$ 10,900	$ 32,892

	October 31, 2018			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents	$ 590,684	$ 59,925	$ —	$ 650,609
Short-term investments	—	148,981	—	148,981
Prepaid expenses and other	—	133	—	133
Long-term investments	—	58,970	—	58,970
Other long-term assets	—	779	—	779
Total assets measured at fair value	$ 590,684	$ 268,788	$ —	$ 859,472
Liabilities:				
Accrued liabilities	$ —	$ 3,231	$ —	$ 3,231
Debt conversion liability	—	164,212	—	164,212
Other long-term obligations	—	—	10,900	10,900
Total liabilities measured at fair value	$ —	$ 167,443	$ 10,900	$ 178,343

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

Ciena's Level 3 liability is included in both accrued liabilities and other long-term obligations and reflects a contingent consideration element of a three-year payout arrangement associated with Ciena's purchase of DonRiver in the fourth quarter of fiscal 2018. The contingent consideration is valued by applying the income approach based upon a discounted cash flow technique using Monte Carlo simulations. As of July 31, 2019, there was no material change to the fair value.

(10) INVENTORIES

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

	July 31, 2019	October 31, 2018
Raw materials	$ 102,240	$ 67,468
Work-in-process	15,456	9,589
Finished goods	193,487	188,575
Deferred cost of goods sold	93,448	48,057
	404,631	313,689
Provision for excess and obsolescence	(47,813)	(50,938)
	$ 356,818	$ 262,751

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 and market conditions. During the first nine months of fiscal 2019, Ciena recorded a provision for excess and obsolescence of $18.8 million, 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 disposal activities.

(11) PREPAID EXPENSES AND OTHER

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

	July 31, 2019	October 31, 2018
Prepaid VAT and other taxes	$ 84,359	$ 82,518
Contract assets for unbilled accounts receivable	74,348	—
Product demonstration equipment, net	39,977	37,623
Prepaid expenses	46,666	32,987
Other non-trade receivables	36,798	25,716
Capitalized commissions - short term	9,601	—
Financing receivable	—	626
Deferred deployment expense	—	19,342
Derivative assets	882	133
	$ 292,631	$ 198,945

Depreciation of product demonstration equipment was $6.5 million and $6.8 million during the first nine months of fiscal 2019 and 2018, respectively.

(12) ACCRUED LIABILITIES AND OTHER SHORT-TERM OBLIGATIONS

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

	July 31, 2019	October 31, 2018
Compensation, payroll related tax and benefits	$ 125,651	$ 140,277
Warranty	46,680	44,740
Vacation [1]	22,076	42,507
Contingent consideration	7,491	—
Capital lease obligations	2,798	3,547
Interest payable	1,062	1,072
Other	119,379	107,932
	$ 325,137	$ 340,075

[1] Reduction is primarily due to the payout of North America vacation accruals in conjunction with adoption of a new vacation policy.

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

Nine Months Ended July 31,	Beginning Balance	Current Period Provisions	Settlements	Ending Balance
2018	$ 42,456	15,715	(14,021)	$ 44,150
2019	$ 44,740	15,933	(13,993)	$ 46,680

Settlement of Conversions of 3.75% Convertible Senior Notes due October 15, 2018 (“New Notes”)

Debt Conversion Liability Associated With the New Notes

The New Notes provided Ciena the option, at its election, to settle conversions of such notes for cash, shares of its common stock, or a combination of cash and shares equal to the aggregate amount due upon conversion. On August 30, 2018, Ciena notified the noteholders that it had elected to settle conversion of the New Notes in a combination of cash and shares, provided that the cash portion would not exceed an aggregate amount of $400 million. Ciena became obligated to settle a portion of the conversion feature in cash and reclassified the cash conversion feature from equity to a derivative liability at its fair value of $164.2 million. On November 15, 2018, Ciena paid approximately $111.3 million in cash and issued 1.6 million shares in settlement of this embedded conversion feature.

(13) DERIVATIVE INSTRUMENTS

Foreign Currency Derivatives

As of July 31, 2019 and October 31, 2018, Ciena had forward contracts to hedge its foreign exchange exposure in order to reduce the variability in its Canadian Dollar- and Indian Rupee-denominated expense, which principally relates to research and development activities. The notional amount of these contracts was approximately $142.0 million and $163.2 million as of July 31, 2019 and October 31, 2018, respectively. These foreign exchange contracts have maturities of 24 months or less and have been designated as cash flow hedges.

During the first nine months of fiscal 2019 and fiscal 2018, in order to hedge foreign exchange exposures of certain balance sheet items, Ciena entered into forward contracts to mitigate risk due to variability in various currencies. The notional amount of these contracts was approximately $193.3 million and $162.6 million as of July 31, 2019 and October 31, 2018, 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 LIBOR interest on its term loan borrowings (see Note 15 below) and has hedged such risk by entering into floating to fixed interest rate swap arrangements ("interest rate swaps"). The interest rate swaps fix the LIBOR rate for $350.0 million of the 2025 Term Loan at 2.957% through September 2023. The total notional amount of interest rate swaps in effect was $350.0 million as of July 31, 2019 and October 31, 2018.

Ciena expects the variable rate payments to be received under the terms of the interest rate swaps to offset exactly the forecasted variable rate payments on the equivalent notional amounts of the term loan. These derivative contracts have been designated as cash flow hedges.

Other information regarding Ciena's derivatives is immaterial for separate financial statement presentation. See Note 6 and Note 9 above.

(14) ACCUMULATED OTHER COMPREHENSIVE INCOME

The following table summarizes the changes in accumulated balances of other comprehensive income ("AOCI"), net of tax, for the nine months ended July 31, 2019:

	Unrealized Loss on Available-for-sale Securities	Unrealized Loss on Foreign Currency Forward Contracts	Unrealized Loss on Forward Starting Interest Rate Swaps	Cumulative Foreign Currency Translation Adjustment	Total
Balance at October 31, 2018	$ (425)	$ (3,060)	$ 6,417	$ (8,712)	$ (5,780)
Other comprehensive income (loss) before reclassifications	581	(349)	(18,370)	(1,903)	(20,041)
Amounts reclassified from AOCI	—	3,100	(1,043)	—	2,057
Balance at July 31, 2019	$ 156	$ (309)	$ (12,996)	$ (10,615)	$ (23,764)

The following table summarizes the changes in AOCI, net of tax, for the nine months ended July 31, 2018:

	Unrealized Loss on Available-for-sale Securities		Unrealized Loss on Foreign Currency Forward Contracts		Unrealized Gain on Forward Starting Interest Rate Swaps		Cumulative Foreign Currency Translation Adjustment		Total	
Balance at October 31, 2017	$	(451)	$	(1,386)	$	218	$	(9,398)	$	(11,017)
Other comprehensive income (loss) before reclassifications		(59)		(9)		5,330		(2,161)		3,101
Amounts reclassified from AOCI		—		(1,058)		269		—		(789)
Balance at July 31, 2018	$	(510)	$	(2,453)	$	5,817	$	(11,559)	$	(8,705)

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

(15) SHORT-TERM AND LONG-TERM DEBT

Outstanding Term Loan Payable

2025 Term Loan

The net carrying value of Ciena’s Term Loan due September 28, 2025 (the “2025 Term Loan”) was comprised of the following for the fiscal periods indicated (in thousands):

	July 31, 2019		October 31, 2018	
Term Loan Payable due September 28, 2025	$	688,918	$	693,450

Deferred debt issuance costs that were deducted from the carrying amounts of the 2025 Term Loan totaled $3.8 million at July 31, 2019 and $4.3 million at October 31, 2018. 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 $0.5 million during the first nine months of fiscal 2019. The carrying value of the 2025 Term Loan listed above is also net of any unamortized debt discounts.

The principal balance, unamortized debt discount, deferred debt issuance costs, net carrying value and fair value of the 2025 Term Loan were as follows as of July 31, 2019 (in thousands):

	Principal Balance		Unamortized Debt Discount		Deferred Debt Issuance Costs		Net Carrying Value		Fair Value(1)	
Term Loan Payable due September 28, 2025	$	694,750	$	(2,043)	$	(3,789)	$	688,918	$	696,487

(1) The 2025 Term Loan is categorized as Level 2 in the fair value hierarchy. Ciena estimated the fair value of the 2025 Term Loan using a market approach based upon observable inputs, such as current market transactions involving comparable securities.

(16) EARNINGS PER SHARE CALCULATION

The following table (in thousands except per share amounts) is a reconciliation of the numerator and denominator of the basic net income (loss) per common share (“Basic EPS”) and the diluted net income (loss) per potential common share (“Diluted EPS”). Basic EPS is computed using the weighted average number of common shares outstanding. Diluted EPS is computed using the weighted average number of 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.

	Quarter Ended July 31,		Nine Months Ended July 31,	
Numerator	2019	2018	2019	2018
Net income (loss)	$ 86,749	$ 50,840	$ 173,103	$ (408,667)
Add: Interest expense associated with 3.75% Convertible Senior Notes due 2018 (Original)	—	464	—	—
Add: Interest expense associated with 4.0% Convertible Senior Notes due 2020	—	2,624	—	—
Net income (loss) used to calculate Diluted EPS	$ 86,749	$ 53,928	$ 173,103	$ (408,667)

	Quarter Ended July 31,		Nine Months Ended July 31,	
Denominator	2019	2018	2019	2018
Basic weighted average shares outstanding	155,488	143,400	156,013	143,766
Add: Shares underlying outstanding stock options and stock unit awards and issuable under employee stock purchase plan	1,967	1,330	1,936	—
Add: Shares underlying 3.75% Convertible Senior Notes due 2018 (New)	—	3,032	—	—
Add: Shares underlying 3.75% Convertible Senior Notes due 2018 (Original)	—	3,038	—	—
Add: Shares underlying 4.0% Convertible Senior Notes due 2020	—	9,198	—	—
Dilutive weighted average shares outstanding	157,455	159,998	157,949	143,766

	Quarter Ended July 31,		Nine Months Ended July 31,	
EPS	2019	2018	2019	2018
Basic EPS	$ 0.56	$ 0.35	$ 1.11	$ (2.84)
Diluted EPS	$ 0.55	$ 0.34	$ 1.10	$ (2.84)

The following table summarizes the weighted average shares excluded from the calculation of the denominator for Diluted EPS due to their anti-dilutive effect for the periods indicated (in thousands):

	Quarter Ended July 31,		Nine Months Ended July 31,	
	2019	2018	2019	2018
Shares underlying stock options and stock unit awards	253	318	256	2,183
3.75% Convertible Senior Notes due 2018 (Original)	—	—	—	3,038
3.75% Convertible Senior Notes due 2018 (New)	—	—	—	2,125
4.0% Convertible Senior Notes due 2020	—	—	—	9,198
Total shares excluded due to anti-dilutive effect	253	318	256	16,544

(17) STOCKHOLDERS’ EQUITY

Stock Repurchase Program

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. The amount and timing of repurchases 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.

The following table summarizes activity of the stock repurchase program, reported based on trade date:

	Shares Repurchased	Weighted-Average Price per Share	Amount Repurchased (in thousands)
Cumulative balance at October 31, 2018	—	$ —	$ —
Repurchase of common stock under the stock repurchase program	2,881,564	38.84	111,925
Cumulative balance at July 31, 2019	2,881,564	$ 38.84	$ 111,925

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

Stock Repurchases Related to Stock Unit Award Tax Withholdings

Ciena repurchases shares of common stock to satisfy employee tax withholding obligations due upon vesting of stock unit awards. The purchase price of $23.2 million for the shares of Ciena's stock repurchased during the first nine months of fiscal 2019 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.

(18) SHARE-BASED COMPENSATION EXPENSE

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

	Quarter Ended July 31,		Nine Months Ended July 31,	
	2019	2018	2019	2018
Product costs	$ 781	$ 783	$ 2,120	$ 2,279
Service costs	783	618	2,460	1,965
Share-based compensation expense included in cost of sales	1,564	1,401	4,580	4,244
Research and development	3,560	3,082	11,034	10,133
Sales and marketing	4,192	3,417	12,323	10,505
General and administrative	5,813	4,538	16,416	14,121
Share-based compensation expense included in operating expense	13,565	11,037	39,773	34,759
Share-based compensation expense capitalized in inventory, net	(45)	(101)	93	(107)
Total share-based compensation	$ 15,084	$ 12,337	$ 44,446	$ 38,896

As of July 31, 2019, total unrecognized share-based compensation expense was approximately $98.8 million, which relates to unvested stock unit awards and is expected to be recognized over a weighted-average period of 1.5 years.

(19) SEGMENTS AND ENTITY-WIDE DISCLOSURES

Segment Reporting

Ciena has the following operating segments for reporting purposes: (i) Networking Platforms; (ii) Software and Software-Related Services; and (iii) Global Services. See Note 3 to Ciena’s Condensed Consolidated Financial Statements included in Item 1 of Part I of this report.

Ciena's long-lived assets, including equipment, building, furniture and fixtures, 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 July 31, 2019, equipment, building, furniture and fixtures, net totaled $280.6 million, primarily supporting asset groups within Ciena’s Networking Platforms and Software and Software-Related Services segments and supporting Ciena’s unallocated selling and general and administrative activities. As of July 31, 2019, $22.7 million of Ciena’s intangible assets, net were assigned to asset groups within Ciena’s Networking Platforms segment and $98.6 million of Ciena’s intangible assets, net were assigned to asset groups within Ciena’s Software and Software-Related Services segment. As of July 31, 2019, $65.7 million of Ciena’s Goodwill was assigned to asset groups within Ciena’s Networking Platforms segment and $232.2 million of Ciena’s Goodwill was assigned to asset groups within Ciena’s Software and Software-Related Services segment. As of July 31, 2019, all of the maintenance spares, net, totaling $51.1 million, were assigned to asset groups within Ciena’s Global Services segment.

Segment Revenue

The table below (in thousands) sets forth Ciena’s segment revenue for the respective periods:

	Quarter Ended July 31,		Nine Months Ended July 31,	
	2019	2018	2019	2018
Revenue:				
Networking Platforms				
Converged Packet Optical	$ 724,245	$ 592,892	$ 1,897,080	$ 1,548,189
Packet Networking	71,823	84,559	216,529	216,977
Total Networking Platforms	796,068	677,451	2,113,609	1,765,166
Software and Software-Related Services				
Platform Software and Services	37,312	36,818	114,139	117,347
Blue Planet Automation Software and Services	10,530	4,365	37,977	16,068
Total Software and Software-Related Services	47,842	41,183	152,116	133,415
Global Services				
Maintenance Support and Training	65,936	60,897	196,002	177,759
Installation and Deployment	39,802	31,262	111,746	89,487
Consulting and Network Design	10,958	8,024	30,671	29,103
Total Global Services	116,696	100,183	338,419	296,349
Consolidated revenue	$ 960,606	$ 818,817	$ 2,604,144	$ 2,194,930

Segment Profit

Segment profit 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; amortization of intangible assets; significant asset impairments and restructuring costs; acquisition and integration costs; interest and other income (loss), net; interest expense; and provision for income taxes.

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

	Quarter Ended July 31,		Nine Months Ended July 31,	
	2019	2018	2019	2018
Segment profit:				
Networking Platforms	$ 230,610	$ 181,603	$ 542,391	$ 396,995
Software and Software-Related Services	6,029	9,305	30,982	41,216
Global Services	47,833	39,502	142,515	121,823
Total segment profit	284,472	230,410	715,888	560,034
Less: Non-performance operating expenses				
Selling and marketing	104,230	95,395	305,845	281,269
General and administrative	42,695	38,212	124,092	115,594
Amortization of intangible assets	5,529	3,837	16,586	11,083
Significant asset impairments and restructuring costs	5,355	6,359	11,696	16,679
Acquisition and integration costs	1,362	1,333	4,105	1,333
Add: Other non-performance financial items				
Interest expense and other income (loss), net	(8,354)	(15,154)	(23,257)	(39,048)
Less: Provision for income taxes	30,198	19,280	57,204	503,695
Consolidated net income (loss)	$ 86,749	$ 50,840	$ 173,103	$ (408,667)

Entity-Wide Reporting

Ciena's revenue includes $592.2 million and $469.2 million of United States revenue for the third quarter of fiscal 2019 and 2018, respectively. Ciena's revenue also includes $83.6 million of India revenue for the third quarter of fiscal 2018. For the nine months ended July 31, 2019 and 2018, United States revenue was $1.60 billion and $1.25 billion, respectively. No other country accounted for 10% or more of total revenue for the periods presented above.

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

	July 31, 2019	October 31, 2018
Canada	$ 201,126	$ 198,028
United States	62,231	75,479
Other International	17,273	18,560
Total	$ 280,630	$ 292,067

For the periods below, as applicable, AT&T, Verizon and a Web-scale provider were the only customers that accounted for at least 10% of Ciena's revenue as follows (in thousands):

	Quarter Ended July 31,		Nine Months Ended July 31,	
	2019	2018	2019	2018
AT&T	n/a	$ 87,389	$ 297,049	$ 263,453
Verizon	118,875	97,103	314,000	221,475
Web-scale provider	123,253	86,364	298,106	n/a
Total	$ 242,128	$ 270,856	$ 909,155	$ 484,928

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

The customers identified above purchased products and services from each of Ciena's operating segments.

(20) COMMITMENTS AND CONTINGENCIES

Canadian Grant

During fiscal 2018, Ciena entered into agreements related to the Evolution of Networking Services through a Corridor in Quebec and Ontario for Research and Innovation (“ENCQOR”) project with the Canadian federal government, the government of the province of Ontario and the government of the province of Quebec to develop a 5G technology corridor between Quebec and Ontario to promote research and development, small business enterprises and entrepreneurs in Canada. Under these agreements, Ciena can receive up to an aggregate CAD$57.6 million (approximately $43.6 million) in reimbursement from the three Canadian government entities for eligible costs over a period commencing on February 20, 2017 and ending on March 31, 2022. Ciena anticipates receiving recurring disbursements over this period. Amounts received under the agreements are subject to recoupment in the event that Ciena fails to achieve certain minimum investment, employment and project milestones. As of July 31, 2019, Ciena has recorded CAD$25.9 million (approximately $19.6 million) in cumulative benefits as a reduction in research and development expense of which CAD$9.3 million (approximately $7.0 million) was recorded in the first nine months of fiscal 2019. As of July 31, 2019, amounts receivable from this grant were CAD$10.8 million (approximately $8.2 million).

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

As a result of the acquisition of Cyan in August 2015, Ciena became a defendant in a securities class action lawsuit. On April 1, 2014, the first of two purported stockholder class action lawsuits was filed in the Superior Court of California, County of San Francisco, against Cyan, the members of Cyan’s board of directors, Cyan’s former Chief Financial Officer, and the underwriters of Cyan’s initial public offering. The cases were consolidated as Beaver County Employees Retirement Fund, et al. v. Cyan, Inc. et al., Case No. CGC-14-538355. The consolidated complaint alleged violations of federal securities laws on behalf of a purported class consisting of purchasers of Cyan’s common stock pursuant or traceable to the registration statement and prospectus for Cyan’s initial public offering in April 2013, and sought unspecified compensatory damages and other relief. On May 19, 2015, the proposed class was certified. During the fourth quarter of fiscal 2018, the parties agreed to the terms of a settlement of the action, which settlement was subject to notice to class members and approval by the court. On August 8, 2019, the court approved the settlement and entered judgment in the case. The terms of the settlement, which include a release and dismissal of all claims against all defendants without any liability or wrongdoing attributed to them, are not material to Ciena’s financial results.

Internal Investigation

As first disclosed in Ciena’s Form 10-K for fiscal 2017, during that year one of Ciena’s third-party vendors raised allegations about certain questionable payments to one or more individuals employed by a customer in a country in the ASEAN region. Ciena promptly initiated an internal investigation into the matter, with the assistance of outside counsel, which investigation corroborated direct and indirect payments to one such individual and sought to determine whether the payments may have violated applicable laws and regulations, including the U.S. Foreign Corrupt Practices Act. In September 2017, Ciena voluntarily contacted the SEC and the U.S. Department of Justice (the “DOJ”) to advise them of the relevant events and the findings of Ciena’s internal investigation. On December 10, 2018, the DOJ advised that it declined to prosecute this matter and that its investigation into this matter is closed. On September 9, 2019, the SEC advised that it has concluded its investigation into this matter and that its staff does not intend to recommend any enforcement action by the SEC against Ciena.

In addition to the matters described in “Litigation” and “Internal Investigation” above, 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.

(21) SUBSEQUENT EVENTS

Stock Repurchase Program

From the end of the third quarter of fiscal 2019 through September 6, 2019, Ciena repurchased an additional 417,819 shares of its common stock, for an aggregate purchase price of $17.3 million at an average price of $41.38 per share, inclusive of repurchases pending settlement. As of September 6, 2019, Ciena has repurchased an aggregate of 3,299,383 shares and has an aggregate of $370.8 million of authorized funds remaining under its Stock Repurchase Program.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Cautionary Note Regarding Forward-Looking Statements

This quarterly 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," "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; factors impacting the businesses of network operators and their network architectures; adoption of next-generation network technology and software programmability and automation of networks; our strategy, including our research and development, supply chain and go-to-market initiatives; efforts to increase application of our solutions in customer networks and to increase the reach of our business into new or growing customer and geographic markets; 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; business initiatives including information technology (IT) transitions or initiatives; the impact of the Tax Cuts and Jobs Act and changes in 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 due to factors such as:

- *our ability to execute our business and growth strategies;*
- *fluctuations in our revenue, gross margin and operating results and our financial results generally;*
- *the loss of any of our large customers, a significant reduction in their spending, or a material change in their networking or procurement strategies;*
- *the competitive environment in which we operate;*
- *market acceptance of products and services currently under development and delays in product or software development;*
- *lengthy sales cycles and onerous contract terms with communications service providers, Web-scale providers and other large customers;*
- *product performance or security problems and undetected errors;*
- *our ability to diversify our customer base beyond our traditional customers and to broaden the application for our solutions in communications networks;*
- *the level of growth in network traffic and bandwidth consumption and the corresponding level of investment in network infrastructures by network operators;*
- *the international scale of our operations;*
- *fluctuations in currency exchange rates;*
- *our ability to forecast accurately demand for our products for purposes of inventory purchase practices;*
- *the impact of pricing pressure and price compression that we regularly encounter in our markets;*
- *our ability to enforce our intellectual property rights, and costs we may incur in response to intellectual property right infringement claims made against us;*
- *the continued availability, on commercially reasonable terms, of software and other technology under third-party licenses;*
- *the potential failure to maintain the security of confidential, proprietary or otherwise sensitive business information or systems or to protect against cyber attacks;*
- *the performance of our third-party contract manufacturers;*
- *changes or disruption in components or supplies provided by third parties, including sole and limited source suppliers;*
- *our ability to manage effectively our relationships with third-party service partners and distributors;*

- *unanticipated risks and additional obligations in connection with our resale of complementary products or technology of other companies;*
- *our ability to grow and to maintain our new distribution relationships under which we will make available certain technology as a component;*
- *our exposure to the credit risks of our customers and our ability to collect receivables;*
- *modification or disruption of our internal business processes and information systems;*
- *the effect of our outstanding indebtedness on our liquidity and business;*
- *fluctuations in our stock price and our ability to access the capital markets to raise capital;*
- *unanticipated expenses or disruptions to our operations caused by facilities transitions or restructuring activities;*
- *our ability to attract and retain experienced and qualified personnel;*
- *disruptions to our operations caused by strategic acquisitions and investments or the inability to achieve the expected benefits and synergies of newly-acquired businesses;*
- *our ability to commercialize and to grow our software business and address networking strategies including software-defined networking and network function virtualization;*
- *changes in, and the impact of, government regulations, including with respect to: the communications industry generally; the business of our customers; the use, import or export of products; and the environment, potential climate change, and other social initiatives;*
- *the impact of the Tax Cuts and Jobs Act, future legislation or executive action in the U.S. relating to tax policy, changes in tax regulations and related accounting, and changes in our effective tax rates;*
- *future legislation or executive action in the U.S. or foreign counties relating to trade regulations, including the imposition of tariffs and duties;*
- *the write-down of goodwill, long-lived assets, or our deferred tax assets;*
- *our ability to maintain effective internal controls over financial reporting and liabilities that result from the inability to comply with corporate governance requirements; and*
- *adverse results in litigation matters.*

These are only some of the factors that may affect the forward-looking statements contained in this quarterly report. For a discussion identifying 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 quarterly report. For a more complete understanding of the risks associated with an investment in Ciena's securities, you should review these factors and the rest of this quarterly report in combination with the more detailed description of our business and management's discussion and analysis of financial condition and risk factors described in our annual report on Form 10-K for fiscal 2018, which we filed with the SEC on December 21, 2018. However, we operate in a very competitive and rapidly changing environment and new risks and uncertainties emerge, are identified or become apparent from time to time. We cannot predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this quarterly report. You should be aware that the forward-looking statements contained in this quarterly report are based on our current views and assumptions. We undertake no obligation to revise or to update any forward-looking statements made in this quarterly 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 quarterly 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.

Overview

We are a networking systems, services and software 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 network hardware, software and services that support the transport, switching, aggregation, service delivery and management of video, data and voice traffic on communications networks. Our solutions are used by communications service providers, cable and multiservice operators, Web-scale providers, submarine network operators, governments, enterprises, research and education (R&E) institutions and other emerging network operators.

Our solutions include a diverse portfolio of high-capacity Networking Platform products, which can be applied from the network core to network access points, and which allow network operators to scale capacity, increase transmission speeds, allocate traffic and adapt dynamically to changing end-user service demands. We also offer Platform Software that provides management and domain control of our next-generation packet and optical platforms and automates network lifecycle operations including provisioning equipment and services. In addition, through our comprehensive suite of Blue Planet Automation Software, we enable network operators to use network data and analytics to drive enhanced automation across multi-vendor and multi-domain network environments, accelerate service delivery, and enable an increasingly predictive and autonomous network infrastructure. To complement our hardware and software solutions, we offer a broad range of attached and software-related services that help our customers to design, optimize, integrate, deploy, manage and maintain their networks and associated operational environments. Through our complete portfolio of solutions, we enable our customers to transform their networks into dynamic, programmable environments driven by automation and analytics, which we refer to as the Adaptive Network. Our solutions for the Adaptive Network create business and operational value for our customers, enabling them to introduce new revenue-generating services, reduce costs and maximize the return on their network infrastructure investment.

Revenue and earnings growth, technology innovation and business diversification.

During the first nine months of fiscal 2019, our revenue and earnings growth accelerated as we benefited meaningfully from strong network operator demand for capacity, favorable industry and competitive dynamics, and the continued execution of our strategy. Our strategy has focused on innovation leadership, the diversification of our business and customer base, and market share capture. For the nine months ended July 31, 2019, compared to the nine months ended July 31, 2018, our revenue grew from $2.19 billion to $2.60 billion, or approximately 19%, and our income from operations grew from $134.1 million to $253.6 million, or approximately 89%. Our results can fluctuate from quarter to quarter and, given the outstanding performance of our business during the first nine months of fiscal 2019, we do not expect that these revenue and profit growth rates will be sustainable long-term.

We believe that we continue to benefit from our efforts to push the pace of innovation in our markets and provide market-leading offerings. Keeping pace with the market’s demands for technology innovation requires considerable research and development investment capacity. For example, during the first nine months of fiscal 2019, we invested $406.5 million in research and development activities, an increase of approximately 14% compared to the first nine months of fiscal 2018. We believe that our investment capacity and innovation execution are important competitive differentiators that have contributed to the growth of our business. We believe that remaining competitive in the geographies, markets, and customer segments in which we sell depends upon our continued investment in innovation and our ability to offer solutions that address evolving consumption models for networking solutions.

We continue to diversify our business and have benefited from revenue contributions across a diverse set of geographies, product solutions and customer segments. During the nine months ended July 31, 2019, we grew revenue in our North America, Europe, Middle East and Africa (“EMEA”) and Caribbean and Latin America (“CALA”) geographic regions and across each of our operating segments, with a diverse set of hardware, software and service offerings. We grew revenue with our largest service provider customers and we have benefited from a strong market position with leading Web-scale providers. We believe continued diversification of our business can help us to compete in a dynamic industry environment, continue to grow our business, and better withstand potential slowdowns in particular geographies, markets, customers or customer segments. For example, sales to Web-scale provider customers have been an increasingly important contributor to our overall growth and certain of these customers were among our largest customers by revenue for the nine months ended July 31, 2019. However, we expect that our revenue growth from these customers will moderate from the significant level achieved to date in fiscal 2019. As another example, after recent years of strong growth, revenue from our Asia Pacific and India (“APAC”) region decreased for the nine months ended July 31, 2019, primarily due to lower spending levels and resulting sales declines with service providers in India. However, the decrease in India was partially offset within APAC by higher sales in Japan, and the decrease in APAC was more than offset by sales increases in other geographies and customer segments.

Available Information. Our quarterly reports on Form 10-Q, annual reports on Form 10-K, current reports on Form 8-K, and any amendments thereto filed or furnished with the SEC are available through the SEC’s website at www.sec.gov and are available free of charge on our website as soon as reasonably practicable after we file or furnish these documents. We routinely post the reports above, recent news and announcements, financial results and other information about Ciena that is important to investors in the “Investors” section of our website at www.ciena.com. Investors are encouraged to review the “Investors” section of our website because, as with the other disclosure channels that we use, from time to time we may post material information on that site that is not otherwise disseminated by us.

For additional information on our business, industry, market opportunity, competitive landscape, and strategy, see our annual report on Form 10-K for the fiscal year ended October 31, 2018.

Consolidated Results of Operations

Operating Segments

We have the following operating segments for reporting purposes: (i) Networking Platforms; (ii) Software and Software-Related Services; and (iii) Global Services. See Note 3 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report.

Quarter ended July 31, 2019 compared to the quarter ended July 31, 2018

As of the first quarter of fiscal 2019, we adopted ASC 606 using the modified retrospective method. See Notes 2 and 3 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report for the impact of this adoption on our financial results.

Revenue

During the third quarter of fiscal 2019, approximately 15.6% of our revenue was non-U.S. Dollar-denominated, including sales in Euros, Japanese Yen, Canadian Dollars, Brazilian Reais, Indian Rupees, Argentina Pesos, British Pounds and Mexican Pesos. During the third quarter of fiscal 2019, as compared to the third quarter of fiscal 2018, the U.S. dollar generally strengthened against these currencies. Consequently, our revenue reported in U.S. Dollars was reduced slightly by approximately $8.2 million, or 1.0%, as compared to the third quarter of fiscal 2018. The table below (in thousands, except percentage data) sets forth the changes in our operating segment revenue for the periods indicated:

	Quarter Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Revenue:						
Networking Platforms						
Converged Packet Optical	$ 724,245	75.4	$ 592,892	72.5	$ 131,353	22.2
Packet Networking	71,823	7.5	84,559	10.3	(12,736)	(15.1)
Total Networking Platforms	796,068	82.9	677,451	82.8	118,617	17.5
Software and Software-Related Services						
Platform Software and Services	37,312	3.9	36,818	4.5	494	1.3
Blue Planet Automation Software and Services	10,530	1.1	4,365	0.5	6,165	141.2
Total Software and Software-Related Services	47,842	5.0	41,183	5.0	6,659	16.2
Global Services						
Maintenance Support and Training	65,936	6.9	60,897	7.4	5,039	8.3
Installation and Deployment	39,802	4.1	31,262	3.8	8,540	27.3
Consulting and Network Design	10,958	1.1	8,024	1.0	2,934	36.6
Total Global Services	116,696	12.1	100,183	12.2	16,513	16.5
Consolidated revenue	$ 960,606	100.0	$ 818,817	100.0	$ 141,789	17.3

* Denotes % of total revenue

** Denotes % change from 2018 to 2019

- **Networking Platforms segment revenue** increased, reflecting a product line sales increase of $131.4 million of our Converged Packet Optical products, partially offset by a product line sales decrease of $12.7 million of our Packet Networking products.
    - Converged Packet Optical sales primarily reflect sales increases of $84.6 million of our Waveserver stackable interconnect system and $59.9 million of our 6500 Packet-Optical Platform. These increases were partially

offset by a sales decrease of $11.3 million of our 5410/5430 Reconfigurable Switching Systems. Waveserver stackable interconnect system sales reflect increased sales to Web-scale providers, which represent a growing portion of our business as we continue to diversify. The sales increase from our 6500 Packet-Optical Platform is primarily due to increased sales to communications service providers and cable and multiservice operators.

    - Packet Networking sales primarily reflect sales decreases of $15.2 million of our packet networking platform independent software and $9.8 million of our 3000 and 5000 families of service delivery and aggregation switches. The sales decreases were partially offset by $12.1 million in sales of our 6500 Packet Transport System.

- **Software and Software-Related Services segment revenue** increased, primarily reflecting a sales increase of $6.2 million of our Blue Planet Automation Software and Services. The increase in our Blue Planet Automation Software and Services includes sales of $2.4 million and $4.1 million related to the Packet Design and DonRiver businesses acquired during fiscal 2018, respectively.

- **Global Services segment revenue** increased, reflecting sales increases of $8.5 million of our installation and deployment services, $5.0 million of our maintenance support and training services and $2.9 million of our network transformation services.

Our operating segments engage in business and operations across four geographic regions: North America; EMEA; CALA and APAC. Results for North America include only activities in the U.S. and Canada. The following table reflects our geographic distribution of revenue principally based on the relevant location for our delivery of products and performance of services. Our revenue, when considered by geographic distribution, can fluctuate significantly, and the timing of revenue recognition for large network projects, particularly outside of North America, can result in large variations in geographic revenue results in any particular quarter. The increase in our EMEA region for the fiscal quarter ended July 31, 2019 was primarily driven by increased sales in the United Kingdom. The increase in our CALA region for the fiscal quarter ended July 31, 2019 was primarily driven by increased sales in Brazil and Mexico. The decrease in our APAC region for the fiscal quarter ended July 31, 2019 was primarily driven by decreased sales in India after a particularly strong 2018. This decrease was partially offset by increased sales in Japan and continued execution of our strategy to capture new market share with communications service providers in the region. The table below (in thousands, except percentage data) sets forth the changes in geographic distribution of revenue for the periods indicated:

	Quarter Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
North America	$ 617,000	64.2	$ 497,004	60.7	$ 119,996	24.1
EMEA	169,532	17.6	122,204	14.9	47,328	38.7
CALA	39,261	4.1	27,493	3.4	11,768	42.8
APAC	134,813	14.1	172,116	21.0	(37,303)	(21.7)
Total	$ 960,606	100.0	$ 818,817	100.0	$ 141,789	17.3

* Denotes % of total revenue

** Denotes % change from 2018 to 2019

- **North America revenue** primarily reflects increases of $108.3 million within our Networking Platforms segment and $8.8 million within our Global Services segment. The increase within our Networking Platforms segment reflects a product line sales increase of $114.1 million of Converged Packet Optical products, primarily related to sales increases of $59.6 million of our 6500 Packet-Optical Platform and $57.2 million of our Waveserver stackable interconnect system. Our 6500 Packet-Optical Platform sales primarily reflect increased sales to communications service providers. Waveserver stackable interconnect system sales reflect increased sales to Web-scale providers.

- **EMEA revenue** primarily reflects an increase of $43.8 million within our Networking Platforms segment. The increase within our Networking Platforms segment reflects a product line sales increase of $43.3 million of Converged Packet Optical products, primarily related to sales increases of $23.4 million of our Waveserver stackable interconnect system to Web-scale providers and $22.0 million of our 6500 Packet-Optical Platform to communications service providers, submarine network operators and enterprise customers.

- **CALA revenue** primarily reflects increases of $7.0 million within our Networking Platforms segment and $4.4 million within our Global Services segment. Networking Platforms segment sales largely reflect increased sales of our 6500 Packet-Optical Platform to communications service providers.

- **APAC revenue** primarily reflects a decrease of $40.6 million within our Networking Platforms segment partially offset by an increase of $3.8 million within our Software and Software-Related Services segment. Networking Platforms segment revenue primarily reflects product line decreases of $31.5 million in Converged Packet Optical sales and $9.1 million in Packet Networking sales. The decrease in Converged Packet Optical sales is primarily due to a decrease of $24.6 million in sales of our 6500 Packet-Optical Platform to communications service providers in India.

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 upon 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 product cost reductions relative to the price compression that we regularly encounter in our markets due to competitive pressures. 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. When we have success in taking share and winning new business, it can result in additional pressure on gross margin from these pricing dynamics, particularly during the early stages of these network deployments. Early stages of new network builds also often include an increased concentration of lower margin "common" equipment sales and installation services, with our intent to improve margin as we sell channel cards, maintenance services, and other higher margin products to customers adding capacity or services to their networks. Gross margin and revenue 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 may 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 (in thousands, except percentage data) set forth the changes in revenue, cost of goods sold, and gross profit for the periods indicated:

	Quarter Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Total revenue	$ 960,606	100.0	$ 818,817	100.0	$ 141,789	17.3
Total cost of goods sold	536,254	55.8	467,274	57.1	68,980	14.8
Gross profit	$ 424,352	44.2	$ 351,543	42.9	$ 72,809	20.7

* Denotes % of total revenue

** Denotes % change from 2018 to 2019

	Quarter Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Product revenue	$ 810,588	100.0	$ 691,758	100.0	$ 118,830	17.2
Product cost of goods sold	454,921	56.1	399,886	57.8	55,035	13.8
Product gross profit	$ 355,667	43.9	$ 291,872	42.2	$ 63,795	21.9

* Denotes % of product revenue

** Denotes % change from 2018 to 2019

	Quarter Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Service revenue	$ 150,018	100.0	$ 127,059	100.0	$ 22,959	18.1
Service cost of goods sold	81,333	54.2	67,388	53.0	13,945	20.7
Service gross profit	$ 68,685	45.8	$ 59,671	47.0	$ 9,014	15.1

* Denotes % of services revenue

** Denotes % change from 2018 to 2019

- **Gross profit as a percentage of revenue** reflects improved product gross profit as described below. In recent periods, we have encountered fluctuations or reductions in our gross margin as a result of our strategy to leverage our technology leadership and to capture aggressively additional market share and displace competitors, with the intent to improve margin in the long term as we sell channel cards, maintenance services, and other higher margin products to customers adding capacity or services to their networks. In the fiscal quarter ended July 31, 2019, our gross margin benefited from the success of this ongoing strategy and the resulting favorable mix of customers, network deployments and capacity additions during the period. Continued implementation of this strategy may require that we agree to aggressive pricing, commercial concessions and other unfavorable terms, or result in an unfavorable mix of revenues from early stage deployments during a particular period, which can adversely impact gross margin.
- **Gross profit on products as a percentage of product revenue** increased, primarily due to product cost reductions, a favorable mix of customers, network deployments and capacity additions, and improved manufacturing efficiencies, partially offset by market-based price compression we encountered during the period.
- **Gross profit on services as a percentage of services revenue** decreased, primarily as a result of lower margins on our Blue Planet Automation software services and the impact of early stages of international network deployments.

Operating Expense

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.
- *Amortization of intangible assets* primarily reflects the amortization of both purchased technology and the value of customer relationships derived from our acquisitions.
- *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 and significant impairments of assets.
- *Acquisition and integration costs* consist of expenses for financial, legal and accounting advisors, severance and other employee-related costs associated with our acquisitions of Packet Design and DonRiver, including costs associated with a three-year earn-out arrangement related to the DonRiver acquisition.

During the third quarter of fiscal 2019, approximately 50.4% of our operating expense was non-U.S. Dollar-denominated, including expenses in Canadian Dollars, British Pounds, Indian Rupees and Euros. During the third quarter of fiscal 2019 as compared to the third quarter of fiscal 2018, the U.S. Dollar generally strengthened against these currencies. Consequently, our operating expense reported in U.S. Dollars was reduced slightly by approximately $2.6 million, or 1.0%, as compared to the third quarter of fiscal 2018, due to the strengthening U.S. Dollar, net of hedging. The table below (in thousands, except percentage data) sets forth the changes in operating expense for the periods indicated:

	Quarter Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Research and development	$ 139,880	14.6	$ 121,133	14.8	$ 18,747	15.5
Selling and marketing	104,230	10.9	95,395	11.7	8,835	9.3
General and administrative	42,695	4.4	38,212	4.7	4,483	11.7
Amortization of intangible assets	5,529	0.6	3,837	0.5	1,692	44.1
Significant asset impairments and restructuring costs	5,355	0.6	6,359	0.8	(1,004)	(15.8)
Acquisition and integration costs	1,362	0.1	1,333	0.2	29	2.2
Total operating expenses	$ 299,051	31.2	$ 266,269	32.7	$ 32,782	12.3

* Denotes % of total revenue

** Denotes % change from 2018 to 2019

- **Research and development expense** benefited from $0.9 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 $18.7 million. This increase primarily reflects increases of $13.5 million in employee and compensation costs, $3.3 million for facility and information technology costs and $3.1 million in professional services.
- **Selling and marketing expense** benefited from $1.4 million as a result of foreign exchange rates primarily due to a stronger U.S. Dollar in relation to the Euro, Australian Dollar and Canadian Dollar. Including the effect of foreign exchange rates, sales and marketing expenses increased by $8.8 million, primarily reflecting an increase in employee and compensation costs.
- **General and administrative expense** increased by $4.5 million, primarily reflecting an increase in employee and compensation costs.
- **Amortization of intangible assets** increased due to additional intangibles acquired in connection with our acquisitions of Packet Design and DonRiver during fiscal 2018.
- **Significant asset impairments and restructuring costs** reflect global workforce reductions as part of a business optimization strategy to improve gross margin, constrain operating expense, and redesign certain business processes and unfavorable lease commitments for certain facility locations in the United States and India where we have vacated unused space.
- **Acquisition and integration costs** reflect financial, legal and accounting advisors and severance and other employment-related costs related to our acquisitions of Packet Design and DonRiver.

Other items

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

	Quarter Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Interest and other income (loss), net	$ 1,050	0.1	$ (1,543)	(0.2)	$ 2,593	(168.0)
Interest expense	$ 9,404	1.0	$ 13,611	1.7	$ (4,207)	(30.9)
Provision for income taxes	$ 30,198	3.1	$ 19,280	2.4	$ 10,918	56.6

* Denotes % of total revenue

** Denotes % change from 2018 to 2019

- **Interest and other income, net** primarily reflects the impact of foreign exchange rates on assets and liabilities denominated in a currency other than the relevant functional currency, net of hedging activity.
- **Interest expense** decreased, primarily due to a reduction in our aggregate outstanding debt during the fourth quarter of fiscal 2018.
- **Provision for income taxes** increased, due to higher earnings for the third quarter of fiscal 2019. The effective tax rate for the third quarter of 2019 was lower compared to the third quarter of fiscal 2018, primarily due to a lower statutory federal income tax rate in 2019.

Nine months ended July 31, 2019 compared to the nine months ended July 31, 2018

Revenue

During the first nine months of fiscal 2019, approximately 17.4% of our revenue was non-U.S. Dollar-denominated, including sales in Euros, Japanese Yen, Canadian Dollars, Brazilian Reais, Indian Rupees, Argentina Pesos, British Pounds and Mexican Pesos. During the first nine months of fiscal 2019, as compared to the first nine months of fiscal 2018, the U.S. Dollar generally strengthened against these currencies. Consequently, our revenue reported in U.S. Dollars was reduced by approximately $37.4 million or 1.4%. The table below (in thousands, except percentage data) sets forth the changes in our operating segment revenue for the periods indicated:

	Nine Months Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Revenue:						
Networking Platforms						
Converged Packet Optical	$ 1,897,080	72.8	$ 1,548,189	70.5	$ 348,891	22.5
Packet Networking	216,529	8.3	216,977	9.9	(448)	(0.2)
Total Networking Platforms	2,113,609	81.1	1,765,166	80.4	348,443	19.7
Software and Software-Related Services						
Platform Software and Services	114,139	4.4	117,347	5.3	(3,208)	(2.7)
Blue Planet Automation Software and Services	37,977	1.5	16,068	0.7	21,909	136.4
Total Software and Software-Related Services	152,116	5.9	133,415	6.0	18,701	14.0
Global Services						
Maintenance Support and Training	196,002	7.5	177,759	8.1	18,243	10.3
Installation and Deployment	111,746	4.3	89,487	4.1	22,259	24.9
Consulting and Network Design	30,671	1.2	29,103	1.4	1,568	5.4
Total Global Services	338,419	13.0	296,349	13.6	42,070	14.2
Consolidated revenue	$ 2,604,144	100.0	$ 2,194,930	100.0	$ 409,214	18.6

* Denotes % of total revenue

** Denotes % change from 2018 to 2019

- **Networking Platforms segment revenue** increased, primarily reflecting a product line sales increase of $348.9 million of our Converged Packet Optical products.
    - Converged Packet Optical sales primarily reflect sales increases of $216.3 million of our 6500 Packet-Optical Platform and $192.7 million of our Waveserver stackable interconnect system. These increases were partially offset by a sales decrease of $50.9 million of our 5410/5430 Reconfigurable Switching Systems. The sales

increase of our 6500 Packet-Optical Platform is primarily due to increased sales to communications service providers, including AT&T, submarine network operators and cable and multiservice operators. Waveserver stackable interconnect system sales primarily reflect increased sales to Web-scale providers, which represent a growing portion of our business as we continue to diversify.

  - Packet Networking sales primarily reflect $47.0 million in initial sales of our 6500 Packet Transport System to communications service providers which was slightly more than offset by sales decreases of $27.7 million of our 3000 and 5000 families of service delivery and aggregation switches and $15.1 million of our packet networking platform independent software.

- **Software and Software-Related Services segment revenue** increased, primarily reflecting a sales increase of $21.9 million of our Blue Planet Automation Software and Services, partially offset by a sales decrease of $3.2 million of our Platform Software and Services. The increase in our Blue Planet Automation Software and Services includes sales of $9.3 million and $11.0 million related to the Packet Design and DonRiver businesses acquired during fiscal 2018, respectively.

- **Global Services segment revenue** increased, primarily reflecting sales increases of $22.3 million of our deployment and installation services and $18.2 million of our maintenance support and training services and $1.6 million of our network transformation services.

The following table reflects our geographic distribution of revenue principally based on the relevant location for our delivery of products and performance of services. Our revenue, particularly when considered by geographic distribution, can fluctuate significantly, and the timing of revenue recognition for large network projects, particularly outside of North America, can result in large variations in geographic revenue results in any particular quarter. The increase in our EMEA region for the nine months ended July 31, 2019 was primarily driven by increased sales in the Netherlands, the United Kingdom and Germany. The increase in our CALA region for the nine months ended July 31, 2019 was primarily driven by increased sales in Brazil, Mexico and Chile. The decrease in our APAC region for the nine months ended July 31, 2019 was primarily driven by decreased sales in India and Australia, partially offset by increased sales in Japan. The table below (in thousands, except percentage data) sets forth the changes in geographic distribution of revenue for the periods indicated:

	Nine Months Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
North America	$ 1,678,599	64.5	$ 1,331,148	60.6	$ 347,451	26.1
EMEA	413,715	15.9	341,785	15.6	71,930	21.0
CALA	109,635	4.2	87,136	4.0	22,499	25.8
APAC	402,195	15.4	434,861	19.8	(32,666)	(7.5)
Total	$ 2,604,144	100.0	$ 2,194,930	100.0	$ 409,214	18.6

* Denotes % of total revenue

** Denotes % change from 2018 to 2019

- **North America revenue** primarily reflects increases of $325.6 million within our Networking Platforms segment and $20.4 million within our Global Services segment. The increase within our Networking Platforms segment primarily reflects product line sales increases of $291.7 million of Converged Packet Optical products and $33.9 million of Packet Networking products. Converged Packet Optical sales primarily reflect sales increases of $168.8 million of our 6500 Packet-Optical Platform and $132.6 million of our Waveserver stackable interconnect system. 6500 Packet-Optical Platform sales primarily reflect increased sales to communications service providers, including AT&T, and enterprise customers. Waveserver stackable interconnect system sales primarily reflect increased sales to Web-scale providers.

- **EMEA revenue** primarily reflects increases of $58.0 million within our Networking Platforms segment, $10.2 million within our Global Services segment and $3.8 million within our Software and Software-Related Services segment. The increase within our Networking Platforms segment primarily reflects a product line sales increase of $55.3 million of Converged Packet Optical products. Converged Packet Optical sales primarily reflects sales increases of $46.5 million of our Waveserver stackable interconnect system to Web-scale providers and $18.1 million of our 6500 Packet-Optical Platform primarily reflecting increased sales to enterprise customers, communications services providers and Web-scale customers.

- **CALA revenue** primarily reflects increases of $16.4 million within our Networking Platforms segment, $3.9 million within our Global Services segment and $2.2 million within our Software and Software-Related Services segment.
- **APAC revenue** primarily reflects a decrease of $51.6 million within our Networking Platforms segment, partially offset by increases of $11.3 million within our Software and Software-Related Services and $7.7 million within our Global Services segment. The decrease within our Networking Platforms segment primarily reflects product line decreases of $36.9 million of Packet Networking products and $14.7 million of Converged Packet Optical products. Packet Networking sales primarily reflects sales decreases of $27.5 million of our 3000 and 5000 families of service delivery and aggregation switches and $8.2 million of our 8700 Packetwave Platform to a certain communications service provider in India. Converged Packet Optical sales primarily reflect a sales decrease of $39.3 million of our 5410/5430 Reconfigurable Switching Systems to communications service providers. This decrease was partially offset by sales increases of $17.0 million of our 6500 Packet-Optical Platform primarily to communications service providers and $8.4 million of our Waveserver stackable interconnect system to Web-scale customers.

Cost of Goods Sold and Gross Profit

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

	Nine Months Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Total revenue	$ 2,604,144	100.0	$ 2,194,930	100.0	$ 409,214	18.6
Total cost of goods sold	1,481,774	56.9	1,278,315	58.2	203,459	15.9
Gross profit	$ 1,122,370	43.1	$ 916,615	41.8	$ 205,755	22.4

* Denotes % of total revenue

** Denotes % change from 2018 to 2019

	Nine Months Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Product revenue	$ 2,163,808	100.0	$ 1,821,593	100.0	$ 342,215	18.8
Product cost of goods sold	1,246,413	57.6	1,085,574	59.6	160,839	14.8
Product gross profit	$ 917,395	42.4	$ 736,019	40.4	$ 181,376	24.6

* Denotes % of product revenue

** Denotes % change from 2018 to 2019

	Nine Months Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Service revenue	$ 440,336	100.0	$ 373,337	100.0	$ 66,999	17.9
Service cost of goods sold	235,361	53.5	192,741	51.6	42,620	22.1
Service gross profit	$ 204,975	46.5	$ 180,596	48.4	$ 24,379	13.5

* Denotes % of services revenue

** Denotes % change from 2018 to 2019

- **Gross profit as a percentage of revenue** reflects improved product gross profit partially offset by lower services gross profit as described below.
- **Gross profit on products as a percentage of product revenue** increased**,** primarily due to product cost reductions and improved manufacturing efficiencies. This benefit was partially offset by an unfavorable mix of customers and early stage international network deployments, and market-based price compression we encountered during the period.

- **Gross profit on services as a percentage of services revenue** decreased, primarily as a result of lower margins on our Blue Planet Automation software services and the impact of early stages of international network deployments.

Operating Expense

During the first nine months of fiscal 2019, approximately 51.0% of our operating expense was non-U.S. Dollar-denominated, including Canadian Dollars, British Pounds, Indian Rupees and Euros. Consequently, our operating expense reported in U.S. Dollars was reduced by approximately $15.9 million, or 1.8%, during the first nine months of fiscal 2019 as compared to the first nine months of fiscal 2018, due to the strengthening U.S. Dollar, net of hedging. The table below (in thousands, except percentage data) sets forth the changes in operating expense for the periods indicated:

	Nine Months Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Research and development	$ 406,482	15.6	$ 356,581	16.2	$ 49,901	14.0
Selling and marketing	305,845	11.7	281,269	12.8	24,576	8.7
General and administrative	124,092	4.8	115,594	5.3	8,498	7.4
Amortization of intangible assets	16,586	0.6	11,083	0.5	5,503	49.7
Significant asset impairments and restructuring costs	11,696	0.4	16,679	0.8	(4,983)	(29.9)
Acquisition and integration costs	4,105	0.2	1,333	0.1	2,772	208.0
Total operating expenses	$ 868,806	33.3	$ 782,539	35.7	$ 86,267	11.0

* Denotes % of total revenue

** Denotes % change from 2018 to 2019

- **Research and development expense** benefited from $8.0 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 $49.9 million. This increase primarily reflects increases of $21.6 million in employee and compensation costs, $14.1 million in professional services, $4.9 million in facility and information technology costs, $4.6 million in prototype expense and $1.0 million in technology and related costs. This increase also reflects a reduced benefit of $3.5 million for the ENCQOR grant reimbursement. For more information on the ENCQOR grant, see Note 20 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report.
- **Selling and marketing expense** benefited from $6.3 million as a result of foreign exchange rates, primarily due to a stronger U.S. Dollar in relation to the Euro and Canadian Dollar. Including the effect of foreign exchange rates, sales and marketing expenses increased by $24.6 million, primarily reflecting increases of $21.6 million in employee and compensation costs and $3.3 million in facilities and information technology costs.
- **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 Euro, Brazilian Real, Canadian Dollar and Indian Rupee. Including the effect of foreign exchange rates, general and administrative expenses increased by $8.5 million, primarily reflecting an increase of $8.0 million in employee and compensation costs.
- **Amortization of intangible assets** increased due to additional intangibles acquired in connection with our acquisitions of Packet Design and DonRiver.
- **Significant asset impairments and restructuring costs** reflect global workforce reductions as part of a business optimization strategy to improve gross margin, constrain operating expense and redesign certain business processes and unfavorable lease commitments for a few of our facility locations in the United States and India where we have vacated unused space.
- **Acquisition and integration costs** reflect financial, legal and accounting advisors and severance and other employment-related costs related to our acquisitions of Packet Design and DonRiver.

Other items

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

	Nine Months Ended July 31,				Increase	
	2019	%*	2018	%*	(decrease)	%**
Interest and other income (loss), net	$ 5,059	0.2	$ 1,328	0.1	$ 3,731	280.9
Interest expense	$ 28,316	1.1	$ 40,376	1.8	$ (12,060)	(29.9)
Provision for income taxes	$ 57,204	2.2	$ 503,695	22.9	$ (446,491)	(88.6)

* Denotes % of total revenue

** Denotes % change from 2018 to 2019

- **Interest and other income (loss), net** primarily reflects a $2.0 million gain related to foreign exchange rates on assets and liabilities denominated in a currency other than the relevant functional currency, net of hedging activity and a $1.6 million gain in interest income due to higher interest rates on our investments during fiscal 2019.
- **Interest expense** decreased, primarily due to a reduction in our aggregate outstanding debt during the fourth quarter of fiscal 2018.
- **Provision for income taxes** decreased as the first nine months of fiscal 2018 reflects the impact of the Tax Act, including $431.3 million in expense for the remeasurement of our net deferred tax assets and a $45.6 million charge related to a transition tax on accumulated historical foreign earnings and their deemed repatriation to the U.S.

Segment Profit

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

	Quarter Ended July 31,			
	2019	2018	Increase (decrease)	%*
Segment profit:				
Networking Platforms	$ 230,610	$ 181,603	$ 49,007	27.0
Software and Software-Related Services	$ 6,029	$ 9,305	$ (3,276)	(35.2)
Global Services	$ 47,833	$ 39,502	$ 8,331	21.1

* Denotes % change from 2018 to 2019

- **Networking Platforms segment profit** increased, primarily due to higher sales volume and higher gross margin as described above, partially offset by higher research and development costs.
- **Software and Software-Related Services segment profit** decreased, primarily due to reduced gross margin on software-related services, as described above, and higher research and development costs, partially offset by higher sales volume.
- **Global Services segment profit** increased, primarily due to higher sales volume and improved gross margin.

	Nine Months Ended July 31,			
	2019	2018	Increase (decrease)	%*
Segment profit:				
Networking Platforms	$ 542,391	$ 396,995	$ 145,396	36.6
Software and Software-Related Services	$ 30,982	$ 41,216	$ (10,234)	(24.8)
Global Services	$ 142,515	$ 121,823	$ 20,692	17.0

* Denotes % change from 2018 to 2019

- **Networking Platforms segment profit** increased, primarily due to higher sales volume and higher gross margin as described above, partially offset by higher research and development costs.
- **Software and Software-Related Services segment profit** decreased, primarily due to reduced gross margin on software-related services partially offset by higher sales volume as described above.
- **Global Services segment profit** increased, primarily due to higher sales volume as described above and improved gross margin.

Liquidity and Capital Resources

For the nine months ended July 31, 2019, we generated $173.1 million of cash from operating activities, as our net income (adjusted for non-cash charges) of $380.7 million exceeded our working capital requirements of $207.6 million. The increase in working capital was primarily driven by inventory increases of $115.4 million. For additional details on our cash provided by operating activities, see the discussion below entitled “Cash Provided By Operating Activities.”

Despite our cash generated from operations, cash, cash equivalents and investments decreased by $110.5 million during the first nine months of fiscal 2019. The decrease in cash primarily reflects (i) cash used for the payment of the debt conversion liability associated with our New Notes of $111.3 million on November 15, 2018, (ii) cash used to fund our investing activities for capital expenditures totaling $49.1 million, (iii) cash used for stock repurchase under our stock repurchase program of $110.5 million, (iv) stock repurchased upon vesting of our stock unit awards to employees relating to tax withholding of $23.2 million and (v) cash used for payments on our term loan due September 28, 2025 (the “2025 Term Loan”) of $5.3 million. Proceeds from the issuance of equity under our employee stock purchase plans provided $22.9 million in cash during the nine months ended July 31, 2019.

	July 31, 2019	October 31, 2018	Increase (decrease)
Cash and cash equivalents	$ 723,229	$ 745,423	$ (22,194)
Short-term investments in marketable debt securities	119,670	148,981	(29,311)
Long-term investments in marketable debt securities	—	58,970	(58,970)
Total cash and cash equivalents and investments in marketable debt securities	$ 842,899	$ 953,374	$ (110,475)

Principal Sources of Liquidity. Our principal sources of liquidity on hand include our cash, cash equivalents and investments, which as of July 31, 2019 totaled $842.9 million, as well as the senior secured asset-backed revolving credit facility to which we and certain of our subsidiaries are parties (the “ABL Credit Facility”). The ABL Credit Facility provides for a total commitment of $250 million with a maturity date of December 31, 2020. We principally use the ABL Credit Facility to support the issuance of letters of credit that arise in the ordinary course of our business and thereby to reduce our use of cash required to collateralize these instruments. As of July 31, 2019, letters of credit totaling $75.0 million were collateralized by our ABL Credit Facility. There were no borrowings outstanding under the ABL Credit Facility as of July 31, 2019.

Foreign Liquidity. The amount of cash, cash equivalents, and short-term investments held by our foreign subsidiaries was $73.3 million as of July 31, 2019.We intend to reinvest indefinitely our foreign earnings. If we were to repatriate the accumulated historical foreign earnings, the estimated amount of unrecognized deferred income tax liability related to foreign withholding taxes would be approximately $28.0 million.

Stock Repurchase Authorization. On December 13, 2018, Ciena announced that its Board of Directors authorized a program to repurchase up to $500 million of its common stock, which replaced in its entirety the previous stock repurchase program authorized in fiscal 2018. The amount and timing of repurchases 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.

Liquidity Position. We regularly evaluate our liquidity position, debt obligations, and anticipated cash needs to fund our operating or investment plans and may consider capital raising and other market opportunities that may be available to us. We regularly evaluate alternatives to manage our capital structure and to reduce our debt. Based on past performance and current expectations, we believe that cash from operations, cash, cash equivalents, investments, and other sources of liquidity, including our ABL Credit Facility, will satisfy our working capital needs, capital expenditures, and other liquidity requirements associated with our operations through at least the next 12 months.

Cash Provided By Operating Activities

The following sections set forth the components of our $173.1 million of cash provided by operating activities during the first nine months of fiscal 2019:

Net income (adjusted for non-cash charges)

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

		Nine months ended July 31, 2019
Net income	$	173,103
Adjustments for non-cash charges:		
Depreciation of equipment, building, furniture and fixtures, and amortization of leasehold improvements		65,071
Share-based compensation costs		44,446
Amortization of intangible assets		26,610
Deferred taxes		35,949
Provision for inventory excess and obsolescence		18,833
Provision for warranty		15,933
Other		743
Net income (adjusted for non-cash charges)	$	380,688

Working Capital

We used $207.6 million of cash for working capital during the period. The following table sets forth the major components of the cash used in working capital (in thousands):

		Nine months ended July 31, 2019
Cash used in accounts receivable	$	(2,517)
Cash used in inventories		(115,427)
Cash used in prepaid expenses and other		(85,039)
Cash used in accounts payable, accruals and other obligations		(9,005)
Cash provided by deferred revenue		4,427
Total cash used for working capital	$	(207,561)

As compared to the end of fiscal 2018:

- The $2.5 million of cash used by accounts receivable during the first nine months of fiscal 2019 reflects increased sales volume partially offset by increased cash collections;
- The $115.4 million of cash used in inventory during the first nine months of fiscal 2019 primarily reflects increases in finished goods to meet customer delivery schedules;
- The $85.0 million of cash used in prepaid expense and other during the first nine months of fiscal 2019 primarily reflects increases in contract assets for unbilled accounts receivable due to changes in recognizing revenue for installation services and certain product sales and higher non-customer receivables;
- The $9.0 million of cash used in accounts payable, accruals and other obligations during the first nine months of fiscal 2019 primarily reflects an employee payout of accrued leave in North America due to a new paid time off policy, partially offset by increased inventory purchases during fiscal 2019; and
- The $4.4 million of cash provided by deferred revenue during the first nine months of fiscal 2019 represents an increase in advanced payments received from customers prior to revenue recognition.

Our days sales outstanding (“DSOs”) for the first nine months of fiscal 2019 were 91 days, and our inventory turns for the first nine months of fiscal 2019 were 4.7. The calculation of DSOs includes accounts receivables and contract assets for unbilled receivables included in prepaid expenses and other.

Cash Paid for Interest

The following table sets forth the cash paid for interest during the period (in thousands):

		Nine months ended July 31, 2019
Term Loan due September 28, 2025 [1]	$	23,442
Interest rate swaps[2]		1,407
ABL Credit Facility[3]		1,234
Capital leases		3,838
Cash paid during period	$	29,921

(1) Interest on the 2025 Term Loan is payable periodically based on the interest period selected for borrowing. The 2025 Term Loan bears interest at LIBOR for the chosen borrowing period plus a spread of 2.00% subject to a minimum LIBOR rate of 0.00%. At the end of the third quarter of fiscal 2019, the interest rate on the 2025 Term Loan was 4.27%.

(2) The interest rate swaps fix the LIBOR rate for $350.0 million of the 2025 Term Loan at 2.957% through September 2023.

(3) During the first nine months of fiscal 2019, we utilized the ABL Credit Facility to collateralize certain standby letters of credit and paid $1.2 million in commitment fees, interest expense and other administrative charges relating to the ABL Credit Facility.

Contractual Obligations

There have been no material changes to our contractual obligations since October 31, 2018. For a summary of our contractual obligations, see Item 7 of Part II of our annual report on Form 10-K for the fiscal year ended October 31, 2018.

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. 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 under the circumstances. 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 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.

Our critical accounting policies and estimates have not changed materially since October 31, 2018, except for items listed below. For a discussion of our critical accounting policies and estimates, see Item 7 of Part II of our annual report on Form 10-K for the fiscal year ended October 31, 2018 (Management’s Discussion and Analysis of Financial Condition and Results of Operations).

Revenue Recognition

For changes to our revenue recognition policies and estimates due to ASC 606, see Notes 2 and 3 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report.

Effects of Recent Accounting Pronouncements

See Note 2 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report for information relating to our discussion of the effects of recent accounting pronouncements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Our exposure to market risk has not changed materially since October 31, 2018. For a discussion of quantitative and qualitative disclosures about market risk, see Item 7A of Part II of our annual report on Form 10-K for the fiscal year ended October 31, 2018 (Quantitative and Qualitative Disclosures About Market Risk).

Item 4. 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 Securities Exchange Act of 1934, as amended). Based upon 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.

PART II — OTHER INFORMATION

Item 1. Legal Proceedings

The information set forth under the headings “Litigation” and “Internal Investigation” in Note 20, Commitments and Contingencies, to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report, is incorporated herein by reference.

Item 1A. Risk Factors

There has been no material change to our Risk Factors from those presented in our annual report on Form 10-K for the year fiscal year ended October 31, 2018, other than as set forth below. Investing in our securities involves a high degree of risk. Before investing in our securities, you should consider carefully the information contained in this report and in our annual report on Form 10-K for the fiscal year ended October 31, 2018, including the risk factors identified in Item 1A of Part I thereof (Risk Factors). This report contains forward-looking statements that involve risks and uncertainties. See “Cautionary Note Regarding Forward-Looking Statements” in “Management’s Discussion and Analysis of Financial Conditions and Results of Operations” above. Our actual results could differ materially from those contained in the forward-looking statements. Any of the risks discussed in our annual report on Form 10-K for the fiscal year ended October 31, 2018, in this report, in other reports we file with the SEC, and other risks we have not anticipated or discussed, could have a material adverse impact on our business, financial condition or results of operations.

A small number of customers account for a significant portion of our revenue. The loss of any 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 56.5% of our fiscal 2018 revenue. Historically, our largest customers by revenue principally consisted of large communications service providers. For example, AT&T and Verizon accounted for approximately 12.1% and 10.3% of fiscal 2018 revenue, respectively. As a result of efforts in recent years to diversify our business, our customer base, including some of our largest customers by revenue, also includes certain Web-scale providers. These customers are increasingly important contributors to our overall growth through both our direct sales to them and their impact on purchases by other network operators. During fiscal 2018, two Web-scale providers were among our top ten customers, and during the third quarter of fiscal 2019, a Web-scale provider was our largest customer by revenue. Consequently, our financial results and our ability to grow our business are closely correlated with the spending of a relatively small number of customers in these important segments. Changes in their levels of network spending or their consumption models for acquiring networking solutions could adversely affect our operating results.

Because of our concentration of revenue with communications service providers and Web-scale providers, our business and results of operations can be significantly affected by market, industry 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, “over-the-top” (OTT) providers, and other content providers challenge their traditional business models and network infrastructures. These dynamics have had an adverse effect on network spending levels by certain of our largest service provider customers. Several of these, including AT&T, with whom we experienced declines in annual revenue during fiscal 2017 and fiscal 2018, have announced various procurement initiatives or efforts to reduce capital expenditures on network infrastructure in future periods that may adversely affect our results of operations. Moreover, a number of our communications service providers and cable operator customers, including AT&T, Verizon and Centurylink, have either recently announced significant acquisition transactions or are in the process of significant related integration activities, including the acquisition of media or content companies. Such transactions have in the past, and may in the future, result in spending delays or deferrals, or changes in preferred vendors, due to changes in strategy or leadership, the timing of regulatory approvals and debt burdens associated with such transactions. Separately, certain of our Web-scale 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 to consider the businesses associated with these platforms and their impact on competition. There can be no assurance that these government actions will not adversely impact the network spending, procurement strategies, or business practices of our Web-scale customers in a manner adverse to us. 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.

Generally, our customer contracts do not require customers to purchase any minimum or guaranteed volumes, and we conduct sales under purchase orders for which our customers often have the right to modify or cancel. We must regularly compete for and win business with existing customers. Moreover, Web-scale providers tend to operate on shorter procurement cycles than 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. Our business and results of operations would be materially adversely impacted by the loss of a large customer or reductions in spending or capital expenditure budgets by our largest customers.

The potential effects of recently announced tariffs on Chinese products by the United States government are uncertain.

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. The loss of a source of supply, or lack of sufficient availability of key components or materials, could require that we locate an alternate source or redesign our products, either of which could result in business interruption and increased costs and could negatively affect our product gross margin and results of operations.

As a result of our global sourcing strategy, 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, some of which were subsequently raised, on a wide range of imports of Chinese products, including component elements of our solutions and certain finished goods products that we sell. Effective September 1, 2019, a new 15% tariff was imposed on approximately $300 billion of China-origin imports covered by the so called “List 4A,” which includes certain Ciena products. The U.S. government has also implemented prohibitions on U.S. companies from doing business with certain Chinese companies. These actions have resulted in escalating tensions between the United States and China and introduce a risk that the Chinese government may take additional steps to retaliate against U.S. industries or companies. At this time, it remains unclear what additional actions, if any, will be taken by the governments of the U.S. or China with respect to such trade and tariff matters. There can be no assurance that any future action or regulation would not adversely affect our business, operations and financial results.

Our reliance upon certain third-party component suppliers exposes us to certain risks relating to their business in China that, in turn, could disrupt our business or limit our sales.

In May 2019, the U.S. Department of Commerce amended the Export Administration Regulations by adding Huawei Technologies Co., Ltd. and 68 of its non-U.S. affiliates to the "Entity List" for actions contrary to the national security and foreign policy interests of the United States, which amendment imposes significant new restrictions on export, reexport and transfer of U.S. regulated technologies and products to Huawei. In August, the U.S. Department of Commerce further added 46 affiliates to the Entity List (collectively, "Huawei"). 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. Any continued restriction on our suppliers' ability to make sales to Huawei may adversely impact their businesses. Such industry, market and regulatory disruptions affecting these 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. At this time, there can be no assurance regarding the scope or duration of the restrictions imposed on Huawei and any future impact on our suppliers.

We rely upon 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 upon third-party contract manufacturers 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;
- risks and uncertainties associated with the locations or countries where our products are manufactured, including potential manufacturing disruptions caused by social, geopolitical or environmental factors;
- changes in U.S. law or policy governing foreign 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;
- limited warranties provided to us; and
- potential misappropriation of our intellectual property.

These and other risks could impair our ability to fulfill orders, harm our sales and impact our reputation with customers. If our contract manufacturers are unable or unwilling to continue manufacturing our products or components of our products, or if our contract manufacturers discontinue operations, we may be required to identify and qualify alternative manufacturers, which could cause us to be unable to meet our supply requirements to our customers and result in the breach of our customer agreements. 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 lose sales revenue and damage our existing customer relationships.

A substantial portion of our products are manufactured and distributed by third-party contract manufacturers in Mexico. In recent months, the U.S. government has generally indicated a willingness to revise, renegotiate, or terminate various multilateral trade agreements and to impose new taxes on certain goods imported into the U.S. For example, the U.S. has threatened to undertake a number of actions relating to trade with Mexico, including the closure of the border and the imposition of escalating tariffs on goods imported into the U.S. from Mexico. If adopted, such actions could adversely impact our business and significantly disrupt our operations. These actions may also make our products less competitive in the United States and other markets. At this time, it remains unclear what additional actions, if any, will be taken by the U.S. with respect to such trade agreements, tax policy related to international commerce, or the imposition of tariffs on goods imported into the U.S. Based on our manufacturing practices and locations, there can be no assurance that any future executive or legislative action in the United States relating to tax policy and trade regulation would not adversely affect our business, operations and financial results.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Issuer Purchases of Equity Securities

The following table provides a summary of repurchases of our common stock during the third quarter of fiscal 2019:

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)
May 1, 2019 to May 31, 2019	392,018	$ 34.92	392,018	$ 419,769
June 1, 2019 to June 30, 2019	343,370	$ 41.96	343,370	$ 405,363
July 1, 2019 to July 31, 2019	393,651	$ 43.92	393,651	$ 388,076
	1,129,039	$ 40.19	1,129,039	

(1) On December 13, 2018, Ciena announced that its Board of Directors authorized a program to repurchase up to $500 million of its common stock, which replaced in its entirety the previous stock repurchase program authorized in fiscal 2018. The amount and timing of repurchases 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.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Not applicable.

Item 6. Exhibits

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
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
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
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
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.
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

SIGNATURES

Pursuant to the requirements 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.

		Ciena Corporation
Date: September 11, 2019	By:	/s/ Gary B. Smith
		Gary B. Smith
		President, Chief Executive Officer and Director (Duly Authorized Officer)
Date: September 11, 2019	By:	/s/ James E. Moylan, Jr.
		James E. Moylan, Jr.
		Senior Vice President, Finance and Chief Financial Officer (Principal Financial Officer)

CIENA CORPORATION
CERTIFICATION OF CHIEF EXECUTIVE OFFICER

I, Gary B. Smith, certify that:

1. I have reviewed this quarterly 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.

Dated: September 11, 2019

/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 quarterly 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: September 11, 2019

/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-Q of the Company for the quarter ended July 31, 2019 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

September 11, 2019

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-Q of the Company for the quarter ended July 31, 2019 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.

James E. Moylan, Jr.
Senior Vice President and Chief Financial Officer

September 11, 2019

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.