

CIENA CORP
Form 10-Q
June 08, 2016

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 April 30, 2016

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

(State or other jurisdiction of incorporation or organization) 23-2725311 (I.R.S. 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)

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T 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 or a smaller reporting company. See the definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

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

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 June 3, 2016

common stock, \$0.01 par value 138,116,410

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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 April 30,		Six Months Ended April 30,	
	2016	2015	2016	2015
Revenue:				
Products	\$523,978	\$511,880	\$981,567	\$934,195
Services	116,739	109,722	232,265	216,569
Total revenue	640,717	621,602	1,213,832	1,150,764
Cost of goods sold:				
Products	291,778	286,898	552,260	523,446
Services	65,846	62,293	127,029	124,612
Total cost of goods sold	357,624	349,191	679,289	648,058
Gross profit	283,093	272,411	534,543	502,706
Operating expenses:				
Research and development	114,603	105,202	222,649	205,963
Selling and marketing	86,668	82,471	169,146	159,183
General and administrative	35,203	30,302	66,345	59,855
Acquisition and integration costs	2,285	1,020	3,584	1,020
Amortization of intangible assets	15,566	11,019	32,428	22,038
Restructuring costs	535	(17)	919	8,068
Total operating expenses	254,860	229,997	495,071	456,127
Income from operations	28,233	42,414	39,472	46,579
Interest and other income (loss), net	967	(5,549)	(7,809)	(13,782)
Interest expense	(12,608)	(12,947)	(25,318)	(26,608)
Income before income taxes	16,592	23,918	6,345	6,189
Provision for income taxes	2,595	3,265	3,894	4,315
Net income	\$13,997	\$20,653	\$2,451	\$1,874
Basic net income per common share	\$0.10	\$0.18	\$0.02	\$0.02
Diluted net income per potential common share	\$0.10	\$0.17	\$0.02	\$0.02
Weighted average basic common shares outstanding	137,950	113,555	137,313	110,578
Weighted average dilutive potential common shares outstanding	138,889	128,017	138,693	111,762

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		Six Months	
	April 30,		Ended April 30,	
	2016	2015	2016	2015
Net income	\$13,997	\$20,653	\$2,451	\$1,874
Change in unrealized gain on available-for-sale securities, net of tax	234	(60)	256	(24)
Change in unrealized loss on foreign currency forward contracts, net of tax	3,984	3,041	1,464	(1,472)
Change in unrealized loss on forward starting interest rate swap, net of tax	423	347	94	(2,218)
Change in cumulative translation adjustment	7,516	8,837	4,693	(3,411)
Other comprehensive income (loss)	12,157	12,165	6,507	(7,125)
Total comprehensive income (loss)	\$26,154	\$32,818	\$8,958	\$(5,251)

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)

	April 30, 2016	October 31, 2015
ASSETS		
Current assets:		
Cash and cash equivalents	\$922,033	\$790,971
Short-term investments	195,179	135,107
Accounts receivable, net	555,056	550,792
Inventories	190,861	191,162
Prepaid expenses and other	214,920	196,178
Total current assets	2,078,049	1,864,210
Long-term investments	125,233	95,105
Equipment, building, furniture and fixtures, net	248,649	191,973
Goodwill	267,681	256,434
Other intangible assets, net	184,920	202,673
Other long-term assets	77,051	84,656
Total assets	\$2,981,583	\$2,695,051
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$225,237	\$222,140
Accrued liabilities	283,096	316,283
Deferred revenue	116,799	126,111
Current portion of long-term debt	5,000	2,500
Total current liabilities	630,132	667,034
Long-term deferred revenue	70,233	62,962
Other long-term obligations	106,817	72,540
Long-term debt, net	1,505,389	1,271,639
Total liabilities	\$2,312,571	\$2,074,175
Commitments and contingencies (Note 22)		
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; 138,008,639 and 135,612,217 shares issued and outstanding	1,380	1,356
Additional paid-in capital	6,679,590	6,640,436
Accumulated other comprehensive loss	(15,619)	(22,126)
Accumulated deficit	(5,996,339)	(5,998,790)
Total stockholders' equity	669,012	620,876
Total liabilities and stockholders' equity	\$2,981,583	\$2,695,051

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

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

	Six Months Ended	
	April 30,	
	2016	2015
Cash flows provided by operating activities:		
Net income	\$2,451	\$1,874
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation of equipment, building, furniture and fixtures, and amortization of leasehold improvements	30,237	27,322
Share-based compensation costs	29,210	22,136
Amortization of intangible assets	40,488	26,439
Provision for inventory excess and obsolescence	20,104	10,834
Provision for warranty	9,563	7,658
Other	8,578	10,266
Changes in assets and liabilities:		
Accounts receivable	(4,865)	(46,630)
Inventories	(19,022)	27,952
Prepaid expenses and other	(7,670)	(15,621)
Accounts payable, accruals and other obligations	(29,400)	(28,982)
Deferred revenue	(3,992)	16,694
Net cash provided by operating activities	75,682	59,942
Cash flows used in investing activities:		
Payments for equipment, furniture, fixtures and intellectual property	(53,050)	(21,899)
Restricted cash	—	(44)
Purchase of available for sale securities	(199,994)	(130,239)
Proceeds from maturities of available for sale securities	110,000	90,000
Settlement of foreign currency forward contracts, net	(4,834)	10,364
Acquisition of business, net of cash acquired	(32,000)	—
Purchase of cost method investment	—	(2,000)
Net cash used in investing activities	(179,878)	(53,818)
Cash flows provided by (used in) financing activities:		
Proceeds from issuance of term loan, net	248,750	—
Payment of long term debt	(15,264)	(8,190)
Payment for debt issuance costs	(3,778)	(247)
Payment of capital lease obligations	(3,769)	(4,745)
Proceeds from issuance of common stock	9,968	9,980
Net cash provided by (used in) financing activities	235,907	(3,202)
Effect of exchange rate changes on cash and cash equivalents	(649)	(3,304)
Net increase (decrease) in cash and cash equivalents	131,062	(382)
Cash and cash equivalents at beginning of period	790,971	586,720
Cash and cash equivalents at end of period	\$922,033	\$586,338
Supplemental disclosure of cash flow information		
Cash paid during the period for interest	\$19,620	\$21,882
Cash paid during the period for income taxes, net	\$6,991	\$5,811
Non-cash investing activities		
Purchase of equipment in accounts payable	\$11,437	\$11,733

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Equipment acquired under capital lease	\$3,012	\$—
Building subject to capital lease	\$8,993	\$10,032
Construction in progress subject to build-to-suit lease	\$21,606	\$—
Non-cash financing activities		
Conversion of 4.0% convertible senior notes, due March 15, 2015 into 8,898,387 shares of common stock	\$—	\$180,645

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 ("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 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, 2015 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, 2015.

Ciena has a 52 or 53-week fiscal year, which ends on the Saturday nearest to the last day of October of each year. Fiscal 2015 and 2016 are 52-week fiscal years. 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.

Ciena previously identified prior period errors in the classification of foreign currency differences on changes in operating assets and liabilities for each quarterly period during the nine months ended July 31, 2015. The matters identified had no impact on any of the cash flow statement subtotals in any of the quarters, and were limited to equal and offsetting errors within the subtotal of cash provided by operations. Ciena concluded that the errors were not material to any of its previously issued financial statements. Ciena has revised the affected periods as they are presented in fiscal 2016 on a comparable basis to reflect the correction. The revisions resulted in net reclassifications within the cash flows from operating activities section of the cash flow from "Other" to "Changes in operating assets and liabilities" of \$10.4 million for the six-month period ending April 30, 2015.

(2) SIGNIFICANT ACCOUNTING POLICIES

Business Combinations

Ciena records acquisitions using the purchase method of accounting. All of the assets acquired, liabilities assumed, contractual contingencies and contingent consideration are recognized at their fair value as of the acquisition date. The excess of the purchase price over the estimated fair values of the net tangible and net intangible assets acquired is recorded as goodwill. The application of the purchase method of accounting for business combinations requires management to make significant estimates and assumptions in the determination of the fair value of assets acquired and liabilities assumed in order to properly allocate purchase price consideration between assets that are depreciated and amortized from goodwill. These assumptions and estimates include a market participant's use of the asset and the appropriate discount rates for a market participant. Ciena's estimates are based on historical experience, information obtained from the management of the acquired companies and, when appropriate, includes assistance from independent third-party appraisal firms. Significant assumptions and estimates can include, but are not limited to, the cash flows that an asset is expected to generate in the future, the appropriate weighted-average cost of capital, and the cost savings expected to be derived from acquiring an asset. These estimates are inherently uncertain and unpredictable. In addition, unanticipated events and circumstances may occur which may affect the accuracy or

validity of such estimates.

Use of Estimates

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

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Cash and Cash Equivalents

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

Investments

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

Ciena has a minority equity investment in a privately held technology company that is classified in other long-term assets. This investment is carried at cost because Ciena owns less than 20% of the voting equity and does not have the ability to exercise significant influence over the company. Ciena monitors this investment for impairment and makes appropriate reductions to the carrying value when necessary. As of April 30, 2016, the carrying value of this investment was \$2.0 million. Ciena has not estimated the fair value of this cost method investment because determining the fair value is not practicable. Ciena has not evaluated this investment for impairment as there have not been any events or changes in circumstances that Ciena believes would have had a significant adverse effect on the fair value of this investment.

Inventories

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

Segment Reporting

Ciena's chief operating decision maker, its chief executive officer, evaluates the company's performance and allocates resources based on multiple factors, including measures of segment profit (loss). Operating segments are defined as components of an enterprise that engage in business activities that may earn revenue and incur expense, for which discrete financial information is available, and for which such information is evaluated regularly by the chief operating decision maker for purposes of allocating resources and assessing performance. As of the first quarter of fiscal 2016, Ciena considers the following to be its operating segments for reporting purposes: (i) Networking Platforms, (ii) Software and Software-Related Services, and (iii) Global Services. See Note 21 below.

Goodwill

Goodwill is the excess of the purchase price over the fair values assigned to the net assets acquired in a business combination. Ciena tests goodwill for impairment on an annual basis, which it has determined to be the last business day of fiscal September each year. Ciena also tests goodwill for impairment between annual tests if an event occurs or

circumstances change that would, more likely than not, reduce the fair value of the reporting unit below its carrying value.

The first step in the process of assessing goodwill impairment is to compare the fair value of the reporting unit with the unit's carrying amount, including goodwill. If this test indicates that the fair value is less than the carrying value, then step two is required to compare the implied fair value of the reporting unit's goodwill with the carrying amount of the reporting unit's goodwill. A non-cash goodwill impairment charge would have the effect of decreasing earnings or increasing losses in such period. If Ciena is required to take a substantial impairment charge, its operating results would be materially adversely affected in such period.

Long-lived Assets

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

Equipment, Building, Furniture and Fixtures and Internal Use Software

Equipment, building, furniture and fixtures are recorded at cost. Depreciation and amortization are computed using the straight-line method over useful lives of two to five years for equipment and furniture and fixtures and the shorter of useful life or lease term for leasehold improvements. During fiscal 2015 and fiscal 2016, Ciena gained access to portions of an office building in Ottawa, Canada pursuant to a lease arrangement accounted for as a capital lease, which is depreciated over the lease term. The leased building is part of Ciena's new campus facility that will replace the "Lab 10" research and development center on the former Nortel Carling campus. See Note 11 below.

Ciena establishes assets and liabilities for the estimated construction costs incurred under build-to-suit lease arrangements to the extent that Ciena is involved in the construction of structural improvements or takes construction risk prior to commencement of a lease. See Notes 11 and 14 below.

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

Intangible Assets

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

Ciena has recorded in-process research and development projects acquired as the result of an acquisition as indefinite-lived intangible assets. Upon completion of the projects, the assets will be amortized on a straight-line basis over the expected economic life of the asset, which will be determined on that date. Should the project be determined to be abandoned, the full value of the asset will be charged to expense.

Maintenance Spares

Maintenance spares are recorded at cost. Spares usage cost is expensed ratably over four years.

Concentrations

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

Historically, a significant percentage of Ciena's revenue has been concentrated among sales to a small number of large communications service providers. Consolidation among Ciena's customers has increased this concentration.

Consequently, Ciena's accounts receivable are concentrated among these customers. See Note 21 below.

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

Revenue Recognition

Ciena recognizes revenue when all of the following criteria are met: persuasive evidence of an arrangement exists; delivery has occurred or services have been rendered; the price to the buyer is fixed or determinable; and collectibility is reasonably assured. Customer purchase agreements and customer purchase orders are generally used to determine the existence of an arrangement. Shipping documents and evidence of customer acceptance, when applicable, are used to verify delivery or services rendered. Ciena assesses whether the price is fixed or determinable based on the payment terms associated with the transaction and whether the sales price is subject to refund or adjustment. Ciena assesses collectibility based primarily on the creditworthiness of the customer as determined by credit checks and analysis, as well as the customer's payment history. Revenue for maintenance services is deferred and recognized ratably over the period during which the services are performed. Shipping and handling fees billed to customers are included in revenue, with the associated expenses included in product cost of goods sold.

Ciena applies the percentage-of-completion method to long-term arrangements where Ciena is required to undertake significant production, customization or modification engineering, and reasonable and reliable estimates of revenue and cost are available. Utilizing the percentage-of-completion method, Ciena recognizes revenue based on the ratio of actual costs incurred to date to total estimated costs expected to be incurred. In instances that do not meet the percentage-of-completion method criteria, recognition of revenue is deferred until there are no uncertainties regarding customer acceptance. Unbilled percentage-of-completion revenues recognized are included in accounts receivable, net. Billings in excess of revenues recognized on these contracts are recorded within deferred revenue. The percentage of total revenue recognized using the percentage-of-completion method for the six months ended April 30, 2016 and April 30, 2015 was 0.4% and 1.7%, respectively.

Software revenue is recognized when persuasive evidence of an arrangement exists, delivery has occurred, the fee is fixed or determinable, and collectibility is probable. In instances where final acceptance criteria of the software are specified by the customer, revenue is deferred until there are no uncertainties regarding customer acceptance.

Ciena limits the amount of revenue recognition for delivered elements to the amount that is not contingent on the future delivery of products or services, future performance obligations or subject to customer-specified return or refund privileges.

Revenue for multiple element arrangements is allocated to each unit of accounting based on the relative selling price of each delivered element, with revenue recognized for each delivered element when the revenue recognition criteria are met. Ciena determines the selling price for each deliverable based upon the selling price hierarchy for multiple-deliverable arrangements. Under this hierarchy, Ciena uses vendor-specific objective evidence ("VSOE") of selling price, if it exists, or third party evidence ("TPE") of selling price if VSOE does not exist. If neither VSOE nor TPE of selling price exists for a deliverable, Ciena uses its best estimate of selling price ("BESP") for that deliverable. For multiple element software arrangements where VSOE of undelivered maintenance does not exist, revenue for the entire arrangement is recognized over the maintenance term.

VSOE, when determinable, is established based on Ciena's pricing and discounting practices for the specific product or service when sold separately. In determining whether VSOE exists, Ciena requires that a substantial majority of the selling prices for a product or service fall within a reasonably narrow pricing range. Ciena has been unable to establish TPE of selling price because its go-to-market strategy differs from that of others in its markets, and the extent of customization and differentiated features and functions varies among comparable products or services from its peers. Ciena determines BESP based upon management-approved pricing guidelines, which consider multiple factors including the type of product or service, gross margin objectives, competitive and market conditions, and the go-to-market strategy, all of which can affect pricing practices.

Warranty Accruals

Ciena provides for the estimated costs to fulfill customer warranty obligations upon recognition of the related revenue. Estimated warranty costs include estimates for material costs, technical support labor costs and associated overhead. Warranty is included in cost of goods sold and is determined based upon actual warranty cost experience, estimates of component failure rates and management's industry experience. Ciena's sales contracts do not permit the right of return of the product by the customer after the product has been accepted.

Accounts Receivable, Net

Ciena's allowance for doubtful accounts is based on its assessment, on a specific identification basis, of the collectibility of customer accounts. Ciena performs ongoing credit evaluations of its customers and generally has not required collateral or other forms of security from them. In determining the appropriate balance for Ciena's allowance for doubtful accounts,

management considers each individual customer account receivable in order to determine collectibility. In doing so, management considers creditworthiness, payment history, account activity and communication with the customer. If a customer's financial condition changes, Ciena may be required to record an allowance for doubtful accounts for that customer, which could negatively affect its results of operations.

Research and Development

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

Government Grants

Ciena accounts for proceeds from government grants as a reduction of operating expense when there is reasonable assurance that Ciena has complied with the conditions attached to the grant and that the grant proceeds will be received. Grant benefits are recorded to the line item in the Condensed Consolidated Statement of Operations to which the grant activity relates.

Advertising Costs

Ciena expenses all advertising costs as incurred.

Legal Costs

Ciena expenses legal costs associated with litigation defense as incurred.

Share-Based Compensation Expense

Ciena measures and recognizes compensation expense for share-based awards based on estimated fair values on the date of grant. Ciena estimates the fair value of each option-based award on the date of grant using the Black-Scholes option-pricing model. This model is affected by Ciena's stock price as well as estimates regarding a number of variables, including expected stock price volatility over the expected term of the award and projected employee stock option exercise behaviors. Ciena estimates the fair value of each restricted stock unit award based on the fair value of the underlying common stock on the date of grant. In each case, Ciena only recognizes expense in its Condensed Consolidated Statement of Operations for those stock options or restricted stock units that are expected ultimately to vest. Ciena recognizes the estimated fair value of performance-based awards, net of estimated forfeitures, as share-based expense over the performance period, using graded vesting, which considers each performance period or tranche separately, based upon Ciena's determination of whether it is probable that the performance targets will be achieved. At the end of each reporting period, Ciena reassesses the probability of achieving the performance targets and the performance period required to meet those targets and the expense is adjusted accordingly. Ciena uses the straight-line method to record expense for share-based awards with only service-based vesting. See Note 20 below.

Income Taxes

Ciena accounts for income taxes using an asset and liability approach that recognizes deferred tax assets and liabilities for the expected future tax consequences attributable to differences between the carrying amounts of assets and liabilities for financial reporting purposes and their respective tax bases, and for operating loss and tax credit carryforwards. In estimating future tax consequences, Ciena considers all expected future events other than the enactment of changes in tax laws or rates. Valuation allowances are provided if, based upon the weight of the

available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

In the ordinary course of business, transactions occur for which the ultimate outcome may be uncertain. In addition, tax authorities periodically audit Ciena's income tax returns. These audits examine significant tax filing positions, including the timing and amounts of deductions and the allocation of income tax expenses among tax jurisdictions. Ciena is currently under audit in India for 2010 and 2012 through 2014 and in Canada for 2010 through 2013. Management does not expect the outcome of these audits to have a material adverse effect on Ciena's consolidated financial position, results of operations or cash flows. Ciena's major tax jurisdictions and the earliest open tax years are as follows: United States (2012), United Kingdom (2013), Canada (2010) and India (2010). Limited adjustments can be made to Federal U.S. tax returns in earlier years in order to reduce net operating loss carryforwards. Ciena classifies interest and penalties related to uncertain tax positions as a component of income tax expense.

Ciena has not provided for U.S. deferred income taxes on the cumulative unremitted earnings of its non-U.S. affiliates, as it plans to indefinitely reinvest cumulative unremitted foreign earnings outside the U.S., and it is not practicable to determine the unrecognized deferred income taxes. These cumulative unremitted foreign earnings relate to ongoing operations in foreign jurisdictions and are required to fund foreign operations, capital expenditures and future expansion requirements.

Ciena recognizes windfall tax benefits associated with the exercise of stock options or release of restricted stock units directly to stockholders' equity only when realized. A windfall tax benefit occurs when the actual tax benefit realized by Ciena upon an employee's disposition of a share-based award exceeds the deferred tax asset, if any, associated with the award that Ciena had recorded. When assessing whether a tax benefit relating to share-based compensation has been realized, Ciena follows the "with-and-without" method. Under the with-and-without method, the windfall is considered realized and recognized for financial statement purposes only when an incremental benefit is provided after considering all other tax benefits including Ciena's net operating losses. The with-and-without method results in the windfall from share-based compensation awards always being effectively the last tax benefit to be considered. Consequently, the windfall attributable to share-based compensation will not be considered realized in instances where Ciena's net operating loss carryover (that is unrelated to windfalls) is sufficient to offset the current year's taxable income before considering the effects of current-year windfalls.

Loss Contingencies

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

Fair Value of Financial Instruments

The carrying value of Ciena's cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximates fair market value due to the relatively short period of time to maturity. For information related to the fair value of Ciena's convertible notes and term loans, see Note 17 below.

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

Level 1 inputs are unadjusted quoted prices in active markets for identical assets or liabilities;

Level 2 inputs are quoted prices for identical or similar assets or liabilities in less active markets or model-derived valuations in which significant inputs are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument; and

Level 3 inputs are unobservable inputs based on Ciena's assumptions used to measure assets and liabilities at fair value.

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

Restructuring

From time to time, Ciena takes actions to better align its workforce, facilities and operating costs with perceived market opportunities, business strategies and changes in market and business conditions. Ciena recognizes a liability for the cost associated with an exit or disposal activity in the period in which the liability is incurred, except for one-time employee termination benefits related to a service period, typically of more than 60 days, which are accrued over the service period. See Note 4 below.

Foreign Currency

Certain of Ciena's foreign branch offices and subsidiaries use the U.S. dollar as their functional currency because Ciena Corporation, as the U.S. parent entity, exclusively funds the operations of these branch offices and subsidiaries. For those subsidiaries using the local currency as their functional currency, assets and liabilities are translated at exchange rates in effect at the balance sheet date, and the statement of operations is translated at a monthly average rate. Resulting translation adjustments are recorded directly to a separate component of stockholders' equity. Where the monetary assets and liabilities are transacted in a currency other than the entity's functional currency, re-measurement adjustments are recorded in interest and other income (loss), net on the Condensed Consolidated Statement of Operations. See Note 5 below.

Derivatives

From time to time, Ciena uses foreign currency forward contracts to reduce variability in certain forecasted non-U.S. dollar denominated cash flows. Generally, these derivatives have maturities of 12 months or less. Ciena also has interest rate hedge arrangements to reduce variability in certain forecasted interest expense associated with its term loans. All of these derivatives are designated as cash flow hedges. At the inception of the cash flow hedge, and on an ongoing basis, Ciena assesses whether the derivative has been effective in offsetting changes in cash flows attributable to the hedged risk during the hedging period. The effective portion of the derivative's net gain or loss is initially reported as a component of accumulated other comprehensive income (loss), and, upon occurrence of the forecasted transaction, is subsequently reclassified to the line item in the Condensed Consolidated Statement of Operations to which the hedged transaction relates. Any net gain or loss associated with the ineffectiveness of the hedging instrument is reported in interest and other income (loss), net. To date, no ineffectiveness has occurred.

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

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

See Notes 7 and 15 below.

Computation of Net Income (Loss) per Share

Ciena calculates basic earnings per share ("EPS") by dividing earnings attributable to common stock by the weighted average number of common shares outstanding for the period. Diluted EPS includes other potential dilutive shares that would be outstanding if securities or other contracts to issue common stock were exercised or converted into common stock. Ciena uses a dual presentation of basic and diluted EPS on the face of its income statement. A reconciliation of the numerator and denominator used for the basic and diluted EPS computations is set forth in Note 19 below.

Software Development Costs

Ciena develops software for sale to its customers. GAAP requires the capitalization of certain software development costs that are incurred subsequent to the date technological feasibility is established and prior to the date the product is generally available for sale. The capitalized cost is then amortized straight-line over the estimated life of the product. Ciena defines technological feasibility as being attained at the time a working model is completed. To date, the period

between Ciena achieving technological feasibility and the general availability of such software has been short, and software development costs qualifying for capitalization have been insignificant. Accordingly, Ciena has not capitalized any software development costs.

Newly Issued Accounting Standards - Not Yet Effective

In May 2014, Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, Revenue from Contracts with Customers (Topic 606), which provides guidance for revenue recognition. This ASU affects any entity that either enters into contracts with customers to transfer goods or services or enters into contracts for the transfer of non-financial assets. This ASU will supersede the revenue recognition requirements in Topic 605, Revenue Recognition, and most industry-specific guidance. This ASU also supersedes some cost guidance included in Subtopic 605-35, Revenue Recognition-Construction-Type and Production-Type Contracts. In August 2015, the FASB issued an amendment to defer the effective date by one year and allow entities to early adopt no earlier than the original effective

date. Based on this amendment, the standard will be effective for Ciena beginning in the first quarter of fiscal 2019. Ciena is currently evaluating the impact of the adoption of this ASU on its Consolidated Financial Statements and disclosures.

In April 2015, FASB issued ASU No. 2015-03, Simplifying the Presentation of Debt Issuance Costs. ASU 2015-03 requires debt issuance costs related to a recognized debt liability to be presented in the balance sheet as a direct deduction from the carrying value of that debt liability, consistent with debt discounts. The guidance is effective retrospectively for fiscal years, and interim periods within those years, and will be effective for Ciena beginning in the first quarter of fiscal 2017. Ciena does not expect that the impact of the adoption of this ASU will be material to its Consolidated Financial Statements or disclosures.

In February 2016, FASB issued ASU No. 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 provide additional disclosures. ASU 2016-02 is effective for Ciena beginning in the first quarter of fiscal 2020. Ciena is currently evaluating the impact of the adoption of this ASU on its Consolidated Financial Statements and disclosures.

In March 2016, the FASB issued ASU No. 2016-09, Improvements to Employee Share-Based Payment Accounting, which provides guidance on several aspects of accounting for share-based payment transactions, including the accounting for income taxes, forfeitures, and statutory tax withholding requirements, as well as classification on the statement of cash flows. ASU 2016-09 is effective for Ciena beginning in the first quarter of fiscal 2018. Ciena does not expect that the impact of the adoption of this ASU will be material to its Consolidated Financial Statements or disclosures.

(3) BUSINESS COMBINATIONS

On February 1, 2016, Ciena, through a Canadian subsidiary, acquired certain high-speed photonics components ("HSPC") assets of TeraXion Inc. ("TeraXion") and its wholly-owned subsidiary for approximately \$32 million in cash. The assets purchased include TeraXion's high-speed indium phosphide and silicon photonics technologies as well as the underlying intellectual property. These technologies support development of Ciena's WaveLogic coherent optical chipsets. This transaction has been accounted for as the acquisition of a business.

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

	Amount
Inventory	\$ 119
Fixed assets	1,381
Developed technology	16,468
In-process technology	3,949
Goodwill	10,083
Total purchase consideration	\$ 32,000

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

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

The goodwill generated from the acquisition of the HSPC assets was primarily related to expected synergies and has been allocated to the Networking Platforms segment. The goodwill is not deductible for income tax purposes.

Pro forma disclosures have not been included due to immateriality.

(4) RESTRUCTURING COSTS

Ciena has undertaken a number of restructuring activities intended to reduce expense and 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 six months ended April 30, 2016 (in thousands):

	Workforce reduction	Consolidation of excess facilities	Total
Balance at October 31, 2015	\$ 591	\$ 688	\$1,279
Additional liability recorded	929	—	929
Adjustments to previous estimates	—	(10)	(10)
Cash payments	(823)	(203)	(1,026)
Balance at April 30, 2016	\$ 697	\$ 475	\$1,172
Current restructuring liabilities	\$ 697	\$ 309	\$1,006
Non-current restructuring liabilities	\$ —	\$ 166	\$166

The following table sets forth the restructuring activity and balance of the restructuring liability accounts for the six months ended April 30, 2015 (in thousands):

	Workforce reduction	Consolidation of excess facilities	Total
Balance at October 31, 2014	\$ 181	\$ 1,134	\$1,315
Additional liability recorded	8,068	(a)—	8,068
Cash payments	(7,518)	(260)	(7,778)
Balance at April 30, 2015	\$ 731	\$ 874	\$1,605
Current restructuring liabilities	\$ 731	\$ 391	\$1,122
Non-current restructuring liabilities	\$ —	\$ 483	\$483

(a) During the fiscal quarter ended January 31, 2015, Ciena recorded a charge of \$8.1 million of severance and other employee-related costs associated with a global workforce reduction of approximately 125 employees.

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

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

	Quarter Ended April 30,		Six Months Ended April 30,	
	2016	2015	2016	2015
Interest income	\$982	\$246	\$1,668	\$465
Gain (loss) on non-hedge designated foreign currency forward contracts	(10,600)	14,351	(15,213)	10,002
Foreign currency exchange gain (loss)	10,506	(18,832)	6,130	(22,485)
Other	79	(1,314)	(394)	(1,764)
Interest and other income (loss), net	\$967	\$(5,549)	\$(7,809)	\$(13,782)

Ciena Corporation, as the U.S. parent entity, uses the U.S. dollar as its functional currency; however, some of its foreign branch offices and subsidiaries use the local currency as their functional currency. During the first six months of fiscal 2016 and the first six months of fiscal 2015, Ciena recorded \$6.1 million of foreign currency exchange rate gains and \$22.5 million in foreign currency exchange rate losses, respectively, as a result of monetary assets and liabilities that were transacted in a currency other than the entity's functional currency, and the re-measurement adjustments were recorded in interest and other income (loss), net on the Condensed Consolidated Statement of

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

Consolidated Statement of Operations. During the first six months of fiscal 2016 and fiscal 2015, Ciena recorded losses of \$15.2 million and gains of \$10.0 million, respectively, from non-hedge designated foreign currency forward contracts.

(6) SHORT-TERM AND LONG-TERM INVESTMENTS

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

	April 30, 2016			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
U.S. government obligations:				
Included in short-term investments	\$ 190,123	\$ 87	(28)	\$ 190,182
Included in long-term investments	125,091	157	(15)	125,233
	\$ 315,214	\$ 244	\$ (43)	\$ 315,415
Commercial paper:				
Included in short-term investments	\$ 4,997	—	—	\$ 4,997
	\$ 4,997	\$ —	\$ —	\$ 4,997
	October 31, 2015			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
U.S. government obligations:				
Included in short-term investments	\$ 110,108	\$ 10	\$ —	\$ 110,118
Included in long-term investments	95,171	—	(66)	95,105
	\$ 205,279	\$ 10	\$ (66)	\$ 205,223
Commercial paper:				
Included in short-term investments	\$ 24,989	—	—	\$ 24,989
	\$ 24,989	\$ —	\$ —	\$ 24,989

The following table summarizes the final legal maturities of debt investments at April 30, 2016 (in thousands):

	Amortized Cost	Estimated Fair Value
Less than one year	\$ 195,120	\$ 195,179
Due in 1-2 years	125,091	125,233
	\$ 320,211	\$ 320,412

(7) 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):

	April 30, 2016			
	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds	\$749,856	\$—	\$	—\$749,856
U.S. government obligations	—	315,415	—	315,415
Commercial paper	—	69,969	—	69,969
Foreign currency forward contracts	—	1,173	—	1,173
Total assets measured at fair value	\$749,856	\$386,557	\$	—\$1,136,413
Liabilities:				
Foreign currency forward contracts	\$—	\$548	\$	—\$548
Forward starting interest rate swap	—	5,428	—	5,428
Total liabilities measured at fair value	\$—	\$5,976	\$	—\$5,976

	October 31, 2015			
	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds	\$642,073	\$—	\$	—\$642,073
U.S. government obligations	—	205,223	—	205,223
Commercial paper	—	74,983	—	74,983
Foreign currency forward contracts	—	89	—	89
Total assets measured at fair value	\$642,073	\$280,295	\$	—\$922,368
Liabilities:				
Foreign currency forward contracts	\$—	\$512	\$	—\$512
Forward starting interest rate swap	—	5,522	—	5,522
Total liabilities measured at fair value	\$—	\$6,034	\$	—\$6,034

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

	April 30, 2016			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents	\$749,856	\$64,972	\$	—\$814,828
Short-term investments	—	195,179	—	195,179
Prepaid expenses and other	—	1,173	—	1,173
Long-term investments	—	125,233	—	125,233
Total assets measured at fair value	\$749,856	\$386,557	\$	—\$1,136,413
Liabilities:				
Accrued liabilities	\$—	\$548	\$	—\$548
Other long-term obligations	—	5,428	—	5,428
Total liabilities measured at fair value	\$—	\$5,976	\$	—\$5,976

	October 31, 2015			Total
	Level 1	Level 2	Level 3	
Assets:				
Cash equivalents	\$642,073	\$49,994	\$	—\$692,067
Short-term investments	—	135,107	—	135,107
Prepaid expenses and other	—	89	—	89
Long-term investments	—	95,105	—	95,105
Total assets measured at fair value	\$642,073	\$280,295	\$	—\$922,368
Liabilities:				
Accrued liabilities	\$—	\$512	\$	—\$512
Other long-term obligations	—	5,522	—	5,522
Total liabilities measured at fair value	\$—	\$6,034	\$	—\$6,034

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

(8) ACCOUNTS RECEIVABLE

As of April 30, 2016 and October 31, 2015, one customer accounted for 11.2% and 10.4% of Ciena's net accounts receivable, respectively. Ciena has not historically experienced a significant amount of bad debt expense. Allowance for doubtful accounts was \$3.4 million and \$3.0 million as of April 30, 2016 and October 31, 2015, respectively.

(9) INVENTORIES

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

	April 30, 2016	October 31, 2015
Raw materials	\$50,612	\$53,082
Work-in-process	12,910	9,120
Finished goods	120,356	125,966
Deferred cost of goods sold	70,403	55,995
	254,281	244,163
Provision for excess and obsolescence	(63,420)	(53,001)
	\$190,861	\$191,162

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 six months of fiscal 2016, Ciena recorded a provision for excess and obsolescence of \$20.1 million, primarily related to a decrease in the forecasted demand for certain Converged Packet Optical and Optical Transport products. Deductions from the provision for excess and obsolete inventory relate primarily to disposal activities.

(10) PREPAID EXPENSES AND OTHER

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

	April 30, 2016	October 31, 2015
Prepaid VAT and other taxes	\$85,479	\$ 74,754
Product demonstration equipment, net	49,626	41,611
Deferred deployment expense	23,834	26,193
Prepaid expenses	25,749	25,074
Financing receivable	20,016	19,869
Other non-trade receivables	9,043	8,588
Derivative assets	1,173	89
	\$214,920	\$ 196,178

Depreciation of product demonstration equipment was \$5.2 million and \$4.8 million for the first six months of fiscal 2016 and 2015, respectively.

(11) EQUIPMENT, BUILDING, FURNITURE AND FIXTURES

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

	April 30, 2016	October 31, 2015
Equipment, furniture and fixtures	\$428,985	\$404,935
Building subject to capital lease	24,042	13,459
Construction in progress subject to build-to-suit lease	42,337	18,663
Leasehold improvements	58,963	49,196
	554,327	486,253
Accumulated depreciation and amortization	(305,678)	(294,280)
	\$248,649	\$ 191,973

During fiscal 2014, Ciena entered into a lease agreement to lease an office building located in Ottawa, Canada. During fiscal 2015 and fiscal 2016, Ciena gained access to portions of the building and recorded the corresponding capital lease asset and liability.

Ciena capitalizes construction in progress and records a corresponding long-term liability for build-to-suit lease agreements where Ciena is considered the owner, for accounting purposes, during the construction period. On April 15, 2015, Ciena entered into a build-to-suit lease arrangement pursuant to which the landlord will construct, and Ciena will subsequently lease, two new office buildings at its new Ottawa, Canada campus. The landlord will construct the buildings and contribute up to a maximum of CAD\$290.00 per rentable square foot in total construction costs plus certain allowances for tenant improvements, and Ciena will be responsible for any additional construction costs. As of April 30, 2016, there were \$42.3 million in costs incurred under this build-to-suit lease arrangement. Upon occupancy of the facilities, Ciena expects this arrangement to qualify as a capital lease. As a result, the facilities will be depreciated over the shorter of their useful life or the lease term.

The total of depreciation of equipment, furniture and fixtures, and amortization of leasehold improvements, was \$24.8 million and \$22.5 million for the first six months of fiscal 2016 and 2015, respectively.

(12) OTHER INTANGIBLE ASSETS

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

	April 30, 2016			October 31, 2015		
	Gross Intangible	Accumulated Amortization	Net Intangible	Gross Intangible	Accumulated Amortization	Net Intangible
Developed technology	\$348,584	\$(226,517)	\$122,067	\$506,647	\$(382,130)	\$124,517
In-process research and development	4,405	—	4,405	—	—	—
Patents and licenses	6,565	(6,182)	383	46,538	(46,072)	466
Customer relationships, covenants not to compete, outstanding purchase orders and contracts	358,648	(300,583)	58,065	388,621	(310,931)	77,690
Total other intangible assets	\$718,202	\$(533,282)	\$184,920	\$941,806	\$(739,133)	\$202,673

In the second quarter of fiscal 2016, certain fully amortized intangible assets of approximately \$246.4 million have been eliminated from gross intangible assets and accumulated amortization during the period, with no corresponding impact to the income statement. These assets were primarily technology for products no longer being sold by Ciena. The aggregate amortization expense of intangible assets was \$40.5 million and \$26.4 million for the first six months of fiscal 2016 and 2015, respectively. Expected future amortization of intangible assets for the fiscal years indicated is as follows (in thousands):

Period ended October 31,	
2016 (remaining six months)	\$37,853
2017	45,447
2018	22,766
2019	22,219
2020	21,192
Thereafter	31,038
	\$180,515 ⁽¹⁾

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

(13) GOODWILL

Ciena's goodwill was generated from the acquisition of Cyan, Inc. ("Cyan") during fiscal 2015 and the acquisition of the HSPC assets of TeraXion during the second quarter of fiscal 2016, and is primarily related to expected synergies. The following table presents the goodwill allocated to Ciena's reportable segments as of the dates indicated (in thousands):

	Balance at October 31, 2015	Acquisitions	Impairments	Translation ⁽¹⁾	Balance at April 30, 2016
Software and Software-Related Services	\$201,428	\$ —	\$ —	—\$ —	\$201,428
Networking Platforms	55,006	10,083	—	1,164	66,253
Total	\$256,434	\$ 10,083	\$ —	—\$ 1,164	\$267,681

(1) Represents translation on goodwill related to the acquisition of the HSPC assets by Ciena's Canadian subsidiary.

(14) OTHER BALANCE SHEET DETAILS

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

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	April 30, October 31,	
	2016	2015
Maintenance spares, net	\$ 54,441	\$ 55,259
Deferred debt issuance costs, net	12,608	10,820
Financing receivable	—	10,107
Other	10,002	8,470
	\$ 77,051	\$ 84,656

Deferred debt issuance costs relate to Ciena's convertible notes payable (described in Note 17 below), term loans (described in Note 17 below) and ABL Credit Facility (described in Note 18 below). 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 related debt. The amortization of deferred debt issuance costs is included in interest expense, and was \$2.1 million and \$2.5 million during the first six months of fiscal 2016 and 2015, respectively.

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

	April 30, October 31,	
	2016	2015
Compensation, payroll related tax and benefits	\$ 75,444	\$ 109,466
Warranty	56,021	56,654
Vacation	38,285	34,189
Capital lease obligations	3,135	4,923
Interest payable	5,265	5,389
Other	104,946	105,662
	\$ 283,096	\$ 316,283

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

Six months ended	Beginning		Ending	
April 30,	Balance	Provisions	Settlements	Balance
2015	\$ 55,997	7,658	(9,696)	\$ 53,959
2016	\$ 56,654	9,563	(10,196)	\$ 56,021

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

	April 30, October 31,	
	2016	2015
Products	\$ 49,191	\$ 66,527
Services	137,841	122,546
	187,032	189,073
Less current portion	(116,799)	(126,111)
Long-term deferred revenue	\$ 70,233	\$ 62,962

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

	April 30,	October 31,
	2016	2015
Construction liability	\$42,337	\$ 18,663
Capital lease obligations	25,070	13,794
Income tax liability	12,244	13,308
Deferred tenant allowance	9,553	9,807
Straight-line rent	6,749	6,237
Forward starting interest rate swap	5,428	5,522
Other	5,436	5,209
	\$106,817	\$ 72,540

Ciena capitalizes construction in progress and records a corresponding long-term liability for build-to-suit lease agreements where Ciena is considered the owner during the construction period for accounting purposes.

The following is a schedule by fiscal year of future minimum lease payments under capital leases and the present value of minimum lease payments as of April 30, 2016 (in thousands):

Period ended October 31,	
2016 (remaining six months)	\$3,196
2017	3,446
2018	3,108
2019	2,896
2020	2,550
Thereafter	32,002
Net minimum capital lease payments	47,198
Less: Amount representing interest	(18,993)
Present value of minimum lease payments	28,205
Less: Current portion of present value of minimum lease payments	(3,135)
Long-term portion of present value of minimum lease payments	\$25,070

(15) DERIVATIVE INSTRUMENTS

Foreign Currency Derivatives

As of April 30, 2016 and October 31, 2015, Ciena had forward contracts in place to reduce the variability in its Canadian Dollar and Indian Rupee denominated expense, which principally related to its research and development activities. The notional amount of these contracts was approximately \$32.4 million and \$68.1 million as of April 30, 2016 and October 31, 2015, respectively. These foreign exchange contracts have maturities of 12 months or less and have been designated as cash flow hedges.

During the first six months of fiscal 2016 and fiscal 2015, in order to hedge certain balance sheet exposures, Ciena entered into forward contracts to mitigate risk due to volatility in the Brazilian Real, Canadian Dollar and Mexican Peso. The notional amount of these contracts was approximately \$112.5 million and \$146.5 million as of April 30, 2016 and October 31, 2015, 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

During fiscal 2014, Ciena entered into floating interest rate to fixed interest rate swap arrangements ("interest rate swaps") that fix the interest rate under the 2019 Term Loan (as defined in Note 17) at 5.004% for the period commencing on July 20,

2015 through July 19, 2018. The total notional amount of these derivatives as of April 30, 2016 and October 31, 2015 was \$245.6 million and \$246.9 million, respectively.

In May 2016, Ciena entered into interest rate swaps that fix the total interest rate under the 2021 Term Loan (as defined in Note 17) at 4.62% to 4.87%, depending on the applicable margin, for the period commencing on June 20, 2016 through June 22, 2020.

Ciena expects the variable rate payments to be received under the terms of the interest rate swaps to exactly offset the forecasted variable rate payments on the equivalent notional amounts of the 2019 Term Loan and 2021 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 5 and Note 7 above.

(16) ACCUMULATED OTHER COMPREHENSIVE INCOME

The following table summarizes the changes in accumulated balances of other comprehensive income ("AOCI") for the six months ending April 30, 2016:

	Unrealized Gain/(Loss) on Marketable Securities	Unrealized Gain/(Loss) on Foreign Currency Contracts	Unrealized Gain/(Loss) on Starting Interest Rate Swap	Cumulative Foreign Currency Translation Adjustment	Total
Balance at October 31, 2015	\$ (78)	\$ (268)	\$ (5,522)	\$ (16,258)	\$ (22,126)
Other comprehensive income (loss) before reclassifications	256	760	(1,478)	4,693	4,231
Amounts reclassified from AOCI	—	704	1,572	—	2,276
Balance at April 30, 2016	\$ 178	\$ 1,196	\$ (5,428)	\$ (11,565)	\$ (15,619)

The following table summarizes the changes in AOCI for the six months ending April 30, 2015:

	Unrealized Gain/(Loss) on Marketable Securities	Unrealized Gain/(Loss) on Foreign Currency Contracts	Unrealized Gain/(Loss) on Starting Interest Rate Swap	Cumulative Foreign Currency Translation Adjustment	Total
Balance at October 31, 2014	\$ 71	\$ (173)	(2,083)	\$ (12,483)	\$ (14,668)
Other comprehensive income (loss) before reclassifications	(24)	(4,233)	(2,218)	(3,411)	(9,886)
Amounts reclassified from AOCI	—	2,761	—	—	2,761
Balance at April 30, 2015	\$ 47	\$ (1,645)	\$ (4,301)	\$ (15,894)	\$ (21,793)

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

(17) SHORT-TERM AND LONG-TERM DEBT

Term Loan due 2021

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On April 25, 2016, Ciena entered into an Incremental Joinder and Amendment Agreement (the “Incremental Term Loan Credit Agreement”) that amends the Credit Agreement (the “Term Loan Credit Agreement”), dated July 15, 2014. The Incremental Term Loan Credit Agreement provides for a new tranche of senior secured term loans under the Term Loan Credit Agreement in an aggregate principal amount of \$250 million (the “2021 Term Loan”). The proceeds of approximately \$246.1 million, net of fees and expenses, will initially supplement cash on the balance sheet and are expected to provide additional liquidity to contribute, in part, to the repayment of the outstanding principal amount owing under Ciena’s 0.875% senior convertible notes due June 15, 2017.

The 2021 Term Loan will, among other things:

- mature on April 25, 2021;
- amortize in equal quarterly installments in aggregate amounts of \$0.6 million (equal to 0.25% of the original principal amount), with the balance payable at maturity;
- be subject to mandatory prepayment on the same basis as Ciena’s existing 2019 Term Loan under the Term Loan Credit Agreement;
- bear interest, at Ciena’s election, at a per annum rate equal to (a) LIBOR (subject to a floor of 0.75%) plus a margin ranging from 3.25% to 3.50%, or (b) a base rate (subject to a floor of 1.75%) plus a margin ranging from 2.25% to 2.50%, in each case, with the actual margin determined according to Ciena’s total net leverage ratio;
- be repayable at any time at Ciena’s election, provided that repayment of the 2021 Term Loan with proceeds of certain indebtedness prior to October 25, 2016 shall require a prepayment premium of 1% of the aggregate principal amount of such prepayment; and
- except as described above or otherwise set forth in the Incremental Term Loan Credit Agreement, have identical terms as the existing 2019 Term Loan under the Term Loan Credit Agreement.

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

The principal balance, unamortized discount and net carrying amount of the 2021 Term Loan were as follows as of April 30, 2016 (in thousands):

	Principal Balance	Unamortized Discount	Net Carrying Amount
Term Loan Payable due April 25, 2021	\$ 250,000	\$ 1,247	\$ 248,753

The following table sets forth the carrying value and the estimated fair value of the 2021 Term Loan (in thousands):

	April 30, 2016	
	Carrying Value	Fair Value ⁽²⁾
Term Loan Payable due April 25, 2021 ⁽¹⁾	\$ 248,753	\$ 250,938

(1) Includes unamortized bond discount.

The 2021 Term Loan is categorized as Level 2 in the fair value hierarchy. Ciena estimated the fair value of its 2021

(2) Term Loan using a market approach based upon observable inputs, such as current market transactions involving comparable securities.

Term Loan due 2019

On July 15, 2014, Ciena entered into the Term Loan Credit Agreement providing for senior secured term loans in an aggregate principal amount of \$250 million (the “2019 Term Loan”) with a maturity date of July 15, 2019. The 2019

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Term Loan requires Ciena to make installment payments of approximately \$0.6 million on a quarterly basis. The principal balance, unamortized discount and net carrying amount of the 2019 Term Loan were as follows as of April 30, 2016 (in thousands):

	Principal Balance	Unamortized Discount	Net Carrying Amount
Term Loan Payable due July 15, 2019	\$245,625	\$ 929	\$244,696

The following table sets forth the carrying value and the estimated fair value of the 2019 Term Loan (in thousands):

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	April 30, 2016	
	Carrying Value	Fair Value ⁽²⁾
Term Loan Payable due July 15, 2019 ⁽¹⁾	\$244,696	\$245,011

(1)Includes unamortized bond discount.

The 2019 Term Loan is categorized as Level 2 in the fair value hierarchy. Ciena estimated the fair value of its 2019

(2)Term Loan using a market approach based upon observable inputs, such as current market transactions involving comparable securities.

Outstanding Convertible Notes Payable

During the first quarter of fiscal 2016, Ciena entered into certain private transactions to repurchase \$14.1 million of the outstanding principal amount of its 0.875% Convertible Senior Notes due June 15, 2017, for a cash purchase price slightly below par.

The principal balance, unamortized discount and net carrying amount of the liability and equity components of Ciena's 4.0% Convertible Senior Notes due December 15, 2020 are as follows as of April 30, 2016:

	Liability Component		Equity Component	
	Principal Balance	Unamortized Discount	Net Carrying Amount	Net Carrying Amount
4.0% Convertible Senior Notes due December 15, 2020	\$ 199,400	\$ 12,446	\$ 186,954	\$ 43,131

The following table sets forth, in thousands, the carrying value and the estimated fair value of Ciena's outstanding issues of convertible notes:

	April 30, 2016	
	Carrying Value	Fair Value ⁽¹⁾
0.875% Convertible Senior Notes due June 15, 2017	\$479,985	\$471,585
3.75% Convertible Senior Notes due October 15, 2018	350,000	395,063
4.0% Convertible Senior Notes due December 15, 2020 ⁽²⁾	186,954	224,766
	\$1,016,939	\$1,091,414

The convertible notes are categorized as Level 2 in the fair value hierarchy. Ciena estimated the fair value of its (1)outstanding convertible notes using a market approach based upon observable inputs, such as current market transactions involving comparable securities.

(2)Includes unamortized discount and accretion of principal.

(18) ABL CREDIT FACILITY

Ciena Corporation and certain of its subsidiaries are parties to a senior secured asset-based revolving credit facility (the "ABL Credit Facility"). Ciena principally uses the ABL Credit Facility to support the issuance of letters of credit that arise in the ordinary course of its business and thereby to reduce its use of cash required to collateralize these instruments.

On January 8, 2016, Ciena amended the ABL Credit Facility to, among other things:

increase the total commitment from \$200 million to \$250 million, of which \$200 million is available for issuances of letters of credit;

extend the maturity date from December 31, 2016 to December 31, 2020, provided an earlier maturity date would apply in the event that Ciena and its subsidiaries are unable to satisfy a minimum liquidity test 90 days prior to the maturity date of any debt equal to \$100 million or greater;

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reduce the minimum aggregate amount of unrestricted cash and cash equivalents that Ciena and its domestic subsidiaries are required to maintain at all times from \$150 million to \$100 million; and reduce the interest rate by 0.25% on borrowings to either (a) LIBOR plus a margin ranging from 1.25% to 1.75% (instead of the previous 1.50% to 2.0%) or (b) a base rate plus a margin ranging from 0.25% to 0.75% (instead of the previous 0.50% to 1.0%), in each case with the actual margin determined according to the Ciena's utilization of the facility.

As of April 30, 2016, letters of credit totaling \$66.7 million were collateralized by the ABL Credit Facility. There were no borrowings outstanding under the ABL Credit Facility as of April 30, 2016.

(19) EARNINGS (LOSS) 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 per common share ("Basic EPS") and the diluted net income 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 restricted stock units, (iii) shares issuable under Ciena's employee stock purchase plan and upon exercise of outstanding stock options, using the treasury stock method, and (iv) shares underlying Ciena's outstanding convertible notes.

	Quarter Ended April 30,		Six Months Ended April 30,	
	2016	2015	2016	2015
Numerator				
Net income	\$13,997	\$20,653	\$2,451	\$1,874
Add: Interest expense associated with 0.875% Convertible Senior Notes due 2017	—	1,387	—	—
Net income used to calculate Diluted EPS	\$13,997	\$22,040	\$2,451	\$1,874
	Quarter Ended April 30,		Six Months Ended April 30,	
	2016	2015	2016	2015
Denominator				
Basic weighted average shares outstanding	137,950	113,555	137,313	110,578
Add: Shares underlying outstanding stock options and restricted stock units and issuable under employee stock purchase plan	939	1,354	1,380	1,184
Add: Shares underlying 0.875% Convertible Senior Notes due 2017	—	13,108	—	—
Dilutive weighted average shares outstanding	138,889	128,017	138,693	111,762

	Quarter Ended April 30,		Six Months Ended April 30,	
EPS	2016	2015	2016	2015
Basic EPS	\$0.10	\$0.18	\$0.02	\$0.02
Diluted EPS	\$0.10	\$0.17	\$0.02	\$0.02

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 April 30,		Six Months Ended April 30,	
	2016	2015	2016	2015
Shares underlying stock options and restricted stock units	2,439	961	2,092	1,923

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4.0% Convertible Senior Notes due March 15, 2015	—	4,346	—	6,772
0.875% Convertible Senior Notes due June 15, 2017	12,583	—	12,748	13,108
3.75% Convertible Senior Notes due October 15, 2018	17,356	17,356	17,356	17,356
4.0% Convertible Senior Notes due December 15, 2020	9,198	9,198	9,198	9,198
Total shares excluded due to anti-dilutive effect	41,576	31,861	41,394	48,357

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(20) SHARE-BASED COMPENSATION EXPENSE

Ciena has outstanding equity awards issued under its 2008 Omnibus Incentive Plan, as well as certain legacy equity plans and equity plans assumed as a result of previous acquisitions. In connection with its acquisition of Cyan during the fourth quarter of fiscal 2015, Ciena assumed the Cyan, Inc. 2006 Stock Plan and Cyan, Inc. 2013 Equity Incentive Plan and exchanged Cyan stock options and unvested restricted stock unit awards outstanding thereunder at closing for options to acquire approximately 2.4 million shares of Ciena common stock and 1.0 million Ciena restricted stock units. Ciena grants equity awards under its 2008 Omnibus Incentive Plan (the "2008 Plan") and makes shares of its common stock available for purchase under its Amended and Restated Employee Stock Purchase Plan (the "ESPP"). These plans were approved by stockholders and are described below.

2008 Plan

The 2008 Plan authorizes the issuance of awards including stock options, restricted stock units (RSUs), restricted stock, unrestricted stock, stock appreciation rights (SARs) and other equity and/or cash performance incentive awards to employees, directors and consultants of Ciena. Subject to certain restrictions, the Compensation Committee of the Board of Directors has broad discretion to establish the terms and conditions for awards under the 2008 Plan, including the number of shares, vesting conditions, and the required service or performance criteria. Options and SARs have a maximum term of ten years, and their exercise price may not be less than 100% of fair market value on the date of grant. Repricing of stock options and SARs is prohibited without stockholder approval. Certain change in control transactions may cause awards granted under the 2008 Plan to vest, unless the awards are continued or substituted for in connection with the transaction. The total number of shares authorized for issuance under the 2008 Plan is 25.1 million shares. As of April 30, 2016, approximately 3.9 million shares remained available for issuance under the 2008 Plan.

Stock Options

Outstanding stock option awards to employees are generally subject to service-based vesting conditions and vest incrementally over a four-year period. The following table is a summary of Ciena's stock option activity for the period indicated (shares in thousands):

	Shares Underlying Options Outstanding	Weighted Average Exercise Price
Balance at October 31, 2015	2,293	\$ 24.45
Exercised	(234)	9.73
Canceled	(276)	39.06
Balance at April 30, 2016	1,783	\$ 24.13

The total intrinsic value of options exercised during the first six months of fiscal 2016 and fiscal 2015 was \$2.5 million and \$0.8 million, respectively. Ciena did not grant any stock options during the first six months of fiscal 2016 or fiscal 2015.

The following table summarizes information with respect to stock options outstanding at April 30, 2016, based on Ciena's closing stock price on the last trading day of Ciena's second fiscal quarter of 2016 (shares and intrinsic value in thousands):

Range of Exercise Price	Options Outstanding at April 30, 2016				Vested Options at April 30, 2016			
	of Underlying Shares	Weighted		Aggregate Intrinsic Value	of Underlying Shares	Weighted		Aggregate Intrinsic Value
		Number Remaining	Average Contractual Life (Years)			Number Remaining	Average Contractual Life (Years)	
\$0.05 — \$11.16	297	2.95	\$ 6.88	\$ 2,958	295	2.91	\$ 6.86	\$ 2,947
\$11.34 — \$17.24	483	5.54	13.49	1,615	438	5.39	13.38	1,514
\$17.50 — \$30.52	410	1.72	26.60	—	386	1.32	27.08	—
\$31.93 — \$37.10	339	2.93	35.14	—	321	2.72	35.12	—
\$37.82 — \$55.63	254	5.31	45.82	—	204	4.87	45.84	—
\$0.05 — \$55.63	1,783	3.70	\$ 24.13	\$ 4,573	1,644	3.40	\$ 23.70	\$ 4,461

Assumptions for Option-Based Awards

Ciena recognizes the fair value of service-based options as share-based compensation expense on a straight-line basis over the requisite service period.

Restricted Stock Units

A restricted stock unit is a stock award that entitles the holder to receive shares of Ciena common stock as the unit vests. Ciena's outstanding restricted stock unit awards are subject to service-based vesting conditions and/or performance-based vesting conditions. Awards subject to service-based conditions typically vest in increments over a three or four-year period. However, the 2008 Plan permits the Company to grant service-based stock awards with shorter vesting periods to certain recipients, including non-employee directors and Ciena's Executive Chairman. Awards with performance-based vesting conditions require the achievement of certain operational, financial or other performance criteria or targets as a condition of vesting, or the acceleration of vesting, of such awards. Ciena recognizes the estimated fair value of performance-based awards, net of estimated forfeitures, as share-based compensation expense over the performance period, using graded vesting, which considers each performance period or tranche separately, based upon Ciena's determination of whether it is probable that the performance targets will be achieved. At the end of each reporting period, Ciena reassesses the probability of achieving the performance targets and the performance period required to meet those targets.

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

	Restricted Stock Units Outstanding	Weighted Average Grant Date Fair Value Per Share	
		Fair Value	Aggregate Fair Value
Balance at October 31, 2015	4,886	\$ 20.02	\$ 117,951
Granted	2,055		
Vested	(1,686))	
Canceled or forfeited	(253))	
Balance at April 30, 2016	5,002	\$ 19.91	\$ 84,182

The total fair value of restricted stock units that vested and were converted into common stock during the first six months of fiscal 2016 and fiscal 2015 was \$33.0 million and \$23.0 million, respectively. The weighted average fair

value of each restricted stock unit granted by Ciena during the first six months of fiscal 2016 and fiscal 2015 was \$19.73 and \$18.68 respectively.

Assumptions for Restricted Stock Unit Awards

The fair value of each restricted stock unit award is based on the closing price on the date of grant. Share-based expense for service-based restricted stock unit awards is recognized, net of estimated forfeitures, ratably over the vesting period on a straight-line basis.

Share-based expense for performance-based restricted stock unit awards, net of estimated forfeitures, is recognized ratably over the performance period based upon Ciena's determination of whether it is probable that the performance targets will be achieved. At the end of each reporting period, Ciena reassesses the probability of achieving the performance targets and the performance period required to meet those targets. The estimation of whether the performance targets will be achieved involves judgment, and the estimate of expense is revised periodically based on the probability of achieving the performance targets. Revisions are reflected in the period in which the estimate is changed. If any performance goals are not met, no compensation cost is ultimately recognized against that goal and, to the extent previously recognized, compensation expense is reversed.

Because share-based compensation expense is recognized only for those awards that are ultimately expected to vest, the amount of share-based compensation expense recognized reflects a reduction for estimated forfeitures. Ciena estimates forfeitures at the time of grant and revises those estimates in subsequent periods based upon new or changed information.

Amended and Restated Employee Stock Purchase Plan (ESPP)

Under the ESPP, eligible employees may enroll in a twelve-month offer period that begins in December and June of each year. Each offer period includes two six-month purchase periods. Employees may purchase a limited number of shares of Ciena common stock at 85% of the fair market value on either the day immediately preceding the offer date or the purchase date, whichever is lower. The ESPP is considered compensatory for purposes of share-based compensation expense. Pursuant to the ESPP's "evergreen" provision, on December 31 of each year, the number of shares available under the ESPP increases by up to approximately 0.6 million shares, provided that the total number of shares available at that time shall not exceed 8.2 million shares. Unless earlier terminated, the ESPP will terminate on January 24, 2023.

During the first six months of fiscal 2016, Ciena issued 0.5 million shares under the ESPP. At April 30, 2016, 6.5 million shares remained available for issuance under the ESPP.

Share-Based Compensation Expense for Periods Reported

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

	Quarter Ended		Six Months	
	April 30,		Ended April 30,	
	2016	2015	2016	2015
Product costs	\$629	\$653	\$1,200	\$1,140
Service costs	693	574	1,285	1,093
Share-based compensation expense included in cost of sales	1,322	1,227	2,485	2,233
Research and development	3,791	2,534	7,219	4,701
Sales and marketing	3,923	3,841	8,658	7,500
General and administrative	4,968	3,723	10,097	7,642
Acquisition and integration costs	697	—	714	—
Share-based compensation expense included in operating expense	13,379	10,098	26,688	19,843
Share-based compensation expense capitalized in inventory, net	32	4	37	60
Total share-based compensation	\$14,733	\$11,329	\$29,210	\$22,136

As of April 30, 2016, total unrecognized share-based compensation expense related was approximately \$85.1 million: (i) \$1.2 million, which relates to unvested stock options and is expected to be recognized over a weighted-average period of 1.4 years, and (ii) \$83.9 million which relates to unvested restricted stock units and is expected to be recognized over a weighted-average period of 1.5 years.

(21) SEGMENTS AND ENTITY WIDE DISCLOSURES

Segment Reporting

During the first quarter of fiscal 2016, in connection with the creation of a new Chief Operating Officer organization, Ciena reorganized its internal organizational structure, the management of its business, and the reporting of its operating segments. This resulted in three new operating segments: Networking Platforms, Software and Software-Related Services, and Global Services. Ciena's previous Converged Packet-Optical, Packet Networking and Optical Transport segments were realigned to form the Networking Platforms segment under a single operating segment manager. Ciena's previous Software and Services operating segment was reorganized into two separate operating segments: (i) Software and Software-Related Services, and (ii) Global Services. Ciena's segment revenue and segment profit for fiscal 2015 have been restated to reflect the new operating segments adopted in fiscal 2016. The following describes each of the newly reorganized operating segments:

Networking Platforms reflects sales of Ciena's Converged Packet Optical, Packet Networking and Optical Transport product lines.

Converged Packet Optical — includes the 6500 Packet-Optical Platform and the 5430 Reconfigurable Switching System, which feature Ciena's WaveLogic coherent optical processors. Products also include the 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 acquired from Cyan.

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 and the Ethernet packet configuration for the 5410 Service Aggregation Switch.

Optical Transport — includes the 4200 Advanced Services Platform, 5100/5200 Advanced Services Platform, Common Photonic Layer (CPL) and 6100 Multiservice Optical Platform. Ciena's Optical Transport products have either been previously discontinued, or are expected to be discontinued during fiscal 2016, reflecting network operators' transition toward next-generation converged network architectures.

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 Statement of Operations.

Software and Software-Related Services reflects sales of Ciena's network virtualization, management, control and orchestration software solutions and software-related services, including subscription, installation, support, and consulting services.

This segment includes Ciena's element and network management solutions and planning tools, including the OneControl Unified Management System, ON-Center® Network & Service Management Suite, Ethernet Services Manager, Optical Suite Release and Planet Operate.

This segment includes Ciena's Blue Planet network virtualization, service orchestration and network management software platform, including the multi-domain service orchestration (MDSO), network function virtualization (NFV) management and orchestration (NFV MANO), and Management and Control Platform (MCP), and Ciena's SDN Multilayer WAN Controller and its related applications.

Revenue from the software platforms portion of this segment is included in product revenue on the Condensed Consolidated Statement of Operations. Revenue from software-related services is included in services revenue on the Condensed Consolidated Statement of Operations.

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

Ciena's long-lived assets, including equipment, building, furniture and fixtures, finite-lived intangible assets and maintenance spares, are not reviewed by the chief operating decision maker for purposes of evaluating performance and allocating resources. As of April 30, 2016, equipment, building, furniture and fixtures, net totaling \$248.6 million

primarily supported asset groups within Ciena's Networking Platforms and Software and Software-Related Services segments and supported Ciena's unallocated selling and general and administrative activities. As of April 30, 2016, \$100.7 million of Ciena's intangible assets, net were assigned to Ciena's Networking Platforms segment and \$84.2 million of Ciena's intangible assets, net were assigned to asset groups within Ciena's Software and Software-Related Services segment. As of April 30, 2016, all of the maintenance spares, net, totaling \$54.4 million, were assigned to asset groups within Ciena's Global Services segment.

Segment Revenue

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

	Quarter Ended		Six Months Ended	
	April 30,		April 30,	
	2016	2015	2016	2015
Revenue:				
Networking Platforms				
Converged Packet Optical	\$435,173	\$432,911	\$824,341	\$769,471
Packet Networking	68,582	53,288	116,779	108,271
Optical Transport	8,451	16,454	20,596	38,793
Total Networking Platforms	512,206	502,653	961,716	916,535
Software and Software-Related Services				
Software Platforms	11,772	9,227	19,851	17,660
Software-Related Services	18,701	14,686	36,048	29,781
Total Software and Software-Related Services	30,473	23,913	55,899	47,441
Global Services				
Maintenance Support and Training	57,069	53,085	113,127	106,986
Installation and Deployment	30,232	30,703	61,072	56,884
Consulting and Network Design	10,737	11,248	22,018	22,918
Total Global Services	98,038	95,036	196,217	186,788
Consolidated revenue	\$640,717	\$621,602	\$1,213,832	\$1,150,764

Segment Profit (Loss)

Segment profit (loss) is determined based on internal performance measures used by the 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; acquisition and integration costs; amortization of intangible assets; restructuring costs; interest and other income (loss), net; interest expense; and provisions for income taxes.

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

	Quarter Ended April		Six Months Ended	
	30,		April 30,	
	2016	2015	2016	2015
Segment profit (loss):				
Networking Platforms	\$ 132,606	\$ 131,252	\$ 239,588	\$ 226,326
Software and Software-Related Services	192	806	(3,382)	3,394
Global Services	35,692	35,151	75,688	67,023
Total segment profit	168,490	167,209	311,894	296,743
Less: Non-performance operating expenses				
Selling and marketing	86,668	82,471	169,146	159,183
General and administrative	35,203	30,302	66,345	59,855
Acquisition and integration costs	2,285	1,020	3,584	1,020
Amortization of intangible assets	15,566	11,019	32,428	22,038
Restructuring costs	535	(17)	919	8,068
Add: Other non-performance financial items				
Interest expense and other income (loss), net	(11,641)	(18,496)	(33,127)	(40,390)
Less: Provision for income taxes	2,595	3,265	3,894	4,315
Consolidated net income	\$ 13,997	\$ 20,653	\$ 2,451	\$ 1,874

Entity Wide Reporting

Ciena's operating segments each engage in business across four geographic regions: North America; Europe, Middle East and Africa ("EMEA"); Asia Pacific ("APAC"); and Caribbean and Latin America ("CALA"). North America includes only activities in the United States and Canada. The following table reflects Ciena's geographic distribution of revenue principally based on the relevant location for Ciena's delivery of products and performance of services. For the periods below, Ciena's geographic distribution of revenue was as follows (in thousands):

	Quarter Ended		Six Months Ended	
	April 30,		April 30,	
	2016	2015	2016	2015
North America	\$395,505	\$397,181	\$788,209	\$728,716
EMEA	96,175	102,194	176,897	213,200
CALA	57,896	47,891	101,706	90,633
APAC	91,141	74,336	147,020	118,215
Total	\$640,717	\$621,602	\$1,213,832	\$1,150,764

North America includes \$367.1 million and \$367.6 million of United States revenue for fiscal quarters ended April 30, 2016 and 2015, respectively. For the six months ended April 30, 2016 and 2015, United States revenue was \$732.3 million and \$665.3 million, respectively. No other country accounted for at least 10% 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 United States and Canada are reflected as "Other International." For the periods below, Ciena's geographic distribution of equipment, building, furniture and fixtures was as follows (in thousands):

	April 30,		October 31,	
	2016		2015	
United States	\$97,327	\$96,292		
Canada	140,056	84,318		
Other International	11,266	11,363		

Total \$248,649 \$ 191,973

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AT&T accounted for greater than 10% of Ciena's revenue in Ciena's fiscal quarters ended April 30, 2016 and 2015 with total revenue of \$116.0 million and \$117.4 million, respectively. AT&T also accounted for greater than 10% of Ciena's revenue for the six months ended April 30, 2016 and 2015 with total revenue of \$242.6 million and \$234.0 million, respectively. AT&T purchases products and services from each of Ciena's operating segments.

(22) COMMITMENTS AND CONTINGENCIES

Foreign 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 liabilities will have a material effect on its results of operations, financial position or cash flows.

Litigation

From May 15 through June 3, 2015, five separate putative class action lawsuits in connection with Ciena's then-pending acquisition of Cyan, Inc. ("Cyan") were filed in the Court of Chancery of the State of Delaware:

• *Luvishis v. Cyan, Inc., et al.*, C.A. No. 11027-CB, filed May 15, 2015

• *Poll v. Cyan, Inc., et al.*, C.A. No. 11028-CB, filed May 15, 2015

• *Canzano v. Floyd, et al.*, C.A. No. 11052-CB, filed May 20, 2015

• *Kassis v. Cyan, Inc., et al.*, C.A. No. 11069-CB, filed May 27, 2015

• *Fenske v. Cyan, Inc., et al.*, C.A. No. 11090-CB, filed June 3, 2015

Each of the complaints named Cyan (except for the Canzano complaint), Ciena, Neptune Acquisition Subsidiary, Inc., a Ciena subsidiary created solely for the purpose of effecting the acquisition ("Merger Sub"), and the members of Cyan's board of directors as defendants. On June 23, 2015, each of these lawsuits was consolidated into a single case captioned *In Re Cyan, Inc. Shareholder Litigation, Consol. C.A. No. 11027-CB*. On July 9, 2015, the plaintiffs filed a verified amended class action complaint, which named as defendants Ciena, Merger Sub, and the members of Cyan's board of directors. On August 5, 2015, the defendants filed motions to dismiss the amended complaint. On October 1, 2015, the plaintiffs filed a second amended complaint which named as defendants the members of Cyan's board of directors. Cyan, Ciena, and Merger Sub were not named as defendants. The second amended complaint generally alleges that the Cyan board members breached their fiduciary duties by engaging in a conflicted and unfair sales process, failing to maximize stockholder value in the acquisition, taking steps to preclude competitive bidding, and failing to disclose material information necessary for stockholders to make an informed decision regarding the acquisition. The second amended complaint seeks (i) a declaration that the plaintiffs are entitled to a quasi-appraisal remedy, (ii) rescissory damages, (iii) recovery through an accounting of all damages caused as a result of the alleged breaches of fiduciary duties, (iv) compensatory damages, and (v) costs including attorneys' fees and experts' fees. On October 15, 2015, the defendants filed a renewed motion to dismiss. In response, plaintiffs filed a motion for leave to amend their complaint. The defendants opposed the motion and it is set for hearing on June 14, 2016.

As a result of Ciena's acquisition of Cyan in August 2015, Ciena became a defendant in a securities class action lawsuit. On April 1, 2014, a purported stockholder class action lawsuit 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. On April 30, 2014, a substantially similar lawsuit was filed in the same court against the same defendants. The two cases have been consolidated as *Beaver County Employees Retirement Fund, et al. v. Cyan, Inc. et al.*, Case No. CGC-14-538355. The consolidated complaint alleges 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 seeks unspecified compensatory damages and other relief. In July 2014, the defendants filed a demurrer to the consolidated complaint, which the court overruled in October 2014 and allowed the case to proceed. On May 19,

2015, the proposed class was certified. On August 25, 2015, the defendants filed a motion for judgment on the pleadings based on an alleged lack of subject matter jurisdiction over the case, which motion was denied on October 23, 2015. On May 24, 2016, the defendants filed a petition for a writ of certiorari with the United States Supreme Court. Ciena believes that the consolidated lawsuit is without merit and intends to defend it vigorously. On May 29, 2008, Graywire, LLC filed a complaint in the United States District Court for the Northern District of Georgia against Ciena and four other defendants, alleging, among other things, that certain of the parties' products infringe U.S. Patent 6,542,673 (the "673 Patent"), relating to an identifier system and components for optical assemblies. The complaint seeks injunctive relief and damages. In July 2009, upon request of Ciena and certain other defendants, the U.S. Patent and Trademark Office ("PTO") granted the defendants' inter partes application for reexamination with respect to certain claims of the '673 Patent, and the district court granted the defendants' motion to stay the case pending reexamination of all of the patents-in-suit.

In December 2010, the PTO confirmed the validity of some claims and rejected the validity of other claims of the '673 Patent, to which Ciena and other defendants filed an appeal. On March 16, 2012, the PTO on appeal rejected multiple claims of the '673 Patent, including the two claims on which Ciena is alleged to infringe. Subsequently, the plaintiff requested a reopening of the prosecution of the '673 Patent, which request was denied by the PTO on April 29, 2013. Thereafter, on May 28, 2013, the plaintiff filed an amendment with the PTO in which it canceled the claims of the '673 Patent on which Ciena is alleged to infringe. The case currently remains stayed, and there can be no assurance as to whether or when the stay will be lifted.

In addition to the matters described above, Ciena is subject to various legal proceedings and claims arising in the ordinary course of business, 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 these matters will have a material effect on its results of operations, financial position or cash flows.

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

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,” “should,” “expects,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “intends,” “potential,” “targets,” or “continue” or the negative of those words and other comparable words. These statements may relate to, among other things, adoption of next-generation network technology and software programmability and control of networks; our competitive landscape; market conditions and growth opportunities; factors impacting our industry; factors impacting the businesses of network operators and their network architectures; our corporate 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; our backlog and seasonality in our business; our acquisition of Cyan, Inc. and its impact on our business and results of operations; 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 real estate and IT transitions or initiatives; 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 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 and the impact of pricing pressure and recurring market-based price erosion that we regularly encounter;
- 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 problems and undetected errors;
- our ability to diversify our customer base beyond our traditional customers and broaden the application for our solutions in communications networks;
- the level of growth in network traffic and bandwidth consumption and corresponding level of investment in network infrastructures by network operators;
- the international scale of our operations and fluctuations in currency exchange rates;
- our ability to forecast accurately demand for our products for purposes of inventory purchase practices;
- 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;
- failure to maintain the security of confidential, proprietary or otherwise sensitive business information or systems or to protect against cyber security 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 effectively manage 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 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;
- inability 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 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;

- impairment charges caused by the write-down of goodwill or long-lived 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 annual 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. You should review these risk factors for a more complete understanding of the risks associated with an investment in our securities. For a more complete understanding of the risks associated with an investment in Ciena’s securities, you should review these risk 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, which we filed with the Securities and Exchange Commission (“SEC”) on December 21, 2015. 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. It is not possible for us to 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 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 network specialist focused on providing solutions that enable a wide range of network operators to adopt next-generation communication architectures. We have optimized our business and solutions to enable network operators to create and deliver a broad array of high-bandwidth services relied upon by enterprise and consumer end users. We provide equipment, software and services that support the transport, switching, aggregation, service delivery and management of voice, video and data traffic on communications networks. In addition to our high-capacity hardware platforms, we offer network management and control software platforms that help network operators simplify and automate their networks and virtualize certain network functions. Our solutions are designed to enable network operators to adopt open, multi-vendor, software-programmable network infrastructures that improve automation, reduce network complexity and flexibly support changing service requirements. Our solutions yield business and operational value for our customers by enabling them to introduce new, revenue-generating services and to reduce network complexity and expense.

Our Converged Packet Optical, Packet Networking and Optical Transport products are used, individually or as part of an integrated solution, by communications service providers, cable and multiservice operators, Web-scale providers, submarine network operators, governments, enterprises, research and education (R&E) institutions and other network operators across the globe. Our products, which support applications from the network core to network access points, allow network operators to scale capacity, increase transmission speeds, allocate traffic and adapt dynamically to changing end-user service demands. Our software solutions are oriented around our Blue Planet software platform, a modular, network virtualization, service orchestration and network management software platform designed to simplify the creation, automation and delivery of services across multi-vendor and multi-domain network

environments. To complement our hardware and software solutions, we offer a broad range of network transformation and related support services that help our customers design, optimize, deploy, manage and maintain their networks.

The rapid proliferation of communications services and devices, together with increased mobility and growth in video, cloud-based services and data center interconnection, have fundamentally affected the bandwidth and service demands placed upon communications networks. As the capacity of their network infrastructures is pressured, many network operators also face a rapidly changing business environment and shifting competitive landscape. Newer market entrants, such as cloud service and over-the-top content providers, are challenging certain traditional business models. Our OPⁿ Architecture, which enables increased network scalability, flexibility and programmability, is designed to meet these challenges. It allows for network-level software applications to control and configure the network dynamically, while flexible interfaces integrate computing, storage and other network resources. This approach enables highly configurable network infrastructures that can meet the “on-demand” service requirements of both our customers and their end-users. By enhancing software-based management and control,

enabling network functions to be provided virtually, and reducing required network elements, our OPⁿ approach optimizes network infrastructures. At the same time, it increases network scale at reduced cost and simplifies the management, deployment and orchestration of multi-vendor hardware and software elements. Our OPⁿ Architecture, which underpins our solutions offering and guides our research and development strategy, is described more fully in the “Strategy” section below.

Our quarterly reports on Form 10-Q, annual reports on Form 10-K, and current reports on Form 8-K filed with the SEC are available through the SEC's website at www.sec.gov or free of charge on our website as soon as reasonably practicable after we file 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.

Market Opportunity

The market for communications networking solutions has been subject to significant changes in recent years, including rapid growth in network traffic, increased mobility, and evolving cloud-based service offerings and end-user service demands. These changes have placed significant demands on network infrastructures, challenged the business models of network operators, and altered the overall competitive landscape. Both traditional and emerging network operators are now competing to distinguish their service offerings and to rapidly introduce differentiated, revenue-generating services, while at the same time seeking to manage the costs of their networks and to ensure profitable business models. These dynamics are driving the convergence of network features, functions and layers, the virtualization of certain network functions, and the implementation of solutions that leverage increased software-based network control and programmability. We believe that these dynamics, and the need to adapt to changing business conditions, are creating an environment that will cause network operators to adopt infrastructures that are more open, programmable and automated. We also believe that network operators and vendors alike will be required to utilize an ecosystem of physical and virtual network resources provided by a variety of third parties, which will further drive increased openness and interoperability of network infrastructures.

Our corporate strategy to capitalize on these market dynamics, promote operational efficiency and drive the profitable growth of our business is set forth, in part, in the “Strategy” section below.

Competitive Landscape

We compete in markets that are characterized by rapidly advancing technologies, frequent introduction of new networking solutions and intense selling efforts to displace incumbent vendors and to capture market share. The markets for our solutions are both highly competitive and fragmented. For example, our sales of Converged Packet Optical solutions face an intense competitive environment as we and our competitors introduce new, high-capacity, high-speed network solutions and seek adoption of these solutions and our network architectural approaches. We expect the competitive landscape in which we operate to remain challenging and dynamic, particularly as we continue to broaden our business. As we have expanded our solutions offerings, including with Packet Networking solutions, such as our 8700 Packetwave Platform, and data center interconnect (DCI) solutions, such as our Waveserver DCI platform, our solutions have become increasingly competitive with those of other networking solution suppliers — including IP router vendors, data center switch providers, and other suppliers or integrators — whose technology is geared toward different network applications, layers or functions than our traditional competitors. In addition, as we seek customer adoption of our Blue Planet software platform, and network operator demands for software programmability, management and control increase, we expect to compete more directly with software vendors and information technology vendors or integrators of these solutions. We may also face competition from companies,

including those in our supply chain, who develop networking products based on off-the-shelf or commoditized hardware technology, referred to as “white box” hardware, particularly where a customer's network strategy seeks to emphasize deployment of those product offerings.

Against both this competitive landscape and market-based price erosion for our products, we expect that in order to achieve sustained revenue growth we will be required to increase our volume of shipments and continue to introduce new technology solutions that address bandwidth consumption and evolving service demands. Further, in order to maintain incumbency with key customers and to secure new opportunities with a diverse set of network operators, we are often required to agree to aggressive pricing, significant commercial concessions or other unfavorable commercial terms. These terms have previously and may in the future adversely affect our quarterly results of operations and contribute to fluctuations in our results. These terms can also lengthen our revenue recognition or cash collection cycles, add start-up costs to initial sales or deployment of our solutions, require financial commitments or performance bonds, and include onerous contractual commitments that place a disproportionate allocation of risk upon us.

Strategy

Our corporate strategy to capitalize on the market dynamics described above, promote operational efficiency and drive the profitable growth of our business includes the following initiatives:

Promote our OPⁿ Architecture. We intend to promote our OPⁿ Architecture as the preferred approach for network operators to transition to next-generation networks and address the industry dynamics described above. Our OPⁿ Architecture enables a programmable infrastructure that brings together the reliability and capacity of optical networking technologies with the flexibility and economics of packet networking technologies. Our OPⁿ Architecture leverages this convergence to enable network operators to scale their networks efficiently and cost-effectively, while applying advanced software-based network management and control for enhanced programmability. The software-driven aspects of this architecture become increasingly important as we expect network operators increasingly to seek to utilize an open ecosystem that enables multi-vendor and multi-domain network management and virtualized resources required for next-generation network architectures. We see opportunities to drive the evolution of network infrastructures by offering a portfolio of solutions, including our Blue Planet software platform, that can accelerate the realization of our OPⁿ Architecture.

Extend Technology Leaderships and Expand Application of Our Solutions. Our product development strategy is focused on maintaining our technology leadership and expanding our role in customer networks to support service delivery and additional network applications. Our research and development efforts seek to extend our existing technologies, including our WaveLogic coherent optical processor for 200G and 400G optical transport, and to introduce terabit per second and greater transmission speeds. We are also focused on expanding high-capacity service delivery capabilities in our Packet Networking and Converged Packet Optical products for metro networks, data center interconnectivity and WAN applications. Separately, we are increasing the scale, density and capability of our packet offerings, reducing power and space requirements, and enabling NFV capabilities for applications in metro networks, user aggregation and data center connectivity. We are also focused on increasing software programmability of networks and enabling network operators to automate and accelerate the creation and delivery of new, cloud-based services. These efforts include investments in our Blue Planet software platform — which is designed to automate, orchestrate, and manage physical network resources and virtualized services across data centers and the WAN — and its integration across our portfolio and with additional third party network resources.

Expand our Role and Reach through Go-to-Market Model. To address the industry dynamics described above, we believe that it is important to secure customer relationships with a diverse set of traditional communications service providers and Web-scale providers, as we expect that their purchasing and network decisions will become increasingly interdependent. As such, our go-to-market model is focused on driving sales growth by diversifying our business with existing customers and penetrating additional customer segments and international markets.

Our sales and marketing efforts seek to promote increased sales to existing customers, particularly through opportunities that expand our role or the application of our solutions within their network and business. We are pursuing opportunities to increase adoption of our packet access and aggregation solutions, and to secure market share of our Blue Planet software platform, including within our existing customer base. We are also focused on opportunities to support metro aggregation, data center interconnectivity, managed services offerings, cloud-based services, submarine networks, business Ethernet services and mobile backhaul. We intend to leverage our existing customer relationships to increase sales and promote the adoption of our solutions as our customers scale and evolve their networks.

We also intend to target important growth markets, including key customer market segments and geographies. Our go-to-market strategy is focused on further penetrating Internet content providers, data center operators and other emerging network operators that form the “Web-scale” marketplace. We intend to use our direct and indirect sales channels to target and expand our sales with several other market verticals, including cable and multiservice operators,

submarine network operators, enterprise customers and in the government, research and education (R&E) markets. We are also focused on securing additional communications service provider customers outside of North America, including in high-growth geographies such as Brazil and India. We believe that this is an important part of our strategy and necessary for continued revenue growth. To leverage the geographic reach of our direct sales resources and expand sales into key geographies, we have pursued channel and distribution opportunities, including our strategic relationship with Ericsson, that enable sales through third parties, including service providers, systems integrators and value-added resellers.

Optimize Business to Yield Operating Leverage. We are actively pursuing initiatives to improve our operating margin, constrain operating expense and redesign certain business processes, systems, and resources. These initiatives include portfolio optimization and engineering efforts to drive improved efficiencies in the design and development of our solutions and supply procurement initiatives to ensure that our product cost model remains ahead of the market-based price erosion that we regularly

encounter. We are also focused on transforming our supply chain, including efforts to reduce our material and overhead costs, reduce customer lead times and improve inventory management and logistics. Our initiatives also include significant investments in the re-engineering of company-wide enterprise resource planning platforms, improved automation of key business processes and systems, and the off-shoring of certain business functions. We seek to leverage these initiatives to promote the profitable growth of our business and to drive additional operating leverage.

Purchase of High-Speed Photonic Component Assets of TeraXion, Inc.

On January 19, 2016, Ciena Canada, Inc., a wholly-owned subsidiary of Ciena Corporation, entered into a definitive agreement with TeraXion, Inc. ("TeraXion") and its wholly-owned subsidiary to acquire certain high-speed photonics components ("HSPC") assets for approximately \$32 million in cash. The assets purchased include, among other things, TeraXion's high-speed indium phosphide and silicon photonics technologies, as well as certain underlying intellectual property, that support development of our WaveLogic coherent optical chipsets. This transaction has been accounted for as an acquisition of a business. As a result of this transaction, we also gained key research and development personnel in Ottawa and Quebec City, Canada. We believe that this acquisition affords us greater control over important component technologies used in our business and provides us opportunities to accelerate further development of our coherent packet-optical solutions. We completed our acquisition of these assets on February 1, 2016, and the acquisition of these assets and related expense are reflected in our financial results for the second fiscal quarter of 2016.

Term Loan due April 25, 2021

On April 25, 2016, Ciena entered into an Incremental Joinder and Amendment Agreement (the "Incremental Term Loan Credit Agreement") that amends the Credit Agreement (the "Term Loan Credit Agreement"), dated July 15, 2014. As more fully described in Note 17 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report, the Incremental Term Loan Credit Agreement provides for a new tranche of senior secured term loans under the Term Loan Credit Agreement in an aggregate principal amount of \$250 million maturing on April 25, 2021 (the "2021 Term Loan"). The proceeds of approximately \$246.1 million, net of fees and expenses, will initially supplement cash on the balance sheet and are expected to provide additional liquidity to contribute, in part, to the repayment of the outstanding principal amount owing under our 0.875% senior convertible notes due June 15, 2017.

Financial Results and Sequential Comparison

Revenue for the second quarter of fiscal 2016 was \$640.7 million, representing a sequential increase of 11.8% from \$573.1 million in the first quarter of fiscal 2016, during which we typically experience seasonal reductions in revenue. Revenue for the second and first quarters of fiscal 2016 includes \$24.8 million and \$40.3 million, respectively, from products and services relating to the business of Cyan, Inc. ("Cyan"), which we acquired on August 3, 2015. Revenue-related details reflecting sequential changes from the first quarter of fiscal 2016 include:

Product revenue for the second quarter of fiscal 2016 increased by \$66.4 million, primarily reflecting revenue increases within our Networking Platforms segment, with product line increases of \$46.0 million in Converged Packet Optical and \$20.4 million in Packet Networking.

Service revenue for the second quarter of fiscal 2016 increased by \$1.2 million.

North America revenue for the second quarter of fiscal 2016 was \$395.5 million, an increase from \$392.7 million in the first quarter of fiscal 2016. This primarily reflects a revenue increase of \$5.2 million within our Software and Software-Related Services segment, partially offset by a decrease of \$2.1 million within our Global Services segment. North America revenue within our Networking Platforms segment remained relatively flat, with a product line increase of \$16.3 million in Packet Networking offset by product line decreases of \$14.4 million in Converged Packet

Optical and \$2.2 million in Optical Transport.

Europe, Middle East and Africa ("EMEA") revenue for the second quarter of fiscal 2016 was \$96.2 million, an increase from \$80.7 million in the first quarter of fiscal 2016. This primarily reflects an \$11.5 million increase within our Networking Platforms segment, with a product line increase of \$14.5 million in Converged Packet Optical, partially offset by product line decreases of \$1.6 million in Optical Transport and \$1.4 million in Packet Networking. EMEA revenue also reflects a revenue increase of \$3.6 million within our Global Services segment.

Caribbean and Latin America ("CALA") revenue for the second quarter of fiscal 2016 was \$57.9 million, an increase from \$43.8 million in the first quarter of fiscal 2016. This primarily reflects a product line increase of \$14.4 million in Converged Packet Optical, within our Networking Platforms segment.

Asia Pacific ("APAC") revenue for the second quarter of fiscal 2016 was \$91.1 million, an increase from \$55.9 million in the first quarter of fiscal 2016. This primarily reflects a \$37.1 million increase within our Networking Platforms segment, with product line increases of \$31.5 million in Converged Packet Optical and \$5.3 million in Packet Networking. This increase was partially offset by a revenue decrease of \$1.2 million within our Global Services segment.

For the second quarter and first quarter of fiscal 2016, AT&T accounted for 18.1% and 22.1% of total revenue, respectively.

Gross margin for the second quarter of fiscal 2016 was 44.2%, a slight increase from 43.9% in the first quarter of fiscal 2016. The improved gross margin for the second quarter of fiscal 2016 was primarily due to a favorable product mix and product cost reductions, partially offset by an increased provision for excess and obsolete inventory expense and lower services margin.

Operating expense was \$254.9 million for the second quarter of fiscal 2016, an increase from \$240.2 million in the first quarter of fiscal 2016. Second quarter fiscal 2016 operating expense primarily reflects increases of \$6.6 million in research and development expense, \$4.2 million in selling and marketing expense and \$4.1 million in general and administrative expense. Operating expenses reflect \$2.8 million of costs associated with our acquisition of TeraXion, including \$1.8 million in research and development expense and \$1.0 million in acquisition and integration costs.

Income from operations for the second quarter of fiscal 2016 was \$28.2 million, compared to income from operations of \$11.2 million during the first quarter of fiscal 2016. Our net income for the second quarter of fiscal 2016 was \$14.0 million, or \$0.10 per diluted common share, compared to a net loss of \$11.5 million or \$0.08 per diluted common share, for the first quarter of fiscal 2016.

We generated cash from operations of \$60.7 million during the second quarter of fiscal 2016, compared to \$15.0 million of cash generated from operations during the first quarter of fiscal 2016. Reflecting the addition of the net proceeds of our 2021 Term Loan, as of April 30, 2016, we had \$922.0 million in cash and cash equivalents, \$195.2 million of short-term investments in U.S. treasury securities and commercial paper and \$125.2 million of long-term investments in U.S. treasury securities. This compares to \$660.3 million in cash and cash equivalents, \$210.0 million of short-term investments in U.S. treasury securities and commercial paper and \$125.1 million of long-term investments in U.S. treasury securities, at January 31, 2016.

As of April 30, 2016, we had 5,418 employees which was an increase from 5,345 at October 31, 2015 and an increase from 5,108 at April 30, 2015.

Consolidated Results of Operations

Operating Segments

During the first quarter of fiscal 2016, in connection with the creation of a new Chief Operating Officer organization, Ciena reorganized its internal organizational structure, the management of its business, and the reporting of its operating segments. This resulted in three new operating segments: Networking Platforms, Software and Software-Related Services, and Global Services. Ciena's previous Converged Packet-Optical, Packet Networking and Optical Transport segments were realigned to form the Networking Platforms segment under a single operating segment manager. Ciena's previous Software and Services operating segment was reorganized into two separate operating segments: (i) Software and Software-Related Services, and (ii) Global Services. Ciena's segment revenue and segment profit for fiscal 2015 have been restated to reflect the new operating segments adopted in fiscal 2016. See Note 21 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report. Quarter ended April 30, 2015 compared to the quarter ended April 30, 2016

Revenue

Our revenue can fluctuate from quarter to quarter as a result of a number of factors, including changes in customer spending levels or networking strategies, order timing and volume, backlog levels, timing of revenue recognition and other competitive dynamics. In recent periods, certain of our service provider customers, including several of our larger customers in North America and EMEA, have taken steps to constrain their capital expenditure budgets. As a result of this measured spending environment, some of our market segments have been adversely impacted and we have experienced lower spending levels on networking equipment from these customers as compared to prior periods. Partly as a result of these dynamics, our sales in EMEA during the first six months of fiscal 2016 declined 17.0% as compared to the first six months of fiscal 2015. We expect our total revenue during fiscal 2016 will be adversely affected by anticipated sales declines in EMEA during fiscal 2016 as compared to fiscal 2015.

As our business has evolved, including the sales of our solutions to meet the "on-demand" service requirements of both our customers and their end-users, the amount of quarterly revenue that we recognize in a quarter from customer orders received in that same quarter (which we refer to as "book to revenue") has increased as compared to our historical periods. Due to the inherent difficulty in forecasting the amount and timing of book to revenue in any given quarter, our increased reliance on book to revenue may increase the likelihood of fluctuations in our results.

We also expect that our total revenue in fiscal 2016 will be adversely impacted by the recent strengthening of the U.S. Dollar, particularly against the Canadian Dollar, Euro and Brazilian Real. During the second quarter of fiscal 2016, as compared to the second quarter of fiscal 2015, the U.S. dollar strengthened against a number of foreign currencies, including the Canadian Dollar, Euro and Brazilian Real, in which we have our most significant foreign currency revenue exposure. Our total revenue reported in U.S. dollars during the second quarter of fiscal 2016 was slightly impacted by approximately \$5.7 million or 0.9% as compared to the second quarter of fiscal 2015. The table below (in thousands, except percentage data) sets forth the changes in our operating segment revenue for the periods indicated:

	Quarter Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Revenue:						
Networking Platforms						
Converged Packet Optical	\$435,173	67.9	\$432,911	69.6	\$2,262	0.5
Packet Networking	68,582	10.7	53,288	8.6	15,294	28.7
Optical Transport	8,451	1.3	16,454	2.7	(8,003)	(48.6)
Total Networking Platforms	512,206	79.9	502,653	80.9	9,553	1.9
Software and Software-Related Services						
Software Platforms	11,772	1.9	9,227	1.5	2,545	27.6
Software-Related Services	18,701	2.9	14,686	2.4	4,015	27.3
Total Software and Software-Related Services	30,473	4.8	23,913	3.9	6,560	27.4
Global Services						
Maintenance Support and Training	57,069	8.9	53,085	8.5	3,984	7.5
Installation and Deployment	30,232	4.7	30,703	4.9	(471)	(1.5)
Consulting and Network Design	10,737	1.7	11,248	1.8	(511)	(4.5)
Total Global Services	98,038	15.3	95,036	15.2	3,002	3.2
Consolidated revenue	\$640,717	100.0	\$621,602	100.0	\$19,115	3.1

* Denotes % of total revenue

** Denotes % change from 2015 to 2016

Networking Platforms segment revenue increased, primarily reflecting increases of \$15.3 million in sales of our Packet Networking products and \$2.3 million in sales of our Converged Packet Optical products, partially offset by a decrease of \$8.0 million in sales of our Optical Transport products.

Converged Packet Optical sales reflect the addition of \$20.0 million in sales relating to the Z-Series Packet-Optical Platform acquired from Cyan. Converged Packet Optical sales also reflects an increase of \$13.0 million in sales of our 5430 Reconfigurable Switching System. These increases within our Converged Packet Optical product line were partially offset by decreases of \$23.1 million in sales of our 6500 Packet-Optical Platform, \$4.9 million in sales of our OTN configuration for the 5410 Reconfigurable Switching System and \$2.9 million in sales of our CoreDirector® Multiservice Optical Switches.

Packet Networking sales reflect increases of \$9.9 million in sales of our 3000 family of service delivery switches and service aggregation switches and \$6.2 million in sales of our 8700 Packetwave Platform.

Optical Transport sales, which have continued to experience expected sales declines, reflect network operators' transition from this product line toward next-generation converged network solutions. As a result, our Optical Transport products have either been previously discontinued or are expected to be discontinued during fiscal 2016. Software and Software-Related Services segment revenue increased, primarily reflecting increases of \$4.0 million in software-related services sales and \$2.5 million in sales of our software platforms. The increase in software-related services sales is primarily due to increased sales of software subscription services. The increase in software platform sales reflects \$2.3 million in initial sales of our Blue Planet network virtualization, service orchestration and network management software platform. Segment revenue also includes \$0.6 million in sales of Planet Operate software acquired from Cyan.

Global Services segment revenue increased, primarily reflecting an increase of \$4.0 million in sales of maintenance support services. Segment revenue includes \$4.2 million in services revenue related to the Cyan acquisition.

Our operating segments each engage in business and operations across four geographic regions: North America; EMEA; CALA; and APAC. Results for North America include only activities in the United States and Canada. Part of our business and growth strategy is to continue to diversify our customer base and secure additional communications service provider customers outside of North America, including in high-growth geographies such as Brazil and India. We believe that this is an important part of our strategy and required for continued revenue growth. 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 from quarter to quarter as a result of the factors described elsewhere in this report including "Risk Factors". Among other things, 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 table below (in thousands, except percentage data) sets forth the changes in geographic distribution of revenue for the periods indicated:

	Quarter Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
North America	\$395,505	61.7	\$397,181	63.9	\$(1,676)	(0.4)
EMEA	96,175	15.0	102,194	16.4	(6,019)	(5.9)
CALA	57,896	9.0	47,891	7.7	10,005	20.9
APAC	91,141	14.3	74,336	12.0	16,805	22.6
Total	\$640,717	100.0	\$621,602	100.0	\$19,115	3.1

* Denotes % of total revenue

** Denotes % change from 2015 to 2016

North America revenue primarily reflects decreases of \$13.8 million within our Networking Platforms segment, partially offset by increases of \$7.0 million within our Software and Software-Related Services segment and \$5.2 million within our Global Services segment. The revenue decrease within our Networking Platforms segment primarily reflects decreases of \$17.7 million of Converged Packet Optical sales and \$4.1 million in Optical Transport sales, partially offset by an increase of \$8.0 million of Packet Networking sales. Converged Packet Optical sales reflect a decrease of \$31.8 million in sales of our 6500 Packet-Optical Platform, which reflects decreased sales to cable and multiservice operators and communication service providers, partially offset by increased sales to enterprise customers, submarine network operators and government customers. Converged Packet Optical sales also reflect \$17.8 million of sales for our Z-Series Packet-Optical Platform acquired from Cyan.

EMEA revenue primarily reflects a decrease of \$10.2 million within our Networking Platform segment, partially offset by revenue increases of \$2.5 million within our Global Services segment and \$1.7 million within our Software and Software-Related Services segment. Networking Platform segment revenue reflects a product line decrease of \$7.8 million in Converged Packet Optical sales, primarily for the 6500 Packet-Optical Platform and the OTN configuration for the 5410 Reconfigurable Switching System. In recent periods, we have seen certain of our large service provider customers in EMEA take steps to constrain their capital expenditure budgets. This measured spending environment, together with macroeconomic conditions, has adversely impacted the spending levels we have experienced from certain customers in this region as compared to prior periods.

CALA revenue primarily reflects an increase of \$10.6 million within our Networking Platform segment. CALA revenue benefited from increased sales to submarine network operators, cable and multiservice operators, Web-scale providers and to AT&T in Mexico, partially offset by lower sales to other service providers, primarily in Brazil.

• APAC revenue primarily reflects an increase of \$23.0 million within our Networking Platform segment, partially offset by decreases of \$4.5 million within our Global Services segment and \$1.7 million within our Software and Software-Related Services segment. The revenue increase within our Networking Platforms segment primarily reflects an increase of our 6500 Packet-Optical Platform sales to enterprise customers and submarine network operators and sales through our strategic relationship with Ericsson, partially offset by

lower sales to service providers. The timing of revenue recognition for large network projects in this region can result in significant variations in revenue results in any particular quarter.

Cost of Goods Sold and Gross Profit

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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,” is susceptible to fluctuations due to a number of factors. In any given period, gross margin can vary significantly depending upon the mix and concentration of revenue by segment, product line within a particular segment, geography, and customers. Gross margin can also be affected by our concentration of lower margin "common" equipment sales and higher margin products including channel cards, the mix of lower margin installation services within our service revenue, our introduction of new products, and changes in expense for excess and obsolete inventory and warranty obligations. We regularly encounter pricing pressure and market-based price erosion that can impact our results of operations, and we expect that our gross margins will be subject to fluctuation and significantly dependent upon our level of success in driving product cost reductions relative to the price reductions that we encounter. In an effort to retain or secure customers, enter new markets or capture market share, we may agree to pricing or other unfavorable commercial terms that result in lower or negative gross margins on a particular order or group of orders. Gross margin can also be affected as a result of our degree of success in implementing certain optimization initiatives focused on rationalizing our supply chain and consolidating third party contract manufacturers and distribution sites. These factors and market dynamics may result in fluctuation in our results of operations and can adversely affect our gross margin and results of operations in certain periods.

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 April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Total revenue	\$640,717	100.0	\$621,602	100.0	\$ 19,115	3.1
Total cost of goods sold	357,624	55.8	349,191	56.2	8,433	2.4
Gross profit	\$283,093	44.2	\$272,411	43.8	\$ 10,682	3.9

* Denotes % of total revenue

** Denotes % change from 2015 to 2016

	Quarter Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Product revenue	\$523,978	100.0	\$511,880	100.0	\$ 12,098	2.4
Product cost of goods sold	291,778	55.7	286,898	56.0	4,880	1.7
Product gross profit	\$232,200	44.3	\$224,982	44.0	\$ 7,218	3.2

* Denotes % of product revenue

** Denotes % change from 2015 to 2016

	Quarter Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Service revenue	\$116,739	100.0	\$109,722	100.0	\$ 7,017	6.4
Service cost of goods sold	65,846	56.4	62,293	56.8	3,553	5.7
Service gross profit	\$50,893	43.6	\$47,429	43.2	\$ 3,464	7.3

* Denotes % of services revenue

** Denotes % change from 2015 to 2016

Gross profit as a percentage of revenue increased as a result of the following factors:

Gross profit on products as a percentage of product revenue increased, as a result of product cost reductions, improved manufacturing efficiencies and higher software revenue, partially offset by the impact of market-based price erosion and an increased provision for excess and obsolete inventory expense.

Gross profit on services as a percentage of services revenue increased, primarily due to increased sales of higher margin software subscription services and improved efficiencies for maintenance and support services.

Operating Expense

We expect operating expense to increase in fiscal 2016 from the level reported for fiscal 2015, in part due to the additional personnel and operations related to our acquisition of Cyan during the fourth quarter of fiscal 2015 and our acquisition of the HSPC assets of TeraXion on February 1, 2016. We also expect operating expense to increase in order to fund our research and development initiatives, to provide for investments in the re-engineering of company-wide enterprise resource planning platforms, and to fund the transition of key facilities. In particular, the development of our new facilities and the transition of our operations in Ottawa, Canada and Gurgaon, India will require significant effort, time and cost.

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, testing of our products, 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.

Acquisition and integration costs consist of expenses for financial, legal and accounting advisors and severance and other employee-related costs, associated with our acquisition of Cyan on August 3, 2015 and our acquisition of the HSPC assets from TeraXion and its wholly-owned subsidiary on February 1, 2016.

Amortization of intangible assets primarily reflects the amortization of purchased technology and customer relationships from our acquisitions.

Restructuring costs primarily reflect actions Ciena has taken to better align our workforce, facilities and operating costs with perceived market opportunities, business strategies and changes in market and business conditions.

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

	Quarter Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Research and development	\$114,603	17.9	\$105,202	16.9	\$9,401	8.9
Selling and marketing	86,668	13.5	82,471	13.3	4,197	5.1
General and administrative	35,203	5.5	30,302	4.9	4,901	16.2
Acquisition and integration costs	2,285	0.4	1,020	0.2	1,265	124.0
Amortization of intangible assets	15,566	2.4	11,019	1.8	4,547	41.3
Restructuring costs	535	0.1	(17)	—	552	(3,247.1)
Total operating expenses	\$254,860	39.8	\$229,997	37.1	\$24,863	10.8

* Denotes % of total revenue

** Denotes % change from 2015 to 2016

Research and development expense benefited from \$4.3 million as a result of foreign exchange rates, net of hedging, primarily due to a stronger U.S. dollar in relation to the Canadian Dollar. Including the effect of foreign exchange rates, research and development expenses increased by \$9.4 million. This change reflects increases of \$6.1 million in employee and compensation costs, \$2.2 million in facilities and information technology costs, \$1.3 million in depreciation expense and \$1.0 million in professional services. These increases were partially offset by a decrease of \$1.9 million in prototype expense.

Selling and marketing expense increased by \$4.2 million, primarily reflecting increases of \$3.9 million in employee and compensation costs and \$1.0 million in facilities and information technology costs, partially offset by a decrease of \$1.0 million in trade show and related costs.

General and administrative expense increased by \$4.9 million, primarily reflecting increases of \$3.0 million in employee and compensation costs and \$1.2 million for legal settlements related to certain patent litigation.

Acquisition and integration costs reflects expense for financial, legal and accounting advisors and severance and other employee compensation costs, related to our acquisition of Cyan on August 3, 2015 and our acquisition of certain HSPC assets of TeraXion and its wholly-owned subsidiary on February 1, 2016.

Amortization of intangible assets increased due to expense related to acquired intangible assets from our acquisition of Cyan on August 3, 2015 and our acquisition of certain HSPC assets of TeraXion and its wholly-owned subsidiary on February 1, 2016.

Restructuring costs primarily reflect certain severance and related expense associated with headcount reductions and initiatives to improve efficiency. As we look to manage operating expense and drive further efficiency and leverage from our operations, we will continue to assess allocation of headcount, facilities and other resources to ensure that they are optimized toward key growth opportunities.

Other items

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

	Quarter Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Interest and other income (loss), net	\$967	0.2	\$(5,549)	(0.9)	\$6,516	117.4
Interest expense	\$12,608	2.0	\$12,947	2.1	\$(339)	(2.6)
Provision for income taxes	\$2,595	0.4	\$3,265	0.5	\$(670)	(20.5)

* Denotes % of total revenue

** Denotes % change from 2015 to 2016

Interest and other income (loss), net reflects the improved 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 remained relatively unchanged.

Provision for income taxes decreased primarily due to foreign tax expense.

Six months ended April 30, 2015 compared to the six months ended April 30, 2016

Revenue

During the first six months of fiscal 2016, as compared to the first six months of fiscal 2015, the U.S. dollar strengthened against a number of foreign currencies, including the Canadian Dollar, Euro, and Brazilian Real in which we have our most significant foreign currency revenue exposure. Consequently, our total revenue reported in U.S. dollars was adversely impacted by approximately \$16.1 million or 1.3% as compared to the first six months of fiscal 2015. The table below (in thousands, except percentage data) sets forth the changes in our operating segment revenue for the periods indicated:

	Six Months Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Revenue:						
Networking Platforms						
Converged Packet Optical	\$824,341	67.9	\$769,471	66.9	\$54,870	7.1
Packet Networking	116,779	9.6	108,271	9.4	8,508	7.9
Optical Transport	20,596	1.7	38,793	3.4	(18,197)	(46.9)
Total Networking Platforms	961,716	79.2	916,535	79.7	45,181	4.9
Software and Software-Related Services						
Software Platforms	19,851	1.6	17,660	1.5	2,191	12.4
Software-Related Services	36,048	3.0	29,781	2.6	6,267	21.0
Total Software and Software-Related Services	55,899	4.6	47,441	4.1	8,458	17.8
Global Services						
Maintenance Support and Training	113,127	9.4	106,986	9.3	6,141	5.7
Installation and Deployment	61,072	5.0	56,884	4.9	4,188	7.4
Consulting and Network Design	22,018	1.8	22,918	2.0	(900)	(3.9)
Total Global Services	196,217	16.2	186,788	16.2	9,429	5.0
Consolidated revenue	\$1,213,832	100.0	\$1,150,764	100.0	\$63,068	5.5

* Denotes % of total revenue

** Denotes % change from 2015 to 2016

Networking Platforms segment revenue increased, primarily reflecting increases of \$54.9 million in sales of our Converged Packet Optical products and \$8.5 million of Packet Networking products, partially offset by a decrease of \$18.2 million in sales of our Optical Transport products.

Converged Packet Optical sales reflect an increase of \$12.3 million of our 6500 Packet-Optical Platform, primarily due to increased sales to enterprise customers, AT&T, government customers and sales through our strategic relationship with Ericsson. These increases were partially offset by decreases in sales of our 6500 Packet-Optical Platform to Web-scale and other service providers, cable and multiservice operators and submarine network operators. Increased sales from Converged Packet Optical also reflects the addition of \$54.1 million in sales relating to the Z-Series Packet-Optical Platform acquired from Cyan. These increases within our Converged Packet Optical product line were partially offset by decreases of \$7.7 million in sales of our OTN configuration for the 5410 Reconfigurable Switching System and \$3.2 million in sales of our CoreDirector® Multiservice Optical Switches.

Packet Networking sales reflect increases of \$7.6 million in sales of our 8700 Packetwave Platform and \$2.7 million in sales of our 3000 family of service delivery switches, partially offset by a decrease of \$1.3 million in sales of our 5410 Service Aggregation Switch.

Optical Transport sales, which generally have experienced continued declines, reflect network operators' transition from this product line toward next-generation converged network solutions. As a result, our Optical Transport products have either been previously discontinued or are expected to be discontinued during fiscal 2016.

Software and Software-Related Services segment revenue increased, primarily reflecting increases of \$6.3 million in software-related services sales and \$2.2 million in sales of our software platforms. The increase in software-related services sales is primarily due to increased sales of software subscription services. The increase in software platform sales reflects \$2.4 million in initial sales of our Blue Planet network virtualization, service orchestration and network management software platform. Segment revenue also includes \$0.8 million in sales of Planet Operate software acquired from Cyan.

Global Services segment revenue increased, primarily reflecting increases of \$6.1 million in sales of our maintenance and support services and \$4.2 million in sales of our installation and deployment services. Global Services segment revenue includes \$10.2 million of services revenue acquired from Cyan.

The table below (in thousands, except percentage data) sets forth the changes in geographic distribution of revenue for the periods indicated:

	Six Months Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
North America	\$788,209	64.9	\$728,716	63.3	\$59,493	8.2
EMEA	176,897	14.6	213,200	18.5	(36,303)	(17.0)
CALA	101,706	8.4	90,633	7.9	11,073	12.2
APAC	147,020	12.1	118,215	10.3	28,805	24.4
Total	\$1,213,832	100.0	\$1,150,764	100.0	\$63,068	5.5

* Denotes % of total revenue

** Denotes % change from 2015 to 2016

North America revenue primarily reflects increases of \$42.9 million within our Networking Platforms segment, \$8.4 million within our Global Services segment, and \$8.2 million within our Software and Software-Related Services segment. The revenue increase within our Networking Platforms segment primarily reflects an increase of \$52.6 million of Converged Packet Optical sales, partially offset by decreases of \$7.7 million in Optical Transport sales and \$2.0 million of Packet Networking sales. Converged Packet Optical sales reflect increases of \$12.4 million in sales of our 6500 Packet-Optical Platform, which reflects increased sales to communication service providers, enterprise customers, government customers and network submarine operators, slightly offset by reduced sales to cable and multiservice operators and Web-scale providers. Converged Packet Optical sales also include \$46.2 million of sales for our Z-Series Packet-Optical Platform acquired from Cyan.

EMEA revenue primarily reflects a decrease of \$39.2 million within our Networking Platform segment. Networking Platform segment revenue reflects a product line decrease of \$34.0 million in Converged Packet Optical sales, primarily for the 6500 Packet-Optical Platform. In recent periods, we have seen certain of our large service provider customers in EMEA take steps to constrain their capital expenditure budgets. This measured spending environment, together with macroeconomic conditions, has adversely impacted the spending levels we have experienced from certain customers in this region as compared to prior periods.

CALA revenue primarily reflects an increase of \$12.0 million within our Networking Platform segment. CALA revenue benefited from increased sales to AT&T in Mexico, submarine network operators, cable and multiservice operators and Web-scale providers, partially offset by lower sales to other service providers, primarily in Brazil.

APAC revenue primarily reflects an increase of \$29.5 million within our Networking Platform segment. The revenue increase within our Networking Platforms segment primarily reflects an increase of our 6500 Packet-Optical Platform sales to certain communications service provider and enterprise customers, submarine network operators and sales through our strategic partnership with Ericsson. The timing of revenue recognition for large network projects in this region can result in significant variations in revenue results in any particular quarter.

Cost of Goods Sold and Gross Profit

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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:

	Six Months Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Total revenue	\$ 1,213,832	100.0	\$ 1,150,764	100.0	\$ 63,068	5.5
Total cost of goods sold	679,289	56.0	648,058	56.3	31,231	4.8
Gross profit	\$ 534,543	44.0	\$ 502,706	43.7	\$ 31,837	6.3

* Denotes % of total revenue

** Denotes % change from 2015 to 2016

	Six Months Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Product revenue	\$ 981,567	100.0	\$ 934,195	100.0	\$ 47,372	5.1
Product cost of goods sold	552,260	56.3	523,446	56.0	28,814	5.5
Product gross profit	\$ 429,307	43.7	\$ 410,749	44.0	\$ 18,558	4.5

* Denotes % of product revenue

** Denotes % change from 2015 to 2016

	Six Months Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Service revenue	\$ 232,265	100.0	\$ 216,569	100.0	\$ 15,696	7.2
Service cost of goods sold	127,029	54.7	124,612	57.5	2,417	1.9
Service gross profit	\$ 105,236	45.3	\$ 91,957	42.5	\$ 13,279	14.4

* Denotes % of services revenue

** Denotes % change from 2015 to 2016

Gross profit as a percentage of revenue increased as a result of the following factors:

Gross profit on products as a percentage of product revenue decreased as a result of market-based price erosion and an increased provision for excess and obsolete inventory expense partially offset by product cost reductions, higher software revenue and improved manufacturing efficiencies.

Gross profit on services as a percentage of services revenue increased primarily due to increased sales of higher margin software subscription services and reduced repair costs to support maintenance service contracts.

Operating Expense

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

	Six Months Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Research and development	\$222,649	18.3	\$205,963	17.9	\$16,686	8.1
Selling and marketing	169,146	13.9	159,183	13.8	9,963	6.3
General and administrative	66,345	5.5	59,855	5.2	6,490	10.8
Acquisition and integration costs	3,584	0.3	1,020	0.1	2,564	251.4
Amortization of intangible assets	32,428	2.7	22,038	1.9	10,390	47.1
Restructuring costs	919	0.1	8,068	0.7	(7,149)	(88.6)
Total operating expenses	\$495,071	40.8	\$456,127	39.6	\$38,944	8.5

* Denotes % of total revenue

** Denotes % change from 2015 to 2016

Research and development expense benefited \$13.6 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. Including the effect of foreign exchange rates, research and development expenses increased by \$16.7 million. This change reflects increases of \$10.8 million in employee and compensation costs, \$4.2 million in facilities and information technology costs, \$1.9 million in professional services and \$1.7 million in depreciation expense. Research and development expense for fiscal 2016 also reflects a \$1.7 million reduction in reimbursements from our strategic jobs investment fund grant from the province of Ontario, due to the maximum funding limit being met in the second quarter of fiscal 2015. These increases were partially offset by a decrease of \$4.4 million in prototype expense.

Selling and marketing expense benefited \$4.7 million as a result of foreign exchange rates, primarily due to a stronger U.S. dollar in relation to the Euro, Canadian Dollar and Brazilian Real. Including the effect of foreign exchange rates, selling and marketing expense increased by \$10.0 million, primarily reflecting increases of \$7.6 million in employee and compensation costs, \$2.1 million in professional services, \$1.4 million in facilities and information technology costs and \$1.0 million in travel and related costs. These increases were partially offset by a decrease of \$1.7 million in trade shows and related costs.

General and administrative expense benefited \$1.6 million as a result of foreign exchange rates, primarily due to a stronger U.S. dollar in relation to the Brazilian Real, Canadian Dollar and Euro. Including the effect of foreign exchange rates, general and administrative expense increased by \$6.5 million, primarily due to increased employee and compensation costs of \$5.3 million and \$1.2 million for legal settlements related to certain patent litigations.

Acquisition and integration costs reflects expense for financial, legal and accounting advisors, and severance and other employee compensation costs, related to our acquisition of Cyan on August 3, 2015 and our acquisition of certain HSPC assets of TeraXion and its wholly-owned subsidiary on February 1, 2016.

Amortization of intangible assets increased due to expense related to acquired intangible assets from our acquisition of Cyan during fiscal 2015 and our acquisition of certain HSPC assets of TeraXion and its wholly-owned subsidiary on February 1, 2016.

Restructuring costs primarily reflect certain severance and related expense associated with headcount reductions and initiatives to improve efficiency. As we look to manage operating expense and drive further efficiency and leverage from our operations, we will continue to assess allocation of headcount, facilities and other resources to ensure that they are optimized toward key growth opportunities

Other items

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

	Six Months Ended April 30,				Increase	
	2016	%*	2015	%*	(decrease)	%**
Interest and other income (loss), net	\$(7,809)	(0.6)	\$(13,782)	(1.2)	\$5,973	43.3
Interest expense	\$25,318	2.1	\$26,608	2.3	\$(1,290)	(4.8)
Provision for income taxes	\$3,894	0.3	\$4,315	0.4	\$(421)	(9.8)

* Denotes % of total revenue

** Denotes % change from 2015 to 2016

Interest and other income (loss), net reflects the improved 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 aggregate of outstanding debt due to the maturity of our outstanding 4.0% Convertible Senior Notes on March 15, 2015.

Provision for income taxes decreased primarily due to foreign tax expense.

Segment Profit (Loss)

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

	Quarter Ended April			
	2016	2015	Increase (decrease)	%*
Segment profit:				
Networking Platforms	\$ 132,606	\$ 131,252	\$ 1,354	1.0
Software and Software-Related Services	\$ 192	\$ 806	\$ (614)	(76.2)
Global Services	\$ 35,692	\$ 35,151	\$ 541	1.5

* Denotes % change from 2015 to 2016

Networking Platforms segment profit increased, primarily due to higher sales volume, as described above, and improved gross margin partially offset by higher research and development costs. The improved gross margin was the result of product cost reductions and improved manufacturing efficiencies partially offset by market-based price erosion and an increased provision for excess and obsolete inventory expense.

Software and Software-Related Services segment profit decreased, primarily due to higher research and development costs and lower gross margin from increased amortization of intangibles expense, partially offset by higher sales volume. Higher research and development costs reflect the addition of expenses relating to the development of our Blue Planet software platform.

Global Services segment profit increased, primarily due to higher sales volume, as described above, partially offset by reduced gross margin.

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

	Six Months Ended			
	2016	2015	Increase (decrease)	%*
Segment profit (loss):				
Networking Platforms	\$ 239,588	\$ 226,326	\$ 13,262	5.9
Software and Software-Related Services	\$ (3,382)	\$ 3,394	\$ (6,776)	(199.6)
Global Services	\$ 75,688	\$ 67,023	\$ 8,665	12.9

* Denotes % change from 2015 to 2016

Networking Platforms segment profit increased, primarily due to higher sales volume as described above. The increased sales volume was partially offset by higher research and development costs and reduced gross margin. The reduced gross margin was the result of market-based price erosion and an increased provision for excess and obsolete inventory expense partially offset by product cost reductions and improved manufacturing efficiencies.

Software and Software-Related Services segment loss primarily reflects higher research and development costs and reduced gross margin from increased amortization of intangibles expense, partially offset by higher sales volume. Higher research and development costs reflect the addition of expenses relating to the development of our Blue Planet software platform.

Global Services segment profit increased, primarily due to higher sales volume and improved gross margin. The improved gross margin reflects lower costs for maintenance, support, installation and deployment services.

Liquidity and Capital Resources

At April 30, 2016, our principal sources of liquidity were cash and cash equivalents, investments in marketable debt securities, representing U.S. treasuries and commercial paper, and our ABL Credit Facility. The following table sets forth changes in our cash and cash equivalents and investments in marketable debt securities (in thousands):

	April 30, 2016	October 31, 2015	Increase (decrease)
Cash and cash equivalents	\$922,033	\$790,971	\$131,062
Short-term investments in marketable debt securities	195,179	135,107	60,072
Long-term investments in marketable debt securities	125,233	95,105	30,128
Total cash and cash equivalents and investments in marketable debt securities	\$1,242,445	\$1,021,183	\$221,262

The amount of cash, cash equivalents and short-term investments held by our foreign subsidiaries was \$44.6 million as of April 30, 2016. Given this amount, we do not believe that there are significant amounts held by foreign subsidiaries in which we consider earnings to be permanently reinvested, that may not be available for U.S.

operations. In the event such funds held by our foreign subsidiaries were repatriated, we believe that any resulting tax implications would not be material.

As more fully described in Note 17 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report, during the second quarter of fiscal 2016 we entered into an Incremental Term Loan Credit Agreement that provides for a new tranche of senior secured term loans under the Credit Agreement dated July 15, 2014 in an aggregate principal amount of \$250 million maturing on April 25, 2021. The proceeds of approximately \$246.1 million, net of fees and expenses, will initially supplement cash on the balance sheet and are expected to provide additional liquidity to contribute, in part, to the repayment of the outstanding principal amount owing under Ciena's 0.875% Senior Convertible Notes due June 15, 2017.

The change in total cash and cash equivalents and investments in marketable debt securities during the first six months of fiscal 2016 was also related to the following:

- \$75.7 million cash generated from operations, consisting of \$140.6 million provided by net income (adjusted for non-cash charges) offset by \$64.9 million used in working capital;
- \$53.1 million used for purchases of equipment, furniture and fixtures and intellectual property;
- \$4.8 million used for settlement of foreign currency forward contracts, net;
- \$3.8 million used to pay capital lease obligations;
- \$32.0 million used for the purchase price to acquire the HSPC assets of TeraXion;
- \$15.3 million used for repayment of long-term debt;
- \$10.0 million provided by stock issuances under our employee stock purchase plan and exercise of stock options;
- \$1.1 million used for payment of debt issuance costs, other than costs associated with the 2021 Term Loan; and
- \$0.6 million decrease due to the effect of exchange rate changes on cash and cash equivalents.

Ciena and certain of its subsidiaries are parties to a senior secured asset-based revolving credit facility (the "ABL Credit Facility") providing for a total commitment of \$250 million with a maturity date of December 31, 2020. Ciena principally uses the ABL Credit Facility to support the issuance of letters of credit that arise in the ordinary course of its business and thereby to reduce its use of cash required to collateralize these instruments. As of April 30, 2016,

letters of credit totaling \$66.7 million were collateralized by our ABL Credit Facility. There were no borrowings outstanding under the ABL Credit Facility as of April 30, 2016.

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

The following sections set forth the components of our \$75.7 million of cash generated from operating activities during the first six months of fiscal 2016:

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):

	Six months ended April 30, 2016
Net income	\$2,451
Adjustments for non-cash charges:	
Depreciation of equipment, building, furniture and fixtures, and amortization of leasehold improvements	30,237
Share-based compensation costs	29,210
Amortization of intangible assets	40,488
Provision for inventory excess and obsolescence	20,104
Provision for warranty	9,563
Other	8,578
Net income (adjusted for non-cash charges)	\$ 140,631

Working Capital

We used \$64.9 million of cash for working capital during the period. The following tables set forth the major components of the cash used in working capital (in thousands):

	Six months ended April 30, 2016
Cash used in accounts receivable	\$(4,865)
Cash used in inventories	(19,022)
Cash used in prepaid expenses and other	(7,670)
Cash used in accounts payable, accruals and other obligations	(29,400)
Cash used in deferred revenue	(3,992)
Total cash used for working capital	\$(64,949)

As compared to the end of fiscal 2015:

• The \$4.9 million of cash used by accounts receivable during the first six months of fiscal 2016 reflects higher proportional sales volume at the end of the second quarter of fiscal 2016;

• The \$19.0 million of cash used in inventory during the first six months of fiscal 2016 primarily reflects increases in deferred costs of goods sold;

• Cash used in prepaid expense and other during the first six months of fiscal 2016 was \$7.7 million, primarily reflecting higher prepaid value added taxes and product demonstration equipment;

• The \$29.4 million of cash used in accounts payable, accruals and other obligations during the first six months of fiscal 2016 reflects, among other things, the annual payment under our cash incentive compensation plan to employees; and

The \$4.0 million of cash used in deferred revenue during the first six months of fiscal 2016 represents an increase in the recognition of revenue for which we received advanced payments from customers.

Our days sales outstanding (DSOs) for the first six months of fiscal 2016 were 82 days and our inventory turns for the first six months of fiscal 2016 were 5.8.

Cash Paid for Interest

The following tables set forth the cash paid for interest during the period (in thousands):

	Six months ended April 30, 2016
0.875% Convertible Senior Notes due June 15, 2017 ⁽¹⁾	\$2,162
3.75% Convertible Senior Notes, due October 15, 2018 ⁽²⁾	6,562
4.0% Convertible Senior Notes, due December 15, 2020 ⁽³⁾	3,750
Term Loan due July 15, 2019 ⁽⁴⁾	4,676
Term Loan due April 25, 2021 ⁽⁵⁾	—
Interest rate swaps ⁽⁶⁾	1,572
ABL Credit Facility ⁽⁷⁾	898
Cash paid during period	\$19,620

(1) Interest on our outstanding 0.875% Convertible Senior Notes, due June 15, 2017, is payable on June 15 and December 15 of each year.

(2) Interest on our outstanding 3.75% Convertible Senior Notes, due October, 2018, is payable on April 15 and October 15 of each year.

(3) Interest on our outstanding 4.0% Convertible Senior Notes, due December 15, 2020, is payable on June 15 and December 15 of each year.

(4) Interest on our outstanding 2019 Term Loan is payable periodically based on the underlying market index rate selected for borrowing. The 2019 Term Loan bears interest at LIBOR plus a spread of 3.00% subject to a minimum LIBOR rate of 0.75%. During the first six months of fiscal 2016, the interest rate on the 2019 Term Loan was 3.75%.

(5) No interest was paid on our outstanding 2021 Term Loan. Interest is payable periodically based on the underlying market index rate selected for borrowing. From April 25, 2016 through May 5, 2016, the interest rate in effect on our 2021 Term Loan was 6.0%, which was a base rate borrowing. After this initial period, the 2021 Term Loan bears interest at LIBOR plus a spread of 3.25% to 3.50% subject to a minimum LIBOR rate of 0.75%.

(6) Payments on our interest rate swaps are variable and effectively fix the total interest rate under the 2019 Term Loan at 5.004% from July 20, 2015 through July 19, 2018.

(7) During the first six months of fiscal 2016, we utilized the ABL Credit Facility to collateralize certain standby letters of credit and paid \$0.9 million in commitment fees, interest expense and other administrative charges relating to our ABL Credit Facility.

For additional information about our convertible notes and term loans, ABL Credit Facility and interest rate swaps, see Notes 15, 17 and 18 to our Condensed Consolidated Financial Statements included in in Item 1 of Part I of this report.

Contractual Obligations

The following is a summary of our future minimum payments under contractual obligations as of April 30, 2016 (in thousands):

	Total	Less than one year	One to three years	Three to five years	Thereafter
Principal due at maturity on convertible notes ⁽¹⁾	\$1,047,112	\$—	\$829,985	\$217,127	\$—
Principal due on term loans	495,625	5,000	10,000	480,625	—
Interest due on convertible notes	76,875	25,000	36,875	15,000	—
Interest due on term loans ⁽²⁾	82,528	20,010	39,615	22,903	—
Payments due under interest rate swaps ⁽²⁾	13,074	4,404	6,914	1,756	—
Operating leases ⁽³⁾	138,210	34,880	39,955	21,219	42,156
Purchase obligations ⁽⁴⁾	216,484	216,484	—	—	—
Capital leases— equipment	4,937	2,778	1,730	429	—
Capital leases— buildings ⁽⁵⁾	132,214	2,242	13,544	15,627	100,801
Other obligations	1,585	1,085	382	118	—
Total ⁽⁶⁾	\$2,208,644	\$311,883	\$979,000	\$774,804	\$142,957

Includes the accretion of the principal amount on our outstanding 4.0% Convertible Senior Notes, due December (1) 15, 2020 payable at maturity at a rate of 1.85% per year compounded semi-annually, commencing December 27, 2012.

Interest on the term loans and payments due under the interest rate swaps are variable and were calculated using (2) the rate in effect on the balance sheet date. For additional information about our term loans and the interest rate swaps, see Notes 15 and 17 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report.

Does not include variable insurance, taxes, maintenance and other costs required by the applicable operating lease. (3) These costs are not expected to have a material future impact.

Purchase obligations relate to purchase order commitments to our contract manufacturers and component suppliers (4) for inventory. In certain instances, we are permitted to cancel, reschedule or adjust these orders. Consequently, only a portion of the amount reported above relates to firm, non-cancelable and unconditional obligations.

This represents the total minimum lease payments due for all buildings that are subject to capital lease accounting, as well as buildings that are expected to be recorded as capital leases upon the commencement of the lease term.

Payment timing is based on the expected commencement of the lease term. Does not include variable insurance, (5) taxes, maintenance and other costs required by the applicable capital lease. These costs are not expected to have a material future impact.

As of April 30, 2016, we also had approximately \$12.2 million of other long-term obligations in our Condensed (6) Consolidated Balance Sheet for unrecognized tax positions that are not included in this table because the timing of any cash settlement with the respective tax authority, if any, cannot be reasonably estimated.

Some of our commercial commitments, including some of the future minimum payments in operating leases set forth above and certain commitments to customers, are secured by standby letters of credit collateralized under our ABL Credit Facility or restricted cash. Restricted cash balances are included in other current assets or other long-term assets depending upon the duration of the underlying letter of credit obligation. The following is a summary of our commercial commitments secured by standby letters of credit by commitment expiration date as of April 30, 2016 (in thousands):

	Total	Less than one year	One to three years	Three to five years	Thereafter
Standby letters of credit	\$69,203	\$34,017	\$14,973	\$9,368	\$10,845

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

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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 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.

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

Revenue Recognition

We recognize revenue when all of the following criteria are met: persuasive evidence of an arrangement exists; delivery has occurred or services have been rendered; the price to the buyer is fixed or determinable; and collectibility is reasonably assured. Customer purchase agreements and customer purchase orders are generally used to determine the existence of an arrangement. Shipping documents and evidence of customer acceptance, when applicable, are used to verify delivery or services rendered. We assess whether the price is fixed or determinable based on the payment terms associated with the transaction and whether the sales price is subject to refund or adjustment. We assess collectibility based primarily on the creditworthiness of the customer as determined by credit checks and analysis, as well as the customer's payment history. Revenue for maintenance services is deferred and recognized ratably over the period during which the services are to be performed. Shipping and handling fees billed to customers are included in revenue, with the associated expenses included in product cost of goods sold.

We apply the percentage-of-completion method to long-term arrangements where we are required to undertake significant production, customization or modification engineering, and reasonable and reliable estimates of revenue and cost are available. Utilizing the percentage-of-completion method, we recognize revenue based on the ratio of actual costs incurred to date to total estimated costs expected to be incurred. In instances that do not meet the percentage-of-completion method criteria, recognition of revenue is deferred until there are no uncertainties regarding customer acceptance. Unbilled percentage-of-completion revenues recognized are included in accounts receivable, net. Billings in excess of revenues recognized on these contracts are recorded within deferred revenue. The percentage of total revenue recognized using the percentage-of-completion method for the first six months ended April 30, 2016 and April 30, 2015 were 0.4% and 1.7%, respectively.

Software revenue is recognized when persuasive evidence of an arrangement exists, delivery has occurred, the fee is fixed or determinable, and collectibility is probable. In instances where final acceptance criteria of the software are specified by the customer, revenue is deferred until there are no uncertainties regarding customer acceptance.

We limit the amount of revenue recognition for delivered elements to the amount that is not contingent on the future delivery of products or services, future performance obligations or subject to customer-specified return or refund privileges.

Revenue for multiple element arrangements is allocated to each unit of accounting based on the relative selling price of each delivered element, with revenue recognized for each delivered element when the revenue recognition criteria are met. We determine the selling price for each deliverable based upon the selling price hierarchy for multiple-deliverable arrangements. Under this hierarchy, we use vendor-specific objective evidence ("VSOE") of selling price, if it exists, or third party evidence ("TPE") of selling price if VSOE does not exist. If neither VSOE nor TPE of selling price exists for a deliverable, we use our best estimate of selling price ("BESP") for that deliverable.

For multiple element software arrangements where VSOE of undelivered maintenance does not exist, revenue for the entire arrangement is recognized over the maintenance term.

VSOE, when determinable, is established based on our pricing and discounting practices for the specific product or service when sold separately. In determining whether VSOE exists, we require that a substantial majority of the selling prices for a product or service fall within a reasonably narrow pricing range. We have generally been unable to establish TPE of selling price because our go-to-market strategy differs from that of others in our markets, and the extent of customization and differentiated features and functions varies among comparable products or services from our peers. We determine BESP based upon management-approved pricing guidelines, which consider multiple factors including the type of product or service, gross margin objectives, competitive and market conditions, and the go-to-market strategy, all of which can affect pricing practices.

Our total deferred revenue for products was \$49.2 million and \$66.5 million as of April 30, 2016 and October 31, 2015, respectively. Our services revenue is deferred and recognized ratably over the period during which the services are to be

performed. Our total deferred revenue for services was \$137.8 million and \$122.5 million as of April 30, 2016 and October 31, 2015, respectively.

Share-Based Compensation

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

Because share-based compensation expense is based on awards that are ultimately expected to vest, the amount of expense takes into account estimated forfeitures. We estimate forfeitures at the time of grant and revise these estimates, if necessary, in subsequent periods if actual forfeitures differ from those estimates. Changes in these estimates and assumptions can materially affect the measurement of estimated fair value of our share-based compensation. See Note 20 to our Condensed Consolidated Financial Statements in Item 1 of Part I of this report for information regarding our assumptions related to share-based compensation and the amount of share-based compensation expense we incurred for the periods covered in this report. As of April 30, 2016, total unrecognized compensation expense was \$85.1 million: (i) \$1.2 million, which related to unvested stock options and is expected to be recognized over a weighted-average period of 1.4 years; and (ii) \$83.9 million which related to unvested restricted stock units and is expected to be recognized over a weighted-average period of 1.5 years.

We recognize windfall tax benefits associated with the exercise of stock options or release of restricted stock units directly to stockholders' equity only when realized. A windfall tax benefit occurs when the actual tax benefit realized by us upon an employee's disposition of a share-based award exceeds the deferred tax asset, if any, associated with the award that we had recorded. When assessing whether a tax benefit relating to share-based compensation has been realized, we follow the "with-and-without" method. Under the with-and-without method, the windfall is considered realized and recognized for financial statement purposes only when an incremental benefit is provided after considering all other tax benefits including our net operating losses. The with-and-without method results in the windfall from share-based compensation awards always being effectively the last tax benefit to be considered. Consequently, the windfall attributable to share-based compensation will not be considered realized in instances where our net operating loss carryover (that is unrelated to windfalls) is sufficient to offset the current year's taxable income before considering the effects of current-year windfalls.

Incentive Compensation Expense

We provide incentive-based compensation opportunities to employees through cash incentive awards and, as described in "Share-Based Compensation" above, performance-based equity awards. The expense associated with these awards is reflected as a component of employee-related expense within our operating expense and costs of goods sold, as applicable.

For fiscal 2016, the Compensation Committee has approved an annual cash incentive arrangement generally applicable to full-time employees excluding commissioned salespersons, with the aggregate amount of any awards payable dependent upon the achievement of certain financial and operational goals for fiscal 2016. Given that the awards are generally contingent upon achieving annual objectives, the payment of cash incentive awards is not expected to be made until after fiscal year-end results are finalized. As a result, the expense that we accrue for incentive compensation in any interim period in fiscal 2016 is based upon estimates of expected financial results for the year and expected performance against relevant operating objectives. Because assessing actual performance against many of these objectives cannot generally occur until at or near fiscal year-end, determining the amount of expense that we incur in our interim financial statements for incentive compensation involves the judgment of management. Amounts accrued are subject to change in future interim periods if actual future financial results or operational performance are better or worse than expected. We incurred an aggregate of \$29.5 million of expense in the first six months of fiscal 2016 associated with our cash incentive bonus plan for fiscal 2016.

Reserve for Inventory Obsolescence

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We make estimates about future customer demand for our products when establishing the appropriate reserve for excess and obsolete inventory. We write down inventory that has become obsolete or unmarketable by an amount equal to the difference between the cost of inventory and the estimated market value based on assumptions about future demand and market conditions. Inventory write downs are a component of our product cost of goods sold. Upon recognition of the write down, a new lower cost basis for that inventory is established, and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis. In an effort to limit our exposure to delivery delays and to satisfy customer needs we purchase inventory based on forecasted sales across our product lines. In addition, part of our research and development strategy is to promote the convergence of similar features and functionalities across our product lines. Each of these practices exposes us to the risk that our customers will not order products for which we have forecasted sales, or will purchase less than we have forecasted. Historically, we have experienced write downs due to changes in our strategic direction, discontinuance of a product and declines in market conditions. We recorded charges for excess and obsolete inventory of \$20.1 million and \$10.8 million in the first six months of fiscal 2016 and 2015, respectively. The charges in fiscal 2016 primarily were related to a decrease in the forecasted demand for certain Converged Packet Optical and Optical Transport products. Our inventory net of allowance for excess and obsolescence was \$190.9 million and \$191.2 million as of April 30, 2016 and October 31, 2015, respectively.

Allowance for Doubtful Accounts Receivable

Our allowance for doubtful accounts receivable is based on management's assessment, on a specific identification basis, of the collectibility of customer accounts. We perform ongoing credit evaluations of our customers and generally have not required collateral or other forms of security from customers. In determining the appropriate balance for our allowance for doubtful accounts receivable, management considers each individual customer account receivable in order to determine collectibility. In doing so, we consider creditworthiness, payment history, account activity and communication with such customer. If a customer's financial condition changes, or if actual defaults are higher than our historical experience, we may be required to take a charge for an allowance for doubtful accounts receivable which could have an adverse impact on our results of operations. Our accounts receivable, net of allowance for doubtful accounts, was \$555.1 million and \$550.8 million as of April 30, 2016 and October 31, 2015, respectively. Our allowance for doubtful accounts was \$3.4 million and \$3.0 million as of April 30, 2016 and October 31, 2015, respectively.

Goodwill

Ciena's goodwill was generated from the acquisition of Cyan during fiscal 2015 and the acquisition of the HSPC assets from TeraXion during the second quarter of fiscal 2016, and is primarily related to expected synergies. Goodwill is the excess of the purchase price over the fair values assigned to the net assets acquired in a business combination. We test goodwill for impairment on an annual basis, which we have determined to be the last business day of fiscal September each year. We also test goodwill for impairment between annual tests if an event occurs or circumstances change that would, more likely than not, reduce the fair value of the reporting unit below its carrying value.

The first step in the process of assessing goodwill impairment is to compare the fair value of the reporting unit with the unit's carrying amount, including goodwill. If this test indicates that the fair value is less than the carrying value, then step two is required to compare the implied fair value of the reporting unit's goodwill with the carrying amount of the reporting unit's goodwill. A non-cash goodwill impairment charge would have the effect of decreasing our earnings or increasing our losses in such period. If we are required to take a substantial impairment charge, our operating results would be materially adversely affected in such period. As of the end of second quarter of fiscal 2015, there was no goodwill balance. At the end of second quarter of fiscal 2016, the goodwill balance was \$267.7 million.

Long-lived Assets

Our long-lived assets include: equipment, building, furniture and fixtures, finite-lived intangible assets, in-process research and development and maintenance spares. As of April 30, 2016 and October 31, 2015, these assets totaled \$488.0 million and \$449.9 million, net, respectively. We test long-lived assets for impairment whenever events or changes in circumstances indicate that the assets' carrying amount is not recoverable from its undiscounted cash flows. Our long-lived assets are assigned to asset groups which represent the lowest level for which we identify cash flows. We measure impairment loss as the amount by which the carrying amount of the asset or asset group exceeds its fair value.

Deferred Tax Valuation Allowance

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As of April 30, 2016, we have recorded a valuation allowance offsetting substantially all our net deferred tax assets of \$1.5 billion. When measuring the need for a valuation allowance, we assess both positive and negative evidence regarding the realizability of these deferred tax assets. We record a valuation allowance to reduce our deferred tax assets to the amount that is more likely than not to be realized. In determining net deferred tax assets and valuation allowances, management is required to make judgments and estimates related to projections of profitability, the timing and extent of the utilization of net operating loss carryforwards, applicable tax rates, transfer pricing methodologies and tax planning strategies. The valuation allowance is reviewed quarterly and is maintained until sufficient positive evidence exists to support a reversal. Because evidence such as our operating results during the most recent three-year period is afforded more weight than forecasted results for future periods, our cumulative loss during this three-year period represents sufficient negative evidence regarding the need for nearly a full valuation allowance. We will release this valuation allowance when management determines that it is more likely than not that our deferred tax assets will be realized. Any future release of valuation allowance may be recorded as a tax benefit increasing net income or as an adjustment to paid-in capital, based on tax ordering requirements.

Warranty

Our liability for product warranties, included in other accrued liabilities, was \$56.0 million and \$56.7 million as of April 30, 2016 and October 31, 2015, respectively. Our products are generally covered by a warranty for periods ranging from one to five years. We accrue for warranty costs as part of our cost of goods sold based on associated material costs, technical support labor costs and associated overhead. Material cost is estimated based primarily upon historical trends in the volume of product returns within the warranty period and the cost to repair or replace the equipment. Technical support labor cost is estimated based primarily upon historical trends and the cost to support the customer cases within the warranty period. The provision for product warranties was \$9.6 million and \$7.7 million for the first six months of fiscal 2016 and 2015, respectively. See Note 14 to the Condensed Consolidated Financial Statements included in Item 1 of Part I of this report. The provision for warranty claims may fluctuate on a quarterly basis depending upon the mix of products and customers in that period. If actual product failure rates, material replacement costs, service or labor costs differ from our estimates, revisions to the estimated warranty provision would be required. An increase in warranty claims or the related costs associated with satisfying our warranty obligations could increase our cost of sales and negatively affect our gross margin.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

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

Interest Rate Sensitivity. We currently hold investments in U.S. Government obligations and commercial paper with varying maturities. See Notes 6 and 7 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report for information relating to investments and fair value. These investments are sensitive to interest rate movements, and their fair value will decline as interest rates rise and increase as interest rates decline. The estimated impact on these investments of a 100 basis point (1.0%) increase in interest rates across the yield curve from rates in effect as of the balance sheet date would be a \$2.6 million decline in value.

Our earnings and cash flows from operations may be exposed to changes in interest rates because of the floating rate of interest in our 2019 Term Loan and our 2021 Term Loan. See Note 17 to our Condensed Consolidated Financial Statements for information relating to these facilities.

The 2019 Term Loan bears interest at LIBOR plus a spread of 3.00% subject to a minimum LIBOR rate of 0.75%. As of April 30, 2016, the interest rate in effect on our 2019 Term Loan was 3.75%. During fiscal 2014, Ciena entered into

interest rate swap arrangements ("interest rate swaps") that fix the total interest rate under the 2019 Term Loan at 5.004%, for the period commencing on July 20, 2015 through July 19, 2018.

From April 25, 2016 through May 5, 2016, the interest rate in effect on our 2021 Term Loan was 6.0%, which was a base rate borrowing. After this initial period, the 2021 Term Loan bears interest, at our election, at LIBOR plus a margin ranging from 3.25% to 3.50% subject to a minimum LIBOR rate of 0.75% or a base rate (subject to a floor of 1.75%) plus a margin ranging from 2.25% to 2.50%, in each case with the actual margin determined according to Ciena's total net leverage ratio. In the future, Ciena intends to use LIBOR borrowing. In May 2016, Ciena entered into interest rate swaps that fix the total interest rate under the 2021 Term Loan at 4.62% to 4.87%, depending on the applicable margin, for the period commencing on June 20, 2016 through June 22, 2020.

As such, a 100 basis point (1%) increase in the LIBOR rate as of our most recent LIBOR rate setting would have an immaterial impact in annualized interest expense on our 2019 Term Loan and our 2021 Term Loan as recognized in our Condensed Consolidated Financial Statements.

Foreign Currency Exchange Risk. As a global concern, our business and results of operations are exposed to and can be impacted by movements in foreign currency exchange rates. Due to our global sales presence, some of our sales transactions and revenue are non-U.S. dollar denominated, with the Canadian Dollar, Euro and Brazilian Real being our most significant foreign currency revenue exposures. If the U.S. dollar strengthens against these currencies, our revenue for these transactions reported in U.S. dollars would decline. For our U.S. dollar denominated sales, an increase in the value of the U.S. dollar would increase the real costs of our products to customers in markets outside the United States, which could impact our competitive position. During the first six months of fiscal 2016, approximately 19.2% of revenue was non-U.S. dollar denominated. During the first six months of fiscal 2016 as compared to the six months of fiscal 2015, the U.S. dollar strengthened against a number of foreign currencies, including the Canadian Dollar, Euro and Brazilian Real and, consequently, our revenue reported in U.S. dollars was adversely impacted by approximately \$16.1 million or 1.3%. As it relates to costs of goods sold, employee-related and facilities costs associated with certain manufacturing-related operations in Canada represent our primary exposure to foreign currency exchange risk.

With regard to operating expense, our primary exposure to foreign currency exchange risk relates to the Canadian Dollar, British Pound, Euro, Indian Rupee and Brazilian Real. During the first six months of fiscal 2016, approximately 46.2% of our operating expense was non-U.S. dollar denominated. If these or other currencies strengthen, costs reported in U.S. dollars will increase. During the first six months of fiscal 2016, research and development expense benefited approximately \$13.6 million, net of hedging, primarily due to the strengthening of the U.S. dollar in relation to the Canadian Dollar in comparison to the first six months of fiscal 2015. During the first six months of fiscal 2016, selling and marketing expense and general and administrative expenses benefited \$4.7 million and \$1.6 million, respectively, due to foreign exchange rates, primarily due to the strengthening of the U.S. dollar in relation to the Euro, Canadian Dollar and Brazilian Real in comparison to the first six months of fiscal 2015.

From time to time, Ciena uses foreign currency forward contracts to reduce variability in certain forecasted non-U.S. dollar denominated cash flows. Generally, these derivatives have maturities of 12 months or less and are designated as cash flow hedges. At the inception of the cash flow hedge, and on an ongoing basis, Ciena assesses whether the forward contract has been effective in offsetting changes in cash flows attributable to the hedged risk during the hedging period. The effective portion of the derivative's net gain or loss is initially reported as a component of accumulated other comprehensive income (loss) and, upon the occurrence of the forecasted transaction, is subsequently reclassified to the line item in the Condensed Consolidated Statement of Operations to which the hedged transaction relates. Any net gain or loss associated with the ineffectiveness of the hedging instrument is reported in interest and other income (loss), net.

Ciena Corporation, as the U.S. parent entity, uses the U.S. dollar as its functional currency; however some of Ciena's foreign branch offices and subsidiaries use the local currency as their functional currency. During the first six months of fiscal 2016, Ciena recorded \$6.1 million in foreign currency exchange gains, as a result of monetary assets and liabilities that were transacted in a currency other than the entity's functional currency, and the re-measurement adjustments were recorded in interest and other income (loss), net on the Condensed Consolidated Statement of Operations. From time to time, Ciena uses foreign currency forwards to hedge these balance sheet exposures. These forwards are not designated as hedges for accounting purposes and any net gain or loss associated with these derivatives is reported in interest and other income (loss), net on the Condensed Consolidated Statement of Operations. During first six months of fiscal 2016, Ciena recorded losses of \$15.2 million from these derivatives. See Note 2, Note 5 and Note 15 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report.

Convertible Notes Outstanding. The fair market value of each of our outstanding issues of convertible notes is subject to interest rate and market price risk due to the convertible feature of the notes and other factors. Generally the fair

market value of fixed interest rate debt will increase as interest rates fall and decrease as interest rates rise. The fair market value of the notes may also increase as the market price of our stock rises and decrease as the market price of our stock falls. Interest rate and market value changes affect the fair market value of the notes, and may affect the prices at which we would be able to repurchase such notes were we to do so. These changes do not impact our financial position, cash flows or results of operations. For additional information on the fair value of our outstanding notes, see Note 17 to our Condensed Consolidated Financial Statements included in Item 1 of Part I of this report.

Item 4. Controls and Procedures

Disclosure Controls and Procedures

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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

From May 15 through June 3, 2015, five separate putative class action lawsuits in connection with Ciena's then-pending acquisition of Cyan, Inc. ("Cyan") were filed in the Court of Chancery of the State of Delaware:

• *Luvishis v. Cyan, Inc., et al.*, C.A. No. 11027-CB, filed May 15, 2015

• *Poll v. Cyan, Inc., et al.*, C.A. No. 11028-CB, filed May 15, 2015

• *Canzano v. Floyd, et al.*, C.A. No. 11052-CB, filed May 20, 2015

• *Kassis v. Cyan, Inc., et al.*, C.A. No. 11069-CB, filed May 27, 2015

• *Fenske v. Cyan, Inc., et al.*, C.A. No. 11090-CB, filed June 3, 2015

Each of the complaints named Cyan (except for the Canzano complaint), Ciena, Neptune Acquisition Subsidiary, Inc., a Ciena subsidiary created solely for the purpose of effecting the acquisition ("Merger Sub"), and the members of Cyan's board of directors as defendants. On June 23, 2015, each of these lawsuits was consolidated into a single case captioned *In Re Cyan, Inc. Shareholder Litigation*, Consol. C.A. No. 11027-CB. On July 9, 2015, the plaintiffs filed a verified amended class action complaint, which named as defendants Ciena, Merger Sub, and the members of Cyan's board of directors. On August 5, 2015, the defendants filed motions to dismiss the amended complaint. On October 1, 2015, the plaintiffs filed a second amended complaint which named as defendants the members of Cyan's board of directors. Cyan, Ciena, and Merger Sub were not named as defendants. The second amended complaint generally alleges that the Cyan board members breached their fiduciary duties by engaging in a conflicted and unfair sales process, failing to maximize stockholder value in the acquisition, taking steps to preclude competitive bidding, and failing to disclose material information necessary for stockholders to make an informed decision regarding the acquisition. The second amended complaint seeks (i) a declaration that the plaintiffs are entitled to a quasi-appraisal remedy, (ii) rescissory damages, (iii) recovery through an accounting of all damages caused as a result of the alleged breaches of fiduciary duties, (iv) compensatory damages, and (v) costs including attorneys' fees and experts' fees. On October 15, 2015, the defendants filed a renewed motion to dismiss. In response, plaintiffs filed a motion for leave to amend their complaint. The defendants opposed the motion and it is set for hearing in June 2016.

As a result of our acquisition of Cyan in August 2015, we became a defendant in a securities class action lawsuit. On April 1, 2014, a purported stockholder class action lawsuit 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. On April 30, 2014, a substantially similar lawsuit was filed in the same court against the same defendants. The two cases have been consolidated as *Beaver County Employees Retirement Fund, et al. v. Cyan, Inc. et al.*, Case No. CGC-14-538355. The consolidated complaint alleges 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 seeks unspecified compensatory damages and other relief. In July 2014, the defendants filed a demurrer to the consolidated complaint, which the court overruled in October 2014 and allowed the case to proceed. On May 19, 2015, the proposed class was certified. On August 25, 2015, the defendants filed a motion for judgment on the pleadings based on an alleged lack of

subject matter jurisdiction over the case, which motion was denied on October 23, 2015. On May 24, 2016, the defendants filed a petition for a writ of certiorari on the jurisdiction issue with the United States Supreme Court. Ciena believes that the consolidated lawsuit is without merit and intends to defend it vigorously.

On May 29, 2008, Graywire, LLC filed a complaint in the United States District Court for the Northern District of Georgia against Ciena and four other defendants, alleging, among other things, that certain of the parties' products infringe U.S. Patent 6,542,673 (the "673 Patent"), relating to an identifier system and components for optical assemblies. The complaint seeks injunctive relief and damages. In July 2009, upon request of Ciena and certain other defendants, the U.S. Patent and Trademark

Office (“PTO”) granted the defendants' inter partes application for reexamination with respect to certain claims of the '673 Patent, and the district court granted the defendants' motion to stay the case pending reexamination of all of the patents-in-suit. In December 2010, the PTO confirmed the validity of some claims and rejected the validity of other claims of the '673 Patent, to which Ciena and other defendants filed an appeal. On March 16, 2012, the PTO on appeal rejected multiple claims of the '673 Patent, including the two claims on which Ciena is alleged to infringe.

Subsequently, the plaintiff requested a reopening of the prosecution of the '673 Patent, which request was denied by the PTO on April 29, 2013. Thereafter, on May 28, 2013, the plaintiff filed an amendment with the PTO in which it canceled the claims of the '673 Patent on which Ciena is alleged to infringe. The case currently remains stayed, and there can be no assurance as to whether or when the stay will be lifted.

In addition to the matters described above, we are subject to various legal proceedings and claims arising in the ordinary course of business, including claims against third parties that may involve contractual indemnification obligations on the part of Ciena. We do not expect that the ultimate costs to resolve these matters will have a material effect on our results of operations, financial position or cash flows.

Item 1A. Risk Factors

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

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

Our revenue and results of operations can fluctuate significantly and unpredictably from quarter to quarter. Our budgeted expense levels are based on our visibility into customer spending plans and our projections of future revenue and gross margin. Customer spending levels are uncertain and subject to change and reductions in our expense levels to react to deviations from our projections can take significant time to implement. Because the amount of revenue that we generate in a quarter from customer orders received in that same quarter has increased as compared to our historical periods, this may increase the likelihood of fluctuations in our results. Our revenue for a particular quarter is difficult to predict, and a shortfall in expected orders in a given quarter can materially adversely affect our revenue and results of operations for that quarter or future quarterly periods. Additional factors that contribute to fluctuations in our revenue and operating results include:

- broader macroeconomic conditions, including weakness and volatility in global markets, that affect our customers;
- changes in capital spending by large communications service providers;
- order timing, volume and cancellations;
- backlog levels;
- the level of competition and pricing pressure in our industry;
- the impact of commercial concessions or unfavorable commercial terms required to maintain incumbency or secure new opportunities with key customers;
- our level of success in achieving cost reductions and improved efficiencies in our supply chain;
- the impact of market-based price erosion that we regularly encounter;
- our incurrence of start-up costs required to support initial deployments, gain new customers or enter new markets;
- the timing of revenue recognition on sales, particularly relating to large orders;
- the mix of revenue by product segment, geography and customer in any particular quarter;
- installation service availability and readiness of customer sites;
- adverse impact of foreign exchange; and
- seasonal effects in our business.

Quarterly fluctuations from these and other factors may also cause our results of operations to fall short of or to exceed significantly the expectations of securities analysts or investors, which may cause volatility in our stock price.

A small number of large communications service providers account for a significant portion of our revenue, and the loss of any of these customers, a significant reduction in their spending, or a material change in their networking or procurement strategies could have a material adverse effect on our business and results of operations.

While our customer base has diversified in recent years to include a number of network operators and new customer verticals, including Web-scale providers and cable and multiservice operators, a significant portion of our revenue remains concentrated among a few, large global communications service providers. By way of example, AT&T accounted for approximately 19.9% of fiscal 2015 revenue, and our largest ten customers contributed 52.5% of fiscal 2015 revenue. Consequently, our financial results are closely correlated with the spending of a relatively small number of customers and can be significantly affected by market, industry or competitive dynamics affecting their businesses. The loss of a significant

customer could have a material adverse effect on our business and results of operations. Our business and results of operations can also be materially adversely impacted by reductions in spending or capital expenditure budgets by our largest service provider customers. Because the terms of our framework contracts do not obligate customers to purchase any minimum or guaranteed order quantities, and customers often have the right to modify or cancel orders, there can be no assurance as to spending levels, and spending levels can be unpredictable.

Our reliance upon a relatively small number of customers also increases our exposure to changes in their spending levels, network priorities and purchasing strategies. Our customers have previously undertaken, and may undertake in the future, procurement initiatives or adopt network strategies adverse to our business. These initiatives may seek to achieve reductions in capital expenditure, require commercial concessions from suppliers or reduce the number of direct suppliers of networking technology. During fiscal 2015, AT&T and other service provider customers announced initiatives to reduce capital expenditures in future periods, including on network infrastructure, and there can be no assurance that we will be able to maintain the sales levels we achieved during fiscal 2015. Moreover, AT&T and other customers, including service providers, are pursuing network strategies that seek to utilize enhanced software programmability, management and control of networks and to deploy off-the-shelf or commoditized hardware technology, referred to as "white box" hardware, in lieu of existing solutions. These strategies may present challenges and opportunities for our business, particularly where we are an incumbent equipment vendor. As a result, we expect our competitive landscape to broaden and competition to increase in the markets in which we compete for sales to service provider customers. The loss of a significant customer, a significant reduction in their spending, or a material change in their networking or procurement strategies could have a material adverse effect on our business, financial condition and results of operations.

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

We face a competitive market for sales of communications networking equipment, software and services, and this level of competition could result in pricing pressure, reduced demand, commercial concessions, lower gross margins and loss of market share that could harm our business and results of operations. Competition is intense on a global basis, as we and our competitors aggressively seek to displace incumbent equipment vendors at large service providers and secure new customers. In our efforts to maintain our incumbency and to secure additional customer opportunities, we have in the past, and may in the future, agree to aggressive pricing, commercial concessions and other unfavorable terms that reduce our revenue and result in low or negative gross margins on a particular order or group of orders. These commercial concessions can also place a disproportionate amount of risk on us.

We expect the competitive landscape in which we operate to broaden, as multinational equipment vendors seek to promote adoption of competing architectural approaches for next-generation networks and retain incumbent positions with large customers globally. As we expand our solutions offering, and, as network technologies, features and layers converge, we expect that our business will overlap more directly with additional networking solution suppliers, including IP router vendors and data center switch providers. In addition, as demands for software programmability, management and control increase, we expect to increasingly compete with software vendors and other information technology vendors and system integrators. We may also face increased competition from companies, including our suppliers, who develop networking products based on off-the-shelf or commoditized hardware technology, referred to as "white box" hardware, particularly where our customer's network strategies seek to emphasize deployment of those product offerings. The expansion of our competitive landscape, and entry of new competitors into our markets and customers, may adversely impact our business and results of operations.

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

- product functionality, speed, capacity, scalability and performance;
- price and total cost of ownership of our solutions;

- incumbency and existing business relationships;
- ability to offer comprehensive networking solutions, consisting of equipment, software and network consulting services;
- product development plans and the ability to meet customers' immediate and future network requirements;
- flexibility and openness of platforms, including ease of integration, interoperability and integrated software programmability and management;
- space and power considerations;
 - manufacturing and lead-time capability; and
- services and support capabilities.

A small number of very large companies have historically dominated our industry, many of which have substantially greater financial and marketing resources, broader product offerings and more established relationships with service providers and other customer segments than we do. Because of their scale and resources, they may be perceived to be a better fit for the procurement or network operating and management strategies of large service providers. Moreover, consolidation among our competitors may bolster their resources and competitive position. We also compete with a number of smaller companies that provide significant competition for a specific product, application, customer segment or geographic market. Due to the narrower focus of their efforts, these competitors may achieve commercial availability of their products more quickly or may be more attractive to customers in a particular product niche. If competitive pressures increase, or if we fail to compete successfully in our markets, our business and results of operations could suffer.

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

Our business and operating results, which depend significantly on general economic conditions and demand for our products and services, could be materially adversely affected by unfavorable or uncertain macroeconomic and market conditions, globally or with respect to a particular region or country where we operate. Thus far in 2016, global financial markets have experienced significant volatility and instability. Broad macroeconomic weakness and market volatility have previously resulted in sustained periods of decreased demand for our products and services, which has adversely affected our operating results. Macroeconomic and market conditions could be adversely affected by a variety of political, economic or other factors in the United States and international markets that could in turn adversely affect spending levels of our customers and their end users, and create volatility or deteriorating conditions in the markets in which we operate. Macroeconomic uncertainty or weakness could result in:

- reductions in customer spending and delay, deferral or cancellation of network infrastructure initiatives;
- increased competition for fewer network projects and sales opportunities;
- increased pricing pressure that may adversely affect revenue, gross margin and profitability;
- difficulty forecasting operating results and making decisions about budgeting, planning and future investments;
- increased overhead and production costs as a percentage of revenue;
- tightening of credit markets needed to fund capital expenditures by Ciena or our customers;
- customer financial difficulty, including longer collection cycles and difficulties collecting accounts receivable or write-offs of receivables; and
- increased risk of charges relating to excess and obsolete inventories and the write-off of other intangible assets.

Reductions in customer spending in response to unfavorable or uncertain macroeconomic and market conditions, globally or with respect to a particular region where we operate, would adversely affect our business, results of operations and financial condition.

Our reliance upon third party component suppliers, including sole and limited source suppliers, exposes our business to additional risk and could limit our sales, increase our costs and harm our customer relationships.

We maintain a global sourcing strategy and depend on third party suppliers for support in our product design and development, and in the sourcing of key product components and subsystems. Our products include optical and electronic components for which reliable, high-volume supply is often available only from sole or limited sources. Increases in market demand or scarcity of resources or manufacturing capability have previously resulted in shortages in availability of important components for our solutions, allocation challenges and increased lead times. We are exposed to risks relating to unfavorable economic conditions or other similar challenges affecting the businesses and results of operations of our component providers that can affect their liquidity levels, ability to continue investing in their businesses, ability to meet development commitments and manufacturing capability. These and other challenges affecting our suppliers could expose our business to increased costs, loss or lack of supply, or discontinuation of

components that can result in lost revenue, additional product costs, increased lead times and deployment delays that could harm our business and customer relationships. We do not have any guarantees of supply from these third parties, and in certain cases are relying upon temporary commercial arrangements or standard purchase orders. As a result, there is no assurance that we will be able to secure the components or subsystems that we require, in sufficient quantity and quality, and on reasonable terms. The loss of a source of supply, or lack of sufficient availability of key components, could require that we locate an alternate source or redesign our products, either of which could result in business interruption, increased costs and negatively affect our product gross margin and results of operations. 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.

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

The market for communications networking hardware and software solutions is characterized by rapidly evolving technologies, changes in market demand and increasing adoption of software-based networking solutions. We continually invest in research and development to sustain or enhance our existing hardware and software solutions and to develop or acquire new technologies including new software platforms. There is often a lengthy period between commencing these development initiatives and bringing new or improved solutions to market. During this time, technology preferences, customer demand and the markets for our solutions, or those introduced by our competitors, may move in directions we had not anticipated. There is no guarantee that our new products, including our Blue Planet software platform, or enhancements to other solutions will achieve market acceptance or that the timing of market adoption will be as predicted. There is a significant possibility, therefore, that some of our development decisions, including significant expenditures on acquisitions, research and development costs, or investments in technologies, will not meet our expectations, and that our investment in some projects will be unprofitable. There is also a possibility that we may miss a market opportunity because we failed to invest, or invested too late, in a technology, product or enhancement sought by our customers. Changes in market demand or investment priorities may also cause us to discontinue existing or planned development for new products or features, which can have a disruptive effect on our relationships with customers. If we fail to make the right investments or fail to make them at the right time, our competitive position may suffer, and our revenue and profitability could be harmed.

Network equipment sales to communications service providers, Web-scale providers and other large customers often involve lengthy sales cycles and protracted contract negotiations that may require us to agree to commercial terms or conditions that negatively affect pricing, risk allocation, payment and the timing of revenue recognition.

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

If the market for software solutions does not evolve in the way we anticipate or if customers do not adopt our Blue Planet solutions, we may not be able to realize a key part of our business strategy and the intended benefits of our acquisition of Cyan.

A key part of our business strategy and ability to derive the anticipated benefits of our acquisition of Cyan will depend on, among other things, our ability to gain market adoption for our Blue Planet software platform and derive long-term revenue growth based on these software capabilities. If the markets relating to software solutions, including SDN, NFV and software management and control, do not develop as we anticipate, or if we are unable to increase market awareness and adoption of our Blue Planet solutions as the preferred solution within those markets, demand

for our Blue Planet solutions may not grow. As a result, our future revenue and profitability would be adversely affected. As a result, the success of our Cyan acquisition and our long-term success in the software market will depend to a significant extent on potential customers recognizing the benefits of our next-generation, Blue Planet software solutions, and the willingness of service providers and high-performance data center and other network operators to increase their use of SDN and NFV solutions in their networks. The market for these solutions is at an early stage, and it is difficult to predict important trends, including the potential growth, if any, of this market. If the market for these software solutions does not evolve in the way we anticipate or if customers do not adopt our solutions, we may not be able to increase sales of our Blue Planet platform, which would adversely impact our revenue and profitability. In addition, our intellectual property strategy must sufficiently evolve to protect our proprietary rights in solutions that increase software programmability of

communications networks. If we are not able to successfully achieve these objectives, certain of the anticipated benefits of the merger may not be realized fully, or may take longer to realize than expected.

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

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

Product performance problems and undetected errors affecting the performance, reliability or security of our products could damage our business reputation and negatively affect our results of operations.

The development and production of sophisticated hardware and software for communications network equipment is highly complex. Some of our products can be fully tested only when deployed in communications networks or when carrying traffic with other equipment, and software products may contain bugs that can interfere with expected performance. As a result, undetected defects or errors, and product quality, interoperability, reliability and performance problems are often more acute for initial deployments of new products and product enhancements. We have recently launched, and are in the process of launching, a number of new hardware and software platforms, including our Blue Planet software platform, and other solutions targeting metro network applications or Web-scale operators or enterprise end users. Unanticipated product performance problems can relate to the design, manufacturing, installation, operation and interoperability of our products. Undetected errors can also arise as a result of defects in components, software or manufacturing, installation or maintenance services supplied by third parties, and technology acquired from or licensed by third parties. From time to time we have had to replace certain components, provide software remedies or other remediation in response to defects or bugs, and we may have to do so again in the future. There can be no assurance that such remediation would not have a material impact on our business and results of operations. In addition, unanticipated security vulnerabilities relating to our products or the activities of our supply chain, including any actual or perceived exposure of our solutions to malicious software or cyber-attacks, could adversely affect our business and reputation. Product performance, reliability, security and quality problems can negatively affect our business, and may result in some or all of the following effects:

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

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

Direct or indirect efforts to increase our sales and market share in targeted international markets and customer segments may be unsuccessful.

Part of our business and growth strategy is to expand our geographic reach and increase market share in international markets, and thereby continue to diversify our customer base and secure additional communications service provider customers outside of North America, including in Brazil and India. We are also undertaking steps to address recent sales challenges we have experienced in our EMEA region and to improve our competitive position and market share in the region. Our efforts to continue to increase our sales and market share in these international markets may ultimately be unsuccessful, and failure to do so could limit our growth and could harm our results of operations.

In addition, in order to sell our products into new geographic markets, diversify our customer base beyond our traditional customers and broaden the application for our solutions in communications networks, we continue to promote sales initiatives and foster strategic channel sales relationships. Specifically, we are targeting sales opportunities around the world with Web-scale providers, cloud infrastructure providers, communications service providers, enterprises, wireless operators, cable and multiservice operators, submarine network operators, research and education institutions, and federal, state and local governments. To succeed in some of these geographic markets and customer segments, we often need to leverage strategic sales channels and distribution arrangements, including the packet-optical resale element of our strategic relationship with Ericsson, and we expect these relationships to be an important part of our business. There can be no assurance we will realize the expected benefits of these third party sales relationships. In some cases we compete in certain business areas with our third party channel partners or may have divergent interests. Our efforts to manage and drive the intended benefits of such sales relationships may ultimately be unsuccessful, and difficulties selling through third party channels could limit our growth and could harm our results of operations.

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

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

- the impact of economic conditions in countries outside the United States;
- effects of adverse changes in currency exchange rates;
- greater difficulty in collecting accounts receivable and longer collection periods;
- difficulty and cost of staffing and managing foreign operations;
- less protection for intellectual property rights in some countries;
- adverse tax and customs consequences, particularly as related to transfer-pricing issues;
- social, political and economic instability;
- compliance with certain testing, homologation or customization of products to conform to local standards;
- higher incidence of corruption or unethical business practices that could expose us to liability or damage our reputation;
- trade protection measures, export compliance, domestic preference procurement requirements, qualification to transact business and additional regulatory requirements; and
- natural disasters, epidemics and acts of war or terrorism.

Our international operations are also subject to complex foreign and U.S. laws and regulations, including anti-corruption laws, antitrust or competition laws, environmental regulations, and data privacy laws, among others. Violations of these laws and regulations could result in fines and penalties, criminal sanctions against us or our employees, prohibitions on the conduct of our business and on our ability to offer our products and services in certain geographies, and significant harm to our business reputation. There can be no assurance that any individual employee, contractor, agent or other business partner will not violate these legal requirements or our policies to mitigate these risks. Additionally, the costs of complying with these laws (including the costs of investigations, auditing and monitoring) could also adversely affect our current or future business.

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

We may be required to write off significant amounts of inventory as a result of our inventory purchase practices, the obsolescence of product lines or unfavorable market conditions.

To avoid delays and meet customer demand for shorter delivery terms, we place orders with our contract manufacturers and component suppliers based on forecasts of customer demand. In a number of cases these suppliers may require longer lead times for fulfillment than we have with our customers. Thus, our practice of buying inventory based on forecasted demand exposes us to the risk that our customers ultimately may not order the products we have forecast or will purchase fewer products than forecast. As a result, we may purchase inventory in anticipation of sales that ultimately do not occur. Market uncertainty can also limit our visibility into customer spending plans and compound the difficulty of forecasting inventory at appropriate levels. Moreover, our customer purchase agreements generally do not include any minimum purchase commitment. Also, customers often have the right to modify, reduce or cancel purchase quantities, and spending levels can be uncertain and subject to significant fluctuation. As we introduce new products with overlapping feature sets or application, it is increasingly

possible that customers may forgo purchases of certain products we have inventoried in favor of next-generation products with similar or increased functionality. We may also be exposed to the risk of inventory write-offs as a result of certain supply chain initiatives, including consolidation and transfer of key manufacturing activities. If we are required to write off or write down a significant amount of inventory, our results of operations for the applicable period would be materially adversely affected.

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

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

We are subject to the risk that third parties may attempt to access, divert or use our intellectual property without authorization. Protecting against the unauthorized use of our products, technology and other proprietary rights is difficult, time-consuming and expensive, and we cannot be certain that the steps that we are taking will prevent or minimize the risks of such unauthorized use. Litigation may be necessary to enforce or defend our intellectual property rights or to determine the validity or scope of the proprietary rights of others. Such litigation could result in substantial cost and diversion of management time and resources, and there can be no assurance that we will obtain a successful result. Any inability to protect and enforce our intellectual property rights could harm our ability to compete effectively.

We may incur significant costs in response to claims by others that we infringe their intellectual property rights. From time to time third parties may assert claims or initiate litigation or other proceedings related to patent, copyright, trademark and other intellectual property rights to technologies and related standards that are relevant to our business. The rate of infringement assertions by patent assertion entities is increasing, particularly in the United States. Generally, these patent owners neither manufacture nor use the patented invention directly, and they seek solely to derive value from their ownership through royalties from patent licensing programs.

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

- pay substantial damages or royalties;
- comply with an injunction or other court order that could prevent us from offering certain of our products;
- seek a license for the use of certain intellectual property, which may not be available on commercially reasonable terms or at all;
- develop non-infringing technology, which could require significant effort and expense and ultimately may not be successful; and
- indemnify our customers or other third parties pursuant to contractual obligations to hold them harmless or pay expenses or damages on their behalf.

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

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

We integrate third party software and other technology into our operating system, network management and control platforms and other products. As networks adopt open software control and virtualized network functions, we believe that we will be increasingly required to work with third party technology providers. As a result, we may be required to license certain software or technology from third parties, including competitors. Licenses for software or other technology may not be available or may not continue to be available to us on commercially reasonable terms. Third party licensors may insist on unreasonable financial or other terms in connection with our use of such technology. Our failure to comply with the terms of any license may result in our inability to continue to use such license, which may result in significant costs, harm our market opportunities and require us to obtain or develop a substitute technology.

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

If our contract manufacturers do not perform as we expect, our business and results of operations may be adversely affected.

We rely on third party contract manufacturers to perform the manufacturing of our products, and our future success will depend on our ability to manage these manufacturing resources and ensure sufficient volumes and quality 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 relating to the locations and geographies of our international contract manufacturing sites;
- limited warranties provided to us;
- potential misappropriation of our intellectual property; and
- potential manufacturing disruptions, including disruptions caused by geopolitical events or environmental factors affecting the locations and geographies of our international contract manufacturing sites.

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 would 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.

Data security breaches and cyber-attacks could compromise our intellectual property or other sensitive information and cause significant damage to our business and reputation.

In the ordinary course of our business, we maintain on our network systems certain information that is confidential, proprietary or otherwise sensitive in nature. This information includes intellectual property, financial information and confidential business information relating to Ciena and our customers, suppliers and other business partners. We also produce networking equipment solutions and software used by network operators to ensure security and reliability in their management and transmission of data. Our customers, particularly those in regulated industries, are increasingly focused on the security features of our technology solutions, and maintaining the security of information sensitive to Ciena and our business partners is critical to our business and reputation. Companies in the technology industry have been increasingly subject to a wide variety of security incidents, cyber-attacks and other attempts to gain unauthorized access to networks or sensitive information. Our network systems and storage applications, and the technology solutions that we offer to end customers, may be subject to unauthorized access by hackers or breached due to

operator error, malfeasance or other system disruptions. In some cases, it is difficult to anticipate or to detect immediately such incidents and the damage caused thereby. If an actual or perceived breach of network security occurs in our network or in the network of a business partner, the market perception of our products could be harmed. While we continually work to safeguard our products and internal network systems to mitigate these potential risks, there is no assurance that such actions will be sufficient to prevent cyber-attacks or security breaches. Security incidents involving access or improper use of our systems, networks or products could compromise confidential or otherwise protected information, destroy or corrupt data, or otherwise disrupt our operations. These security events could also negatively impact our reputation and our competitive position and could result in litigation with third parties, regulatory action, loss of business, potential liability and increased remediation costs, any of which could have a material adverse effect on our financial condition and results of operations.

Our failure to manage effectively our relationships with third party service partners could adversely impact our financial results and relationship with customers.

We rely on a number of third party service partners, both domestic and international, to complement our global service and support resources. We rely upon these partners for certain installation, maintenance and support functions. In addition, as network operators increasingly seek to rely on vendors to perform additional services relating to the design, construction and operation of their networks, the scope of work performed by our support partners is likely to increase and may include areas where we have less experience providing or managing such services. We must successfully identify, assess, train and certify qualified service partners in order to ensure the proper installation, deployment and maintenance of our products, as well as to ensure the skillful performance of other services associated with expanded solutions offerings, including site assessment and construction-related services. Vetting and certification of these partners can be costly and time-consuming, and certain partners may not have the same operational history, financial resources and scale as Ciena. Moreover, certain service partners may provide similar services for other companies, including our competitors. We may not be able to manage effectively our relationships with our service partners, and we cannot be certain that they will be able to deliver services in the manner or time required or that we will be able to maintain the continuity of their services. We may also be exposed to a number of risks or challenges relating to the performance of our service partners, including:

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

If we do not manage effectively our relationships with third party service partners, or if they fail to perform these services in the manner or time required, our financial results and relationships with customers could be adversely affected.

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

As a company with global operations, we face exposure to adverse movements in foreign currency exchange rates. Due to our global presence, a significant percentage of our revenue, operating expense and assets and liabilities are non-U.S. dollar denominated and therefore subject to foreign currency fluctuation. We face exposure to currency exchange rates as a result of the growth in our non-U.S. dollar denominated operating expense in Canada, Europe, Asia and Latin America. An increase in the value of the U.S. dollar could increase the real cost to our customers of our products in those markets outside the United States where we sell in dollars, and a weakened dollar could increase the cost of local operating expenses and procurement of materials or service that we purchase in foreign currencies. From time to time, we may hedge against currency exposure associated with anticipated foreign currency cash flows or assets and liabilities denominated in foreign currency. Such attempts to offset the impact of currency fluctuations are costly, and no amount of hedging can be effective against all circumstances. Losses associated with these hedging instruments and the adverse effect of foreign currency exchange rate fluctuation may negatively affect our results of operations.

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

We have entered into agreements with strategic supply partners that permit us to distribute their products or technology. We may rely upon these relationships to add complementary products or technologies, diversify our product portfolio, or address a particular customer or geographic market. We may enter into additional original equipment manufacturer (OEM), resale or similar strategic arrangements in the future. We may incur unanticipated

costs or difficulties relating to our resale of third party products. Our third party relationships could expose us to risks associated with the business, financial condition, intellectual property rights and supply chain continuity of such partners, as well as delays in their development, manufacturing or delivery of products or technology. We may also be required by customers to assume warranty, indemnity, service and other commercial obligations, including potential liability to customers, greater than the commitments, if any, made to us by our technology partners. Some of our strategic supply partners are relatively small companies with limited financial resources. If they are unable to satisfy their obligations to us or our customers, we may have to expend our own resources to satisfy these obligations. Exposure to these risks could harm our reputation with key customers and could negatively affect our business and our results of operations.

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

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

Our business is dependent upon the proper functioning of our internal business processes and information systems, and modification or interruption of such systems or external factors may disrupt our business, processes and internal controls.

We rely upon a number of internal business processes and information systems to support key business functions, and the efficient operation of these processes and systems is critical to managing our business. Our business processes and information systems must be sufficiently scalable to support the growth of our business and may require modifications or upgrades that expose us to a number of operational risks. We have commenced a significant upgrade of our company-wide enterprise resource planning platform that will impact multiple locations, functions and processes. We expect to transition to this upgraded system in the fourth quarter of fiscal 2016. We are also currently pursuing initiatives to transform and optimize our business operations through the reengineering of certain other processes, investment in automation, and engagement of strategic partners or resources to assist with certain business functions. These changes will require a significant investment of capital and human resources and may be costly and disruptive to our operations, and they could impose substantial demands on management time. These changes may also require changes in our information systems, modification of internal control procedures and significant training of employees or third party resources. There can be no assurance that our business and operations will not experience disruption in connection with our current system upgrade or other initiatives. Even if we do not encounter these adverse effects or disruption in our business, the design and implementation of these new systems may be more costly than anticipated.

Our information technology systems, and those of third party information technology providers or business partners, may also be vulnerable to damage or disruption caused by circumstances beyond our control, including catastrophic events, power anomalies or outages, natural disasters, viruses or malware, and computer system or network failures. We may also be exposed to cyber-security related incidents, including unauthorized access of information systems and disclosure or diversion of intellectual property or confidential data. There can be no assurance that our business systems or those of our third party business partners would not be subject to similar incidents, exposing us to significant cost, reputational harm and disruption or damage to our business.

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

At April 30, 2016, indebtedness on our outstanding convertible notes totaled approximately \$1.0 billion in aggregate principal. In the event that some or all of these notes are converted into common stock, the ownership interests of our existing stockholders will be diluted, and any sales of such shares in the public market following conversion may adversely affect the market price for our common stock. We are also a party to credit agreements relating to a \$250 million senior secured asset-based revolving credit facility and approximately \$500 million in outstanding senior secured term loans. The agreements governing these credit facilities contain certain covenants that limit our ability, among other things, to incur additional debt, create liens and encumbrances, pay cash dividends, redeem or repurchase stock, enter into certain acquisition transactions or transactions with affiliates, repay certain indebtedness, make investments or dispose of assets. The agreements also include customary remedies, including the right of the lenders to take action with respect to the collateral securing the loans, that would apply should we default or otherwise be unable to satisfy our debt obligations.

Our indebtedness could have important negative consequences, including:

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

We may also enter into additional transactions or credit facilities, including equipment loans, working capital lines of credit and other long-term debt, which may increase our indebtedness and result in additional restrictions upon our business. In addition,

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major debt rating agencies regularly evaluate our debt based on a number of factors. There can be no assurance that we will be able to maintain our existing debt ratings, and failure to do so could adversely affect our cost of funds, liquidity and access to capital markets.

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

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

Facilities transitions could be disruptive to our operations and may result in unanticipated expense and adverse effects to our cash position and cash flows.

We have recently undertaken and expect to undertake in the future the transition of two of our significant research and development facilities, which will affect a large number of our employees. The lease for our Lab 10 building on the Carling Campus in Ottawa, Canada will expire in fiscal 2018, and the leases for our facilities in Gurgaon, India will expire in fiscal 2017. The Ottawa and Gurgaon facilities represent our two largest research and development sites, and they house both significant headcount including key engineering personnel and a large amount of sophisticated lab equipment. In Ottawa, we are in the process of developing a new research and development campus, and we will be transitioning our existing operations and personnel to the new campus over the next two years in anticipation of the expiration of the Lab 10 lease. In Gurgaon, we recently entered into a letter of intent to lease a new building adjacent to one of our existing facilities, and we will be transitioning certain of our existing operations and personnel to the new building over the next two years. Relocating our engineering operations may be costly, and there can be no assurance that the transition of key engineering functions to a successor facility will not be disruptive or adversely affect productivity. Significant facilities transitions could be disruptive to our operations and may result in unanticipated expense and adverse effects on our cash position and cash flows.

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

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

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

Competition to attract and retain highly skilled technical, engineering and other personnel with experience in our industry is intense, and our employees have been the subject of targeted hiring by our competitors. Competition is particularly intense in certain jurisdictions where we have research and development centers, including the Silicon Valley area of northern California, and we may experience difficulty retaining and motivating existing employees and attracting qualified personnel to fill key positions. Because we rely upon equity awards as a significant component of compensation, particularly for our executive team, a lack of positive performance in our stock price, reduced grant levels, or changes to our compensation program may adversely affect our ability to attract and retain key employees. In addition, none of our executive officers is bound by an employment agreement for any specific term. The loss of members of our management team or other key personnel could be disruptive to our business, and, were it necessary, it could be difficult to replace members of our management team or other key personnel. If we are unable to attract and retain qualified personnel, we may be unable to manage our business effectively, and our operations and financial results could suffer.

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

We may acquire or make investments in other technology companies, or enter into other strategic relationships, to expand the markets we address, diversify our customer base or acquire, or accelerate the development of, technology or products. To do so, we may use cash, issue equity that could dilute our current stockholders, or incur debt or assume indebtedness.

Strategic transactions, including our recently completed acquisition of Cyan, can involve numerous additional risks, including:

- failure to achieve the anticipated transaction benefits or the projected financial results and operational synergies;
- greater than expected acquisition and integration costs;
- disruption due to the integration and rationalization of operations, products, technologies and personnel;
- diversion of management attention;
- difficulty completing projects of the acquired company and costs related to in-process projects;
- difficulty managing customer transitions or entering into new markets;
- the loss of key employees;
- disruption on termination of business relationships with customers, suppliers, vendors, landlords, licensors and other business partners;
- ineffective internal controls over financial reporting;
- dependence on unfamiliar suppliers or manufacturers;
- assumption of or exposure to unanticipated liabilities, including intellectual property infringement claims; and
- adverse tax or accounting effects including amortization expense related to intangible assets and charges associated with impairment of goodwill.

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

We are a party to claims and litigation in the normal course of our business. Among other claims, we are a party to a consolidated class action lawsuit in the Court of Chancery of the State of Delaware relating to our acquisition of Cyan, Inc. in August 2015. As a result of this acquisition, we also became a defendant in a consolidated securities class action lawsuit 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 consolidated complaint alleges 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 seeks unspecified compensatory damages and other relief. Such litigation can be expensive, lengthy, and disruptive to normal business operations. Moreover, the results of complex legal proceedings are difficult to predict and may harm our operating results or financial condition. For additional information regarding certain of the legal proceedings in which we are involved, see Item 1, "Legal Proceedings," contained in Part II of this report.

Changes in government regulation affecting the communications industry and the businesses of our customers could harm our prospects and operating results.

The Federal Communications Commission, or FCC, has jurisdiction over the U.S. communications industry, and similar agencies have jurisdiction over the communication industries in other countries. Many of our largest customers, including service providers and multiservice network operators, are subject to the rules and regulations of

these agencies. On February 26, 2015, the FCC approved rules that would regulate Internet service providers as telecommunications service carriers under Title II of the Telecommunications Act. The impact of these rules are uncertain, and multiple court challenges to these rules are pending in the D.C. Circuit. These and similar changes in regulatory requirements covering access to, management of, or carriage of traffic on the Internet in the United States and internationally could serve as a disincentive to certain wireline or wireless network operators, including certain of our customers, to invest in their network infrastructures or introduce new services. Such changes could adversely affect the sale of our products and services. Similarly, changes in regulatory tariff requirements or other regulations relating to pricing or terms of carriage on communications networks could slow the development or expansion of network infrastructures and adversely affect our business, operating results, and financial condition.

Government regulations affecting the use, import or export of products could adversely affect our operations, negatively affect our revenue and increase our costs.

The United States and various foreign governments have imposed controls, license requirements and other restrictions on the usage, import or export of some of the technologies that we sell. Government regulation of usage, import or export of our products, or our technology within our products, or our failure to obtain required approvals for our products, could harm our international and domestic sales and adversely affect our revenue and costs of sales. Failure to comply with such regulations could result in enforcement actions, fines, penalties or restrictions on export privileges. In addition, costly tariffs on our equipment, restrictions on importation, trade protection measures and domestic preference requirements of certain countries could limit our access to these markets and harm our sales. For example, India's government has implemented security regulations applicable to network equipment vendors and has previously imposed significant tariffs on certain communications equipment. These and other regulations could adversely affect the sale or use of our products, substantially increase our cost of sales and adversely affect our business and revenue.

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

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

We may be required to write down goodwill or long-lived assets, and these impairment charges would adversely affect our operating results.

As of April 30, 2016, our balance sheet includes \$267.7 million of goodwill on our balance sheet. This amount represents the remaining excess of the total purchase price of our acquisitions of Cyan and the HSPC assets from TeraXion over the fair value of the net assets acquired. Ciena tests each reporting unit for impairment of goodwill on an annual basis, and between annual tests if an event occurs or circumstances change that would, more likely than not, reduce the fair value of the reporting unit below its carrying value. As of April 30, 2016, our balance sheet also includes \$488.0 million in long-lived assets, which includes \$184.9 million of intangible assets. Valuation of our long-lived assets requires us to make assumptions about future sales prices and sales volumes for our products. These

assumptions are used to forecast future, undiscounted cash flows upon which our estimates are based. Periods of significant uncertainty or instability of macroeconomic conditions can make forecasting future business difficult. If actual market conditions differ or our forecasts change, we may be required to reassess goodwill or long-lived assets and could record an impairment charge. Any impairment charge relating to goodwill or long-lived assets would have the effect of decreasing our earnings or increasing our losses in such period. If we are required to take a substantial impairment charge, our operating results would be materially adversely affected in such period.

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

Section 404 of the Sarbanes-Oxley Act of 2002 requires that we include in our annual report a report containing management's assessment of the effectiveness of our internal controls over financial reporting as of the end of our fiscal year and a statement as to whether or not such internal controls are effective. Compliance with these requirements has resulted in,

and is likely to continue to result in, significant costs and the commitment of time and operational resources. Certain ongoing initiatives, including a significant upgrade of our company-wide enterprise resource planning platform that is underway, will necessitate modifications to our internal control systems, processes and related information systems. Similarly, other efforts to transform business processes, including our supply chain operations, or to transition certain functions to third party resources or providers, will require further changes to our control environment as we optimize our business and operations. Our expansion into new regions could pose further challenges to our internal control systems. We cannot be certain that our current design for internal control over financial reporting, or any additional changes to be made, will be sufficient to enable management to determine that our internal controls are effective for any period, or on an ongoing basis. If we are unable to assert that our internal controls over financial reporting are effective, market perception of our financial condition and the trading price of our stock may be adversely affected, and customer perception of our business may suffer.

Our stock price is volatile.

Our common stock price has experienced substantial volatility in the past and may remain volatile in the future. Volatility in our stock price can arise as a result of a number of the factors discussed in this “Risk Factors” section. During fiscal 2015, our closing stock price ranged from a high of \$26.50 per share to a low of \$14.69 per share. The stock market has experienced significant price and volume fluctuation that has affected the market price of many technology companies, with such volatility often unrelated to the operating performance of these companies. Divergence between our actual or anticipated financial results and published expectations of analysts, or the expectations of the market generally, can cause significant swings in our stock price. Our stock price can also be affected by market conditions in our industry as well as announcements that we, our competitors, vendors or our customers may make. These may include announcements of financial results or changes in estimated financial results, technological innovations, the gain or loss of customers or key opportunities. Our common stock is also included in certain market indices, and any change in the composition of these indices to exclude our company would adversely affect our stock price. These and other factors affecting macroeconomic conditions or financial markets may materially adversely affect the market price of our common stock in the future.

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

Not applicable.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Not applicable.

Item 6. Exhibits

- 10.1 Incremental Joinder and Amendment Agreement (Term Loan) dated as of April 25, 2016, by and among Ciena Corporation, as borrower, Ciena Communications, Inc. and Ciena Government Solutions, Inc., as guarantors, the lenders party thereto, and Bank of America, N.A., as administrative agent.
- 10.2 Amendment No. 4 to Ciena Corporation 2008 Omnibus Incentive Plan dated as of March 24, 2016.
- 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 XBRL Instance Document
- 101.SCH XBRL Taxonomy Extension Schema Document
- 101.CAL XBRL Taxonomy Extension Calculation Linkbase Document
- 101.DEF XBRL Taxonomy Extension Definition Linkbase Document
- 101.LAB XBRL Taxonomy Extension Label Linkbase Document
- 101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

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: June 8, 2016 By: /s/ Gary B.
Smith
Gary B.
Smith
President,
Chief
Executive
Officer
and
Director
(Duly
Authorized
Officer)

Date: June 8, 2016 By: /s/ James E.
Moylan, Jr.

James E.
Moylan, Jr.
Senior Vice
President,
Finance
and
Chief
Financial
Officer
(Principal
Financial
Officer)