UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 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 June 30, 2019

OR

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

For the transition period from to

Commission File Number: 001-35061

NeoPhotonics Corporation
(Exact name of registrant as specified in its charter)

Delaware	**94-3253730**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

2911 Zanker Road
San Jose, California 95134
(Address of principal executive offices, zip code)

(408) 232-9200
(Registrant's telephone number, including area code)

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

Title of each class:	Trading symbol(s):	Name of each exchange on which registered
Common Stock, $0.0025 par value	NPTN	The New York Stock Exchange

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

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

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

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

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

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

As of July 31, 2019, there were approximately 47,407,654 shares of the registrant’s Common Stock outstanding.

NEOPHOTONICS CORPORATION
For the Quarter Ended June 30, 2019
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PART I. FINANCIAL INFORMATION

ITEM 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited)

	As of	
(In thousands, except par data)	**June 30, 2019**	**December 31, 2018**
ASSETS		
Current assets:		
Cash and cash equivalents	$ 55,107	$ 58,185
Short-term investments	7,567	7,481
Restricted cash	11,533	11,053
Accounts receivable, net of allowance for doubtful accounts	59,623	74,751
Inventories	48,795	52,159
Assets held for sale	—	2,971
Prepaid expenses and other current assets	23,397	26,605
Total current assets	206,022	233,205
Property, plant and equipment, net	89,283	100,090
Operating lease right-of-use assets	16,520	—
Purchased intangible assets, net	2,532	3,018
Goodwill	1,115	1,115
Other long-term assets	3,144	3,148
Total assets	$ 318,616	$ 340,576
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 51,857	$ 58,403
Notes payable and short-term borrowing	—	4,795
Current portion of long-term debt	3,048	2,897
Accrued and other current liabilities	43,020	50,288
Total current liabilities	97,925	116,383
Long-term debt, net of current portion	45,181	50,454
Operating lease liabilities, noncurrent	17,577	—
Other noncurrent liabilities	9,949	13,499
Total liabilities	170,632	180,336
Commitments and contingencies (Note 12)		
Stockholders' equity:		
Preferred stock, $0.0025 par value, 10,000 shares authorized, no shares issued or outstanding	—	—
Common stock, $0.0025 par value, 100,000 shares authorized		
As of June 30, 2019, 47,152 shares issued and outstanding; as of December 31, 2018, 46,378 shares issued and outstanding	118	116
Additional paid-in capital	572,734	564,722
Accumulated other comprehensive loss	(5,979)	(7,126)
Accumulated deficit	(418,889)	(397,472)
Total stockholders' equity	147,984	160,240
Total liabilities and stockholders' equity	$ 318,616	$ 340,576

See accompanying Notes to Condensed Consolidated Financial Statements.

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)

(In thousands, except per share data)	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Revenue	$ 81,690	$ 81,102	$ 161,056	$ 149,688
Cost of goods sold	66,015	65,630	129,644	125,034
Gross profit	15,675	15,472	31,412	24,654
Operating expenses:				
Research and development	13,793	13,243	28,476	27,131
Sales and marketing	3,623	3,891	8,226	8,015
General and administrative	7,174	7,267	14,927	14,917
Amortization of purchased intangible assets	—	120	119	239
Asset sale related costs	47	79	376	93
Restructuring charges	79	622	258	653
Gain on asset sale	(817)	—	(817)	—
Total operating expenses	23,899	25,222	51,565	51,048
Loss from operations	(8,224)	(9,750)	(20,153)	(26,394)
Interest income	99	122	198	215
Interest expense	(496)	(759)	(989)	(1,467)
Other income (expense), net	1,090	930	(508)	581
Total interest and other income (expense), net	693	293	(1,299)	(671)
Loss before income taxes	(7,531)	(9,457)	(21,452)	(27,065)
Income tax benefit (provision)	205	(1,080)	35	(1,718)
Net loss	$ (7,326)	$ (10,537)	$ (21,417)	$ (28,783)
Basic net loss per share	$ (0.16)	$ (0.24)	$ (0.46)	$ (0.65)
Diluted net loss per share	$ (0.16)	$ (0.24)	$ (0.46)	$ (0.65)
Weighted average shares used to compute basic net loss per share	46,754	44,665	46,585	44,463
Weighted average shares used to compute diluted net loss per share	46,754	44,665	46,585	44,463

See accompanying Notes to Condensed Consolidated Financial Statements.

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(Unaudited)

(in thousands)	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Net loss	$ (7,326)	$ (10,537)	$ (21,417)	$ (28,783)
Other comprehensive income (loss):				
Foreign currency translation adjustments, net of zero tax	(1,790)	(8,482)	1,147	(2,380)
Unrealized gains on available-for-sale securities, net of zero tax	—	—	—	1
Total other comprehensive income (loss)	(1,790)	(8,482)	1,147	(2,379)
Comprehensive loss	$ (9,116)	$ (19,019)	$ (20,270)	$ (31,162)

See accompanying Notes to Condensed Consolidated Financial Statements.

NEOPHOTONICS CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

Three Months Ended June 30, 2019	**Common stock**		**Additional paid-in capital**	**Accumulated other comprehensive income (loss)**	**Accumulated deficit**	**Total stockholders' equity**
(In thousands)	**Shares**	**Amount**				
Balances at March 31, 2019	46,455	$ 116	$ 568,194	$ (4,189)	$ (411,563)	$ 152,558
Comprehensive loss	—	—	—	(1,790)	(7,326)	(9,116)
Issuance of common stock upon exercise of stock options	118	—	406	—	—	406
Issuance of common stock under employee stock purchase plan	254	1	1,234	—	—	1,235
Issuance of common stock for vested restricted stock units	381	1	(1)	—	—	—
Tax withholding related to vesting of restricted stock units	(56)	—	(245)	—	—	(245)
Stock-based compensation costs	—	—	3,146	—	—	3,146
Balances at June 30, 2019	47,152	$ 118	$ 572,734	$ (5,979)	$ (418,889)	$ 147,984

Three Months Ended June 30, 2018	**Common stock**		**Additional paid-in capital**	**Accumulated other comprehensive income (loss)**	**Accumulated deficit**	**Total stockholders' equity**
(In thousands)	**Shares**	**Amount**				
Balances at March 31, 2018	44,314	$ 111	$ 549,189	$ 6,501	$ (372,081)	$ 183,720
Comprehensive loss	—	—	—	(8,482)	(10,537)	(19,019)
Issuance of common stock upon exercise of stock options	149	—	561	—	—	561
Issuance of common stock under employee stock purchase plan	234	1	1,241	—	—	1,242
Issuance of common stock for vested restricted stock units	248	—	—	—	—	—
Tax withholding related to vesting of restricted stock units	(39)	—	(216)	—	—	(216)
Stock-based compensation costs	—	—	3,170	—	—	3,170
Balances at June 30, 2018	44,906	$ 112	$ 553,945	$ (1,981)	$ (382,618)	$ 169,458

See Accompanying Notes to Consolidated Financial Statements.

NEOPHOTONICS CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (continued)

Six Months Ended June 30, 2019	**Common stock**										
(In thousands)	**Shares**		**Amount**		**Additional paid-in capital**		**Accumulated other comprehensive income (loss)**		**Accumulated deficit**		**Total stockholders' equity**
Balances at December 31, 2018	46,378	$	116	$	564,722	$	(7,126)	$	(397,472)	$	160,240
Comprehensive income (loss)	—		—		—		1,147		(21,417)		(20,270)
Issuance of common stock upon exercise of stock options	166		—		572		—		—		572
Issuance of common stock under employee stock purchase plan	254		1		1,234		—		—		1,235
Issuance of common stock for vested restricted stock units	423		1		(1)		—		—		—
Tax withholding related to vesting of restricted stock units	(69)		—		(327)		—		—		(327)
Stock-based compensation costs	—		—		6,534		—		—		6,534
Balances at June 30, 2019	47,152	$	118	$	572,734	$	(5,979)	$	(418,889)	$	147,984

Six Months Ended June 30, 2018	**Common stock**										
(In thousands)	**Shares**		**Amount**		**Additional paid-in capital**		**Accumulated other comprehensive income (loss)**		**Accumulated deficit**		**Total stockholders' equity**
Balances at December 31, 2017	44,219	$	111	$	545,953	$	398	$	(352,011)	$	194,451
Impact of adoption of new accounting standard ASU 2016-16	—		—		—		—		(1,824)		(1,824)
Comprehensive loss	—		—		—		(2,379)		(28,783)		(31,162)
Issuance of common stock upon exercise of stock options	189		—		703		—		—		703
Issuance of common stock under employee stock purchase plan	234		1		1,241		—		—		1,242
Issuance of common stock for vested restricted stock units	312		—		—		—		—		—
Tax withholding related to vesting of restricted stock units	(48)		—		(276)		—		—		(276)
Stock-based compensation costs	—		—		6,324		—		—		6,324
Balances at June 30, 2018	44,906	$	112	$	553,945	$	(1,981)	$	(382,618)	$	169,458

See Accompanying Notes to Consolidated Financial Statements.

NEOPHOTONICS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

(In thousands)	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Cash flows from operating activities		
Net loss	$ (21,417)	$ (28,783)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	16,942	15,911
Stock-based compensation expense	6,343	6,486
Deferred taxes	—	(42)
Others	216	214
Loss (gain) on sale of assets and other write-offs	(541)	43
Loss on foreign currency hedges	—	1,005
Allowance for doubtful accounts	(8)	(101)
Write-down of inventories	5,479	1,857
Amortization of operating lease right-of-use assets	872	—
Foreign currency remeasurement	614	(1,123)
Change in assets and liabilities, net of effects of asset sale:		
Accounts receivable	15,163	(9,981)
Inventories	(2,103)	4,173
Prepaid expenses and other assets	3,053	5,565
Accounts payable	(6,933)	94
Accrued and other liabilities	(8,247)	148
Net cash provided by (used in) operating activities	9,433	(4,534)
Cash flows from investing activities		
Purchase of property, plant and equipment	(4,042)	(10,653)
Proceeds from sale of property, plant and equipment and other assets	1,986	15
Purchase of marketable securities	(86)	(840)
Proceeds from maturity of marketable securities	—	750
Settlement of foreign currency hedges	—	1,003
Net cash used in investing activities	(2,142)	(9,725)
Cash flows from financing activities		
Proceeds from exercise of stock options and issuance of stock under ESPP	1,807	1,933
Tax withholding on restricted stock units	(327)	(276)
Proceeds from bank loans, net of debt issuance costs	5,000	24,419
Repayment of bank loans	(11,529)	(39,603)
Proceeds from issuance of notes payable	—	2,039
Repayment of notes payable	(4,860)	(1,676)
Repayment of finance lease liabilities	(46)	—
Proceeds from government grants	—	1,257
Net cash used in financing activities	(9,955)	(11,907)
Effect of exchange rates on cash, cash equivalents and restricted cash	66	(176)
Net decrease in cash, cash equivalents and restricted cash	(2,598)	(26,342)
Cash, cash equivalents and restricted cash at the beginning of the period	69,238	81,564
Cash, cash equivalents and restricted cash at the end of the period	$ 66,640	$ 55,222
Supplemental disclosure of non-cash investing and financing activities:		
Decrease (increase) in unpaid property, plant and equipment	$ (1)	$ 6,943

See accompanying Notes to Condensed Consolidated Financial Statements.

Note 1. Basis of presentation and significant accounting policies

Basis of Presentation and Consolidation

The condensed consolidated financial statements of NeoPhotonics Corporation (“NeoPhotonics” or the “Company”) as of June 30, 2019 and for the three and six months ended June 30, 2019 and 2018, have been prepared in accordance with the instructions on Form 10-Q pursuant to the rules and regulations of the Securities and Exchange Commission (“SEC”). In accordance with those rules and regulations, the Company has omitted certain information and notes normally provided in the Company’s annual consolidated financial statements. In the opinion of management, the condensed consolidated financial statements contain all adjustments, consisting only of normal recurring items, except as otherwise noted, necessary for the fair presentation of the Company’s financial position and results of operations for the interim periods. The year-end condensed consolidated balance sheet data was derived from audited consolidated financial statements, but does not include all disclosures required by U.S. generally accepted accounting principles (“U.S. GAAP”). These condensed consolidated financial statements should be read in conjunction with the Consolidated Financial Statements and Notes thereto included in the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2018. The results of operations for the three and six months ended June 30, 2019 are not necessarily indicative of the results expected for the entire fiscal year. All intercompany accounts and transactions have been eliminated.

Going Concern

Accounting Standards Update (“ASU”) No. 2014-15, *Disclosure of Uncertainties about an Entity’s Ability to Continue as a Going Concern*, requires an entity to disclose information about its potential inability to continue as a going concern when conditions and events indicate that it is probable that the entity may be unable to meet its obligations as they become due within one year. Management has assessed the Company’s ability to continue as a going concern within one year of the filing date of this Quarterly Report on Form 10-Q with the SEC in August 2019. The accompanying unaudited condensed consolidated financial statements have been prepared assuming that the Company will continue as a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business.

As of June 30, 2019, the Company’s working capital was $108.1 million, including available cash, cash equivalents, short-term investments and restricted cash of approximately $74.2 million. In the first six months of 2019, the Company had operating losses of $20.2 million and net cash provided by operations of $9.4 million. The Company had an accumulated deficit of approximately $418.9 million as of June 30, 2019.

In September 2017, the Company entered into a revolving line of credit agreement with Wells Fargo Bank, National Association ("Wells Fargo") which provides for borrowings under an accounts receivable based formula up to a maximum of $50.0 million. As of June 30, 2019, $31.7 million was outstanding under this line. The remaining borrowing capacity as of June 30, 2019 was $13.7 million, of which $5.0 million is required to be maintained as unused borrowing capacity. Borrowings under the Wells Fargo line are not due until June 30, 2022 as long as the borrowing base is not less than the outstanding amount (See Note 9). Additionally, the Company had $3.0 million of current portion of long-term debt as of June 30, 2019, which it plans to pay out of its existing available cash.

On May 16, 2019, the U.S. Commerce Department ‘s Bureau of Industry and Security, or BIS, added Huawei and certain affiliates to the BIS Entity List, with an effective date of May 21, 2019. This denies Huawei the ability to purchase products, software and technology that are subject to U.S. Export Administration Regulations (EAR). As Huawei is the Company’s largest customer, this is expected to have a material impact on the forecasted revenue and profitability for the Company. To adjust to the revised forecast, the Company has adjusted capital expenditures, operating expenditures, project plans and reset incoming materials to adjust to changing demand levels. The company continues to implement actions to improve cash flow and profitability.

The Company currently believes it will have sufficient resources to fund its currently planned operations and expenditures over the next twelve months without additional financing or other actions. In addition, the Company believes there are a number of ongoing and potential actions that may further strengthen its projected cash and projected financial position.

The Company operates in an industry that makes its prospects difficult to evaluate with certainty. Future declines in China market demand or other changes to the Company’s forecasts could adversely affect the Company’s results of operations, financial position and cash flows. As a result, the Company may need to raise additional debt or equity capital to fund its operations. Any additional debt arrangements may likely require regular interest and principal payments which could adversely

NeoPhotonics Corporation
Notes to Condensed Consolidated Financial Statements (Continued)
(Unaudited)

affect the Company's operations. There can be no assurance that additional debt or equity capital will be available on acceptable terms, or at all.

Certain Significant Risks and Uncertainties

The Company operates in a dynamic industry and, accordingly, can be affected by a variety of factors. For example, any of the following areas could have a negative effect on the Company in terms of its future financial position, results of operations or cash flows: the general state of the U.S., China and world economies; the highly cyclical nature of the industries the Company serves; the loss of any of a small number of its larger customers; ability to obtain additional financing; inability to meet certain debt covenants; failure to successfully integrate completed acquisitions; fundamental changes in the technology underlying the Company's products; the hiring, training and retention of key employees; successful and timely completion of product design efforts; and new product design introductions by competitors.

Concentration

In the three months ended June 30, 2019, Huawei Technologies Co. Ltd. and its affiliate HiSilicon Technologies (together with Huawei Technologies Co. Ltd., "Huawei") accounted for approximately 36% of the Company's total revenue. One other customer was greater than 10% and the Company's top five customers represented approximately 84% of the Company's total revenue. In the three months ended June 30, 2018, Huawei accounted for approximately 43% of the Company's total revenue. Two other customers were each greater than 10% and the Company's top five customers represented approximately 90% of the Company's total revenue. In the six months ended June 30, 2019, Huawei accounted for approximately 43% of the Company's total revenue. One other customer was greater than 10% and the Company's top five customers represented approximately 85% of the Company's total revenue. In the six months ended June 30, 2018, Huawei accounted for approximately 46% of the Company's total revenue. Two other customers were each greater than 10% and the Company's top five customers represented approximately 87% of the Company's total revenue.

As of June 30, 2019, four customers each accounted for more than 10% of the Company's accounts receivable. As of December 31, 2018, two customers each accounted for more than 10% of the Company's accounts receivable.

Use of Estimates

The preparation of financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported revenue and expenses during the reporting period. Significant estimates made by management include: the useful lives of property, plant and equipment and intangible assets as well as future cash flows to be generated by those assets; fair values of identifiable assets acquired and liabilities assumed in business combinations; allowances for doubtful accounts; valuation allowances for deferred tax assets; valuation of excess and obsolete inventories; warranty reserves; litigation accrual and recognition of stock-based compensation, among others. Actual results could differ from these estimates.

Leases

The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease right-of-use ("ROU") assets, other current liabilities and operating lease liabilities on the Company's consolidated balance sheets. Finance leases are included in property, plant and equipment, current portion of long-term debt and long-term debt, net of current portion on the consolidated balance sheets.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. As most of our leases do not provide an implicit rate, the Company uses an estimate of its incremental borrowing rate based on observed market data and other information available at the lease commencement date. The operating lease ROU assets also includes any lease payments made and excludes lease incentives. Lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise such options. The Company does not record leases on the condensed consolidated balance sheet with a term of one year or less. The Company does not separate lease and non-lease components but rather account for each separate component as a single lease component for all underlying classes of assets. Variable lease payments are expensed as incurred and are not included within the operating lease ROU asset and lease liability calculation. Variable lease payments primarily include reimbursements of costs incurred by lessors for common area maintenance and utilities. Lease expense for minimum operating lease payments is recognized on a straight-line basis over the lease term.

NeoPhotonics Corporation
Notes to Condensed Consolidated Financial Statements (Continued)
(Unaudited)

Accounting Standards Update Recently Adopted

In February 2016, the Financial Accounting Standards Board ("FASB") issued ASU 2016-2, *Leases (Topic 842)* (“ASU 2016-2”). ASU 2016-2 introduces a lessee model that requires recognition of assets and liabilities arising from qualified leases on the consolidated balance sheets and consolidated statements of operations and to disclose qualitative and quantitative information about lease transactions. It is effective for interim and annual periods beginning after December 15, 2018. Certain optional practical expedients are allowed. The Company adopted this standard as of January 1, 2019, using the modified retrospective transition method by applying the new standard to all leases existing at the date of initial application and not restating comparative periods. The Company elected the package of practical expedients permitted under the transition guidance, which allowed the Company to carryforward historical lease classification, assessment on whether a contract was or contains a lease, and initial direct costs for any leases that existed prior to January 1, 2019. The Company also elected to combine lease and non-lease components and to keep leases with an initial term of 12 months or less off the condensed consolidated balance sheet.

As a result of adopting Topic 842 on January 1, 2019, the Company recognized operating lease right-of-use assets of $17.3 million and corresponding operating lease liabilities of $20.8 million from existing leases on the Company's condensed consolidated balance sheet. See Note 10 for further details. The adoption of Topic 842 had no impact on the Company's condensed consolidated statement of operations or condensed consolidated statement of cash flows.

There have been no other changes in the Company’s significant accounting policies in the six months ended June 30, 2019, as compared to the significant accounting policies described in its Annual Report on Form 10-K for the year ended December 31, 2018.

Recent Accounting Standards Update Not Yet Effective

In January 2017, the FASB issued ASU 2017-4, *Intangibles-Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment* (“ASU 2017-4”). This standard amends the goodwill impairment test to compare the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit’s fair value, up to the total amount of goodwill allocated to that reporting unit. ASU 2017-4 is effective prospectively for interim and annual periods beginning after December 15, 2019. Early adoption is permitted for interim and annual goodwill impairment tests performed on testing dates after January 1, 2017. The Company has not determined whether it will elect early adoption and is currently evaluating the impact of the adoption of this standard on its consolidated financial statements and related disclosures.

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* (“ASU 2016-13”). ASU 2016-13 amends existing guidance on the impairment of financial assets and adds an impairment model that is based on expected losses rather than incurred losses and requires an entity to recognize as an allowance its estimate of expected credit losses for its financial assets. An entity will apply this guidance through a cumulative-effect adjustment to retained earnings upon adoption (a modified-retrospective approach) while a prospective transition approach is required for debt securities for which an other-than-temporary impairment had been recognized before the effective date. It is effective for the Company’s annual and interim reporting periods beginning after December 15, 2019. Early adoption is permitted. The Company is in the process of evaluating the impact of the adoption on its consolidated financial statements and related disclosures.

Note 2. Revenue

Product revenue

The Company develops, manufactures and sells optoelectronic products that transmit, receive, modify and switch high speed digital optical signals for communications networks. Revenue is derived primarily from the sale of hardware products. The Company sells its products worldwide, primarily to leading network equipment manufacturers.

Revenue recognition

Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration the Company expects to receive in exchange for those products or services. The Company generally bears all costs, risk of loss or damage and retains title to the goods up to the point of transfer of control of promised products to customer. Revenue related to the sale of consignment inventories at customer vendor managed locations is not recognized until the products are pulled from consignment inventories by customers. In instances where acceptance of the product or solutions is specified by the customer, revenue is deferred until such required acceptance criteria have been met. Shipping and handling costs are included in the cost of goods sold. The Company presents revenue net of sales taxes and any similar assessments.

Nature of products

Revenue from sale of hardware products is recognized upon transfer of control to the customer. The performance obligation for the sale of hardware products is satisfied at a point in time. The Company has aligned its products in two groups - High Speed Products and Network Products and Solutions. The following presents revenue by product group (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
High Speed Products	$ 72,860	$ 69,754	$ 143,028	$ 128,843
Network Products and Solutions	8,830	11,348	18,028	20,845
Total revenue	$ 81,690	$ 81,102	$ 161,056	$ 149,688

The following table presents the Company's revenue information by geographical region. Revenue is classified based on the ship to location requested by the customer. Such classification recognizes that for many customers, including those in North America or in Europe, designated shipping points are often in China or elsewhere in Asia (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
China	$ 38,943	$ 46,111	$ 84,490	$ 87,783
Americas	19,596	17,694	33,425	29,901
Rest of world	23,151	17,297	43,141	32,004
Total revenue	$ 81,690	$ 81,102	$ 161,056	$ 149,688

Certain prior period amounts have been reclassified to conform to the current period presentation.

Deferred revenue

The Company records deferred revenue when cash payments are received or due in advance of our performance. Refer to Note 7 for disclosure of deferred revenue balances. The increase in the deferred revenue balance during the three and six months ended June 30, 2019 was immaterial, offset by approximately $0.2 million and $0.8 million of revenue recognized during the three and six months ended June 30, 2019, respectively, that was included in the deferred revenue balance as of December 31, 2018. The increase in the deferred revenue balance during the three and six months ended June 30, 2018 was immaterial, offset by approximately $0.2 million and $0.6 million of revenue recognized during the three and six months ended June 30, 2018, respectively, that was included in the deferred revenue balance as of December 31, 2017.

Contract assets

The Company records contract assets when the revenue is recognized but the customer payment is contingent on a future event. The balance of contract assets as of June 30, 2019 and December 31, 2018 was immaterial.

Refund liabilities

The Company records refund liabilities when the contract permits the customer to return the product if certain circumstances arise. The balance of refund liabilities as of June 30, 2019 and December 31, 2018 was immaterial.

NeoPhotonics Corporation
Notes to Condensed Consolidated Financial Statements (Continued)
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Note 3. Net loss per share

The following table sets forth the computation of the basic and diluted net loss per share for the periods indicated (in thousands, except per share amounts):

	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Numerator:				
Net loss	$ (7,326)	$ (10,537)	$ (21,417)	$ (28,783)
Denominator:				
Weighted average shares used to compute per share amount:				
Basic	46,754	44,665	46,585	44,463
Diluted	46,754	44,665	46,585	44,463
Basic net loss per share	$ (0.16)	$ (0.24)	$ (0.46)	$ (0.65)
Diluted net loss per share	$ (0.16)	$ (0.24)	$ (0.46)	$ (0.65)

The Company has excluded the impact of the following outstanding employee stock options and restricted stock units as well as the shares expected to be issued under its employee stock purchase plan from the computation of diluted net loss per share, as their effect would have been antidilutive (in thousands):

	June 30, 2019	June 30, 2018
Employee stock options	2,963	3,860
Restricted stock units	2,208	3,279
Market-based restricted stock units	647	—
Employee stock purchase plan	263	193
	6,081	7,332

Note 4. Cash, cash equivalents, short-term investments, and restricted cash

The following table summarizes the Company's cash, cash equivalents, short-term investments and restricted cash (in thousands):

	June 30, 2019	December 31, 2018
Cash and cash equivalents:		
Cash	$ 55,107	$ 58,185
Cash equivalents	—	—
Cash and cash equivalents	$ 55,107	$ 58,185
Short-term investments	$ 7,567	$ 7,481
Restricted cash	$ 11,533	$ 11,053

	June 30, 2019	December 31, 2018
Cash and cash equivalents	$ 55,107	$ 58,185
Restricted cash	11,533	11,053
Total cash, cash equivalents and restricted cash shown in the statement of cash flows	$ 66,640	$ 69,238

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The following table summarizes the Company's unrealized gains and losses related to its cash equivalents and short-term investments in marketable securities designated as available-for-sale (in thousands):

	As of June 30, 2019				As of December 31, 2018			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Loss	Fair Value	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Loss	Fair Value
Marketable securities:								
Money market funds	$ 7,567	$ —	$ —	$ 7,567	$ 7,481	$ —	$ —	$ 7,481
Reported as:								
Short-term investments				$ 7,567				$ 7,481

As of June 30, 2019 and December 31, 2018, maturities of marketable securities were less than 1 year. There were no realized gains and losses on the sale of marketable securities during the three and six months ended June 30, 2019 and 2018. The Company did not recognize any impairment losses on its marketable securities during the three and six months ended June 30, 2019 or 2018. As of June 30, 2019, the Company did not have any investments in marketable securities that were in an unrealized loss position for a period in excess of 12 months.

Note 5. Fair value disclosures

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following table presents the Company's assets and liabilities that are measured at fair value on a recurring basis (in thousands):

	As of June 30, 2019				As of December 31, 2018			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets								
Short-term investments:								
Money market funds	$ 7,567	$ —	$ —	$ 7,567	$ 7,481	$ —	$ —	$ 7,481
Other long-term assets:								
Mutual funds held in Rabbi Trust	$ 560	$ —	$ —	$ 560	$ 465	$ —	$ —	$ 465
Liabilities								
Accrued and other current liabilities:								
Rusnano payment derivative	$ —	$ —	$ —	$ —	$ —	$ —	$ 2,000	$ 2,000

The Company offers a Non-Qualified Deferred Compensation Plan ("NQDC Plan") to a select group of its highly compensated employees. The NQDC Plan provides participants the opportunity to defer payment of certain compensation as defined in the NQDC Plan. A Rabbi Trust has been established to fund the NQDC Plan obligation, which was fully funded at June 30, 2019. The assets held by the Rabbi Trust are substantially in the form of exchange traded mutual funds and are included in the Company's other long-term assets on its condensed consolidated balance sheets as of June 30, 2019 and December 31, 2018.

Assets and Liabilities Measured at Fair Value on a Nonrecurring Basis

As of June 30, 2019 and December 31, 2018 the Company had no assets or liabilities required to be measured at fair value on a nonrecurring basis.

Assets and Liabilities Not Measured at Fair Value

The carrying values of accounts receivable, accounts payable, notes payable and short-term borrowings approximate their fair values due to the short-term nature and liquidity of these financial instruments.

NeoPhotonics Corporation
Notes to Condensed Consolidated Financial Statements (Continued)
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The estimated fair value of the Company's long-term debt approximated its carrying value as of June 30, 2019 and December 31, 2018, as the interest rates approximated rates currently available to the Company on the issuance of liabilities with a similar maturity. This estimate is considered to be a level 2 fair value measurement.

Note 6. Asset Sale

NeoRussia

In April 2019, the Company completed the sale of 100% interest in the operations of NeoPhotonics Corporation, LLC (NeoRussia), the Company's manufacturing operations in Russia, to Joint Stock Company Rusnano ("Rusnano"), a related party. As consideration for the sale, the Company received $2.0 million in cash and settled the $2.0 million Rusnano payment derivative recorded in accrued and other current liabilities.

As of March 31, 2019, assets held for sale was $3.1 million, consisting primarily of $2.6 million of property, plant and equipment and $0.5 million of prepaid expenses and other current assets. After the transfer of assets held for sale and $0.1 million of cash held in the subsidiary, reversal of $0.2 million of loss on sale accrued in the three months ended December 31, 2018 and write off of $0.2 million of accumulated other comprehensive loss along with expenses associated with the sale, the Company recognized a gain on asset sale of approximately $0.8 million within operating expenses in the three months ended June 30, 2019.

APAT

In January 2017, the Company completed the sale of its Low Speed Transceiver Products' assets to APAT OE pursuant to an asset purchase agreement dated December 14, 2016 for consideration of approximately $25.0 million (in RMB equivalent) plus approximately $1.4 million (in RMB equivalent) post-closing transaction service fees to be received under a transition services agreement with APAT OE in which the Company will provide short-term manufacturing and other specific services pursuant to such agreement. The related supply chain purchase commitments and value-added tax obligations have been assumed by APAT OE. The receivable and payable balances related to the transition service arrangement were $12.0 million and $11.8 million, respectively, as of June 30, 2019.

As of December 31, 2016, the balance in assets held for sale was $13.9 million, consisting of $13.1 million in inventories and $0.8 million in property, plant and equipment. As a result of post-closing adjustments, total consideration was reduced by approximately $3.4 million for inventory. In addition, an immaterial amount of property, plant and equipment was reclassified from assets held for sale. Upon closing, assets sold to APAT OE were approximately $12.8 million, including approximately $12.1 million in inventories and $0.7 million in property, plant and equipment. The adjusted consideration received of approximately $21.6 million is subject to further reduction of up to $10.0 million for any indemnification claims. As of June 30, 2019, the Company has a reserve of $6.8 million within accrued and other current liabilities for warranty claims. The indemnification warranties expired on June 30, 2017. The Company recognized a $2.2 million gain on the sale of these assets within operating loss in 2017.

All of the Low Speed Transceiver Products were part of the Company's Network Products and Solution product group and included the low speed optical network (PON) products for which the end-of-life plan was announced in mid-2016.

Note 7. Balance sheet components

Accounts receivable, net

Accounts receivable, net, consists of the following (in thousands):

	June 30, 2019	December 31, 2018
Accounts receivable	$ 57,471	$ 74,343
Trade notes receivable	2,409	672
Allowance for doubtful accounts	(257)	(264)
	$ 59,623	$ 74,751

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Notes to Condensed Consolidated Financial Statements (Continued)
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Inventories, net

Inventories, net, consist of the following (in thousands):

	June 30, 2019	December 31, 2018
Raw materials	$ 24,083	$ 27,806
Work in process	14,892	13,044
Finished goods(1)	9,820	11,309
	$ 48,795	$ 52,159

(1)Finished goods inventory at customer vendor managed inventory locations was $2.8 million and $5.6 million as of June 30, 2019 and December 31, 2018, respectively.

Assets held for sale

In December 2018, the Company entered into an agreement with Joint Stock Company Rusnano, a related party, for Joint Stock Company Rusnano group to purchase the 100% interest in the operations of NeoPhotonics Corporation, LLC, the Company's manufacturing operations in Russia. In 2018, the Company recorded additional restructuring expense of $1.6 million related to these operations, bringing the total amount accrued for the Rusnano payment derivative to $2.0 million.

As of December 31, 2018, the Company has recorded assets with a carrying value of $3.0 million as held for sale, consisting primarily of $2.5 million of property, plant and equipment and $0.5 million of prepaid expenses and other current assets. The estimated fair value less direct costs of sale approximates the related carrying value. The balance for liabilities held for sale as of December 31, 2018 was immaterial and was primarily included in accrued and other current liabilities.

In April 2019, the Company completed the sale of 100% interest in the operations of NeoPhotonics Corporation, LLC, the Company's manufacturing operations in Russia to Joint Stock Company Rusnano, a related party. In connection with the sale, the Company received $2.0 million in cash, settled the $2.0 million exit fee and recognized a gain on asset sale of $0.8 million during the three and six months ended June 30, 2019, see Note 6.

Prepaid expenses and other current assets

Prepaid expenses and other current assets consist of the following (in thousands):

	June 30, 2019	December 31, 2018
Prepaid taxes and taxes receivable	$ 4,130	$ 5,461
Transition services agreement receivable (see Note 6)	12,016	11,999
Deposits and other prepaid expenses	2,424	3,020
Other receivable	4,827	6,125
	$ 23,397	$ 26,605

Property, plant and equipment, net

Purchases of property, plant and equipment unpaid as of June 30, 2019 and June 30, 2018 was $1.5 million and $3.1 million, respectively.

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Notes to Condensed Consolidated Financial Statements (Continued)
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Purchased intangible assets

Purchased intangible assets consist of the following (in thousands):

	June 30, 2019			December 31, 2018		
	Gross Assets	Accumulated Amortization	Net Assets	Gross Assets	Accumulated Amortization	Net Assets
Technology and patents	$ 37,048	$ (35,368)	$ 1,680	$ 37,029	$ (34,995)	$ 2,034
Customer relationships	15,172	(15,172)	—	15,146	(15,026)	120
Leasehold interest	1,240	(388)	852	1,238	(374)	864
	$ 53,460	$ (50,928)	$ 2,532	$ 53,413	$ (50,395)	$ 3,018

Amortization expense relating to technology and patents and the leasehold interest intangible assets is included within cost of goods sold and customer relationships within operating expenses. The following table presents details of the amortization expense of the Company's purchased intangible assets as reported in the condensed consolidated statements of operations (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Cost of goods sold	$ 184	$ 184	$ 368	$ 387
Operating expenses	—	120	119	239
Total	$ 184	$ 304	$ 487	$ 626

The estimated future amortization expense of purchased intangible assets as of June 30, 2019, is as follows (in thousands):

2019 (remaining six months)	$ 368
2020	737
2021	644
2022	28
2023	28
Thereafter	727
	$ 2,532

Accrued and other current liabilities

Accrued and other current liabilities consist of the following (in thousands):

	June 30, 2019	December 31, 2018
Transition services agreement payables (see Note 6)	$ 11,769	$ 11,769
Employee-related	12,905	14,899
Asset sale related contingent liabilities (see Note 6)	6,762	6,751
Operating lease liabilities, current	2,223	—
Accrued warranty	751	672
Deferred revenue, current	291	1,114
Income and other taxes payable	1,107	1,580
Rusnano payment derivative	—	2,000
Accrued litigation settlement	—	2,645
Other accrued expenses	7,212	8,858
	$ 43,020	$ 50,288

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Notes to Condensed Consolidated Financial Statements (Continued)
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Warranty Accrual

The table below summarizes the movement in the warranty accrual, which is included in accrued and other current liabilities (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Beginning balance	$ 739	$ 1,699	$ 672	$ 1,334
Warranty accruals	161	(17)	476	529
Settlements	(149)	(90)	(397)	(271)
Ending balance	$ 751	$ 1,592	$ 751	$ 1,592

Other noncurrent liabilities

Other noncurrent liabilities consist of the following (in thousands):

	June 30, 2019	December 31, 2018
Pension and other employee-related	$ 4,113	$ 4,529
Deferred rent	—	3,058
Government grant	2,333	2,108
Capital lease obligation	—	282
Asset retirement obligations and other	3,503	3,522
	$ 9,949	$ 13,499

Note 8. Restructuring

In 2017, the Company initiated restructuring actions in order to focus on key growth initiatives and to move towards a lower break even revenue level through lower operating expenses and manufacturing cost reductions. Actions included a reduction in force, facilities consolidation and certain asset-related adjustments. The Company recorded restructuring charges of $0.1 million and $0.3 million within operating expenses in the three and six months ended June 30, 2019, respectively for costs related to the sale of NeoPhotonics Russia. The Company recorded $0.1 million in restructuring charges within cost of goods sold in the three and six months ended June 30, 2018 and $0.6 million and $0.7 million in restructuring charges within operating expenses in the three and six months ended June 30, 2018, respectively. Restructuring activities for the six months ended June 30, 2019 were as follows (in thousands):

	Employee Severance	Facilities Consolidation	Others	Total
Restructuring obligations December 31, 2018	$ 436	$ 769	$ 1,611	$ 2,816
Charges	88	—	170	258
Cash payments	(523)	(90)	(141)	(754)
Settlement of Rusnano payment derivative	—	—	(1,611)	(1,611)
Adoption of ASC 842	—	(620)	—	(620)
Restructuring obligations June 30, 2019	$ 1	$ 59	$ 29	$ 89

The current restructuring liability reported in accrued and other current liabilities in the condensed consolidated balance sheets as of June 30, 2019 was $0.1 million.

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Note 9. Debt

The table below summarizes the carrying amount and weighted average interest rate of the Company’s debt (in thousands, except percentages):

	June 30, 2019		December 31, 2018	
	Carrying Amount	Interest Rate	Carrying Amount	Interest Rate
Notes payable to suppliers	$ —	—	$ 4,795	—
Total notes payable and short-term borrowing	$ —		$ 4,795	
Long-term debt, current and non-current:				
Borrowing under Wells Fargo Credit Facility	$ 31,662	4.33%	$ 35,961	4.41%
Mitsubishi Bank loans	10,310	1.05% - 1.45%	11,094	1.05% - 1.45%
Mitsubishi Bank and Yamanashi Chou Bank loan	6,468	1.1%	6,898	1.1%
Finance lease liability	317		—	
Unaccreted discount and issuance costs	(528)		(602)	
Total long-term debt, net of unaccreted discount and issuance costs	$ 48,229		$ 53,351	
Reported as:				
Current portion of long-term debt	$ 3,048		$ 2,897	
Long-term debt, net of current portion	45,181		50,454	
Total long-term debt, net of unaccreted discount and issuance costs	$ 48,229		$ 53,351	

Notes payable and short-term borrowing

The Company regularly issues notes payable to its suppliers in China. These notes are supported by non-interest bearing bank acceptance drafts issued under the Company’s existing line of credit facilities and are due three to six months after issuance. As a condition of the notes payable arrangements, the Company is required to keep a compensating balance at the issuing banks that is a percentage of the total notes payable balance until the amounts are settled. As of June 30, 2019, the Company’s subsidiary in China had two line of credit facilities with the following banking institutions:

- Under the first line of credit facility with Shanghai Pudong Development Bank, the Company can borrow up to RMB 120.0 million ($17.5 million) for short-term loans at varying interest rates, or up to approximately RMB 240.0 million ($35.0 million) for bank acceptance drafts (with up to 50% compensating balance requirement). This line of credit facility expires in November 2021. In November 2017, the Company borrowed $17.0 million under this line which bore interest at 4.1%. The amount of $17.0 million under this line was repaid in May 2018.

- Under the second line of credit facility with Shanghai Pudong Development Bank, which expires in November 2021, the Company can borrow up to RMB 30.0 million ($4.4 million) for short-term loans at varying interest rates, or up to approximately RMB 60.0 million ($8.7 million) for bank acceptance drafts (with up to 50% compensating balance requirement).

- In December 2017, the Company's subsidiary in China entered into a third line of credit facility with China CITIC Bank in China, which expired in November 2018. The purpose of the credit facility is to provide short-term borrowings, bank acceptance drafts and letters of credits. Under this credit facility, the Company could borrow up to approximately RMB 250 million ($36.4 million) at varying interest rates, or up to approximately RMB 390.6 million ($56.9 million) for bank acceptance drafts (with up to 36% compensating balance requirement). In February 2018, the Company borrowed $17.0 million under this line which bore interest at 4.7%. The amount of $17.0 million under this line was repaid in August 2018.

The Company had a line of credit facility previously with China CITIC Bank in China which expired during September 2017. In July 2017, the Company borrowed $17.0 million under this line which bears interest at LIBOR plus 2.55%. The amount of $17.0 million under this line was repaid to CITIC Bank in January 2018.

Under these line of credit facilities, the non-interest bearing bank acceptance drafts issued in connection with the Company's notes payable to its suppliers in China, had no outstanding balance at June 30, 2019 and an outstanding balance of $4.8 million as of December 31, 2018.

As of December 31, 2018, compensating balances relating to these bank acceptance drafts and letters of credit issued to suppliers and the Company's subsidiaries totaled $2.6 million. Compensating balances are classified as restricted cash on the Company's condensed consolidated balance sheets.

In China, when there is a case pending in judicial court, banks may choose to limit borrowing against existing credit lines, regardless of the legitimacy of the case. The Company has a dispute pending with APAT OE in judicial court (See Note 12). The Company has repaid funds borrowed and does not expect to make any additional draws against its credit facilities in China until this matter is resolved.

Credit facilities

In September 2017, the Company entered into a revolving line of credit agreement with Wells Fargo Bank, National Association ("Wells Fargo") as the administrative agent for a lender group (the "Wells Fargo Credit Facility" or "Credit Facility").

The Wells Fargo Credit Facility provides for borrowings equal to the lower of (a) a maximum revolver amount of $50.0 million, or (b) an amount equal to 80% - 85% of eligible accounts receivable plus 100% of qualified cash balances up to $15.0 million, less certain discretionary adjustments ("Borrowing Base"). The maximum revolver amount may be increased by up to $25.0 million, subject to certain conditions. At closing, $50.0 million was available, of which $30.0 million was drawn. The Company used $20.0 million of this amount to pay the principal and interest due under the Comerica Bank Credit Facility, which has since been terminated.

The Credit Facility matures on June 30, 2022 and borrowings bear interest at an interest rate option of either (a) the LIBOR rate, plus an applicable margin ranging from 1.50% to 1.75% per annum, or (b) the prime lending rate, plus an applicable margin ranging from 0.50% to 0.75% per annum. The Company is also required to pay a commitment fee equal to 0.25% of the unused portion of the Credit Facility.

The Credit Facility agreement ("Agreement") requires prepayment of the borrowings to the extent the outstanding balance is greater than the lesser of (a) the most recently calculated Borrowing Base, or (b) the maximum revolver amount. The Company is required to maintain a combination of certain defined cash balances and unused borrowing capacity under the Credit Facility of at least $20.0 million, of which at least $5.0 million shall include unused borrowing capacity. The Agreement also restricts the Company's ability to dispose of assets, permit change in control, merge or consolidate, make acquisitions, incur indebtedness, grant liens, make investments and make certain restricted payments. Borrowings under the Credit Facility are collateralized by substantially all of the Company's assets.

On June 14, 2019, the Company entered into a First Amendment to the Credit Facility (the "Amended Credit Facility"). The Amendment removes Huawei from the list of "Eligible Accounts" as a basis for the Company's borrowing while Huawei is on the U.S. Bureau of Industry and Security ("BIS") "Entity List". During the period of time while Huawei remains on the Entity List, the concentration limits of certain other customers are increased to partially offset the removal of Huawei. Additionally, until Huawei is no longer on the Entity List, the Company is required to maintain a temporary combination of certain defined unrestricted cash and unused borrowing capacity under the Credit Facility of at least $30 million in the U.S. and $40 million world-wide, of which at least $5.0 million shall include unused borrowing capacity.

The Company was in compliance with the covenants of this Amended Credit Facility as of June 30, 2019. As of June 30, 2019, the outstanding balance under the Credit Facility was $31.7 million and the weighted average rate under the LIBOR option was 4.33%. The remaining borrowing capacity as of June 30, 2019 was $13.7 million, of which $5.0 million is required to be maintained as unused borrowing capacity. The Company repaid $5.0 million in January 2019, which was borrowed in December 2018.

Mitsubishi Bank loans

On February 25, 2015, the Company entered into certain loan agreements and related agreements with MUFG Bank, Ltd. (the "Mitsubishi Bank") that provided for (i) a term loan in the aggregate principal amount of 500 million JPY ($4.4 million) (the "Term Loan A") and (ii) a term loan in the aggregate principal amount of one billion JPY (approximately $9.3 million) (the "Term Loan B" and together with the Term Loan A, the "2015 Mitsubishi Bank Loans"). The 2015 Mitsubishi Bank Loans are

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secured by a mortgage on certain real property and buildings owned by the Company's Japanese subsidiary. Interest on the 2015 Mitsubishi Bank Loans accrues and is paid monthly based upon the annual rate of the monthly Tokyo Interbank Offer Rate (TIBOR) plus 1.40%. The Term Loan A required interest only payments until the maturity date of February 23, 2018, with a lump sum payment of the aggregate principal amount on the maturity date. The Term Loan B requires equal monthly payments of principal equal to 8,333,000 JPY (approximately $0.1 million) until the maturity date of February 25, 2025, with a lump sum payment of the balance of 8,373,000 JPY (approximately $0.1 million) on the maturity date. Interest on the Term Loan B is accrued based upon monthly TIBOR plus 1.40% and is secured by real estate collateral. In conjunction with the execution of the Bank Loans, the Company paid a loan structuring fee, including consumption tax, of 40,500,000 JPY (approximately $0.4 million). The Term Loan A of 500 million JPY (approximately $4.4 million) was repaid to the Mitsubishi Bank in January 2018.

The 2015 Mitsubishi Bank Loans contain customary representations and warranties and customary affirmative and negative covenants applicable to the Company's Japanese subsidiary, including, among other things, restrictions on cessation in business, management, mergers or acquisitions. The 2015 Mitsubishi Bank Loans contain financial covenants relating to minimum net assets, maximum ordinary loss and a coverage ratio covenant. The Company was in compliance with the related covenants as of June 30, 2019 and December 31, 2018. Outstanding principal balance for the Mitsubishi Term Loans for 566.7 million JPY (approximately $5.2 million) as of June 30, 2019.

In March 2017, the Company entered into a loan agreement and related agreements with the Mitsubishi Bank for a term loan of 690 million JPY (approximately $6.4 million) (the "2017 Mitsubishi Bank Loan") to acquire manufacturing equipment for its Japanese subsidiary. This loan is secured by the manufacturing equipment acquired from the loan proceeds. Interest on the 2017 Mitsubishi Bank Loan is based on the annual rate of the monthly TIBOR rate plus 1.00%. The 2017 Mitsubishi Bank Loan matures on March 29, 2024 and requires monthly interest and principal payments over 72 months commencing in April 2018. The loan contains customary covenants relating to minimum net assets, maximum ordinary loss and a coverage ratio covenant. The Company was in compliance with these covenants as of June 30, 2019. The loan was available from March 31, 2017 to March 30, 2018 and 690 million JPY (approximately $6.4 million) under this loan was fully drawn in March 2017. Outstanding principal balance for the 2017 Mitsubishi Bank Loan was approximately 546.3 million JPY (approximately $5.1 million) as of June 30, 2019.

Mitsubishi Bank and Yamanashi Chou Bank loan

In January 2018, the Company entered into a term loan agreement with Mitsubishi Bank and The Yamanashi Chou Bank, Ltd. for a term loan in the aggregate principal amount of 850 million JPY (approximately $7.9 million) (the "Term Loan C"). The purpose of the Term Loan C is to obtain machinery for the core parts of the manufacturing line and payments for related expenses by the Company's subsidiary in Japan. The Term Loan C is secured by the assets owned by the Company's subsidiary in Japan. The Term Loan C was available from January 29, 2018 to January 29, 2025. The full amount of the Term Loan C was drawn in January 2018. Interest on the Term Loan C is based upon the annual rate of the three months TIBOR rate plus 1.00%. The Term Loan C requires quarterly interest payments, along with the principal payments, over 82 months commencing in April 2018. The Term Loan C loan agreement contains customary representations and warranties and customary affirmative and negative covenants applicable to the Japanese Subsidiary, including, among other things, restrictions on cessation in business, management, mergers or acquisitions. The Term Loan C loan agreement contains financial covenants relating to minimum net assets and maximum ordinary loss. The Company was in compliance with these covenants as of June 30, 2019 and December 31, 2018. Outstanding principal balance for the Mitsubishi Bank and Yamanashi Chou Bank Loan was approximately 698.2 million JPY (approximately $6.5 million) as of June 30, 2019.

As of June 30, 2019, maturities of total long-term debt were as follows (in thousands):

2019 (remaining six months)	$	1,607
2020		3,204
2021		3,211
2022		34,863
2023		3,116
Thereafter		2,756
	$	48,757

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Note 10. Leases

The Company has operating leases for offices, research and development facilities and manufacturing facilities. Leases have remaining terms of less than one year to nine years, some of which include options to extend the leases and some of which may include options to terminate the leases within 1 year. As of June 30, 2019 and December 31, 2018, an asset recorded in property, plant and equipment under a finance lease was immaterial.

The components of lease expense were as follows (in thousands):

	Three Months Ended June 30, 2019	Six Months Ended June 30, 2019
Operating lease cost	$ 756	$ 1,510
Variable and short-term lease cost	313	661
Total lease cost	$ 1,069	$ 2,171

Other information related to leases was as follows (in thousands, except lease term and discount rate):

	Six Months Ended June 30, 2019
Supplemental cash flow information	
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ 1,814
Right-of-use assets obtained in exchange for lease obligations:	
Operating leases	$ 136
Weighted average remaining lease term	
Operating leases	7.7
Weighted average discount rate	
Operating leases	6.4%

Future minimum lease payments under non-cancellable leases as of June 30, 2019 were as follows (in thousands):

	Operating Leases
2019 (excluding the six months ended June 30, 2019)	$ 1,859
2020	3,153
2021	3,101
2022	3,094
2023	3,043
Thereafter	11,204
Total future minimum lease payments	25,454
Less imputed interest	(5,654)
Total	$ 19,800

Reported as of June 30, 2019:	Operating Leases
Accrued and other current liabilities	$ 2,223
Operating lease liabilities, noncurrent	17,577
Total	$ 19,800

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As of December 31, 2018, the future minimum commitments under the Company's non-cancelable operating leases and capital leases are as follows (in thousands):

	Operating Leases
2019	$ 3,618
2020	3,113
2021	3,059
2022	3,056
2023	3,049
Thereafter	11,437
Total future minimum lease payments	$ 27,332

Note 11. Japan pension plan

The pension liability related to the Company's Retirement Allowance Plan ("RAP") in Japan as of June 30, 2019 was $4.2 million, of which $0.6 million was recorded in accrued and other current liabilities and the remainder in other noncurrent liabilities on the Company's condensed consolidated balance sheet. The pension liability related to the Company's RAP in Japan as of December 31, 2018 was $4.3 million, of which $0.3 million, was recorded in accrued and other current liabilities and the remainder in other noncurrent liabilities on the Company's condensed consolidated balance sheet.

Net periodic pension cost associated with this plan was immaterial in the three and six months ended June 30, 2019 and 2018.

Note 12. Commitments and contingencies

Litigation

From time to time, the Company is subject to various claims and legal proceedings, either asserted or unasserted, that arise in the ordinary course of business. The Company accrues for legal contingencies if the Company can estimate the potential liability and if the Company believes it is probable that the case will be ruled against it. If a legal claim for which the Company did not accrue is resolved against it, the Company would record the expense in the period in which the ruling was made. The Company believes that the likelihood of an ultimate amount of liability, if any, for any pending claims of any type (alone or combined) that will materially affect the Company's financial position, results of operations or cash flows is remote. The ultimate outcome of any litigation is uncertain, however, and unfavorable outcomes could have a material negative impact on the Company's financial condition and operating results. Regardless of outcome, litigation can have an adverse impact on the Company because of defense costs, negative publicity, diversion of management resources and other factors.

In January 2010, Finisar Corporation, or Finisar, filed a complaint in the U.S. District Court for the Northern District of California, or the Court, against Source Photonics, Inc., MRV Communications, Inc., Oplink Communications, Inc. and the Company, or collectively, the co-defendants. In the complaint Finisar alleged infringement of certain of its U.S. patents. In 2010 the Company filed an answer to the complaint and counterclaims, asserting two claims of patent infringement and additional claims. The Court dismissed without prejudice all co-defendants (including the Company) except Source Photonics, Inc., on grounds that such claims should have been asserted in four separate lawsuits, one against each defendant. This dismissal does not prevent Finisar from bringing a new similar lawsuit against the Company. In 2011 the Company and Finisar agreed to suspend their respective claims and in 2012 the Company and Finisar further agreed to toll their respective claims. While there has been no action on this matter since 2012, the Company is currently unable to predict the outcome of this dispute and therefore cannot determine the likelihood of loss nor estimate a range of possible loss.

In December 2016, the Company was served with a lawsuit filed by Lestina International Ltd. ("Lestina"), in Santa Clara County, CA. The lawsuit is regarding a dispute of approximately $3.0 million related to purchase orders for the Company's Low Speed Transceiver Products that was soon thereafter sold by the Company to APAT OE in January 2017. The purchase orders in question were included in the asset sale and were assumed liabilities by the purchaser of the business. The parties engaged in extensive negotiations and in January 2019, the parties agreed to a proposed settlement which was placed on the record of the Superior Court of Santa Clara County agreeing that NeoPhotonics Dongguan Co., Ltd. ("NeoDongguan") (the Company's wholly owned subsidiary located in China) would pay to Lestina a total of $2.2 million. Upon Lestina's receipt of full payment, Lestina will ship to NeoDongguan the remaining parts from the original purchase orders. The Company has

NeoPhotonics Corporation
Notes to Condensed Consolidated Financial Statements (Continued)
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agreed to be a guarantor for NeoDongguan on the payment obligation to Lestina. $1.2 million of the $2.2 million settlement was paid in February 2019 and the balance of $1.0 million was paid in June 2019.

In April 2018, APAT OE filed a lawsuit in the Qianhai Court in Shenzhen, China against NeoPhotonics (China) Co., Ltd. and NeoPhotonics Dongguan Co. Ltd. (collectively "NeoChina") and NeoPhotonics Corporation with a claim of approximately $20.0 million. The lawsuit is in reference to the sale of the low speed transceiver business to APAT OE from NeoChina. APAT OE claims that the business has been losing money and that APAT OE was not given all of the information about the business they purchased prior to signing the Asset Purchase Agreement. In May 2018, counsel on behalf of NeoChina filed a motion objecting to the jurisdiction, claiming that the proper jurisdiction for any dispute between these parties is the Shenzhen Court of International Arbitration (or the "Arbitration Court") and the proper parties to this dispute are NeoChina and APAT OE, pursuant to the Asset Purchase Agreement signed by APAT OE and NeoChina (or the "APA"). In June 2018 a hearing was held in the Qianhai Court in Shenzhen, China and in August 2018 the Court ruled in favor of APAT OE. In October 2018, a hearing was held in the Intermediate Court of Shenzhen (or the "Intermediate Court") on an appeal which was filed by NeoChina and in November 2018 the Intermediate Court ruled in favor of NeoChina and dismissed in totality the litigation against NeoChina, ruling that arbitration was the proper forum for such dispute resolution between the parties. The litigation continues against NeoPhotonics Corporation in Intermediate Court, where NeoPhotonics Corporation claims that there is no existing contract between APAT OE and NeoPhotonics Corporation and therefore there is no basis for litigation. The Company is unable to predict the outcome of this matter and is not currently aware of the precise amount of the ongoing claim by APAT against the remaining defendant, NeoPhotonics Corporation, in this lawsuit.

In December 2018, APAT OE officially filed claims through two lawsuits against NeoChina, NeoPhotonics Corporation Limited Hong Kong (or NeoHK), Novel Centennial Limited BVI (or NeoBVI) and NeoPhotonics Corporation in the Intermediate Court in addition to a pre-trial preservation order. On the same day the Court issued the order to preserve approximately $29.0 million of NeoChina assets, which is the approximate amount of the revised claims by APAT OE against all defendants in the first lawsuit. The temporary pre-trial preservation order was made simultaneously to the filing of the two lawsuits, but the defendants were not served or aware of the lawsuit until later in January, 2019. In the first lawsuit, the legal claims are the same as the ones APAT OE filed on April 21, 2018 in Qianhai Court in Shenzhen, China (as described above). The difference is that instead of distributing claims in separate cases, APAT OE has combined its claims to one single case and added the additional defendants of NeoHK and NeoBVI and increased the claimed damages to approximately $29.0 million. In the second lawsuit, the claims are new and related to the alleged new issues related to a contract manufacturer located in the Philippines and claiming damages in the amount of RMB 50.9 million (approximately $7.6 million). APAT OE claims that the defendants have interfered with APAT OE’s ability to sign an engagement agreement with the contract manufacturer. Defendants believe this dispute is related to and should be under the jurisdiction that was agreed to in the APA, and therefore should be properly transferred to the Shenzhen Court of International Arbitration. In March 2019 the Shenzhen Intermediate Court assigned a judge for the two lawsuits, but no hearing date has been set yet. The Company is unable to predict the outcome of this matter.

In February 2019, NeoChina filed a case in the Qianhai Court in Shenzhen, China against APAT OE and Zhejiang Merchants Property Insurance Company for losses and damages caused to NeoChina from APAT OE’s previously granted property preservation. The claim is for approximately RMB 350,000 (approximately $52,000) in damages and legal fees and was heard in May, 2019. A ruling has not yet been made by the Court and the Company is unable to predict the outcome of this matter.

APAT Arbitration

In June 2017, APAT OE filed an arbitration claim in the Shenzhen Court of International Arbitration (or the Arbitration Court) against NeoChina (collectively both of the Company’s China subsidiaries), claiming that approximately $1.5 million of the inventory that was sold to APAT OE by NeoChina in an Asset Purchase Agreement executed between the parties on December 14, 2016 was aged inventory and of no value. The arbitration was heard in the Arbitration Court in August 2017. In October 2017, NeoChina was informed that it was successful in the defense of the dispute and was also successful in its counterclaim against APAT OE. NeoChina was awarded approximately RMB 700,000 (approximately $110,000) in compensatory damages and attorney fees as well as having the approximately $1.5 million claim against it rejected in its entirety.

In April 2018, APAT OE filed a Notice of Judicial Review of the arbitration judgment in the Shenzhen Intermediate Court in Shenzhen, China. The case was heard in May 2018, and NeoChina was successful in disputing the Judicial Review, which means that the arbitration judgment against APAT OE and in favor of NeoChina stands.

NeoPhotonics Corporation
Notes to Condensed Consolidated Financial Statements (Continued)
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In July 2018, NeoChina applied together to the Shenzhen Intermediate Court for enforcement of the previous arbitration ruling because APAT OE had refused to perform the arbitral award. In October 2018, the Court enforced the award officially closing this arbitration matter.

In July 2018, NeoChina filed an arbitration claim against APAT OE in the Arbitration Court claiming approximately USD$12.0 million in damages as related to liability under the APA. NeoChina also was granted a property preservation of APAT OE’s bank accounts. In February 2019 NeoChina applied to the Arbitration Court to reduce the claim to USD $7.1 million according to the evidence of confirmation requests received by NeoChina. A hearing date has been set for August, 2019. The Company is unable to predict the outcome of this matter.

In November 2018, APAT OE filed an additional arbitration claim against NeoChina and NeoPhotonics Corporation claiming approximately USD $7.8 million for liability under the APA. In March 2019, NeoChina filed a response and counterclaim against APAT OE including a claim for attorney fees in the amount of RMB 810,000 (approximately $121,000). This matter is scheduled to be heard in the same hearing as the NeoChina arbitration claim referenced above, which is currently schedule for August, 2019. The Company is unable to predict the outcome of this matter.

Indemnifications

In the normal course of business, the Company enters into agreements that contain a variety of representations and warranties and provide for general indemnification. The Company’s exposure under these agreements is unknown because it involves claims that may be made against the Company in the future, but have not yet been made. To date, the Company has not paid any claims or been required to defend any action related to its indemnification obligations. However, the Company may record charges in the future as a result of these indemnification obligations.

In November 2016, Oyster Communications, Inc. filed nine patent lawsuits against several defendants in the U.S. District Court for the Eastern District of Texas, including one against Cisco Systems, Inc. ("Cisco"). One defendant successfully transferred their case to the U.S. District Court for the Northern District of California. Additional defendants requested venue changes are still pending. The Company was not named as a defendant in any of the lawsuits. In July 2017, Cisco notified the Company that it would be seeking indemnification from the Company for claims against Cisco arising from the lawsuits and the parties engaged in discussions and negotiations. In September 2018, the Company and Cisco signed a settlement agreement under which the Company agreed to pay to Cisco $300,000, which was paid in January 2019, and $150,000 in product credits to be applied during calendar year 2019. This settlement resolves Cisco's indemnification claims against the Company in this matter.

Penalty Payment Derivative

In connection with a private placement transaction with Joint Stock Company "Rusnano" (formerly Open Joint Stock Company “RUSNANO"), or Rusnano, in 2012, the Company agreed to certain performance obligations including establishing a wholly-owned subsidiary in Russia and making a $30.0 million investment commitment (the "Investment Commitment") towards the Company’s Russian operations, which could be partially satisfied by cash and/or non-cash investment inside or outside of Russia and/or by way of non-cash asset transfers.

The Rights Agreement as amended in 2015 (the "Amended Rights Agreement") limited the maximum amount of penalties and/or exit fee (the "Rusnano Payment") to be paid by the Company to $5.0 million in the aggregate and allowed such payment to be reduced when certain milestones were met over time. The Amended Rights Agreement also provided for an updated investment plan for the Company’s Russian subsidiaries that included non-cash transfer of licensing rights to intellectual property, non-cash transfers of existing equipment and commitments to complete the remaining investment milestones through 2019.

As of December 31, 2018, the remaining Investment Commitment was approximately $6.5 million to be invested at any time on or before December 31, 2019. At any point before December 31, 2019, the Company could have elected to pay a $2.0 million exit fee to terminate any remaining obligations associated with the Investment Commitment.

Rusnano had non-transferable veto rights over the Company’s Russian subsidiaries’ annual budget during the investment period and had the right to approve non-cash asset transfers to be made in satisfaction of the Investment Commitment. The Company accounted for the Rusnano Payment as an embedded derivative instrument. The fair value of the penalty payment derivative has been estimated at the date of the original common stock sale (April 27, 2012) and at each subsequent balance sheet date using a probability-weighted discounted future cash flow approach using unobservable inputs, which are classified as

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Notes to Condensed Consolidated Financial Statements (Continued)
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Level 3 within the fair value hierarchy. The primary inputs for this approach include the probability of achieving the Investment Commitment and a discount rate that approximates the Company's incremental borrowing rate. After the initial measurement, changes in the fair value of this derivative are recorded in other income (expense), net. The estimated fair value of this derivative was $2.0 million as of December 31, 2018. As of December 31, 2018, the derivative was reported within Accrued and other current liabilities on the Company's condensed consolidated balance sheets. See Note 7.

In December 2018, the Company signed a definitive agreement with Rusnano to sell the Company's 100% interest in NeoPhotonics Corporation, LLC, the subsidiary for the Company's manufacturing operations in Russia, for approximately book value. The purchase price agreed to be paid by Rusnano consisted of approximately $3.0 million in cash and $1.0 million in cancellation of the remaining penalty payment that would otherwise have been owed to Rusnano as consideration for the Company's obligations to provide manufacturing process transition to NeoPhotonics Corporation, LLC.

In April 2019, the Company completed the sale of 100% interest in the operations of NeoPhotonics Corporation, LLC, the Company's manufacturing operations in Russia to Joint Stock Company Rusnano, a related party. In connection with the sale, the Company received $2.0 million in cash, settled the $2.0 million exit fee and recognized a gain on asset sale of $0.8 million during the three and six months ended June 30, 2019.

Note 13. Stockholders' equity

Common Stock

As of June 30, 2019, the Company had reserved 8,554,197 common stock for issuance under its equity incentive plans and 1,820,744 common stock shares for issuance under its employee stock purchase plan.

Accumulated Other Comprehensive Income (loss)

The components of accumulated other comprehensive income (loss), net of related taxes, were as follows (in thousands):

	Foreign Currency Translation Adjustments	Defined Benefit Pension Plan Adjustment	Total Accumulated Other Comprehensive Income (loss)
Balance as of December 31, 2018	$ (6,897)	$ (229)	$ (7,126)
Other comprehensive income (loss), net of taxes of zero and reclassifications	1,147	—	1,147
Balance as of June 30, 2019	$ (5,750)	$ (229)	$ (5,979)

No material amounts were reclassified out of accumulated other comprehensive income during the three and six months ended June 30, 2019 and 2018 for realized gains or losses on available-for-sale securities.

Accumulated Deficit

Approximately $9.0 million of the Company's retained earnings within its total accumulated deficit as of December 31, 2018 was subject to restriction due to the fact that the Company's subsidiaries in China are required to set aside at least 10% of their respective accumulated profits each year end to fund statutory common reserves as well as allocate a discretional portion of their after-tax profits to their staff welfare and bonus fund.

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Notes to Condensed Consolidated Financial Statements (Continued)
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Note 14. Restricted Net Assets

The Company’s consolidated subsidiaries operating in China and Japan are restricted from transferring funds or assets to its parent company in the form of cash dividends, loans or advances. As of June 30, 2019 and December 31, 2018, the Company's consolidated subsidiaries had $21.6 million and $20.9 million, respectively, of restricted net assets, which consisted of (in thousands):

	June 30, 2019	December 31, 2018
Cash restricted in China as a result of ongoing litigation and unfulfilled government grants	$ 11,497	$ 11,018
China earnings restricted to fund statutory common reserves in China as well as allocate a discretional portion of the Chinese subsidiaries' after-tax profits to their staff welfare and bonus fund	9,140	9,005
Loan agreements in Japan requiring local subsidiaries to maintain minimum net asset levels	926	909
Total restricted net assets in the Company's consolidated subsidiaries	$ 21,563	$ 20,932

Note 15. Stock-based compensation

The following table summarizes the stock-based compensation expense recognized in the three and six months ended June 30, 2019 and 2018 (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Cost of goods sold	$ 609	$ 629	$ 1,210	$ 1,279
Research and development	787	829	1,668	1,602
Sales and marketing	599	642	1,277	1,580
General and administrative	1,010	1,039	2,188	2,025
	$ 3,005	$ 3,139	$ 6,343	$ 6,486

Determining Fair Value

The Company estimated the fair value of certain stock-based awards using a Black-Scholes-Merton valuation model with the following assumptions:

	Three Months Ended June 30,		Six Months Ended June 30,	
Stock options	2019	2018	2019	2018
Weighted-average expected term (years)	6.00	6.02	6.00	6.02
Weighted-average volatility	67%	66%	67%	65%
Risk-free interest rate	2.27%	2.62%	2.27%	2.27% - 2.62%
Expected dividends	—%	—%	—%	—%
Stock appreciation units				
Weighted-average expected term (years)	1.55	2.00	1.61	2.04
Weighted-average volatility	62%	67%	63%	67%
Risk-free interest rate	2.27%-2.44%	1.73% - 2.39%	2.27%-2.63%	1.03%-2.39%
Expected dividends	—%	—%	—%	—%
ESPP				
Weighted-average expected term (years)	0.69	0.71	0.69	0.71
Weighted-average volatility	60%	61%	60%	61%
Risk-free interest rate	2.36%-2.59%	1.20% - 1.93%	2.36%-2.59%	1.20%-1.93%
Expected dividends	—%	—%	—%	—%

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Notes to Condensed Consolidated Financial Statements (Continued)
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Stock Options and Restricted Stock Units (RSUs)

The following table summarizes the Company’s stock option and RSU activity, excluding market-based RSUs, during the six months ended June 30, 2019:

	Stock Options		Restricted Stock Units	
	Number of Shares	Weighted Average Exercise Price	Number of Units	Weighted Average Grant Date Fair Value
Balance as of December 31, 2018	3,202,745	$ 5.73	2,486,028	$ 7.87
Granted	84,336	4.33	332,034	5.28
Exercised/Converted	(166,071)	3.45	(423,229)	7.12
Cancelled/Forfeited	(158,011)	6.16	(186,353)	7.73
Balance as of June 30, 2019	2,962,999	5.80	2,208,480	7.63

At June 30, 2019, the Company had $1.2 million of unrecognized stock-based compensation expense for stock options, net of estimated forfeitures, which will be recognized over the remaining weighted-average period of 1.3 years. At June 30, 2019, the Company had $9.8 million of unrecognized stock-based compensation expense for RSUs, excluding market-based RSUs, net of estimated forfeitures, which will be recognized over the remaining weighted-average period of 1.8 years.

Market-based Restricted Stock Units

As of June 30, 2019, the Company has granted 705,000 shares of market-based RSUs to certain employees. These RSUs will vest if the 30-day weighted average closing price of the Company's common stock is equal to or greater than certain price targets per share and the recipients remain in continuous service with the Company through such service period. No market-based RSUs have vested and 58,500 market-based RSUs have been cancelled through June 30, 2019.

The weighted average grant-date fair value per share of market-based RSUs granted during 2018 was approximately $5.82 per share. As of June 30, 2019, the Company had $1.9 million of unrecognized stock-based compensation expense for these RSUs, net of estimated forfeitures, which will be recognized over the remaining weighted-average period of 1.14 years. The fair value of market-based RSUs was measured on the grant date using Monte Carlo simulation model with the following assumptions:

Market-based restricted stock units	Assumptions Used
Weighted-average volatility	66%
Risk-free interest rate	2.79%
Expected dividends	—%

Stock Appreciation Units (SAU)

SAUs are liability classified share-based awards. Outstanding SAUs are re-measured each reporting period at fair value until settlement. The Company did not grant any SAUs during the three and six months ended June 30, 2019 or 2018. As of June 30, 2019 and December 31, 2018, there were 189,739 and 192,872 SAUs outstanding, respectively, and related SAU liabilities were $0.3 million and $0.6 million, respectively.

Employee Stock Purchase Plan (ESPP)

The Company issued 253,718 shares under the ESPP during the six months ended June 30, 2019. As of June 30, 2019, there was $0.2 million of unrecognized stock-based compensation expense for employee stock purchase rights that will be recognized over the remaining offering period through November 2019. In June 2019, the Company adopted an Amendment and Restatement of the ESPP to increase the number of shares authorized for issuance under the ESPP by an additional 1,500,000 shares and to eliminate the annual "'evergreen" automatic increase provisions.

Note 16. Income taxes

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Notes to Condensed Consolidated Financial Statements (Continued)
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The provision for income taxes in the periods presented is based upon the income (loss) before income taxes (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Income tax benefit (provision)	$ 205	$ (1,080)	$ 35	$ (1,718)

The Company’s income tax (provision) benefit in the three and six months ended June 30, 2019 and 2018 was primarily related to income taxes of the Company’s non-U.S. operations.

The Company conducts its business globally and its operating income is subject to varying rates of tax in the U.S., China and Japan. Consequently, the Company’s effective tax rate is dependent upon the geographic distribution of its earnings or losses and the tax laws and regulations in each geographical region. Historically, the Company has experienced net losses in the U.S. and in the short term, expects this trend to continue.

Due to historical losses in the U.S., the Company has a full valuation allowance on its U.S. federal and state deferred tax assets. Management continues to evaluate the realizability of deferred tax assets and the related valuation allowance. If management's assessment of the deferred tax assets or the corresponding valuation allowance were to change, the Company would record the related adjustment to income during the period in which management makes the determination.

On December 22, 2017, the Tax Cuts and Jobs Act (the “TCJA”) was enacted which, among other things, lowered the U.S. federal corporate income tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred and creates Global Intangible Low Taxed Income ("GILTI") to tax certain foreign sourced earnings. As of December 31, 2018, the Company has concluded the accounting under the TCJA within the time period set forth in Staff Accounting Bulletin 118. There was no provision impact of TCJA on the 2018 financial statements due to full valuation allowance on US deferred tax assets. In addition, the Company has elected to treat GILTI inclusion accounting impact as a current period expense. As of June 30, 2019, the TCJA has no material impact on the financial statements due to full valuation allowance on US deferred tax assets.

The Company adopted ASU 2016-16 on a modified retrospective basis effective January 1, 2018. Upon adoption of this standard on January 1, 2018, the Company recorded $1.8 million to accumulated deficit balance for intra-entity transfer of an asset other than inventory in prior years.

As of June 30, 2019, there were no material changes to either the nature or the amounts of the uncertain tax positions previously determined for the year ended December 31, 2018.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the unaudited condensed consolidated financial statements and the related notes thereto included elsewhere in this Quarterly Report on Form 10-Q for the period ended June 30, 2019 and the audited consolidated financial statements and notes thereto and management's discussion and analysis of financial condition and results of operations for the year ended December 31, 2018 included in our Annual Report on Form 10-K. References to "NeoPhotonics," "we," "our," and "us" are to NeoPhotonics Corporation unless otherwise specified or the context otherwise requires.

This Quarterly Report on Form 10-Q for the period ended June 30, 2019 contains "forward-looking statements" that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements. The statements contained in this Quarterly Report on Form 10-Q for the period ended June 30, 2019 that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Terminology such as "believe," "may," "might," "objective," "estimate," "continue," "anticipate," "intend," "should," "plan," "expect," "predict," "potential," or the negative of these terms or other similar expressions is intended to identify forward-looking statements.

We have based these forward-looking statements largely on our current expectations and projections about future events and industry and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. Such forward-looking statements are subject to risks, uncertainties and other important factors that could cause actual results and the timing of events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those identified in "Part II—Item 1A. Risk Factors" below, and those discussed in the sections titled "Special Note Regarding Forward-Looking Statements" and "Risk Factors" included in our Annual Report on Form 10-K for the year ended December 31, 2018, as filed with the SEC on March 8, 2019. Furthermore, such forward-looking statements speak only as of the date of this report. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances after the date of such statements.

Business Overview

We develop, manufacture and sell optoelectronic products that transmit, receive, modify and switch high speed digital optical signals for communications networks and related applications. Our products address the highest speed over distance applications and are designed for 100G and beyond data rates, such as at 200G, 400G, 600G and 800G per second rates on a single wavelength for telecom and hyper-scale data center, or content provider, networks. We sell our products to the world's leading network equipment manufacturers, including Ciena Corporation ("Ciena"), Cisco Systems, Inc., Fiberhome Technologies, Ltd. ("Fiberhome"), Huawei Technologies Co., Ltd. and its affiliate HiSilicon Technologies, Ltd. (collectively "Huawei") and Nokia (formerly Alcatel-Lucent, which was acquired by Nokia in January 2016). These companies are among our largest customers and a focus of our strategy due to their leading market positions.

Over the last decade we have been a consistent technology innovator in high speed digital optics products and applications, steadily introducing new capabilities and solutions that enable leading market positions for our customers and for our products that they use.

We have research and development and wafer fabrication facilities in San Jose and Fremont, California and in Tokyo, Japan that coordinate with our research and development and manufacturing facilities in Dongguan, Shenzhen and Wuhan, China and Ottawa, Canada. We use proprietary design tools and design-for-manufacturing techniques to align our design process with our precision nanoscale, vertically integrated manufacturing and testing. Today, we believe we are one of the highest volume photonic integrated circuit ("PIC") manufacturers in the world.

Our High Speed Products for data rates of 100G, 400G, 600G and beyond use our Advanced Hybrid Photonic Integration technology. These products using our advanced technology are the core focus of our strategy, and we believe that they are an important competitive differentiator. Our strategic focus on high speed components and coherent solutions recognizes the explosion of optics in converged edge network applications and we are expanding to new markets ranging from data centers to cable television to autonomous vehicle navigation. We align our product group reporting to "High Speed Products", which includes products designed for 100G and beyond communications applications, and "Network Products and Solutions," which comprises all products designed for applications that do not have data rates at or above 100G.

For coherent transport from data center interconnect through long-haul, we are a vertically integrated designer and manufacturer of the highest speed optical components which we sell to the merchant market and which we incorporate into our own module level products. For applications inside the data center, we are focused on supplying the highest value laser, receiver and optical IC solutions to the merchant market. As disaggregation of optical equipment continues to gain momentum, we believe that high performance merchant components capability will be an increasingly important differentiator.

We recently introduced a number of new products for 400G and 600G systems. We see strength in our design wins, most notably across all three of our leading coherent components, including our ultra-narrow linewidth tunable laser, 400G and 600G micro coherent driver-modulator and coherent receiver. Our ultra-narrow linewidth lasers are a critical element in achieving these speeds because they have the narrowest linewidth and minimal phase noise for the higher order modulation schemes - or data coding methods - that are required. Our laser, receiver and modulator work together to enable the highest performance solutions and we offer them as both a full solution and as discrete elements to customers who demand the highest performance and whose systems operate at the highest data rates. We are currently shipping these products to customers to meet their system development needs and we are now ramping manufacturing volumes as 400G and 600G demands grow.

Our coherent module solutions leverage our high performance and high speed components. Our CFP-DCO 100G coherent module is shipping to customers deploying links in metro networks and switch/router connection applications where high signal clarity is key. We further demonstrated at OFC in March 2019 our 100G coherent CFP2-DCO module.

Our new client side and data center product offerings are focused on 400G applications. Our 53GBaud Linear Optical Component product family includes PAM4 capable optical components for 100G and 400G cloud data center and other client applications, including drivers and EML lasers for transmitters plus photodetectors and trans-impedance amplifiers for receivers. These provide the optical content necessary for single wavelength 100G PAM4 and four wavelength 400G PAM4 transceivers for 2-10km distances inside data centers, such as DD-QSFP and OSFP. We have also introduced high-power, non-hermetic laser optical sources for shorter reach 100G and 400G Silicon Photonics based transceivers for data center applications.

While supporting our customers' current needs with these advanced components, we are also preparing for their next generation needs by taking steps to integrate and reduce the size of the optics by approximately a factor of two while maintaining the high performance necessary for 400G, 600G and 800G per wavelength. We recently introduced and demonstrated our Coherent Optical Subassembly, or COSA, which integrates our 64GBaud coherent driver-modulator and our coherent receiver in a compact package that occupies less than half the space of the equivalent discrete components. Alongside this, we introduced and are now shipping in limited availability our “Nano” ultra-narrow linewidth external cavity integrable tunable laser assembly, similarly reduces the size in half while featuring the industry leading linewidth and power consumption of our external cavity laser.

Long Haul, Metro and high density data center interconnect networks also leverage our multi-cast switches to boost network capacity while supporting bandwidth-hungry services. These switches enable contentionless reconfiguration to maximize fiber utilization and capacity growth.

Finally, we are deploying a range of both passive module solutions and long reach laser solutions for 5G network applications, for which network deployments are expected to ramp in 2019 and 2020.

In 2017, the market situation for 100G and above product deployments in China materially affected our results. Demand from our China-based customers was very strong in 2016 with our customers at that time providing optimistic forecasts for 2017 in anticipation of new tenders for provincial and metro 100G system deployments from the leading Chinese telecom carriers. However, tender awards from the China telecom carriers were slower than expected in 2017 and into 2018.

Due to tender awards by Chinese telecom carriers for provincial development and other smaller tender awards we experienced a more normalized demand environment in China beginning in the second quarter of 2018 and continuing through the rest of the year and into 2019.

At the same time, through 2018 and continuing into 2019 we experienced increased demand for certain of our High Speed Products that are used in metro and data center interconnect (DCI) applications in North America and Europe. DCI deployments in North America were particularly strong, and our products for these applications were shipped to contract manufacturers for our system manufacturer customers.

Our expectations were that we would see the same demand pattern in the second quarter of 2019 and we expected volume growth for our High Speed Products to continue.

On May 16, 2019, however, the U.S. Commerce Department's Bureau of Industry and Security, or BIS, added Huawei and certain affiliates to the BIS Entity List with an effective date of May 21, 2019. This denies Huawei the ability to purchase products, software and technology that are subject to U.S. Export Administration Regulations (EAR). To ensure compliance, NeoPhotonics immediately suspended shipments to Huawei and began a systematic assessment of its products sold to Huawei and its affiliate, HiSilicon, to determine how they are, or are not, subject to the restrictions resulting from the ban. This had an immediate impact on the level of revenue shipments in the quarter, as in general Huawei accounts for slightly under one half of NeoPhotonics revenue.

After consulting with legal and technical experts, NeoPhotonics determined that certain of its products, notably its foreign products, are not subject to EAR regulations and may be lawfully sold to Huawei and its affiliates. Each product must be reviewed individually in a detailed, specific and time consuming process, and these reviews are ongoing. Consequently, we have reset our business approach with Huawei to consist of only products that have been determined to be not subject to US EAR. During 2018, non-EAR products were over half of NeoPhotonics Huawei revenue. As a result some shipments resumed late in the quarter.

On June 29, 2019, President Trump announced that US firms would be allowed to sell to Huawei while trade negotiations were ongoing. Administration spokespersons subsequently clarified that companies could apply for temporary export licenses for products subject to EAR and that these licenses might be granted if the product was deemed not to be a risk to national security. NeoPhotonics has begun the process of applying for licenses for certain technology subject to EAR, but at the time of this filing no licenses have yet been granted.

Our revenue and gross margins may fluctuate materially from quarter to quarter due to changes in government regulations and Huawei demand, as well as depending on a variety of other factors including customer demand fluctuations, ramp-up of new product introductions, average selling price changes, product mix, volume, manufacturing utilization and ongoing manufacturing process improvements.

Revenue was $81.7 million in the three months ended June 30, 2019, compared to $81.1 million in the same period in 2018 primarily due to volume growth in the Americas, including through off-shore contract manufacturers, offset by a decrease in China due to the suspension of shipments to Huawei after their placement on the Entities List. Our gross profit was 19% of revenue in the three months ended June 30, 2019, compared to 19% of revenue in the three months ended June 30, 2018. Improvement from cost reductions, favorable product mix and lower standard cost variances were offset by annual price reduction and inventory write-down related to Huawei ban."

In the three months ended June 30, 2019, High Speed Products represented approximately 89% of total revenue, or $72.9 million and Network Products and Solutions represented approximately 11% of total revenue, or $8.8 million. In the three months ended June 30, 2018, High Speed Products were 86% of total revenue, or $69.8 million and Network Products and Solutions represented approximately 14% of total revenue, or $11.3 million.

Critical accounting policies and estimates

Other than the policy changes disclosed in Note 1 in Notes to Condensed Consolidated Financial Statements in Item 1, Part I of this Report, there have been no material changes to our critical accounting policies and estimates during the three and six months ended June 30, 2019 from those disclosed in Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on Form 10-K for the year ended December 31, 2018.

Results of Operations

Revenue

Our business is focused on the highest speed digital optics and signal processing communications applications. In the three months ended June 30, 2019, our High Speed Products for data rates of 100G and beyond comprised 89% of our revenues.

We sell substantially all of our products to original equipment manufacturers ("OEMs") and their contract manufacturers. Revenue is recognized upon transfer of control of the product to the buyer. We price our products based on market and competitive conditions and may periodically reduce the price of our products as market and competitive conditions change or as manufacturing costs are reduced. Our first quarter revenue is typically seasonally lower than the rest of the year primarily due to the impact of annual price negotiations with customers that occur at the end of the prior year and lower capacity utilization during the holidays in China. However, this historical pattern should not be considered a reliable indicator of our future revenue or financial performance. Our sales transactions to customers are denominated primarily in U.S. dollars, with some portions in Chinese Renminbi ("RMB") or Japanese Yen ("JPY"). In this quarter, Huawei and certain affiliates were added to the BIS Entity List. We ceased all shipments to Huawei before the ban became effective and resumed shipment in late

June of certain products that have been determined by NeoPhotonics to be not subject to US EAR. We expect this Huawei ban to continue to affect our revenue and operations.

	Three Months Ended June 30,				Six Months Ended June 30,			
(in thousands)	2019	2018	$ Change	% Change	2019	2018	$ Change	% Change
Total revenue	$ 81,690	$ 81,102	$ 588	1%	$ 161,056	$ 149,688	$11,368	8%

We generate most of our revenue from a limited number of customers. Huawei has consistently been our largest customer, which was again the case in the three months ended June 30, 2019, as it accounted for approximately 36% of our revenue. One other customer was greater than 10% of our revenue for the three months ended June 30, 2019. In the three months ended June 30, 2018, Huawei accounted for approximately 43% of our revenue and two other customers were each greater than 10% of our revenue.

In addition to Huawei, we have several large customers which may or may not exceed 10% of revenue in any given quarter. After Huawei, our next four largest customers accounted for an additional 48% and 47% of our revenue in the three months ended June 30, 2019 and 2018, respectively.

We expect that a significant portion of our revenue will continue to be derived from a limited number of customers. As a result, the loss of, or a significant reduction in, orders from any of our key customers would materially affect our revenue and results of operations. Similarly, our accounts receivable are from a limited number of customers. As of June 30, 2019, four customers each accounted for more than 10% of total accounts receivable and as of December 31, 2018, two customers each accounted for more than 10% of total accounts receivable.

Three Months Ended June 30, 2019 Compared With Three Months Ended June 30, 2018

Revenue increased $0.6 million, or 1%, in the three months ended June 30, 2019, compared to the same period in 2018, reflecting an increase in volume. In the three months ended June 30, 2019, High Speed Products represented approximately 89% of total revenue, compared to 86% of total revenue in the same period in 2018, while Network Products and Solutions represented approximately 11% of total revenue in the three months ended June 30, 2019, compared to approximately 14% of total revenue in the same period a year ago. In the three months ended June 30, 2019, revenue from China, Americas and rest of the world, based on the ship to location requested by the customer, was 48%, 24% and 28% of total revenue, respectively, compared to 57%, 22% and 21% of total revenue, respectively, in the same period in 2018.

Six Months Ended June 30, 2019 Compared With Six Months Ended June 30, 2018

Revenue increased $11.4 million, or 8%, in the six months ended June 30, 2019, compared to the same period in 2018, as described in "Business Overview" above reflecting a recovery in volume. In the six months ended June 30, 2019, High Speed Products represented approximately 89% of total revenue, compared to 86% of total revenue in the same period in 2018, while Network Products and Solutions represented approximately 11% of total revenue in the six months ended June 30, 2019, compared to approximately 14% of total revenue in the same period a year ago. In the six months ended June 30, 2019, revenue from China, Americas and rest of the world, based on the ship to location requested by the customer, was 52%, 21% and 27% of total revenue, respectively, compared to 59%, 20% and 21% of total revenue, respectively, in the same period in 2018.

Cost of Goods Sold and Gross Profit

Our cost of goods sold consists primarily of the cost to produce wafers and to manufacture and test our products. Additionally, our cost of goods sold generally includes stock-based compensation, write-downs of excess and obsolete inventory, amortization of certain purchased intangible assets, depreciation, acquisition-related fair value adjustments, restructuring charges, warranty costs, royalty payments, logistics and allocated facilities costs.

Gross profit as a percentage of total revenue, or gross margin, has been and is expected to continue to be affected by a variety of factors including the introduction of new products, production volume, the mix of products sold, inventory changes, changes in the average selling prices of our products, changes in the cost and volumes of materials purchased from our suppliers, changes in labor costs, changes in overhead costs or requirements, stock-based compensation, write-downs of excess and obsolete inventories and warranty costs. In addition, we periodically negotiate pricing with certain customers which can cause our gross margins to fluctuate, particularly in the quarters in which the negotiations occurred. With the Huawei ban, $3.6 million of Huawei specific inventory subject to the U.S. EAR has been written down at the end of June 30, 2019.

As a manufacturing company, our margins are sensitive to changes in volume and factory utilization. Gross profit in the three months ended June 30, 2019 improved 1% when compared to the same period 2018, which was driven by cost reductions and was partially offset by annual price reductions and inventory write-downs related to the Huawei ban.

The China government has recently imposed tariffs affecting products manufactured in the United States. Certain products manufactured in our U.S. operations have been included in the tariffs imposed on imports into China from the United States. Going forward, we expect these tariffs, as currently applied, will increase our cost of goods sold by as much as one percentage point for as long as the tariffs remain in place.

(in thousands, except percentages)	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	$ Change	% Change	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018	$ Change	% Change
Cost of goods sold	$ 66,015	$ 65,630	$ 385	1%	$ 129,644	$ 125,034	$ 4,610	4%
Gross profit	$ 15,675	$ 15,472	$ 203	1%	$ 31,412	$ 24,654	$ 6,758	27%

	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Gross profit as a % of revenue	19%	19%	20%	16%

Three Months Ended June 30, 2019 Compared With Three Months Ended June 30, 2018

Gross profit increased $0.2 million, or 1%, to $15.7 million in the three months ended June 30, 2019, compared to $15.5 million in the same period in 2018. Gross margin remained flat at 19% in the three months ended June 30, 2019, compared to the same period in 2018. Approximately 11 percentage points of improvement was due to cost reductions, offset by approximately 6 percentage points from average selling price and $3.6 million or 4 percentage points of inventory write-down related to the Huawei ban.

Six Months Ended June 30, 2019 Compared With Six Months Ended June 30, 2018

Gross profit increased $6.8 million, or 27%, to $31.4 million in the six months ended June 30, 2019, compared to $24.7 million in the same period in 2018. Gross margin was up 4 percentage points largely driven by approximately 14 percentage points due to cost reductions, offset by approximately 7 percentage points change in average selling price and product mix, approximately 2 percentage points for factory under-utilization and 2 percentage points of inventory write-down related to the Huawei ban.

Operating expenses

Personnel costs are the most significant component of operating expenses and consist of costs such as salaries, benefits, bonuses, stock-based compensation and, with regard to sales and marketing expense, other variable compensation.

(in thousands, except percentages)	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	$ Change	% Change	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018	$ Change	% Change
Research and development	$ 13,793	$ 13,243	$ 550	4 %	$ 28,476	$ 27,131	$ 1,345	5 %
Sales and marketing	3,623	3,891	(268)	(7)%	8,226	8,015	211	3 %
General and administrative	7,174	7,267	(93)	(1)%	14,927	14,917	10	— %
Amortization of purchased intangible assets	—	120	(120)	(100)%	119	239	(120)	(50)%
Asset sale related costs	47	79	(32)	(41)%	376	93	283	304 %
Restructuring charges	79	622	(543)	(87)%	258	653	(395)	(60)%
Gain on asset sale	(817)	—	(817)	— %	(817)	—	(817)	— %
Total operating expenses	$ 23,899	$ 25,222	$ (1,323)	(5)%	$ 51,565	$ 51,048	$ 517	1 %

Research and development

Research and development expense consists of personnel costs, including stock-based compensation, for our research and development personnel, and product development costs, including engineering services, development software and hardware tools, depreciation of equipment and facility costs. We record all research and development expense as incurred.

Three Months Ended June 30, 2019 Compared With Three Months Ended June 30, 2018

Research and development expense increased by $0.6 million, or 4%, in the three months ended June 30, 2019, compared to the same period in 2018. The increase was primarily due to increases in compensation related expenses.

Six Months Ended June 30, 2019 Compared With Six Months Ended June 30, 2018

Research and development expense increased by $1.3 million, or 5%, in the six months ended June 30, 2019, compared to the same period in 2018. The increase was primarily due to increases of $0.6 million in compensation related expenses mostly from bonuses and $0.2 million in outside services.

Sales and marketing

Sales and marketing expense consists primarily of personnel costs, including stock-based compensation and other variable compensation, costs related to sales and marketing programs and services and facility costs.

Three Months Ended June 30, 2019 Compared With Three Months Ended June 30, 2018

Sales and marketing expense decreased $0.3 million, or 7%, in the three months ended June 30, 2019, compared to the same period in 2018. The decrease was primarily due to lower personnel and marketing expenses.

Six Months Ended June 30, 2019 Compared With Six Months Ended June 30, 2018

Sales and marketing expense increased $0.2 million, or 3%, in the six months ended June 30, 2019, compared to the same period in 2018. The increase was due to lower bad debt recovery of $0.5 million and partially offset by lower marketing expenses.

General and administrative

General and administrative expense consists primarily of personnel costs, including stock-based compensation, for our finance, human resources and information technology personnel and certain executive officers, as well as professional services costs related to accounting, tax, banking, legal and information technology services, depreciation and facility costs.

Three Months Ended June 30, 2019 Compared With Three Months Ended June 30, 2018

General and administrative expense decreased by $0.1 million, or 1%, in the three months ended June 30, 2019, compared to the same period in 2018, on small reductions in all areas.

Six Months Ended June 30, 2019 Compared With Six Months Ended June 30, 2018

General and administrative expense was relatively flat in the six months ended June 30, 2019, compared to the same period in 2018. Increases were primarily due to a $0.5 million increase in compensation related costs, partially offset by a $0.5 million decrease in professional services.

Amortization of purchased intangible assets

Our intangible assets are being amortized over their estimated useful lives. Amortization expense relating to technology, patents and leasehold interests are included within cost of goods sold, while customer relationships and other agreements are recorded within operating expenses.

Asset sale related costs

We incurred $0.4 million in the six months ended June 30, 2019 in asset sale related costs for legal and other professional services.

Restructuring charges

We incurred $0.1 million and $0.3 million in the three and six months ended June 30, 2019, respectively, in restructuring charges related to the disposal of NeoPhotonics Corporation, LLC, our manufacturing operations in Russia.

Gain on asset sale

In April 2019, we completed the sale of 100% interest in the operations of NeoPhotonics Corporation, LLC, our manufacturing operation in Russia to

Joint Stock Company Rusnano, a related party. In connection with the sale, we received

$2.0 million in cash, settled the $2.0 million exit fee and recognized a gain on asset sale of $0.8 million during the three and six months ended June 30, 2019.

Interest and other income (expense), net

Interest income consists of income earned on our cash, cash equivalents and short-term investments, as well as restricted cash. Interest expense consists of amounts paid for interest on our bank and other borrowings. Other income (expense), net is primarily made up of government subsidies as well as foreign currency transaction gains and losses. The functional currency of our subsidiaries in China is the RMB and of our subsidiary in Japan is the JPY. The foreign currency transaction gains and losses of our subsidiaries in China and Japan primarily result from transactions in U.S. dollars.

	Three Months Ended June 30,				Six Months Ended June 30,			
(in thousands)	**2019**	**2018**	**$ Change**	**% Change**	**2019**	**2018**	**$ Change**	**% Change**
Interest income	$ 99	$ 122	$ (23)	(19)%	$ 198	$ 215	$ (17)	(8)%
Interest expense	(496)	(759)	263	(35)%	(989)	(1,467)	478	(33)%
Other income (expense), net	1,090	930	160	17 %	(508)	581	(1,089)	(187)%
Total	$ 693	$ 293	$ 400	137 %	$ (1,299)	$ (671)	$ (628)	94 %

Interest expense included in interest and other income (expense), decreased in the three and six months ended June 30, 2019, as compared to the same periods in 2018. The decrease in interest expense was due to a decrease in outstanding borrowings during the three and six months ended June 30, 2019. Other income (expense), net included in interest and other income (expense), increased in the three months ended June 30, 2019, as compared to the same periods in 2018, primarily due to the decreased purchasing value of U.S. dollar relative to other currencies. Other income (expense), net included in interest and other income (expense), decreased in the six months ended June 30, 2019, as compared to the same periods in 2018, primarily due to the increased purchasing value of U.S. dollar relative to other currencies.

Income taxes

We conduct our business globally and our operating income is subject to varying rates of tax in the U.S., China, Japan and other various foreign jurisdictions. Consequently, our effective tax rate is dependent upon the geographic distribution of our earnings or losses and the tax laws and regulations in each geographical region. Historically, we have experienced net losses in the U.S. and in the short term, we expect this trend to continue.

	Three Months Ended June 30,				Six Months Ended June 30,			
(in thousands)	**2019**	**2018**	**$ Change**	**% Change**	**2019**	**2018**	**$ Change**	**% Change**
Income tax benefit (provision)	$ 205	$ (1,080)	$ 1,285	(119)%	$ 35	$ (1,718)	$ 1,753	(102)%

Our income tax benefit (provision) in the three and six months ended June 30, 2019 and 2018 was primarily related to the release of income tax reserves on the income of our non-U.S. operations.

Liquidity and capital resources

As of June 30, 2019, we had working capital of $108.1 million, including total cash, cash equivalents, short-term investments and restricted cash of $74.2 million. Approximately 28% of our total cash, cash equivalents, short-term investments and restricted cash were held by our foreign entities, including approximately $17.4 million in accounts held by our subsidiaries in China, of which $11.5 million was in restricted cash, and approximately $2.9 million in accounts held by our subsidiary in Japan. Cash, cash equivalents, investments and restricted cash held outside of the U.S. may be subject to taxes if repatriated and may not be immediately available for our working capital needs.

Approximately $9.0 million of our retained earnings within our total accumulated deficit as of December 31, 2018 was subject to restrictions due to the fact that our subsidiaries in China are required to set aside at least 10% of their respective accumulated profits each year end to fund statutory common reserves as well as allocate a discretionary portion of their after-tax profits to their staff welfare and bonus fund. This restricted amount is not distributable as cash dividends except in the event of liquidation.

In September 2017 we entered into a revolving line of credit agreement with Wells Fargo Bank, National Association ("Wells Fargo") as the administrative agent for a lender group (the "Wells Fargo Credit Facility" or "Credit Facility").

The Wells Fargo Credit Facility provides for borrowings equal to the lower of (a) a maximum revolver amount of $50.0 million, or (b) an amount equal to 80% - 85% of eligible accounts receivable plus 100% of qualified cash balances up to $15.0 million, less certain discretionary adjustments ("Borrowing Base"). The maximum revolver amount may be increased by up to $25.0 million, subject to certain conditions.

The Credit Facility matures on June 30, 2022 and borrowings bear interest at an interest rate option of either (a) the LIBOR rate, plus an applicable margin ranging from 1.50% to 1.75% per annum, or (b) the prime lending rate, plus an applicable margin ranging from 0.50% to 0.75% per annum. We are also required to pay a commitment fee equal to 0.25% of the unused portion of the Credit Facility.

The Credit Facility agreement requires prepayment of the borrowings to the extent the outstanding balance is greater than the lesser of (a) the most recently calculated Borrowing Base, or (b) the maximum revolver amount. The Borrowing Base calculation contains a customary provision that gives the lender the ability to reduce the Borrowing Base by reserves that are subjectively determinable, which is considered a subjective acceleration clause. We are required to maintain a combination of certain defined cash balances and unused borrowing capacity under the Credit Facility of at least $20.0 million, of which at least $5.0 million must be unused borrowing capacity. Borrowings under the Credit Facility are collateralized by substantially all of our assets.

On June 14, 2019, we entered into a First Amendment to the Credit Facility (the "Amended Credit Facility"). The Amendment removes Huawei from the list of "Eligible Accounts" as a basis for our borrowing while Huawei is on the U.S. Bureau of Industry and Security ("BIS") "Entity List". During the period of time while Huawei remains on the Entity List, the concentration limits of certain other customers are increased to partially offset the removal of Huawei. Additionally, until Huawei is no longer on the Entity List, we are required to maintain a temporary combination of certain defined unrestricted cash and unused borrowing capacity under the credit facility of at least $30 million in U.S. and $40 million world-wide, of which at least $5.0 million shall include unused borrowing capacity.

We were in compliance with the covenants of this Credit Facility as of June 30, 2019. As of June 30, 2019, the outstanding balance under the Credit Facility was $31.7 million and the weighted average rate under the LIBOR option was 4.33%. The remaining borrowing capacity as of June 30, 2019 was $13.7 million of which $5.0 million is required to be maintained as unused borrowing capacity.

We regularly issue short-term notes payable to our suppliers in China in exchange for accounts payable. These notes are supported by non-interest bearing bank acceptance drafts and are due three to six months after issuance. As a condition of the notes payable arrangements, we are required to keep a compensating balance at the issuing banks that is a percentage of the total notes payable balance until the amounts are settled. As of June 30, 2019, our subsidiary in China had two line of credit facilities with banking institutions.

Under these line of credit facilities, the non-interest bearing bank acceptance drafts issued in connection with our notes payable to our suppliers in China, had no outstanding balance at June 30, 2019 and an outstanding balance of $4.8 million as of December 31, 2018. Compensating balances relating to these credit facilities totaled $2.6 million as of December 31, 2018. Compensating balances are classified as restricted cash on our condensed consolidated balance sheets.

As of June 30, 2019, we had two loan arrangements with MUFG Bank, Ltd. (collectively the "Mitsubishi Bank Term Loans") and a third loan arrangement with the MUFG Bank, Ltd. and The Yamanashi Chou Bank, Ltd. One of Mitsubishi Bank Term Loans requires equal monthly payments of principal equal to 8,333,000 JPY until the maturity date of February 25, 2025, with a lump sum payment of the balance of 8,373,000 JPY on the maturity date. Interest on this loan accrues and is paid monthly based upon the annual rate of the monthly Tokyo Interbank Offer Rate (TIBOR) plus 1.40% and is secured by real estate collateral. The second term loan of 690 million JPY (approximately $6.4 million) (the "2017 Mitsubishi Bank Loan") was entered into in March 2017 to acquire manufacturing equipment for our Japanese subsidiary and has an annual interest rate of the monthly TIBOR rate plus 1.00%. The 2017 Mitsubishi Bank Loan requires monthly interest and principal payments over 72 months commencing in April 2018. This loan was available from March 31, 2017 to March 30, 2018 and 690 million JPY (approximately $6.4 million) under this loan was fully drawn in March 2017. In January 2018, we entered into a term loan agreement with MUFG Bank, Ltd. and The Yamanashi Chou Bank, Ltd. for a term loan in the aggregate principal amount of 850 million JPY (approximately $7.9 million) (the "Mitsubishi-Yamanashi Term Loan"). The Mitsubishi-Yamanashi Term Loan was available from January 29, 2018 to January 29, 2025. The full amount of the Mitsubishi-Yamanashi Term Loan was drawn on January 29, 2018. Interest on the Mitsubishi-Yamanashi Term Loan is based upon the annual rate of the three months TIBOR rate plus 1.00%. The Mitsubishi-Yamanashi Term Loan requires quarterly interest payments, along with the principal payments, over 82 months commencing in April 2018. As of June 30, 2019, our aggregate outstanding principal balance under

Mitsubishi Bank Term Loans and Mitsubishi-Yamanashi Term Loan was 1.8 billion JPY (approximately $16.8 million). See Note 9 of Notes to Condensed Consolidated Financial Statements in Item 1 of Part I of this Report.

From time to time we accept notes receivable in exchange for accounts receivable from certain of our customers in China. These notes receivable are non-interest bearing and are generally due within six months. Historically, we have collected on the notes receivable in full at the time of maturity.

In the first six months of 2019, we generated operating losses of $20.2 million and cash from operations was $9.4 million. We had an accumulated deficit of $418.9 million as of June 30, 2019. As of June 30, 2019, the remaining borrowing capacity under our revolving line of credit agreement with Wells Fargo, was $13.7 million of which $5.0 million is required to be maintained as unused borrowing capacity. Additionally, we had $3.0 million of current portion of long-term debt as of June 30, 2019, which we plan to pay out of our existing available cash.

In China, when there is a case pending in judicial court, banks may choose to limit borrowing against existing credit lines, regardless of the legitimacy of the case. We have a dispute pending with APAT OE in judicial court (See Note 12 of Notes to Condensed Consolidated Financial Statements in Item 1 of Part I of this Report). We do not expect to make any additional draws against our credit facilities in China until this matter is resolved. We have less expensive cash and credit lines available in the U.S., and believe this will not impact our operations in China.

On May 16, 2019, the U.S. Commerce Department ‘s Bureau of Industry and Security, or BIS, added Huawei and certain affiliates to the BIS Entity List, with an effective date of May 21, 2019. This denies Huawei the ability to purchase products, software and technology that are subject to U.S. Export Administration Regulations (EAR). As Huawei is our largest customer, this is expected to have a material impact on our forecasted revenue and profitability. To adjust to the revised forecast, we have adjusted capital expenditures, operating expenditures, project plans and reset incoming materials to adjust to changing demand levels. We continue to implement actions to improve cash flow and profitability.

We currently believe we will have sufficient resources to fund our currently planned operations and expenditures over the next twelve months without additional financing or other actions. In addition, we believe we have a number of ongoing and potential actions that may further strengthen our projected cash and projected financial position.

We operate in an industry in which it is difficult to evaluate our prospects with certainty. Future declines in China market demand or other changes to our forecasts could adversely affect our results of operations, financial position and cash flows. As a result, we may need to raise additional debt or equity capital to fund our operations. Any additional debt arrangements may likely require regular interest or principal payments which could adversely affect our operations. There can be no assurance that additional debt or equity capital will be available on acceptable terms, or at all.

Rusnano Rights Agreement

Under our amended rights agreement, dated June 30, 2015, with Rusnano, one of our principal stockholders, we agreed to make a $30.0 million investment commitment (the “Investment Commitment”) toward our Russian operations. If certain of the Investment Commitments were not achieved in the indicated time frames through 2019, we had the ability to exit our Russian operations by paying an exit fee of up to $2.0 million at that time. See Note 12 in Notes to Condensed Consolidated Financial Statements in Item 1 of Part I of this Report.

In April 2019, we completed the sale of 100% interest in the operations of NeoPhotonics Corporation, LLC, our manufacturing operations in Russia, to Rusnano. In connection with the sale, we received $2.0 million in cash and settled the $2.0 million exit fee.

Cash flow discussion

The table below sets forth selected cash flow data for the periods presented:

	Six Months Ended June 30,	
(in thousands)	**2019**	**2018**
Net cash provided by (used in) operating activities	$ 9,433	$ (4,534)
Net cash used in investing activities	(2,142)	(9,725)
Net cash used in financing activities	(9,955)	(11,907)
Effect of exchange rates on cash, cash equivalents and restricted cash	66	(176)
Net decrease in cash, cash equivalents and restricted cash	$ (2,598)	$ (26,342)

Operating activities

Net cash provided by (used in) operating activities was $9.4 million in the six months ended June 30, 2019, compared to $4.5 million net cash used in operating activities in the same 2018 period. The net cash provided by operating activities increased primarily due to a lower net loss from operations of $7.4 million, a decrease of $1.0 million in foreign currency hedges, $25.1 million of higher net collection of accounts receivable and partially offset by a net increase in inventories of $6.3 million, a net increase in prepaid expenses and other current assets of $2.5 million, a net decrease in accounts payable of $7.0 million and a net decrease in accrued and other liabilities of $8.4 million when compared to 2018.

Investing activities

Net cash used in investing activities was $2.1 million in the six months ended June 30, 2019, compared to $9.7 million used in investing activities in the same 2018 period. The decrease in cash flows used in investing activities was primarily due to a decrease in purchases of property, plant and equipment of $6.6 million and an increase in proceeds from the sale of property, plant and equipment and other assets of $2.0 million and partially offset by a decrease of $1.0 million in settlement of foreign currency hedges when compared to 2018.

Financing activities

Net cash used in financing activities was $10.0 million in the six months ended June 30, 2019, compared to $11.9 million used in financing activities in the same 2018 period. The decrease in cash flows used in financing activities was primarily due to a decrease in net payments under our credit facilities and term loans of $8.7 million, a net increase in net payments of notes payable of $5.2 million and a net decrease in proceeds from government grants of $1.3 million when compared to the same period in 2018.

Off-balance Sheet Arrangements

As of June 30, 2019, we did not have any significant off-balance sheet arrangements.

Recent Accounting Pronouncements

See Note 1 “Basis of presentation and significant accounting policies” in the Notes to Condensed Consolidated Financial Statements in Item 1 of Part I of this Quarterly Report on Form 10-Q for a description of recent accounting pronouncements and accounting changes.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Starting in July 2016, we entered into foreign currency forward contracts to minimize the short-term impact of foreign currency exchange rate fluctuations, related to RMB on our inter-company receivables and payables. Beginning in the three months ended September 30, 2018, we have temporarily discontinued entering into forward exchange contracts. This may increase the risks to us arising from the short-term impact of foreign currency fluctuations. Other than the foregoing, our exposures to other market risk have not changed materially since December 31, 2018. For quantitative and qualitative disclosures about market risk, see Item 7A Quantitative and Qualitative Disclosures About Market Risk, in our Annual Report on Form 10-K for the year ended December 31, 2018.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of the design and operation of our disclosure controls and procedures as of June 30, 2019. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered in this report, our disclosure controls and procedures were effective at a reasonable assurance level.

Changes in Internal Control over Financial Reporting

There have not been any changes in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Securities and Exchange Act of 1934, as amended) for the quarter ended June 30, 2019 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitation on the Effectiveness of Internal Controls

The effectiveness of any system of internal control over financial reporting is subject to inherent limitations, including the exercise of judgment in designing, implementing, operating, and evaluating the controls and procedures, and the inability to eliminate misconduct completely. Accordingly, any system of internal control over financial reporting can only provide reasonable, not absolute assurances. In addition, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. We intend to continue to monitor and upgrade our internal controls as necessary or appropriate for our business, but cannot assure that such improvements will be sufficient to provide us with effective internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

From time to time, we are involved in litigation that we believe is of the type common to companies engaged in our line of business, including commercial disputes and employment issues. As of the date of this Quarterly Report on Form 10-Q, other than as described below, we are not involved in any pending legal proceedings that we believe could have a material adverse effect on our financial condition, results of operations or cash flows. However, as described below, a certain dispute involves a claim by a third party that our activities infringe their intellectual property rights. This and other types of intellectual property rights claims generally involve the demand by a third party that we cease the manufacture, use or sale of the allegedly infringing products, processes or technologies and/or pay substantial damages or royalties for past, present and future use of the allegedly infringing intellectual property. Claims that our products or processes infringe or misappropriate any third-party intellectual property rights (including claims arising through our contractual indemnification of our customers) often involve highly complex, technical issues, the outcome of which is inherently uncertain. Moreover, from time to time, we may pursue litigation to assert our intellectual property rights. Regardless of the merit or resolution of any such litigation, complex intellectual property litigation is generally costly and diverts the efforts and attention of our management and technical personnel which could adversely affect our business.

For a discussion of our current legal proceedings, please refer to the information set forth under the “Litigation” section in Note 12, *Commitments and Contingencies*, in Notes to Condensed Consolidated Financial Statements in Item 1 of Part I of this Quarterly Report on Form 10-Q, which is incorporated herein by reference.

ITEM 1A. RISK FACTORS

Except for those risk factors denoted by an asterisk (*), the risk factors facing our company have not changed materially from those set forth in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2018, as filed with the SEC on March 8, 2019, which risk factors are set forth below.

Risks Associated with Our Business

We are dependent on Huawei Technologies Co., Ltd. and its affiliate HiSilicon Technologies Co., Ltd. and on four other customers for a large portion of our revenue and the loss of, or a significant reduction in orders in any period from Huawei or any of these major customers may reduce our revenue and adversely impact our results of operations.*

In the six months ended June 30, 2019 and 2018, Huawei Technologies Co. Ltd., together with its affiliate HiSilicon Technologies Co., Ltd. (collectively “Huawei”) accounted for approximately 43% and 46% of our revenue, respectively. One other customer in the six months ended June 30, 2019 and two other customers in the six months ended June 30, 2018 were each greater than 10% our revenue, respectively. We have generated most of our revenue from a limited number of customers. In the six months ending June 30, 2019 and 2018, our top five customers represented 85% and 87% of our revenue respectively. The loss of, or a significant reduction in orders from these major customer would materially and adversely affect our revenue and results of operations.

The telecommunications systems market is concentrated with approximately ten global network equipment manufacturing companies having collectively more than 90% market share. As to the size, scale and technological complexity of requirements on these global network equipment companies, gain of market share by one such customer is generally resulting in a gain of share by another of our customers.

U.S. governmental export control actions have significantly limited our sales to Huawei, which has had (and may continue to have) a material adverse effect on our business, financial condition and results of operations.

On May 16, 2019, the U.S. Commerce Department's Bureau of Industry and Security, or BIS, added Huawei and certain affiliates to the BIS Entity List with an effective date of May 21, 2019. This action denies Huawei the ability to purchase products, software and technology that are subject to U.S. Export Administration Regulations (EAR). To ensure compliance, we immediately suspended shipments to Huawei and began a systematic assessment of our products sold to Huawei and its affiliate, HiSilicon, to determine how these products are, or are not, subject to the restrictions resulting from the ban. This had an immediate impact on the level of our products shipments to Huawei in the second quarter of 2019, which significantly affected our revenue for the quarter.

We have consulted closely with legal and technical experts, in order to determine which of our products, notably our foreign-manufactured products, are not subject to EAR and may be lawfully sold to Huawei and its affiliates. Each product must be reviewed individually in a detailed, specific and time consuming process, and these reviews are ongoing. Consequently, we have reset our business approach with Huawei to consist of only products that have been determined to be not subject to the EAR regulations. During 2018, non-EAR products were over half of our revenue from sales to Huawei. Some shipments of non-EAR products resumed late in the second quarter of 2019.

On June 29, 2019, President Trump announced that U.S. firms would be allowed to sell to Huawei while trade negotiations were ongoing. Administration spokes people subsequently clarified that companies could apply for temporary export licenses for products subject to EAR and that these licenses might be granted if the product was deemed not to be a risk to national security. We have begun the process of applying for licenses for certain technology subject to EAR, but at the time of the filing of this Quarterly Report on Form 10-Q no licenses have yet been granted. There can be no assurance as to which products may qualify for a license, or that any such licenses will be granted in a timely manner or at all.

Even if licenses are obtained, or if the EAR restrictions are lifted or modified to allow us to sell the same types of products we have sold to Huawei historically, Huawei may decide not to resume the full level of purchases of these products for various reasons, including to reduce its own risks of being exposed to disruptions of its supply chain.

A continued significant reduction in orders from Huawei as a result of these U.S. export control actions would materially and adversely affect our business, financial condition, and results of operations.

We face intense competition which could negatively impact our results of operations and market share.

The communications networks industry is highly competitive. Our competitors range from large international companies offering a wide range of products to smaller companies specializing in niche products.

Some of our competitors have substantially greater name brand recognition, technical, financial, and marketing resources, and greater manufacturing capacity, as well as better-established relationships with customers, than we do. Some of our competitors have more resources to develop or acquire, and more experience in developing or acquiring, new products and technologies. Some of our competitors may be able to develop new products more quickly than us and may be able to develop products that are more reliable or which provide more functionality than ours. In addition, some of our competitors have the financial resources to offer competitive products at below-market pricing levels that could prevent us from competing effectively and result in a loss of sales or market share or cause us to lower prices for our products.

We also face competition from some of our customers who evaluate our capabilities against the merits of manufacturing products internally, including Huawei. Due to the fact that such customers are not seeking to make a comparable profit directly from the manufacture of these products, they may have the ability to provide competitive products at a lower total cost than we would charge such customers. As a result, these customers may purchase less of our products and there would be additional pressure to lower our selling prices which, accordingly, would negatively impact our revenue and gross margin.

In December 2017, the Chinese Government Ministry of Industry and Information Technology announced a five-year optical component technology roadmap with the aim to reduce China's dependency on non-domestic companies for high-end optical chips and sub-components, including some products manufactured and sold by us. This announcement continues an ongoing trend in China to build domestic industry in this area, and, while we believe local Chinese component suppliers do not currently have the capability to supply the highest performance optical chips and sub-components, those companies may over time develop such capability and negatively impact our revenue and financial performance if we do not continue to innovate and maintain our lead in the highest speed and performance optical components. This trend may accelerate as a result of the current Huawei listing on the BIS Entity List and US-China trade tensions.

We are subject to risks and uncertainties related to our revenue growth outlook in China.

Fiber optics telecommunication growth in China is an important contributor to our success. We expect a major portion of our revenue to come from China infrastructure spending in wireline and wireless networks, notably from the three largest China telecom carriers, China Mobile Communications Corporation, China Telecommunications Corporation and China United Network Communications Group Co., Ltd. In part, this infrastructure spending originates from the publicly announced China Broadband 2020 and related initiatives. In 2017, slower than anticipated spending and tender awards from the China telecom carriers, reduced spending under these tender awards initiatives and excess inventory accumulated and held by our leading customers in China, adversely affected our financial condition and results of operations. While these conditions improved in 2018 and in the first half of 2019, if the anticipated Chinese spending and carrier tender awards do not increase as anticipated, or if there are further unanticipated and/or prolonged delays in the Chinese initiative, our business, financial condition, results of operations and prospects would be further adversely affected.

***We are subject to global governmental export and import controls that could subject us to liability, impair our ability to compete in international markets, or restrict our sales to certain customers.**

We are subject to export and import control laws, trade regulations and other trade requirements that limit which products we sell and where and to whom we sell our products. In some cases, it is possible that export licenses would be required from the U.S. or other government agencies outside the U.S. such as, but not limited to, Japan or China for some of our products in accordance with various statutes or regulations, such as the EAR regulations discussed above. In addition, various countries regulate the export or import of certain technologies and have enacted laws that could limit our ability to distribute our products. Failure to comply with these and similar laws on a timely basis, or at all, or any limitation on our ability to export or sell our products or to obtain any required licenses would adversely affect our business, financial condition and results of operations.

We have had a history of losses which may recur in the future.

We have had a history of losses and we may incur additional losses in future periods. As of June 30, 2019, our accumulated deficit was $418.9 million. We continue to review our expenditures related to the ongoing operations of our business for their effectiveness. These include expenditures related to the sales, marketing and development of our products and to maintain our manufacturing facilities and research and development operations. Operations and assets that are deemed to be less effective may be subject to restructuring, which could lead to increased operating losses in future periods when and if restructuring charges are incurred.

***Continued tension in U.S.-China trade relations may adversely impact our business and operating results.**

Beyond the BIS actions affecting our sales to Huawei, the U.S. government has recently made statements and taken certain actions that change U.S. trade policies, including recently-imposed tariffs affecting certain products manufactured in China. Some products manufactured by our Chinese affiliates are subject to these recently imposed tariffs if imported into the United States. In addition, the China government has taken certain reciprocal actions, including recently imposed tariffs affecting certain products manufactured in the United States. Certain of our products manufactured in our U.S. operations have been included in the tariffs imposed on imports into China from the United States. Going forward, we expect these tariffs, as currently applied, will increase our cost of goods sold by about one percentage point for as long as the tariffs remain in place.

It is unknown whether and to what extent additional new tariffs (or other new laws or regulations) will be adopted that increase the cost of importing products to or from the United States, or from China to the United States. Further, it is unknown what effect that any such new tariffs or retaliatory actions would have on us or our industry and customers. As additional new tariffs, legislation and/or regulations are implemented, or if existing trade agreements are renegotiated or if China or other affected countries take retaliatory trade actions, such changes could have a material adverse effect on our business, financial condition, results of operations or cash flows.

We may need to raise additional capital in order to pursue our business strategies or maintain our operations, and we may not be able to obtain capital when desired on favorable terms, if at all, or without dilution to our stockholders.

We believe that our existing cash and cash equivalents, and cash flows from our operating activities and funds available under our credit facilities will be sufficient to meet our anticipated cash needs for at least the next 12 months. However, we operate in an industry that makes our prospects difficult to evaluate. It is possible that we may not generate sufficient cash flow from operations or otherwise have the capital resources to meet our future capital needs. If this occurs, we may need additional financing to continue operations or execute on our current or future business strategies, including to:

- invest in our research and development efforts, including by hiring additional technical and other personnel;
- maintain and expand our operating or manufacturing infrastructure;
- acquire complementary businesses, products, services or technologies; or
- otherwise pursue our strategic plans and respond to competitive pressures.

We do not know with certainty what forms of financing, if any, will be available to us. If financing is not available on acceptable terms, if and when needed, our ability to fund our operations, enhance our research and development and sales and marketing functions, develop and enhance our products, respond to unanticipated events, including unanticipated opportunities, or otherwise respond to competitive pressures could be adversely impacted. In any such event, our business, financial position and results of operations could be materially harmed. Moreover, if we raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our stockholders could be significantly diluted, and these newly issued securities may have rights, preferences or privileges senior to those of existing stockholders. If we fail to raise sufficient additional capital if needed, we may not be able to completely execute our business plan and may not be able to continue our operations without further reducing expenses.

If we incur additional indebtedness through arrangements such as credit agreements or term loans, such arrangements may impose restrictions and covenants that limit our ability to respond appropriately to market conditions, make capital investments or take advantage of business opportunities. In addition, any additional debt arrangements we may enter into would likely require us to make regular interest payments, which could adversely affect our results of operations.

Covenants in our borrowing arrangements may limit our flexibility in responding to business opportunities and competitive developments and increase our vulnerability to adverse economic or industry conditions.

We have lending arrangements with several financial institutions, which generally require us to maintain certain financial covenants and limit our ability to take certain actions such as incurring some kinds of additional debt, paying dividends, or engaging in certain transactions like mergers and acquisitions, investments and asset sales without the lenders' consent. These restrictions may limit our flexibility in responding to business opportunities, competitive developments and adverse economic or industry conditions. In addition, a breach of any of these covenants, or a failure to pay interest or indebtedness when due under any of our credit facilities, could result in a variety of adverse consequences, including the acceleration of our indebtedness.

While we rely on many suppliers, there are a few which, if they stopped, decreased or delayed shipments to us, it could have an adverse effect on our business and financial results.

We depend on a limited number of suppliers for certain components and materials we have qualified to use in the manufacture of certain of our products. Some of these suppliers could disrupt our business if they stop, decrease or delay shipments or if the components they ship have quality, consistency, or business continuity issues. Some of these components and materials are available only from a sole source, or have been qualified only from a single source. We may also face component shortages if we experience increased demand for components beyond what our qualified suppliers can deliver. If we experience component shortages from certain key suppliers, we may be unable to meet customer demand or may have higher purchasing costs, or both. Although we engage in various actions to mitigate the impact of these shortages, any inability on our part to obtain sufficient quantities of critical components at reasonable costs could adversely affect our ability to meet demand for our products, which could cause our revenue, results of operations, or both to suffer.

Our customers generally restrict our ability to change the component parts in our modules without their approval and such changes may require repeating product qualification processes. The reliance on a sole supplier, single qualified vendor or limited number of suppliers could result in delivery and quality problems, reduced control over product pricing, reliability and performance and an inability to identify and qualify another supplier in a timely manner. Any supply deficiencies relating to the quality, quantities or timeliness of delivery of components that we use to manufacture our products could adversely affect our ability to fulfill our customer orders and our results of operations.

Manufacturing problems and supply constraints could impact manufacturing yields or result in delays in product shipments to customers and could adversely affect our revenue, competitive position and reputation.*

We may experience delays, disruptions or quality control problems in our manufacturing operations or supply chain constraints, which could adversely impact manufacturing volumes, yields or delay product shipments. As a result, we could incur additional costs that would adversely affect our gross margin, and product shipments to our customers could be delayed beyond the shipment schedules requested by our customers, which would negatively affect our revenue, competitive position and reputation.

Additionally, manufacturing yields depend on a number of factors, including the stability and manufacturability of the product design, manufacturing improvements gained over cumulative production volumes, the quality and consistency of component parts and the nature and extent of customization requirements by customers. Capacity constraints, raw materials shortages, logistics issues, labor shortages, volatility in utilization of manufacturing operations, supporting utility services and other manufacturing supplies, the introduction of new product lines, rapid increases in production demands and changes in customer requirements, manufacturing facilities or processes, or those of some third party contract manufacturers and suppliers of raw materials and components have historically caused, and may in the future cause, reduced manufacturing yields, negatively impacting the gross margin on, and our production capacity for, those products. Our ability to maintain sufficient manufacturing yields is particularly challenging with respect to PICs due to the complexity and required precision of a large number of unique manufacturing process steps. Manufacturing yields for PICs can also suffer if contaminated materials or materials that do not meet highly precise composition requirements are inadvertently utilized. Because a large portion of our PIC manufacturing costs are fixed, PIC manufacturing yields have a substantial effect on our gross margin. Lower than expected manufacturing yields could also delay product shipments and decrease our revenue.

Further, our products contain purchased components including electronic components. It is possible that such purchased items could contain quality defects, manufacturing defects, performance problems or even counterfeit substitutes, each of which could result in manufacturing issues. As a result, we could incur additional costs that would adversely affect our gross margin, and product shipments to our customers could be delayed beyond the shipment schedules requested by our customers, which would negatively affect our revenue, competitive position and reputation.

Customer demand is difficult to accurately forecast and, as a result, we may be unable to optimally match production with customer demand.

We make planning and spending decisions based on our estimates of customer requirements. The short-term nature of commitments by many of our customers, and the possibility of unexpected changes in demand for their products, reduce our ability to accurately estimate future customer requirements. In 2016 and 2017, we incurred substantial capital expenditures to increase manufacturing capacity in response to strong customer demand in 2016 (particularly in China) and in expectation of continued strong demand in 2017. However, tender awards from the China telecom carriers and spending under the China Broadband 2020 and related initiatives was slower in 2017 than anticipated. Changes in expected worldwide and national growth rates for 2018 and 2019 could lead to increased volatility in demand, particularly from our China customers. Because many of our costs and operating expenses are relatively fixed, reduction in customer demand due to market downturns or other reasons would have a material adverse effect on our operating results, as occurred in 2017.

On the other hand, on occasion, customers may require rapid increases in production, which can strain our resources, cause our manufacturing to be negatively impacted by materials shortages, necessitate higher or more restrictive procurement commitments, increase our manufacturing yield loss and scrapping of excess materials, result in delayed shipments and/or reduce our gross margins. We may not have sufficient capacity at any given time to meet the volume demands of our customers, and we may have difficulty expanding our manufacturing operations on a timely basis to meet increasing customer demand. Additionally, one or more of our suppliers may not have sufficient capacity at any given time to meet our volume demands. Any inability to meet customer demands for rapid increases in production in the future could have a material adverse effect on our business, financial condition, results of operations and prospects.

We are under continuous pressure to reduce the prices of our products, which has adversely affected, and may continue to adversely affect, our gross margins.

The communications networks industry has been characterized by declining product prices over time as technological advances increase price and performance and put pressure on existing products. We have reduced the prices of many of our products in the past, most often during annual end-of-year price negotiation. We expect pricing pressure for our products to continue, including from our major customers. To maintain or increase their market share, our competitors also reduce prices of their products each year. In addition, our customers may seek to internally develop and manufacture competing products at a lower cost than we would otherwise charge, which would add additional pressure on us to lower our selling prices. If we are unable to offset any future reductions in our average selling prices by increasing our sales volume, reducing our costs or introducing new products, our gross margin would be adversely affected.

If we fail to retain our key personnel or if we fail to attract additional qualified personnel, we may not be able to achieve our anticipated growth and our business could suffer.

Our success and ability to implement our business strategy depends upon the continued contributions of our senior management team and others, including senior management in foreign subsidiaries and our technical and operations employees in all locations. Our future success depends, in part, on our ability to attract and retain key personnel, including our senior management and others. The loss of services of members of our senior management team or key personnel or the inability to continue to attract and retain qualified personnel could have a material adverse effect on our business. Competition for highly skilled technical and operations people where we operate is extremely intense, and we continue to face challenges identifying, hiring and retaining qualified personnel in many areas of our business.

We depend upon outside contract manufacturers for a portion of the manufacturing process for some of our products. Our operations and revenue related to these products could be adversely affected if we encounter problems with any such contract manufacturer.

While the majority of our products are manufactured internally, we also rely upon contract manufacturers in Thailand, China, Japan and other Asia locations to provide back-end manufacturing and production of some of our products. Our reliance on contract manufacturers for some of our products makes us vulnerable to possible production capacity constraints, reduced control over their supply chains, delivery schedules, manufacturing yields, manufacturing quality/controls and costs. If one of our contract manufacturers is unable to meet all of our customer demand in a timely fashion, whether due to their direct operating control or due to their supply chain, this could have a material adverse effect on the revenue from our products.

If the Metro and data center interconnect market sectors do not grow as rapidly as we expect, or if demand for our products in these sectors is lower than we expect, our revenue growth may be adversely affected.

We expect that our future growth in the market for 100G, 400G and beyond coherent products to be driven in large part by the increased adoption of our products in the Metro market segment and in the high-performance data center interconnect market. Over the last several years, 100G and beyond coherent technology has seen increasing adoption in the Long Haul market segment and now is penetrating the much larger Metro sector of the market.

If we fail to achieve or sustain a leadership position in the Long Haul telecom sector and use our position in that market to penetrate the Metro and data center interconnect segments, if these segments fail to grow as expected, or if demand for our products in the Metro and data center interconnect market segments fails to materialize, our business, financial condition, results of operations and prospects would suffer.

The majority of our customer contracts do not commit customers to specified buying levels, and many of our customers may decrease, cancel or delay their buying levels at any time with little or no advance notice to us.

Our products are typically sold pursuant to individual purchase orders or by use of a vendor-managed inventory, or VMI, model, which is a process by which we ship agreed quantities of products to a customer-designated location and those products remain our inventory and we retain the title and risk of loss for those products until the customer takes possession of the products. Our customers are typically not contractually committed to buy any quantity of products beyond firm purchase orders. Many of our customers may increase, decrease, cancel or delay purchase orders already in place. We have experienced and expect to continue to experience wide fluctuations in demand from customers using VMI, particularly Huawei and its affiliate HiSilicon Technologies Co., Ltd., even in instances where we have built and shipped products to the customer-designated locations as VMI.

Our success will depend on our ability to anticipate and quickly respond to evolving technologies and customer requirements.

Our ability to anticipate and respond to evolving technology, industry standards, customer requirements and product offerings, and to develop and introduce new and enhanced products and technologies, will be critical factors in our ability to succeed. In addition, the introduction of new products by other companies embodying new technologies, or the emergence of new industry standards, could render our existing products uncompetitive from a pricing standpoint, obsolete or otherwise unmarketable.

We must continually achieve new design wins and develop new products or our business and future revenue may be harmed.

The markets for our products are characterized by frequent new product introductions, changes in customer requirements and evolving industry standards, all with an underlying pressure to reduce cost and meet stringent reliability and qualification requirements. Our future performance will depend on our successful development, introduction and market acceptance of new and enhanced products that address these challenges. The anticipated or actual introduction of new and enhanced products by us and by our competitors may cause our customers to defer or cancel orders for our existing products, and could result, and in the past, has resulted, in a write-down in the value of inventory. To the extent customers defer or cancel orders for our products for any reason or we fail to achieve new design wins, our competitive position would be adversely affected and our ability to grow revenue would be impaired.

Furthermore, fast time-to-market with new products can be critical to success in our markets. It is difficult to displace an existing supplier for a particular type of product once a network equipment vendor has chosen a supplier, even if a later-to-market product provides superior performance or cost efficiency. If we are unable to make our new or enhanced products commercially available on a timely basis, we may lose existing and potential customers and our financial results would suffer.

We may be exposed to costs or losses from product lines that we intend to exit or may undertake divestiture of portions of our business that require us to continue providing substantial post-divestiture transition services and support, which may cause us to incur unanticipated costs and liabilities and adversely affect our financial condition and results of operations.

We have a strategy to exit products that have been declining in revenue and have lower gross margins than our other higher speed products. For instance, in January 2017, we completed the sale of assets and transfer of certain liabilities of our access network and low speed transceiver product lines (the "Low Speed Transceiver Products") and in January 2019 we announced the end-of-life of certain client transceiver modules and discontinued the manufacture and sale of those products after completing final production in May 2019. We may incur additional costs in connection with the sale or end-of-life of these products, or other products and/or facilities in the future, and our revenues and net income could be negatively affected, particularly in the short term, in connection with the end-of-life or sales of such products and/or facilities. It is also possible that we could incur continued costs or liabilities after the end-of-life process is completed, which could have a material adverse effect on our financial condition or operating results.

We are subject to the cyclical nature of the markets in which we compete and any future downturn may reduce demand for our products and revenue.

The markets in which we compete are tied to the aggregate capital expenditures of telecommunications service providers as they build out and upgrade their network infrastructure. These markets may be cyclical and characterized by rapid technological change, price erosion, evolving standards and wide fluctuations in product supply and demand. In the past, including recently to varying degrees in China, the U.S. and Europe, these markets have experienced significant downturns, often connected with, or in anticipation of, the maturation of product cycles—for both manufacturers' and their customers' products—or in response to over or under purchasing of inventory by our customers relative to ultimate carrier demand, and with declining general economic conditions. These downturns have been characterized by diminished product demand, production overcapacity, high inventory levels and accelerated erosion of average selling prices.

Our historical results of operations have been subject to substantial fluctuations, and we may experience substantial period-to-period fluctuations in future results of operations.

If spending for communications networks does not continue to grow as expected, our business and financial results may suffer.

Our future success as a provider of components, modules and subsystems to leading network equipment vendors depends on continued capital spending on global communications networks. Network traffic has experienced rapid growth driven primarily by bandwidth-intensive content, including cloud services, mobile video and data services, wireless 4G/LTE and 5G services, social networking, video conferencing and other multimedia. This growth is intensified by the proliferation of fixed and wireless devices that are enabling consumers to access content at increasing data rates anytime and anywhere. Our future success depends on continued demand for high-bandwidth, high-speed communications networks and the ability of network equipment vendors and carrier data center operators to fulfill this demand. In 2017, this growth slowed, primarily due to soft demand and high inventory levels in China, which adversely affected our business and financial condition in 2017. While we believe the long term prospects for growth in data traffic remain strong, our business and financial results will suffer if growth does not occur as expected.

We face a variety of risks associated with international sales and operations, which if not adequately managed could adversely affect our business and financial results.

We derive, and expect to continue to derive, a significant portion of our revenue from international sales in various markets. In addition, a major portion of our operations are based in Shenzhen and Dongguan, China and we have additional operations in Japan and Canada. Our international revenue and operations are subject to a number of material risks, including, but not limited to:

- difficulties in staffing, managing and supporting operations in more than one country;
- difficulties in enforcing agreements and collecting receivables through foreign legal systems;
- fewer legal protections for intellectual property in foreign jurisdictions;
- the need for compliance with local laws and regulations;
- foreign and U.S. taxation issues and international trade barriers;
- general economic and political conditions in the markets in which we operate;
- difficulties in obtaining any necessary governmental authorizations for the export of our products to certain foreign jurisdictions;
- imposition of export restrictions on sales to any of our major foreign customers;
- fluctuations in foreign economies and fluctuations in the value of foreign currencies and interest rates;
- trade and travel restrictions;
- outbreaks of contagious disease;
- domestic and international economic or political changes, hostilities and other disruptions; and
- difficulties and increased expenses in complying with a variety of U.S. and foreign laws, regulations and trade standards, including the Foreign Corrupt Practices Act and international labor standards.
- Negative developments in any of these areas in China, Japan, or other countries could result in a reduction in demand for our products, the cancellation or delay of orders already placed, difficulties in producing and delivering our products, threats to our intellectual property, difficulty in collecting receivables, higher labor costs and a higher cost of doing business.

In addition, although we maintain an anti-corruption compliance program throughout our company, violations of our compliance program may result in criminal or civil sanctions, including material monetary fines, penalties and other costs against us or our employees, and may have a material adverse effect on our business.

Our revenues and costs will fluctuate over time, making it difficult to predict our future results of operations.

Our revenue, gross margin and results of operations have varied significantly and are likely to continue to vary from quarter to quarter due to a number of factors, many of which are not within our control. For instance, changes in gross margin may result from various factors, such as changes in pricing, changes in our fixed costs, changes in the cost of labor, changes in the mix of our products sold, changes in the amount of product manufactured versus the amount of product sold over time, and charges for excess and obsolete inventory. In addition, our first quarter revenue is typically seasonally lower than the rest of the year primarily due to annual price negotiations with customers that occur at the end of the prior year and lower capacity utilization during the holidays in China. It is difficult for us to accurately forecast our future revenue and gross margin and plan expenses accordingly and, therefore, it is difficult for us to predict our future results of operations.

Increasing costs and other factors may adversely impact our gross margins.

We may not be able to maintain or improve our gross margins because of slow introductions of new products, pricing pressure from increased competition, failure to effectively reduce the cost of existing products, failure to improve our product mix, future macroeconomic or market volatility reducing sales volumes, changes in customer demand (including a change in product mix among different areas of our business) or other factors. Our gross margins can also be adversely affected for reasons including, but not limited to, fixed manufacturing costs that would not be expected to decrease in proportion to any decrease in revenues; unfavorable production yields or variances; increases in costs of input parts and materials; the timing of movements in our inventory balances; warranty costs and related returns; changes in foreign currency exchange rates; possible exposure to inventory valuation reserves; and other increases in our costs and expenses, including as a result of rising labor costs in China. Such significant increases in costs without corresponding increases in revenue would materially and adversely affect our business, our results of operations and our financial condition and our gross margins.

If our customers do not qualify our products for use, then our results of operations may suffer.

Prior to placing volume purchase orders with us, most of our customers require us to obtain their approval—called qualification in our industry—of our new and existing products, and our customers often audit our manufacturing facilities and perform other vendor evaluations during this process. The qualification process involves product sampling and reliability testing and collaboration with our product management and engineering teams in the design and manufacturing stages. If we are unable to qualify our products with customers, then our revenue would be lower than expected and we may not be able to recover the costs associated with the qualification process which would have an adverse effect on our results of operations.

In addition, due to evolving technological changes in our markets, a customer may cancel or modify a design project before we have qualified our product or begun volume manufacturing of a qualified product. It is unlikely that we would be able to recover the expenses for cancelled or unutilized custom design projects.

Potential changes in our effective tax rate could negatively affect our future results.

We are subject to income taxes in the U.S., China, Japan and other foreign jurisdictions, and our domestic and international tax liabilities are subject to the allocation of expenses in differing jurisdictions. Our tax rate is affected by changes in the mix of earnings and losses in countries with differing statutory tax rates, certain non-deductible expenses and the valuation of deferred tax assets and liabilities, including our ability to utilize our net operating losses. Increases in our effective tax rate could negatively affect our results of operations.

We may be involved in intellectual property disputes, which could divert management's attention, cause us to incur significant costs and prevent us from selling or using the challenged technology.

Participants in the markets in which we sell our products have experienced frequent litigation regarding patent and other intellectual property rights. Numerous patents in these industries are held by others, including our competitors. In addition, from time to time, we have been notified that we may be infringing certain patents or other intellectual property rights of others. Regardless of their merit, responding to such claims can be time consuming, divert management's attention and resources and may cause us to incur significant expenses. In addition, there can be no assurance that third parties will not assert infringement claims against us, whether or not such claims are valid. While we believe that our products do not infringe in any material respect upon intellectual property rights of other parties and/or meritorious defense would exist with respect to any assertions to the contrary, we cannot be certain that our products would not be found infringing the intellectual property rights of others.

In January 2010, Finisar Corporation, or Finisar, filed a complaint in the U.S. District Court for the Northern District of California against us and three other co-defendants. In the complaint, Finisar alleged infringement of certain of its U.S. patents arising from the co-defendants' respective manufacture, importation, use, sale of or offer to sell certain optical transceiver products in the U.S. In March 2010, we filed an answer to the complaint and counterclaims, asserting two claims of patent infringement and additional claims asserting that Finisar has violated state and federal competition laws and violated its obligations to license on reasonable and non-discriminatory terms. In May 2010, the Court dismissed without prejudice all co-defendants (including us) except Source Photonics, Inc., on grounds that such claims should have been asserted in four separate lawsuits, one against each co-defendant. This dismissal without prejudice does not prevent Finisar from bringing a new similar lawsuit against us. In May 2012, we and Finisar agreed to toll our respective claims until the refiling of certain of the previously asserted claims from this dispute. As a result, Finisar is permitted to bring a new lawsuit against us if it chooses to do so, and we may bring new claims against Finisar upon seven days written notice prior to filing such claims.

Although we believe that we would have meritorious defenses to the infringement allegations and intend to defend any new similar lawsuit vigorously, there can be no assurance that we will be successful in our defense. Even if we are successful, we may incur substantial legal fees and other costs in defending the lawsuit. Further, a new lawsuit, if brought by either party, would be likely to divert the efforts and attention of our management and technical personnel, which could harm our business.

We have pursued and may continue to pursue acquisitions. Acquisitions could be difficult to integrate, divert the attention of key personnel, disrupt our business, dilute stockholder value and impair our financial results.

As part of our business strategy, we have pursued and intend to continue to pursue acquisitions of complementary businesses, products, services or technologies that we believe could accelerate our ability to compete in our existing markets or allow us to enter new markets. Any of these transactions could be material to our financial condition and results of operations. For instance, we completed four acquisitions between 2011 and 2015.

Acquisitions involve numerous risks. The failure to successfully evaluate and execute acquisitions or otherwise adequately address such risks could result in excess costs and materially harm our business and financial results.

Acquisitions also frequently result in the recording of goodwill and other intangible assets which are subject to potential impairments which have occurred in the past and which, were they to occur in the future, could harm our financial results.

If we fail to protect our intellectual property and other proprietary rights, our business and results of operations could be materially harmed.*

Our success depends to a significant degree on our ability to protect our intellectual property and other proprietary rights. We rely on a combination of patent, trademark, copyright, trade secret and unfair competition laws, as well as license agreements and other contractual provisions, to establish and protect our intellectual property and other proprietary rights. We have applied for patent registrations in the U.S. and in other foreign countries, some of which have been issued. We cannot guarantee that our pending applications will be approved by the applicable governmental authorities.

Similarly we must protect all company data as it pertains to customers, products and product designs, technology and technology related trade secrets, plus customer and supplier and personal data of suppliers, customers and personnel. We rely on a combination of these important data elements to establish and protect multiple aspects of our business, and loss of data, breaching of data or stealing of such data could hard the company.

Policing unauthorized use of our technology is difficult and we cannot be certain that the steps we have taken will prevent the misappropriation, unauthorized use or other infringement of our intellectual property rights. Further, we may not be able to effectively protect our intellectual property rights from misappropriation or other infringement in foreign countries where we have not applied for patent protections, and where effective patent, trademark, trade secret and other intellectual property laws may be unavailable, or may not protect our proprietary rights as fully as U.S. or Japan law. Particularly, our U.S. patents do not afford any intellectual property protection in China, Japan, Canada or other Asia locations, including Russia, where we have company operations.

In the future, we may need to take legal actions to prevent third parties from infringing upon or misappropriating our intellectual property or from otherwise gaining access to our technology. Protecting and enforcing our intellectual property rights and determining their validity and scope could result in significant litigation costs and require significant time and attention from our technical and management personnel. If we fail to protect our intellectual property and other proprietary rights, or if such intellectual property and proprietary rights are infringed or misappropriated, our business, results of operations or financial condition could be materially harmed.

We may be subject to disruptions or failures in information technology systems and network infrastructures that could have a material adverse effect on our business and financial condition.

We rely on the efficient and uninterrupted operation of complex information technology systems and network infrastructures to operate our business. A disruption, infiltration or failure of our information technology systems as a result of software or hardware malfunctions, system implementations or upgrades, computer viruses, cyber-attacks, third-party security breaches, employee error, theft or misuse, malfeasance, power disruptions, natural disasters or accidents could cause breaches of data security, loss of intellectual property and critical data and the release and misappropriation of sensitive competitive information and partner, customer and employee personal data. Any of these events could harm our competitive position, result in a loss of customer confidence, cause us to incur significant costs to remedy any damages and ultimately materially adversely affect our business and financial condition.

It could be discovered that our products contain defects that may cause us to incur significant costs, divert our attention, result in a loss of customers and result in product liability claims.*

Our products are complex and undergo quality testing as well as formal qualification, both by our customers and by us. For various reasons, such as the occurrence of performance problems that are unforeseeable in testing or that are detected only when products age or are operated under peak stress conditions, our products may fail to perform as expected long after customer acceptance. Failures could result from faulty components or design, problems in manufacturing or other unforeseen reasons. As a result, we could incur significant costs to repair or replace defective products under warranty, particularly when such failures occur in installed systems. Any significant product failure could result in lost future sales of the affected product and other products, as well as customer relations problems and litigation, which could harm our business.

Further, our products contain purchased components including electronic components. It is possible that such purchased items could contain quality defects, manufacturing defects, performance problems or even counterfeit substitutes. Any significant product failure that is the result of such defects could result in lost future sales as well as customer relations problems and litigation, which could harm our business.

The communications networks industry has long product development cycles requiring us to incur product development costs without assurances of an acceptable investment return.

Large volumes of communications equipment and support structures are installed with considerable expenditures of funds and other resources, and long investment return period expectations. At the component supplier level, these cycles create considerable, typically multi-year, gaps between the commencement of new product development and volume purchases. Due to changing industry and customer requirements, we are constantly developing new products, including seeking to further integrate functions on PICs and developing and using new technologies in our products. These development activities necessitate significant investment of capital. Our new products often require a long time to develop because of their complexity and rigorous testing and qualification requirements. Accordingly, we and our competitors often incur significant research and development and sales and marketing costs for products that, initially, will be purchased by our customers long after much of the cost is incurred and, in some cases, may never be purchased due to changes in industry or customer requirements in the interim.

We are subject to global governmental export and import controls that could subject us to liability, impair our ability to compete in international markets, or restrict our sales to certain customers.

We are subject to export and import control laws, trade regulations and other trade requirements that limit which products we sell and where and to whom we sell our products, especially laser-dependent products. In some cases, it is possible that export licenses would be required from the U.S. or other government agencies outside the U.S. such as, but not limited to, Japan, China or Russia for some of our products in accordance with various statutes. In addition, various countries regulate the export or import of certain technologies and have enacted laws that could limit our ability to distribute our products. Failure to comply with these and similar laws on a timely basis, or at all, or any limitation on our ability to export or sell our products or to obtain any required licenses would adversely affect our business, financial condition and results of operations.

If we fail to obtain the right to use the intellectual property rights of others which are necessary to operate our business, and to protect their intellectual property, our business and results of operations will be adversely affected.

From time to time we may choose to, or be required to, license technology or intellectual property from third parties in connection with the development of our products. Failure to obtain a necessary third-party license required for our product offerings or to develop new products and product enhancements could adversely affect our business.

Participation in standards setting organizations may subject us to intellectual property licensing requirements or limitations that could adversely affect our business and prospects.

In the course of our participation in the development of emerging standards for some of our present and future products, we may agree to grant to all other participants a license to our patents that are essential to the practice of those standards on reasonable and non-discriminatory, or RAND, terms. If we fail to limit to whom we license our patents, or fail to limit the terms of any such licenses, we may be required to license our patents or other intellectual property to others in the future, which could limit the effectiveness of our patents against competitors.

Any potential dispute involving our products, services or technology could also include our customers using our products, which could trigger our indemnification obligations to them and result in substantial expenses to us.

In any potential dispute involving allegations that our products, services or technology infringe the intellectual property rights of third parties, our customers could also become the target of litigation. Because we often indemnify our customers for intellectual property claims made against them for products incorporating our technology, any claims against our customers could trigger indemnification obligations in some of our supply agreements, which could result in substantial expenses such as increased legal expenses, product recalls, damages for past infringement or royalties for future use.

Natural disasters, terrorist attacks or other catastrophic events could harm our operations and our financial results.

Our worldwide operations could be subject to natural disasters and other business disruptions, which could harm our future revenue and financial condition and increase our costs and expenses. For example, our corporate headquarters and wafer fabrication facility in Silicon Valley, California and our Tokyo, Japan facility are located near major earthquake fault lines, and our manufacturing facilities are located in Shenzhen and Dongguan, China, areas that are susceptible to typhoons. We are not insured against many natural disasters, including earthquakes.

Similarly, our worldwide operations could be subject to secondary effects of natural disasters, terrorist attacks or other catastrophic events. Even if our facilities are not directly affected, any of these types of events could substantially disrupt the business of our suppliers or customers, which could have a material adverse effect on us.

Rapidly changing standards and regulations could make our products obsolete, which would cause our revenue and results of operations to suffer.

We design our products to conform to regulations established by governments and to standards set by industry standards bodies worldwide, such as The American National Standards Institute, the European Telecommunications Standards Institute, the International Telecommunications Union and the Institute of Electrical and Electronics Engineers. Various industry organizations are currently considering whether and to what extent to create standards for elements used in 100Gbps and beyond systems. Because certain of our products are designed to conform to current specific industry standards, if competing or new standards emerge that are preferred by our customers, we would have to make significant expenditures to develop new products and our revenue and results of operations would suffer.

Our future results of operations may be subject to volatility as a result of exposure to fluctuations in foreign exchange rates, primarily the Chinese Renminbi (RMB) and Japanese Yen (JPY) exchange rates.

We are exposed to foreign exchange risks. Foreign currency fluctuations may adversely affect our revenue and our costs and expenses, and hence our results of operations. A substantial portion of our business is conducted through our subsidiaries based in China, whose functional currency is the RMB and Japan, whose functional currency is the JPY. The value of the RMB against the U.S. dollar and other currencies and the value of the JPY against the U.S. dollar and other currencies fluctuate and are affected by, among other things, changes in political and economic conditions.

To the extent that transactions by our subsidiaries in China and Japan are denominated in currencies other than the RMB and JPY, we bear the risk that fluctuations in the exchange rates of the RMB and JPY in relation to other currencies could decrease our revenue or increase our costs and expenses, therefore having an adverse effect on our future results of operations.

While we generate a significant portion of our revenue in U.S dollars, a significant portion of our cost of goods sold are in RMB and JPY. Therefore appreciation in RMB and JPY against the U.S. dollar would negatively impact our cost of goods sold upon translation to U.S. dollars.

Since July 2016, we entered into hedging transactions to reduce the short-term impact of foreign currency fluctuations. Beginning in the second half of 2018, we temporarily discontinued entering into foreign currency forward contracts. This may increase the risks to us arising from the short-term impact of foreign currency fluctuations. If we resume using hedging transactions to reduce our risks in this area, the availability and effectiveness of these hedging transactions may be limited and we may not be able to successfully hedge our exposure. In addition, our currency exchange variations may be magnified by Chinese exchange control regulations that restrict our ability to convert RMB into foreign currency.

If we fail to maintain effective internal control over financial reporting in the future, the accuracy and timing of our financial reporting may be adversely affected.

Our management is responsible for establishing and maintaining adequate internal control over our financial reporting, as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Preparing our consolidated financial statements involves a number of complex manual and automated processes, which are dependent upon individual data input or review and require significant management judgment. One or more of these elements may result in errors that may not be detected and could result in a material misstatement of our consolidated financial statements. If we fail to maintain the adequacy of our internal controls over financial reporting, our business and operating results may be harmed and we may fail to meet our financial reporting obligations. If material weaknesses in our internal control are discovered or occur, our consolidated financial statements may contain material misstatements and we could be required to restate our financial results.

Our internal control over financial reporting may not prevent or detect misstatements because of its inherent limitations, including the possibility of human error, the circumvention or overriding of controls, or fraud. Even effective internal controls can provide only reasonable assurance with respect to the preparation and fair presentation of financial statements. Any failure of our internal controls could adversely affect the results of the periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting. If we cannot provide reliable financial reports or prevent fraud, our business and results of operations could be harmed, investors could lose confidence in our reported financial information, and the trading price of our stock may decline.

We may be unable to utilize our net operating loss carryforwards to reduce our income taxes, which could adversely affect our future financial results.

As of December 31, 2018, we had net operating loss, or NOL, carryforwards for U.S. federal and state tax purposes of $276.6 million and $52.0 million, respectively. As these net operating losses have not been utilized and may not be utilized prior to their expiration in the future. The utilization of the NOL and tax credit carryforwards are subject to a substantial limitation imposed by Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, and similar state provisions. We recorded deferred tax assets, net of valuation allowance, for the NOL carryforwards currently available after considering the existing Section 382 limitation. If we incur an additional limitation under Section 382, then the NOL carryforwards, as disclosed, could be reduced by the impact of any future limitation that would result in existing NOL carryforwards and tax credit carryforwards expiring unutilized and increases in future tax liabilities.

In some instances, we rely on third-party sales representatives to assist in selling our products, and the failure of these representatives to perform as expected could reduce our future revenue.

Although we primarily sell our products through direct sales to systems vendors, we also sell our products to some of our customers through third-party sales representatives. Many of our third-party sales representatives also market and sell competing products from our competitors. Our third-party sales representatives may terminate their relationships with us at any time, or with short notice. Our future performance will also depend, in part, on our ability to attract additional third-party sales representatives that will be able to market and support our products effectively, especially in markets in which we have not previously distributed our products. If our third-party sales representatives fail to perform as expected or to operate their businesses effectively, our revenue and results of operations could be harmed.

We are subject to environmental, health and safety laws and regulations, which could subject us to liabilities, increase our costs, or restrict our business or operations in the future.

Our manufacturing operations and our products are subject to a variety of federal, state, local and international environmental, health and safety laws and regulations in each of the jurisdictions in which we operate or sell our products. Our failure to comply with present and future environmental, health or safety requirements, or the identification of contamination, could cause us to incur substantial costs, including cleanup costs, monetary fines, civil or criminal penalties, or curtailment of operations, which could have a material adverse effect on our business, financial condition and results of operations.

Additionally, increasing efforts to control emissions of greenhouse gases, or GHG, may also impact us. Additional climate change or GHG control requirements are under consideration at the federal level in the U.S. and in China. Additional restrictions, limits, taxes, or other controls on GHG emissions could increase our operating costs and, while it is not possible to estimate the specific impact any final GHG regulations will have on our operations, there can be no assurance that these measures will not have significant additional impact on us.

Additional Risks Related to Our Operations in China

Our business operations conducted in China are critical to our success. A significant portion of our revenue was recognized from customers for whom we shipped products to a location in China. Additionally, a substantial portion of our net property, plant and equipment, approximately 24% as of June 30, 2019, was located in China. We expect to make further investments in China in the foreseeable future. Therefore, our business, financial condition, results of operations and prospects are to a significant degree subject to economic, political, legal, and social events and developments in China.

Adverse changes in economic and political policies in China, or Chinese laws or regulations could have a material adverse effect on business conditions and the overall economic growth of China, which could adversely affect our business.

Over the past two decades, the Chinese economy has been transitioning from a planned economy, with increased government control, to a more free market-oriented economy. Despite reforms, the government continues to exercise significant control over China's economic growth by way of the allocation of resources, control over foreign currency-denominated obligations and monetary policy and provision of preferential treatment to particular industries or companies. Moreover, the laws, regulations and legal requirements in China, including the laws that apply to foreign-invested enterprises are relatively new and are subject to frequent changes. The interpretation and enforcement of such laws is uncertain. Any adverse changes to these laws, regulations and legal requirements, including tax laws, or their interpretation or enforcement, or the creation of new laws or regulations relating to our business, could have a material adverse effect on our business.

Furthermore, any slowdown or economic downturn, whether actual or perceived, in China could have a material adverse effect on our business, financial condition and results of operation.

Uncertainties with respect to China's legal system could adversely affect the legal protection available to us.

Our operations in China are governed by Chinese laws and regulations. Our subsidiaries in China are generally subject to laws and regulations applicable to foreign investments in China and, in particular, laws applicable to wholly foreign-owned enterprises. China has not developed a fully-integrated legal system to fully address its transition to a more market-oriented economy, and recently-enacted laws and regulations may not sufficiently cover all aspects of economic activities in China. Uncertainties in the Chinese legal system may impede our ability to enforce the contracts we have entered into with our distributors, business partners, customers and suppliers. In addition, protections of intellectual property rights and confidentiality in China may not be as effective as in the U.S. or other countries or regions with more developed legal systems. All of these uncertainties could limit the legal protections available to us and could materially and adversely affect our business and operations.

Changes in China's international trade policies may adversely impact our business and operating results.

The China government has recently made statements and taken certain actions that change trade policies, including recently-imposed tariffs affecting products manufactured in the U.S. Certain of our products manufactured in our U.S. operations have been included in the tariffs imposed on imports into China from the United States. We expect these tariffs, as currently applied, will increase our cost of goods sold by approximately one percentage point. It is unknown if any additional such tariffs or retaliatory actions will be imposed or what impact they would have on us or our industry and customers. As new tariffs, legislation and/or regulations are implemented, or if existing trade agreements are renegotiated between China and the U.S. or other affected countries, such changes could have a material adverse effect on our business, financial condition, results of operations or cash flows.

A considerable portion of our business involves selling High Speed optical components in China and any move to local Chinese vendors for these products might adversely affect our results.

The Chinese Government Ministry of Industry and Information Technology has announced a five-year optical component technology roadmap with the aim to reduce China's dependency on non-domestic companies for high-end optical chips and sub-components, including some products manufactured and sold by us. This announcement continues an ongoing trend in China to build domestic industry in this area. While we believe local Chinese component suppliers do not currently have the capability to supply the highest performance optical chips and sub-components, those companies may over time develop such capability and negatively impact our revenue and financial performance if we do not continue to innovate and maintain our lead in the highest speed and performance optical components.

Our subsidiaries in China may be subject to restrictions on dividend payments, on making other payments to us or any other affiliated company, and on borrowing or allocating tax losses among our subsidiaries.

Current Chinese regulations permit our subsidiaries in China to pay dividends only out of their accumulated profits, if any, determined in accordance with Chinese accounting standards and regulations, which are different than U.S. accounting standards and regulations. In addition, our subsidiaries in China are required to set aside at least 10% of their respective accumulated profits each year, if any, to fund their statutory common reserves until such reserves have reached at least 50% of their respective registered capital, as well as to allocate a discretional portion of their after-tax profits to their staff welfare and bonus fund. As of June 30, 2019 and December 31, 2018, our Chinese subsidiaries' common reserves had not reached this threshold and, accordingly, these entities are required to continue funding such reserves with accumulated net profits. Accordingly, we may not be able to move our capital easily, which could harm our business.

Restrictions on currency exchange may limit our ability to receive and use our revenue and cash effectively.

Because a portion of our revenue is denominated in RMB, any restrictions on currency exchange may limit our ability to use revenue generated in RMB to fund any business activities we may have outside China or to make dividend payments in U.S. dollars. Under relevant Chinese rules and regulations, the RMB is convertible under the "current account," which includes dividends, trade and service-related foreign exchange transactions, but not under the "capital account," which includes foreign direct investment and loans, without the prior approval of the State Administration of Foreign Exchange, or SAFE. We cannot be certain that Chinese regulatory authorities will not impose more stringent restrictions on the convertibility of the RMB, especially with respect to foreign exchange transactions. If such restrictions are imposed, our ability to adjust our capital structure or engage in foreign exchange transactions may be limited.

If the Chinese government determines that we failed to obtain approvals of, or registrations with, the requisite Chinese regulatory authority with respect to our current and past import and export of technologies, or failed to obtain the necessary licenses to file patent applications outside China for inventions made in China, we could be subject to sanctions, which could adversely affect our business.

China imposes controls on technology import and export. The term "technology import and export" is broadly defined to include, without limitation, the transfer or license of patents, software and know-how, and the provision of services in relation to technology. Depending on the nature of the relevant technology, the import and export of technology to or from China requires either approval by or registration with, the relevant Chinese governmental authorities. Additionally, the Chinese government requires the patent application for any invention made at least in part in China to be filed first in China, then undergo a government secrecy review and obtain a license before such application is filed in other countries.

If the Chinese government determines that we failed to obtain follow required procedures and obtain the appropriate license before filing a patent application outside China for an invention made at least in part in China, our China patents on such products may be invalidated, which could have a material and adverse effect on our business and operations.

China regulation of loans and direct investment by offshore holding companies to China entities may delay or prevent us from using our cash proceeds to make loans or additional capital contributions to our China subsidiaries.

From time to time, we may make loans or additional capital contributions to our China subsidiaries. We cannot assure you that we will be able to obtain these government registrations or approvals on a timely basis, if at all, with respect to our future loans or capital contributions to our China subsidiaries. If we fail to receive such registrations or approvals, our ability to capitalize our China subsidiaries may be negatively affected, which could materially and adversely affect our liquidity and ability to fund and expand our business.

Dividends paid to us by our Chinese subsidiaries may be subject to Chinese withholding tax.

The Enterprise Income Tax Law and the implementation regulations provide that a 10% withholding tax may apply to dividends payable to investors that are "non-resident enterprises," to the extent such dividends are derived from sources within China and in the absence of any tax treaty that may reduce such withholding tax rate.

Our contractual arrangements with our subsidiaries in China may be subject to audit or challenge by the Chinese tax authorities, and a finding that our subsidiaries in China owe additional taxes could substantially reduce our net income and the value of our stockholders' investment.

Under the applicable laws and regulations in China, arrangements and transactions among related parties may be subject to audit or challenge by the Chinese tax authorities. We would be subject to adverse tax consequences if the Chinese tax authorities were to determine that the contracts with or between our subsidiaries were not executed on an arm's length basis, and as a result the Chinese tax authorities could require that our Chinese subsidiaries adjust their taxable income upward for Chinese tax purposes. Such an adjustment could adversely affect us by increasing our tax expenses.

We may have difficulty maintaining adequate management, legal and financial controls in China, which we are required to do in order to comply with Section 404 of the Sarbanes-Oxley Act and securities laws, and which could cause a material adverse impact on our consolidated financial statements, the trading price of our common stock and our business.

Our subsidiaries in China are generally subject to our overall obligations to maintain strong corporate governance, internal controls and computer, financial and other control systems. We may have difficulty hiring and retaining employees in China with experience and expertise relating to accounting principles generally accepted in the U.S. and U.S. public-company reporting requirements. These issues could make it more difficult for us to establish and maintain adequate internal control over our financial reporting, which could then result in errors that could cause a material misstatement of our consolidated financial statements.

We may be exposed to liabilities under the FCPA and Chinese anti-corruption laws, and any determination that we violated these laws could have a material adverse effect on our business.

We are subject to the Foreign Corrupt Practices Act of 1977, or FCPA, and other laws that prohibit improper payments or offers of payments to foreign governments and their officials and political parties by U.S. persons and issuers as defined by the statute, for the purpose of obtaining or retaining business. We have operations, agreements with third parties and we make significant sales in China. China also strictly prohibits bribery of government officials. Our activities in China create the risk of unauthorized payments or offers of payments by our employees, consultants, sales agents or distributors, even though they may not always be subject to our control. Although we have implemented policies and procedures to discourage these practices by our employees, our existing safeguards and any future improvements may prove to be less than effective, and our employees, consultants, sales agents or distributors may engage in conduct for which we might be held responsible. Violations of the FCPA or anti-corruption laws in other countries may result in severe criminal or civil sanctions, and we may be subject to other liabilities, which could negatively affect our business, operating results and financial condition.

Risks Related to Ownership of Our Common Stock

Our stock price may be volatile due to fluctuation of our financial results from quarter-to-quarter and other factors.

Our quarterly revenue and results of operations have varied in the past and may continue to vary significantly from quarter to quarter. This variability may lead to volatility in our stock price as research analysts and investors respond to these quarterly fluctuations. These fluctuations are due to numerous factors, including:

- fluctuations in demand for our products;
- the timing, size and product mix of sales of our products;
- changes in our pricing and sales policies, particularly in the first quarter of the year, or changes in the pricing and sales policies of our competitors;
- our ability to design, manufacture and deliver products to our customers in a timely and cost-effective manner and that meet customer requirements;
- quality control, yield or other output-related problems in our manufacturing operations;
- our ability to timely obtain adequate quantities of the components used in our products;
- length and variability of the sales cycles of our products;
- unanticipated increases in costs or expenses; and
- fluctuations in foreign currency exchange rates.

The foregoing factors are difficult to forecast, and these, as well as other factors, could materially adversely affect our quarterly and annual results of operations in the future. In addition, a significant amount of our operating expenses is relatively fixed in nature due to our internal manufacturing, research and development, sales and general administrative efforts. Any failure to adjust spending quickly enough to compensate for a revenue shortfall could magnify the adverse impact of such revenue shortfall on our results of operations. Moreover, our results of operations may not meet our announced financial outlook or the expectations of research analysts or investors, in which case the price of our common stock could decrease significantly. There can be no assurance that we will be able to successfully address these risks.

The market price of our common stock could be subject to wide fluctuations in response to, among other things, the risk factors described in this section of this Quarterly Report on Form 10-Q, and other factors beyond our control, such as fluctuations in the valuation of companies perceived by investors to be comparable to us.

The stock markets have experienced price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions, such as recessions, sovereign debt or liquidity issues, interest rate changes or international currency fluctuations, may negatively affect the market price of our common stock.

In the past, many companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may become the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

Our charter documents and Delaware law could prevent a takeover that stockholders consider favorable and could also reduce the market price of our stock.

Our amended and restated certificate of incorporation and our amended and restated bylaws contain provisions that could delay or prevent a change in control of our company. These provisions could also make it more difficult for stockholders to elect directors and take other corporate actions. These provisions include:

- providing for a classified board of directors with staggered, three-year terms;
- not providing for cumulative voting in the election of directors;
- authorizing our board of directors to issue, without stockholder approval, preferred stock rights senior to those of common stock;
- prohibiting stockholder action by written consent;
- limiting the persons who may call special meetings of stockholders; and
- requiring advance notification of stockholder nominations and proposals.

In addition, we have been governed by the provisions of Section 203 of the Delaware General Corporate Law since the completion of our initial public offering. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding common stock, from engaging in certain business combinations without approval of substantially all of our stockholders for a certain period of time.

These and other provisions in our amended and restated certificate of incorporation, our amended and restated bylaws and under Delaware law could discourage potential takeover attempts, reduce the price that investors might be willing to pay for shares of our common stock in the future and result in the market price being lower than it would be without these provisions.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

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ITEM 6. EXHIBITS

Exhibit no.	Exhibit Description	Form	SEC File No.	Exhibit	Filing Date	Filed herewith
3.1	Amended and Restated Certificate of Incorporation of NeoPhotonics Corporation.	Form 8-K	001-35061	3.1	February 10, 2011	
3.2	Amended and Restated Bylaws of NeoPhotonics Corporation.	Form S-1/A	333-166096	3.5	November 22, 2010	
31.1	Certification pursuant to Rule 13a-14(a)/15d-14(a).					X
31.2	Certification pursuant to Rule 13a-14(a)/15d-14(a).					X
32.1	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
101.INS	XBRL Instance Document.					X
101.SCH	XBRL Taxonomy Extension Schema Document.					X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.					X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.					X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.					X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.					X

SIGNATURE

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.

NeoPhotonics Corporation

Date:	August 6, 2019	By:	/S/ ELIZABETH EBY
			Elizabeth Eby
			Senior Vice President, Finance and Chief Financial Officer
			(Principal Financial and Accounting Officer)

Exhibit 31.1

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Timothy S. Jenks, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of NeoPhotonics Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 6, 2019

/S/ TIMOTHY S. JENKS

Timothy S. Jenks
President, Chief Executive Officer and
Chairman of the Board of Directors
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Elizabeth Eby, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of NeoPhotonics Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 6, 2019

/S/ ELIZABETH EBY

Elizabeth Eby
Senior Vice President, Finance and Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
AND CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C SECTION 3150, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the U.S. Code (18 U.S.C. § 1350), Timothy S. Jenks, President, Chief Executive Officer and Chairman of the Board of Directors of NeoPhotonics Corporation (the "Company"), and Elizabeth Eby, Senior Vice President, Finance and Chief Financial Officer of the Company, each hereby certifies that, to the best of his/her knowledge:

1. The Company's Quarterly Report on Form 10-Q for the period ended June 30, 2019, to which this Certification is attached as Exhibit 32.1 (the "Quarterly Report") fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act, as amended; and

2. The information contained in the Quarterly Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned have set their hands hereto as of the 6th day of August, 2019.

/S/ TIMOTHY S. JENKS	/S/ ELIZABETH EBY
Timothy S. Jenks	Elizabeth Eby
President, Chief Executive Officer and Chairman of the Board of Directors	Senior Vice President, Finance and Chief Financial Officer
(Principal Executive Officer)	(Principal Financial and Accounting Officer)

This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of NeoPhotonics Corporation under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.