ECHELON CORP
Form 10-Q
May 10, 2018

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

FORM 10-Q

(Mark One)
[x] QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended March 31, 2018
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 001-37755
ECHELON CORPORATION
(Exact Name of Registrant as Specified in its Charter)

Delaware	77-0203595
State or Other Jurisdiction of Incorporation or Organization	I.R.S. Employer Identification No.
2901 Patrick Henry Drive Santa Clara, CA	95054
Address of Principal Executive Offices	Zip Code

(408) 938-5200
Registrant's Telephone Number, Including Area Code

Former Name, Former Address and Former Fiscal Year, if Changed Since Last Report

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No o
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No o
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 o	Accelerated filer o
Non-accelerated filer o (Do not check if a smaller reporting company)	Smaller reporting company x
Emerging growth company o	

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

APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PRECEDING FIVE YEARS:

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Section 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court. Yes o No o

APPLICABLE ONLY TO CORPORATE ISSUERS

As of April 30, 2018, 4,542,273 shares of the registrant's common stock were outstanding.

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FORM 10 Q
FOR THE QUARTER ENDED MARCH 31, 2018
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FORWARD-LOOKING INFORMATION

This report contains forward-looking statements within the meaning of the U.S. federal securities laws that involve risks and uncertainties. Certain statements contained in this report are not purely historical including, without limitation, statements regarding our expectations, beliefs, intentions, anticipations, commitments or strategies regarding the future that are forward-looking. These statements include those discussed in Item 2, Management's Discussion and Analysis of Financial Condition and Results of Operations, including "Critical Accounting Estimates," "Results of Operations," "Off-Balance-Sheet Arrangements and Other Critical Contractual Obligations," "Liquidity and Capital Resources," and "Recently Issued Accounting Standards," and elsewhere in this report.

In this report, the words "may," "could," "would," "might," "will," "should," "plan," " forecast," "anticipate," "believe," "expe "estimate," "predict," "potential," "continue," "future," "moving toward" or the negative of these terms or other similar express also identify forward-looking statements. Our actual results could differ materially from those forward-looking statements contained in this report as a result of a number of risk factors including, but not limited to, those set forth in the section entitled "Factors That May Affect Future Results of Operations" and elsewhere in this report. You should carefully consider these risks, in addition to the other information in this report and in our other filings with the SEC. All forward-looking statements and reasons why results may differ included in this report are made as of the date of

this report, and we assume no obligation to update any such forward-looking statement or reason why such results might differ, except as required by law.

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PART I. FINANCIAL INFORMATION
ITEM 1. UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
ECHELON CORPORATION
CONDENSED CONSOLIDATED BALANCE SHEETS
(In thousands)
(Unaudited)

	March 31, 2018	December 31, 2017
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$5,846	$ 7,261
Short-term investments	11,960	11,967
Restricted investments	1,250	1,250
Accounts receivable, net	2,556	2,296
Inventories	3,566	3,251
Deferred cost of revenues	529	1,039
Other current assets	1,516	1,152
Total current assets	27,223	28,216
Property and equipment, net	453	458
Intangible assets, net	668	725
Other long term assets	558	987
Total assets	$28,902	$ 30,386
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable	$2,570	$ 2,317
Accrued liabilities	2,256	1,878
Deferred revenues	849	1,812
Total current liabilities	5,675	6,007
LONG-TERM LIABILITIES:		
Other long-term liabilities	616	652
Total long-term liabilities	616	652
STOCKHOLDERS' EQUITY:		
Common stock	49	48
Additional paid-in capital	359,715	359,339
Treasury stock	(28,130)	(28,130)
Accumulated other comprehensive loss	(1,681)	(1,821)
Accumulated deficit	(307,342)	(305,963)
Total Echelon Corporation stockholders' equity	22,611	23,473
Noncontrolling interest in subsidiary	—	254
Total stockholders' equity	22,611	23,727
Total liabilities and stockholders' equity	$28,902	$ 30,386

See accompanying notes to condensed consolidated financial statements.

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ECHELON CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
Revenues	$7,837	$7,703
Cost of revenues [1]	3,460	3,292
Gross profit	4,377	4,411
Operating expenses:		
Product development [1]	3,005	2,227
Sales and marketing [1]	1,310	1,462
General and administrative [1]	1,705	1,924
Total operating expenses	6,020	5,613
Loss from operations	(1,643)	(1,202)
Interest and other income (expense), net	258	(65)
Loss before provision for income taxes	(1,385)	(1,267)
Income tax benefit	(6)	(6)
Net loss	$(1,379)	$(1,261)
Basic and diluted net loss per share	$(0.30)	$(0.28)
Shares used in computing net loss per share:		
Basic	4,527	4,434
Diluted	4,527	4,434

[1] See Note 4 for summary of amounts included representing stock-based compensation expense.
See accompanying notes to condensed consolidated financial statements.

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ECHELON CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(In thousands)
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
Net loss	$(1,379)	$(1,261)
Other comprehensive income (loss), net of tax:		
Foreign currency translation adjustment	140	83
Unrealized holding gain (loss) on available-for-sale securities	—	(1)
Total other comprehensive income (loss)	140	82
Comprehensive loss	$(1,239)	$(1,179)

See accompanying notes to condensed consolidated financial statements.

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ECHELON CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
CASH FLOWS PROVIDED BY (USED IN) OPERATING ACTIVITIES:		
Net loss	$(1,379)	$(1,261)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	119	110
Reduction in allowance for doubtful accounts	—	(7)
Increase in accrued investment income	(44)	(16)
Stock-based compensation	444	467
Gain on liquidation of joint venture	(424)	—
Change in operating assets and liabilities:		
Accounts receivable	(270)	(224)
Inventories	(315)	54
Deferred cost of revenues	48	(159)
Other current assets	65	(124)
Accounts payable	290	42
Accrued liabilities	135	(545)
Deferred revenues	(3)	185
Deferred rent	(19)	(18)
Net cash used in operating activities	(1,353)	(1,496)
CASH FLOWS PROVIDED BY (USED IN) INVESTING ACTIVITIES:		
Purchases of available for sale short term investments	(5,948)	(5,979)
Proceeds from maturities and sales of available for sale short term investments	6,000	6,000
Change in other long term assets	9	11
Capital expenditures	(87)	(16)
Net cash provided by (used in) investing activities	(26)	16
CASH FLOWS PROVIDED BY (USED IN) FINANCING ACTIVITIES:		
Repurchase of common stock from employees for payment of taxes on vesting of restricted stock units and upon exercise of stock options	(66)	(17)
Net cash used in financing activities	(66)	(17)
EFFECT OF EXCHANGE RATE CHANGES ON CASH	30	19
NET CHANGE IN CASH AND CASH EQUIVALENTS	(1,415)	(1,478)
CASH AND CASH EQUIVALENTS:		
Beginning of period	7,261	9,803
End of period	$5,846	$8,325
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:		
Cash paid for income taxes	$35	$37

See accompanying notes to condensed consolidated financial statements.

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ECHELON CORPORATION
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Summary of Significant Accounting Policies

Basis of Presentation

The condensed consolidated financial statements include the accounts of Echelon Corporation, a Delaware corporation, its wholly-owned subsidiaries, and a subsidiary in which it has a controlling interest (collectively referred to as the "Company"). The Company reports non-controlling interests in consolidated entities as a component of equity separate from the Company's equity. All material inter-company transactions between and among the Company and its consolidated subsidiaries and other consolidated entities have been eliminated in consolidation.

While the financial information furnished is unaudited, the condensed consolidated financial statements included in this report reflect all adjustments (consisting only of normal recurring adjustments) which the Company considers necessary for the fair presentation of the results of operations for the interim periods covered, and of the financial condition of the Company at the date of the interim balance sheet. The results for interim periods are not necessarily indicative of the results for the entire year. The condensed consolidated financial statements should be read in conjunction with the Company's consolidated financial statements for the year ended December 31, 2017 included in its Annual Report on Form 10 K.

Apart from the Company's adoption of new revenue recognition guidance discussed more fully below, there have been no material changes to the Company's significant accounting policies as compared to the significant accounting policies described in its Annual Report on Form 10 K for the fiscal year ended December 31, 2017.

Risks and Uncertainties

The Company's operations and performance depend significantly on worldwide economic conditions and their impact on purchases of the Company's products, as well as the ability of suppliers to provide the Company with products and services in a timely manner. The impact of any of the matters described below could have an adverse effect on the Company's business, results of operations and financial condition.

- The Company's sales are currently concentrated, as approximately 40.4% of revenues for the three months ended March 31, 2018, were derived from two customers, Avnet Europe Comm VA ("Avnet"), the Company's primary distributor of its IIoT products in Europe and Japan; and Engenuity Systems, Inc., a reseller of the Company's products focused primarily in the United States. Customers in any of the Company's target market sectors may experience unexpected reductions in demand for their products and consequently reduce their purchases from the Company, resulting in either the loss of a significant customer or a notable decrease in the level of sales to a significant customer. In addition, if any of these customers are unable to obtain the necessary capital to operate their business, they may be unable to satisfy their payment obligations to the Company.
- The Company utilizes third-party contract electronic manufacturers to manufacture, assemble, and test its products. If any of these third-parties were unable to obtain the necessary capital to operate their business, they may be unable to provide the Company with timely services or to make timely deliveries of products.
- From time to time, the Company has experienced shortages or interruptions in supply for certain products or components used in the manufacture of the Company's products that have been or will be discontinued. In order to ensure an adequate supply of these items, the Company has occasionally purchased quantities of these items that are in excess of the Company's then current estimate of short-term requirements. If the long-term requirements do not materialize as originally expected, or if the Company develops alternative solutions that no longer employ these items and the Company is not able to dispose of these excess products or components, the Company could be subject to increased levels of excess and obsolete inventories.
- In an effort to manage costs and inventory risks, the Company has decreased the inventory levels of certain products. If there is an unexpected increase in demand for these items, the Company might not be able to supply its customers with products in a timely manner.
- Due to the nature of development efforts in general, the Company can experience delays in the introduction of new or improved products beyond its original projected shipping date for such products. These delays can result in increased development costs and delays in the ability to generate revenues from these new products. Furthermore, when such

new products are developed, there is no guarantee that they will meet customer requirements or will otherwise be

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acceptable to them, which could cause them to discontinue buying these products. This could have a material adverse effect on the Company's revenues and results of operations.

Use of Estimates

The preparation of financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America requires management to make judgments, assumptions, and estimates that affect amounts reported in the Condensed Consolidated Financial Statements and accompanying notes. Significant estimates and judgments are used for revenue recognition, performance-based equity compensation, inventory valuation, intangible asset valuation, contingent consideration valuation, allowance for warranty costs, and other loss contingencies. In order to determine the carrying values of assets and liabilities that are not readily apparent from other sources, the Company bases its estimates and assumptions on current facts, historical experience, and various other factors that it believes to be reasonable under the circumstances. Actual results experienced by the Company may differ materially from management’s estimates.

Recently Issued Accounting Standards

(i) New Accounting Standards Recently Adopted

In May 2014, the FASB issued a new standard related to revenue recognition, ASC 606 - Revenue from Contracts with Customers ("ASC 606"). Under the standard, revenue is recognized when a customer obtains control of promised goods or services in an amount that reflects the consideration the entity expects to receive in exchange for those goods or services. In addition, the standard requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers.

The Company adopted ASC 606 effective January 1, 2018, using the full retrospective method, which required the Company to restate each prior reporting period presented. The most significant impact of the standard relates to the Company's accounting for sales made to distributors under agreements that contain a limited right to return unsold products and price adjustment provisions. Under previous revenue guidance, the Company historically concluded that the price to these distributors was not fixed or determinable at the time it delivers products to them. Accordingly, revenue from sales to these distributors has not historically been recognized until the distributor resells the product. By contrast, under the new standard, the Company will recognize revenue, including estimates for applicable variable consideration, predominately at the time of shipment to these distributors, thereby accelerating the timing of revenue for products sold through the distribution channel. Revenue recognition related to transactions not involving the Company's distributor partners remains substantially unchanged.

Adoption of the standard using the full retrospective method required the Company to restate certain previously reported results. In summary, adoption of the standard resulted in the recognition of slightly lower revenue for the quarter ended March 31, 2017. In addition, as of December 31, 2017, adoption of the standard resulted in a reduction of deferred revenues driven by the recognition of revenues associated with on-hand distributor inventory as of that date, the revenue for which was deferred under previous guidance; a decrease of deferred cost of goods sold, again driven by the recognition of revenue that was deferred under previous guidance; and a decrease in accounts receivable, driven by the incremental reserves required for estimated price adjustments that will be issued to the distributors in the future based on the additional revenue recognized under the new guidance. Adoption of the standard impacted our previously reported results as follows (in thousands, except earnings per share amounts):

	Three Months Ended March 31, 2017		
	As Reported	New Revenue Standard Adjustment	As Adjusted
Statement of Operations:			

Revenue	$7,799	$ (96)	$7,703
Net loss	(1,199)	(62)	(1,261)
Basic and diluted loss per share	$(0.27)	$ (0.01)	$(0.28)

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	December 31, 2017		
	As Reported	New Revenue Standard Adjustment	As Adjusted
Balance Sheets:			
Accounts receivable, net	$2,721	$ (425)	$ 2,296
Deferred cost of goods sold	1,767	(728)	1,039
Deferred revenues	4,805	(2,993)	1,812
Stockholders' equity	21,887	1,840	23,727

(ii) New Accounting Standards Not Yet Effective

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842), which requires, among other things, the recognition of lease assets and lease liabilities on the balance sheet by lessees for certain leases classified as operating leases under previous GAAP. ASU 2016-02 is effective for annual and interim periods beginning after December 15, 2018. ASU 2016-02 mandates a modified retrospective transition method with early adoption permitted. The Company is currently evaluating the effect that ASU 2016-02 will have on its consolidated financial statements and related disclosures.

Revenue Recognition

The Company’s revenues are derived from the sale and license of its products and, to a lesser extent, from fees associated with training, technical support, and other services offered to its customers. Product revenues consist of revenues from hardware sales and software licensing arrangements. Service revenues consist of product technical support and training.

The Company recognizes revenue 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 enters into contracts that can include various combinations of products and services, which in most instances are capable of being distinct and accounted for as separate performance obligations. In the case of product sales, the Company's performance obligations are generally met and revenue is recognized at the time of shipment of the products to the customer because the customer has significant risks and rewards of ownership of the asset and the Company has a present right to payment at that time. For service revenues, these criteria are generally met at the time the services have been performed for the same reasons. Revenue is recognized net of allowances for returns and any taxes collected from customers, which are subsequently remitted to governmental authorities.

The Company's contracts with customers often include promises to transfer multiple products and services to a customer. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment. For example, in certain instances, the Company's outdoor lighting control customers may contract with the Company to perform certain services when deploying the Company's outdoor lighting control solution. These services require that the Company "commission" the outdoor lighting control system by integrating the hardware (purchased from the Company and installed by the customer) with the Company's Central Management System ("CMS") software. These systems depend on a significant level of integration and interdependency between the hardware and the CMS. Judgment is required to determine whether the commissioning services are considered distinct and accounted for separately, or not distinct and accounted for together with the system hardware and CMS.

The transaction price for a contract is allocated to each distinct performance obligation and recognized as revenue when, or as, each performance obligation is satisfied. For contracts with multiple performance obligations, the Company allocates the transaction price to each performance obligation using the best estimate of the standalone selling price ("SSP") of each distinct good or service in a contract. Judgment is required to determine the SSP for each distinct performance obligation. The primary method used to estimate the SSP is the observable price when the good or service is sold separately in similar circumstances and to similar customers. If the SSP is not directly observable, it is estimated using either a market adjustment or cost plus margin approach.

The Company's products are generally sold without a right of return. However, the Company may provide other credits or incentives, which are accounted for as variable consideration when estimating the amount of revenue to recognize. For example, in many instances, the Company issues Point of Sale ("POS") credits to its distributors when they sell certain of the Company's products to their end use customers. In these cases, the Company is required to estimate (and reserve for) the amount of future POS credits it will issue to the distributors associated with unsold inventory they have on hand at the end of

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the period. The Company also grants its distributor partners a limited ability to return unsold product in the form of stock rotation rights. Judgment is required to determine the amount of variable consideration associated with these POS credits and stock rotation rights, which are estimated at contract inception and updated at the end of each reporting period as additional information becomes available and only to the extent that it is probable that a significant reversal of any incremental revenue will not occur.

In accordance with ASC 606, the Company disaggregates its revenue from contracts with customers into geographical regions as the Company determined that disaggregating revenue into these categories meets the disclosure objective in ASC 606, which is to depict how the nature, amount, timing and uncertainty of revenue and cash flows are affected by regional economic factors. Information regarding revenues disaggregated by geographic area can be found in Note 10 - Segment Disclosure. The Company has not provided disaggregation information associated with product and service revenues as the amount of service revenues are immaterial in the periods presented. Similarly, no disaggregation information has been provided for revenues based on the timing of when goods and services are transferred as the amount of revenue associated with products and services recognized over time is also immaterial.

The Company invoices its customers upon shipment in the case of hardware sales, and upon the completion of the required services for service revenues. These invoices are generally issued with net 30 day payment terms. However, in certain instances, the Company may offer payment terms of up to 75 days.

The Company generally sells its hardware products with a one-year warranty against defects or failure. However, in some cases, the Company's hardware products come with a standard five-year warranty. As of March 31, 2018 and December 31, 2017, the Company's warranty reserves totaled $428,000 and $350,000, respectively, and are included in Accrued liabilities and Other long-term liabilities on the unaudited condensed consolidated balance sheets.

The Company's contract assets were immaterial at both March 31, 2018 and December 31, 2017. The Company's contract liabilities consist generally of deferred revenue where the Company has unsatisfied performance obligations, and are classified as such on the unaudited condensed consolidated balance sheets. The following table reflects changes in contract balances for the three months ended March 31, 2018 and 2017 (in thousands):

	Three Months Ended	
	March 31, 2018	March 31, 2017
Beginning balance	$1,812	$ 1,057
Deferred revenues added	146	220
Elimination of deferred revenues due to joint venture liquidation	(986)	—
Previously deferred revenues recognized	(123)	(109)
Ending balance	$849	$ 1,168

During the three months ended March 31, 2018 and 2017, deferred revenues increased primarily as a result of sales of products where cash payments are received or due for hardware products in advance of satisfying the service related performance obligation associated with those hardware products. Similarly, previously deferred revenues were recognized during the three months ended March 31, 2018 and 2017 once the underlying service related performance obligations were completed.

The Company recognizes an asset for the incremental costs of obtaining a contract with a customer if it expects the benefit of those costs to be longer than one year. These assets are then amortized over the period of benefit of the related revenue. The Company expenses immediately any incremental costs of obtaining a contract when the amortization period would be one year or less. These costs are recorded within sales and marketing expenses. As of

March 31, 2018 and December 31, 2017, there were no customer contracts in effect that had incremental costs meeting the requirement for capitalization.

For the period ended March 31, 2018, the Company elected the following practical expedients:

- In accordance with Subtopic 340-40 "Other Assets and Deferred Costs - Contracts with Customers," the Company has elected to expense the incremental costs of obtaining a contract when the amortization period for such contracts would have been one year or less.
- In accordance with ASC 606-10-50-14, the Company has elected not to disclose the remaining performance obligations where the underlying contract's original expected duration is one year or less and revenue from the

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satisfaction of the performance obligations is recognized in the amount invoiced in accordance with ASC 606-10-55-18.

- The Company has made an accounting policy election to exclude all taxes by governmental authorities from the measurement of the transaction price.

Deferred Revenue and Deferred Cost of Revenues

Deferred revenue consists of amounts billed or payments received in advance of revenue recognition. Deferred cost of revenues related to deferred product revenues includes direct product costs and applied overhead. Deferred cost of revenues related to deferred service revenues includes direct labor costs and applied overhead. Once all revenue recognition criteria have been met, the deferred revenues and associated cost of revenues are recognized.

Restricted Investments

As of March 31, 2018, restricted investments consist of balances maintained by the Company with an investment advisor in money market funds and permitted treasury bills. These balances represent collateral for a $1.0 million operating line of credit issued to the Company by its primary bank for credit card purchases. Because the Company’s agreement with the lender prevents the Company from withdrawing these funds, they are considered restricted.

Fair Value Measurements

The Company measures at fair value its cash equivalents and available-for-sale investments using a valuation hierarchy based on whether the inputs to those valuation techniques are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect the Company's own assumptions. These two types of inputs have created the following fair value hierarchy:

- Level 1 - Quoted prices for identical instruments in active markets;
- Level 2 - Quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-derived valuations in which all significant inputs and significant value drivers are observable in active markets; and
- Level 3 - Valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are unobservable.

This hierarchy requires the Company to minimize the use of unobservable inputs and to use observable market data, if available, when estimating fair value. Other than cash and money market funds, the Company's only financial assets and liabilities required to be measured at fair value on a recurring basis at March 31, 2018, are its fixed income available-for-sale debt securities. See Note 2 of these Notes to condensed consolidated financial statements for a summary of the input levels used in determining the fair value of these assets and liabilities as of March 31, 2018.

Long-Lived Assets

We perform periodic reviews to determine whether facts and circumstances exist that would indicate that the carrying amounts of property, plant and equipment and long-lived intangible assets might not be fully recoverable. If facts and circumstances indicate that the carrying amount of these assets might not be fully recoverable, we compare projected undiscounted net cash flows associated with the related asset or group of assets over their estimated remaining useful lives against their respective carrying amounts. In the event that the projected undiscounted cash flows are not sufficient to recover the carrying value of the assets, the assets are written down to their estimated fair values based on the expected discounted future cash flows attributable to the assets. Evaluation of impairment of property, plant and equipment and long-lived intangible assets requires estimates in the forecast of future operating results that are used in the preparation of the expected future undiscounted cash flows. Actual future operating results and the remaining economic lives of our property, plant and equipment and long-lived intangible assets could differ from our estimates used in assessing the recoverability of these assets. These differences could result in impairment charges, which could have a material adverse impact on our results of operations.

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2. Financial Instruments:

The Company's financial instruments consist of cash equivalents, restricted investments, short-term investments, accounts receivable, and accounts payable. The carrying value of the Company's financial instruments approximates fair value. Financial instruments that potentially subject the Company to concentrations of credit risk consist principally of investments, which are classified as either cash equivalents, restricted investments, or short-term investments, and accounts receivable. With respect to its investments, the Company has an investment policy that limits the amount of credit exposure to any one financial institution and restricts placement of the Company's investments to financial institutions independently evaluated as highly creditworthy. With respect to its accounts receivable, the Company performs ongoing credit evaluations of each of its customers' financial condition. For a customer whose credit worthiness does not meet the Company's minimum criteria, the Company may require partial or full payment prior to shipment. Alternatively, prior to shipment, customers may be required to provide the Company with an irrevocable letter of credit or arrange for some other form of coverage to mitigate the risk of uncollectibility, such as a bank guarantee. Additionally, the Company establishes an allowance for doubtful accounts and sales return allowances based upon factors surrounding the credit risk of specific customers, historical trends, and other available information.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

On a recurring basis, the Company measures certain of its financial assets, namely its cash equivalents and available-for-sale debt securities, at fair value. The fair value of the Company's financial assets measured at fair value on a recurring basis was determined using the following inputs at March 31, 2018 (in thousands):

	Fair Value Measurements at Reporting Date Using			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Money market funds [1]	$3,576	$ 3,576	$ —	$ —
U.S. government securities[2]	13,210	—	13,210	—
Total	$16,786	$ 3,576	$ 13,210	$ —

The fair value of the Company's financial assets measured at fair value on a recurring basis was determined using the following inputs at December 31, 2017 (in thousands):

	Fair Value Measurements at Reporting Date Using			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Money market funds [1]	$4,515	$ 4,515	$ —	$ —
U.S. government securities[2]	13,217	—	13,217	—

Total	$17,732	$ 4,515	$ 13,217	$ —

(1) Included in cash and cash equivalents in the Company's condensed consolidated balance sheets

(2) Represents the portfolio of available for sale securities that is included in restricted investments and short-term investments in the Company's condensed consolidated balance sheets

Cash equivalents consist of either investments with remaining maturities of three months or less at the date of purchase, or money market funds for which the carrying amount is a reasonable estimate of fair value.

The Company's available-for-sale securities consist of U.S. government securities with a minimum and weighted average credit rating of A-1+. The Company values these securities based on pricing from pricing vendors, who may use quoted prices in active markets for identical assets (Level 1 inputs) or inputs other than quoted prices that are observable either directly or indirectly (Level 2 inputs) in determining fair value. However, the Company classifies all of its fixed income available-for-sale securities as having Level 2 inputs. The valuation techniques used to measure the fair value of the Company's financial

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instruments having Level 2 inputs were derived from non-binding market consensus prices that are corroborated by observable market data, quoted market prices for similar instruments, or pricing models, such as discounted cash flow techniques. The Company's procedures include controls to ensure that appropriate fair values are recorded by comparing prices obtained from a third party independent source.

As of March 31, 2018, the Company’s available-for-sale securities had contractual maturities of six months and an average remaining term to maturity of three months. As of March 31, 2018, the amortized cost basis, aggregate fair value, and gross unrealized holding gains and losses of the Company’s short-term investments by major security type were as follows (in thousands):

	Amortized Cost	Aggregate Fair Value	Unrealized Holding Gains	Unrealized Holding Losses
U.S. government securities	$ 11,963	$ 11,960	$ —	$ 3

The amortized cost basis, aggregate fair value and gross unrealized holding gains and losses for the Company’s available-for-sale short-term investments, by major security type, were as follows as of December 31, 2017 (in thousands):

	Amortized Cost	Aggregate Fair Value	Unrealized Holding Gains	Unrealized Holding Losses
U.S. government securities	$ 11,970	$ 11,967	$ —	$ 3

Market values were determined for each individual security in the investment portfolio. The Company reviews its investments on a regular basis to evaluate whether or not any have experienced an other-than-temporary decline in fair value.

3. Earnings Per Share:

The computation of diluted net loss per share does not include stock options and performance shares of 978,135 and 960,606 for the three months ended March 31, 2018 and 2017, respectively, because the effect of their inclusion would be anti-dilutive based on their respective exercise prices.

4. Stockholders’ Equity and Employee Stock Option Plans:

On April 17, 2017, the Company's Board of Directors approved an amendment to the Tax Benefit Preservation Plan (the "Tax Plan"), dated as of April 22, 2016, by and between the Company and Computershare Inc., as rights agent (the “Rights Agent”), to extend the Final Expiration Date (as such term is defined in the Tax Plan) to April 25, 2019.

Stock-based Compensation Expense

The following table summarizes stock-based compensation expense for the three months ended March 31, 2018 and 2017 and its allocation within the condensed consolidated statements of operations (in thousands):

	Three Months Ended March 31,	
	2018	2017
Cost of revenues	$58	$29
Product development	94	124
Sales and marketing	88	102
General and administrative	204	212
Total	$444	$467

Stock Award Activity

There were no options exercised during the three months ended March 31, 2018 and 2017.

The total fair value of RSUs vested and released during the three months ended March 31, 2018 was $169,000. The total fair value of RSUs vested and released during the three months ended March 31, 2017 was approximately $49,000. The fair

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value is calculated by multiplying the fair market value of the Company's common stock on the vesting date by the number of shares of common stock issued upon vesting.

5. Significant Customers:

The Company markets its products and services throughout the world to original equipment manufacturers (OEMs) and systems integrators in the building, industrial, transportation, utility/home, and other automation markets. During the three months ended March 31, 2018 and 2017, the Company had two customers that accounted for a significant portion of its revenues: Avnet Europe Comm VA ("Avnet"), the Company's primary distributors of its IIoT products in Europe and Japan; and Engenuity Systems, Inc. ("Engenuity), a reseller of the Company's products focused mainly in the United States. For the three months ended March 31, 2018 and 2017, the percentage of the Company's revenues attributable to sales made to these customers was as follows:

	March 31, 2018	March 31, 2017
Avnet	27.3 %	25.3 %
Engenuity	13.1 %	9.5 %
	40.4 %	34.8 %

6. Commitments and Contingencies:

Legal Actions

From time to time, in the ordinary course of business, the Company may be subject to certain legal proceedings, claims, investigations, and other proceedings, including claims of alleged infringement of third-party patents and other intellectual property rights, and commercial, employment, or other matters. In accordance with generally accepted accounting principles, the Company makes a provision for a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. These provisions are reviewed at least quarterly and adjusted to reflect the impacts of negotiations, settlements, rulings, advice of legal counsel, and other information and events pertaining to a particular case. While the Company believes it has adequately provided for such contingencies as of March 31, 2018, the amounts of which were immaterial, it is possible that the Company's results of operations, cash flows, and financial position could be harmed by the resolution of any such outstanding claims.

Line of Credit

As of March 31, 2018, the Company maintained an operating credit line of $1.0 million with its primary bank for company credit card purchases. This line of credit is secured by a collateral of the first priority on $1.3 million of the Company's investments (presented as restricted investments in the condensed consolidated balance sheets). The restricted investments are classified as current assets due to the contractual duration of the underlying credit agreement.

7. Accumulated Other Comprehensive Income (Loss), Net of Tax (Amounts in thousands):

	Foreign currency translation adjustment	Unrealized gain (loss) on available-for-sale debt securities	Accumulated Other Comprehensive Income (Loss)
Beginning balance at December 31, 2017	$ (1,818)	$ (3)	$ (1,821)
Change during January - March 2018	140	—	140
Balance at March 31, 2018	$ (1,678)	$ (3)	$ (1,681)

None of the above amounts have been reclassified in the condensed consolidated statement of operations.

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8. Inventories:

Inventories are stated at the lower of cost (first in, first out) or net realizable value and include material, labor and manufacturing overhead. When required, provisions are made to reduce excess and obsolete inventories to their estimated net realizable value. Inventories consist of the following (in thousands):

	March 31, 2018	December 31, 2017
Purchased materials	$ 624	$ 148
Finished goods	2,942	3,103
	$ 3,566	$ 3,251

9. Accrued Liabilities:

Accrued liabilities consist of the following (in thousands):

	March 31, 2018	December 31, 2017
Accrued payroll and related costs	$ 980	$ 1,088
Warranty reserve	209	142
Restructuring charges	185	185
Payable to joint venture partner (see Note 13 - Joint Venture)	438	—
Other accrued liabilities	444	463
	$ 2,256	$ 1,878

10. Segment Disclosure:

ASC Topic 280, Segment Reporting, establishes standards for reporting information about operating segments, products and services, geographic areas of operations and major customers. Operating segments are defined as components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision maker in deciding how to allocate resources and in assessing business performance. The Company's chief operating decision-making group is the Executive Staff, which is comprised of the Chief Executive Officer and his direct reports (CODM). The Company operates in one principal industry segment - the IIoT segment, which is its reportable segment.

The Company operates in three main geographic areas: the Americas; Europe, Middle East and Africa ("EMEA"); and Asia Pacific / Japan ("APJ"). Each geographic area provides products and services to the Company's customers located in the respective region. The Company's long-lived and other assets include property and equipment, acquired intangible assets, and deposits on its leased facilities. Long-lived assets are attributed to geographic areas based on the country where the assets are located. As of March 31, 2018 and December 31, 2017, long-lived assets of approximately $1.6 million and $2.1 million, respectively, were domiciled in the United States. Long-lived assets for all other locations are not material to the condensed consolidated financial statements.

In North America, the Company sells its products primarily through a direct sales organization and select third-party electronics representatives. Outside North America, the Company sells its products through direct sales organizations, value-added resellers, and local distributors, primarily in EMEA and APJ. Revenues are attributed to geographic areas based on the country where the products are shipped to or the services are delivered. Summary revenue information by geography for the three months ended March 31, 2018 and 2017 is as follows (in thousands):

	Three Months Ended March 31,

	2018	2017
Americas	$3,496	$3,250
EMEA	2,541	2,606
APJ	1,800	1,847
Total	$7,837	$7,703

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For information regarding the Company's major customers, please refer to Note 5, Significant Customers.

11. Income Taxes:

The benefit from income taxes for the three months ended March 31, 2018 and 2017 was $(6,000) and $(6,000), respectively. The difference between the statutory rate and the Company's effective tax rate is primarily due to the impact of foreign taxes, changes in the valuation allowance on deferred tax assets, and changes in the accruals related to unrecognized tax benefits.

As of March 31, 2018 and December 31, 2017, the Company had gross unrecognized tax benefits of approximately $9.4 million and $9.3 million, respectively, of which $322,000 and $332,000, respectively, if recognized, would impact the effective tax rate on income from continuing operations. The Company's policy is to recognize interest and/or penalties related to unrecognized tax benefits in income tax expense. As of March 31, 2018 and December 31, 2017, the Company had accrued $43,000 and $56,000, respectively, for interest and penalties. The $13,000 reduction in interest and penalties on gross unrecognized tax benefits during the three months ended March 31, 2018 was primarily attributable to the expiration of the statute of limitations in certain foreign jurisdictions.

12. Related Parties:

In June 2000, the Company entered into a stock purchase agreement with Enel pursuant to which Enel purchased 300,000 newly issued shares of its common stock for $130.7 million. To the Company's knowledge, Enel has disposed of none of its 300,000 shares. Under the terms of the stock purchase agreement, Enel has the right to nominate one member of the Company's board of directors. While a representative of Enel served on the board until March 14, 2012, no Enel representative is presently on the board.

In October 2006, the Company entered into a new development and supply agreement with Enel. Under the development and supply agreement, Enel and its contract manufacturers purchase additional electronic components and finished goods from the Company. The development and supply agreement expired in March 2016.

For the three months ended March 31, 2018 and 2017, the Company recognized no revenue from products sold to Enel and its designated manufacturers.

As of March 31, 2018 and December 31, 2017, none of the Company's total accounts receivable balance related to amounts owed by Enel and its designated manufacturers.

13. Joint Venture:

On March 23, 2012, the Company entered into an agreement with Holley Metering Limited ("Holley Metering"), a designer and manufacturer of energy meters in China, to create a joint venture, Zhejiang Echelon-Holley Technology Co., Ltd. ("Echelon-Holley"). The joint venture's intended focus was on the development and sales of smart energy products for China and rest-of-world markets. The Company had a 51.0% ownership interest in the joint venture and exercised controlling influence. Therefore, Echelon-Holley's accounts have been included in the Company's condensed consolidated financial statements up until the point of its liquidation (see below). Holley Metering's interests in Echelon-Holley's net assets were reported in the non-controlling interest in subsidiary on the condensed consolidated balance sheet as of December 31, 2017. Net loss attributable to the non-controlling interest in Echelon-Holley was $0 and $0 during the three months ended March 31, 2018 and 2017, respectively.

As of March 23, 2018, Echelon and Holley Metering had contributed in cash a total of approximately $4.0 million in Share Capital, as defined in the joint venture agreement, to Echelon-Holley in proportion to their respective ownership interests.

In connection with the decision to sell the Grid business announced in the third quarter of 2014, the Company undertook a process to sell the remaining net assets of the joint venture and recorded the net assets and liabilities of the joint venture at the lower of their carrying amount or fair value less cost to sell, and classified them as held for sale on the accompanying balance sheet at December 31, 2014. The major classes of assets and liabilities that were classified as held for sale were inventory, deferred revenues and the related deferred costs of sales, and accrued liabilities.

During the quarter ended September 30, 2015, the Company concluded that it would no longer pursue a sale, but would instead work with Holley Metering to shut the joint venture down. The remaining net assets of the joint venture were immaterial as of September 30, 2015.

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In early April 2018, the Company was informed by the Chinese authorities that the liquidation of Echelon-Holley had been completed on March 23, 2018. This resulted in a gain on liquidation of approximately $424,000, which is reflected in the Interest and other income (expense), net line in the Company's Condensed Consolidated Statement of Operations for the quarter ended March 31, 2018. In conjunction with the liquidation, the Company is required to remit approximately $438,000 to Holley Metering, which represents Holley-Metering's share of the remaining cash balance on the liquidation date. This payable obligation is reflected in Accrued Liabilities on the Company's Condensed Consolidated Balance Sheet at March 31, 2018.

14. Restructuring:

During the fourth quarter of 2016, the Company undertook restructuring actions affecting approximately 7 employees to be terminated between October 2016 and September 2017, as part of an overall plan to reshape the Company for the future. In connection with this restructuring, the Company recorded restructuring charges of approximately $286,000 related to termination benefits for these personnel during the year ended December 31, 2016.

The following table sets forth a summary of restructuring activities related to the Company's 2016 restructuring program in 2018 (in thousands):

	December 31, 2017	Costs Incurred	Cash Payments	March 31, 2018
Termination benefits	$ 185	$ —	$ —	$ 185

The following table sets forth a summary of restructuring activities related to the Company's 2016 restructuring program in 2017 (in thousands):

	December 31, 2016	Costs Incurred	Cash Payments	March 31, 2017
Termination benefits	$ 273	$ —	$ (48)	$ 225

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

The following discussion should be read in conjunction with the condensed consolidated financial statements and notes thereto included elsewhere in this Quarterly Report. The following discussion contains predictions, estimates, and other forward-looking statements that involve a number of risks and uncertainties about our business. These statements may be identified by the use of words such as “we believe,” “expect,” “anticipate,” “intend,” “plan,” “goal,” “contin “may,” "target"," and similar expressions. Forward-looking statements include statements that refer to projections of our future financial performance, our anticipated growth and trends in our businesses, and other characterizations of future events or circumstances. In particular, these statements include statements such as: our plan to focus our product development spend in our foundational technology to broaden the applicability of our control networking platform into new markets; our predictions about the smart energy market, increased pricing pressures and worldwide macro-economic conditions; our projections of IIoT revenues; our expectations on shipments to Enel and revenues from Enel; our expectation that we will achieve a return on our investment of resources into our products; estimates of our future gross margins and factors affecting our gross margins; statements regarding reinvesting a portion of our earnings from foreign operations; plans to use our cash reserves to strategically acquire other companies, products, or technologies; our projections of our combined cash, cash equivalent and short term investment balance; the sufficiency of our cash reserves to meet cash requirements; our expectations that our IIoT revenues will not fluctuate significantly from foreign currency sales; estimates of our interest income and expense; our belief that we have adequately provided for legal contingencies; and our belief that we have made adequate provisions for tax exposure and legal matters. Such statements are based on our current expectations and could be affected by the uncertainties and risk factors described throughout this filing and particularly in the “Factors That May Affect Future Results of Operations” section. Therefore, our actual results may differ materially and adversely from those expressed in any forward-looking statements. We undertake no obligation to review or update publicly any forward-looking statements

for any reason, except as required by law.

EXECUTIVE OVERVIEW

Echelon Corporation was incorporated in California in February 1988 and reincorporated in Delaware in January 1989. We went public on the NASDAQ market under the symbol "ELON" in July, 1998. We are based in Santa Clara, California, and maintain offices in several foreign countries throughout Europe and Asia. Our products enable "things" in commercial and

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industrial applications — such as air conditioners, lighting, manufacturing equipment, electricity meters, light switches, thermostats, and valves — to be made “smart” and inter-connected, part of an emerging market known as the Industrial Internet of Things ("IIoT").

Our widely deployed, open standard, multi-vendor energy control networking platform powers applications for smart cities, smart buildings, and smart campuses that help customers save on their energy usage; prevent failure or reduce failure duration; reduce carbon footprint; improve safety, comfort, and convenience; and more. Our solutions, which feature a programmable, distributed intelligence architecture that is designed for both high reliability and fast action, are implemented over the powerline or through wireless communication systems for flexibility in installation and operation.

We offer two product lines, the first of which is comprised of chips, modules, gateways, and design and management software that enables Original Equipment Manufacturers ("OEMs") to quickly design and bring to market interoperable smart systems for their commercial and industrial customers. These products are generally marketed under the LONWORKS and IzoT brand names. We refer to revenues from these products as "embedded systems" revenues.

Our second product line is a range of control networking solutions designed specifically for the lighting market within the IIoT. As this market continues its transition to solid state lighting, or LEDs, we have focused our initial offerings on outdoor lighting control solutions, as we believe that the incremental energy savings, maintenance benefits, and safety improvements resulting from the implementation of controls offers a compelling return on investment. In addition, due to the abundance of lighting fixtures in most locations, the lighting control system can host a variety of "smart" applications that can further improve safety and comfort on roadways, in parking lots and garages, on campuses, in tunnels, and more. Our lighting control solutions consist of wired and wireless control nodes placed at the lighting fixtures of a wide variety of manufacturers, “smart” gateways for interconnecting the control nodes, and a software-based Central Management System, or CMS, which is used for startup, commissioning, management, and monitoring of the lighting network. These solutions are sold to end users typically through manufacturers' representatives, energy services companies, and distributors, and are generally marketed under the LumInsight and Lumewave by Echelon brand names. We refer to revenues from these products as "outdoor lighting" revenues.

The following tables provide an overview of key financial metrics for the three months ended March 31, 2018 and 2017 that our management team focuses on in evaluating our financial condition and operating performance (in thousands, except percentages).

	Three Months Ended March 31,			
	2018	2017	$ Change	% Change
Revenues	$7,837	$ 7,703	$134	1.7 %
Gross margin	55.9 %	57.3 %	---	(1.4 ppt)
Operating expenses	$6,020	$ 5,613	$407	7.3 %
Net loss	$(1,379)	$ (1,261)	$(118)	9.4 %

	Balance as of			
	March 31, 2018	December 31, 2017	$ Change	% Change
Cash, cash equivalents, and short-term investments *	$19,056	$ 20,478	$(1,422)	(6.9)%

* As of March 31, 2018 and December 31, 2017, includes $1.3 million of restricted investments presented separately on condensed consolidated balance sheet

- Revenues: Our revenues increased by 1.7% during the first quarter of 2018 as compared to the same period in 2017. The increase in revenues between the two quarterly periods was mainly due to an increase in sales to customers in the

Americas, partially offset by a slight reduction in sales made to customers in the EMEA and APJ regions. For further analysis please see the topic Revenues in the Results of Operations discussion later in this section.

- Gross margin: Our gross margins decreased by 1.4 percentage points during the first quarter of 2018 as compared to the same period in 2017. These fluctuations were primarily due to an increase in the indirect costs in our cost of goods sold departments. For further analysis please see the topic Gross Profit and Gross Margin in the Results of Operations discussion later in this section.
- Operating expenses: Our operating expenses increased by 7.3% during the three months ended March 31, 2018, respectively, as compared to the same period in 2017. The increase was primarily due to an increase in our product

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development spending, partially offset by reductions in our general and administrative and sales and marketing expenses. For further analysis please see the topic Operating Expenses in the Results of Operations discussion later in this section.

- Net loss: We generated a net loss of $1.4 million during the first quarter of 2018 compared to $1.3 million during the same period in 2017. This increase in our net loss was mainly attributable to an increase in our operating expenses.
- Cash, cash equivalents, and short-term investments: During the first three months of 2018, our cash, cash equivalents, and short-term investment balance decreased by 6.9%, from $20.5 million at December 31, 2017 to $19.1 million at March 31, 2018. This decrease was primarily the result of cash used in operations of $1.4 million (driven primarily by our net loss of $1.4 million).

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our discussion and analysis of our financial condition and results of operations is based upon our condensed consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. For further information on our significant accounting policies, see the Notes to our condensed consolidated financial statements included in Part 1 of this Report. Our critical accounting policies and estimates are also described in Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 1, “Significant Accounting Policies” of Notes to consolidated financial statements in our Annual Report on Form 10-K for the year ended December 31, 2017, which we filed with the Securities and Exchange Commission in March 2018. The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our estimates, including those related to our revenues, stock-based compensation, allowance for doubtful accounts, inventories, and commitments and contingencies. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results may differ from these estimates under different assumptions or conditions.

With the exception of our adoption of new revenue recognition guidance effective January 1, 2018 (which is discussed more fully below), during the three months ended March 31, 2018, there were no material changes to our critical accounting policies or in the matters for which we make critical accounting estimates in the preparation of our condensed consolidated financial statements as compared to those disclosed in our Annual Report on Form 10-K for the year ended December 31, 2017.

Revenue Recognition. Our contracts with customers often include promises to transfer multiple products and services to a customer. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment. Judgment is required to determine the level of integration and interdependency between individual components of the products and services that we sell. This determination influences whether the hardware and software products we sell to the outdoor lighting market are considered distinct and accounted for separately, or not distinct and accounted for together with certain services sold to these customers and recognized once the services have been delivered.

Judgment is also required in determining the amount of variable consideration associated with sales to our distributor partners. In many instances, we issue Point of Sale ("POS") credits to our distributors when they sell certain of our products to their end use customers. In these cases, we are required to estimate (and reserve for) the amount of future POS credits we will issue to the distributors associated with unsold inventory they have on hand at the end of the period. To determine the amount of this variable consideration, we use a combination of historical average selling prices and future forecasts to calculate how much of the original sale price is subject to refund.

Our products are generally sold without a right of return. However, we do grant limited rights of return to our distributor partners. As such, we use historical distributor return rates to determine the amount of variable consideration to account for when estimating the amount of revenue to recognize.

Please refer to Note 1 – Accounting Policies in the Notes to Financial Statements (Part I, Item 1 of this Form 10-Q) for further discussion.

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RESULTS OF OPERATIONS

The following table reflects the percentage of total revenues represented by each item in our condensed consolidated statements of operations for the three months ended March 31, 2018 and 2017:

	Three Months Ended March 31,	
	2018	2017
Revenues	100.0 %	100.0 %
Cost of revenues	44.1	42.7
Gross profit	55.9	57.3
Operating expenses:		
Product development	38.3	28.9
Sales and marketing	16.7	19.0
General and administrative	21.8	25.0
Total operating expenses	76.8	72.9
Loss from operations	(21.0)	(15.6)
Interest and other income (expense), net	3.3	(0.8)
Loss before provision for income taxes	(17.7)	(16.5)
Income tax expense (benefit)	(0.1)	(0.1)
Net loss	(17.6)%	(16.4)%

Revenues

Total revenues

(Dollars in thousands)	Three Months Ended March 31, 2018	March 31, 2017	2018 over 2017 $ Change	2018 over 2017 % Change
Total revenues	$7,837	$7,703	$ 134	1.7 %

Our revenues are primarily comprised of sales of our hardware products, and to a lesser extent, revenues we generate from sales of our software products and from our customer support and training offerings.

Our revenues increased during the three months ended March 31, 2018, as compared to the same period in 2016, by $134,000, or 2%. This increase was primarily due to increases in sales made to customers in the Americas, partially offset by a slight reduction in sales made to customers in the EMEA and APJ regions. During 2017, our embedded systems revenues revenues grew across a broad base of customer applications, ranging from semiconductor manufacturing monitoring, to building automation, HVAC controls, and more. We believe this trend may be taking hold and working to Echelon's benefit, as companies expand into IIoT deployments and leverage the capabilities of our LONWorks platform.

The portion of our revenues conducted in currencies other than the United States dollar, principally the Japanese Yen, was about 3.6% for the three months ended March 31, 2018. Our revenues will continue to be subject to fluctuations in the exchange rates between the United States dollar and the foreign currencies in which we sell these products and services. In general, if the dollar were to weaken against these currencies, our revenues from those foreign currency sales, when translated into United States dollars, would increase. Conversely, if the dollar were to strengthen against these currencies, our revenues from those foreign currency sales, when translated into United States dollars, would decrease. The extent of this exchange rate fluctuation increase or decrease will depend on the amount of sales conducted in these currencies and the magnitude of the exchange rate fluctuation from year to year. To date, we have not hedged any of these foreign currency risks. We do not currently expect that, during the remainder of 2018, the

amount of our revenues conducted in these foreign currencies will fluctuate significantly from prior year levels. Given the historical and expected future level of sales made in foreign currencies, we do not currently plan to hedge against these currency rate fluctuations. However, if the portion of our revenues conducted in foreign currencies were to grow significantly, we would re-evaluate these exposures and, if necessary, enter into hedging arrangements to help minimize these risks.

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Gross Profit and Gross Margin

(Dollars in thousands)	Three Months Ended March 31, 2018	March 31, 2017	2018 over 2017 $ Change	2018 over 2017 % Change
Gross Profit	$4,377	$4,411	$ (34)	(0.8)%
Gross Margin	55.9%	57.3%	N/A	(1.4)

Gross profit is equal to revenues less cost of revenues. Cost of revenues associated with sales of our products includes direct costs associated with the purchase of components, sub-assemblies, and finished goods, as well as indirect costs such as allocated labor and overhead; costs associated with the packaging, preparation, and shipment of products; and charges related to warranty and excess and obsolete inventory reserves. Cost of revenues associated with sales of our services includes employee-related costs such as salaries and fringe benefits as well as other direct and indirect costs incurred in providing training and customer support. Gross margin is equal to gross profit divided by revenues.
Our gross margins decreased by 1.4 percentage points for the three months ended March 31, 2018, as compared to the same periods in 2017. The decrease is primarily due to higher indirect costs incurred in our cost of goods sold departments.

Our future gross margins will continue to be affected by several factors, including, but not limited to: overall revenue levels, changes in the mix of products sold, changes in our distribution strategy and use of distributors, changes in the prices charged by our suppliers, periodic charges related to excess and obsolete inventories, warranty expenses, introductions of cost reduced versions of our products, changes in the average selling prices of the products we sell, purchase price variances, and fluctuations in the level of indirect overhead spending. In addition, the impact of foreign exchange rate fluctuations and labor rates may affect our gross margins in the future. We currently outsource the manufacturing of most of our products requiring assembly to CEMs located primarily in China. To the extent labor rates were to rise further, or to the extent the U.S. dollar were to weaken against the Chinese currency, or other currencies used by our CEMs, our costs for the products they manufacture could rise, which would negatively affect our gross margins.

Operating Expenses
Product Development

(Dollars in thousands)	Three Months Ended March 31, 2018	March 31, 2017	2018 over 2017 $ Change	2018 over 2017 % Change
Product Development	$3,005	$2,227	$ 778	34.9 %

Product development expenses consist primarily of payroll and related expenses for development personnel, facility costs, expensed material, fees paid to third party service providers, depreciation and amortization, and other costs associated with the development of new technologies and products.
Our product development expenses increased by $778,000, or 34.9%, during the three months ended March 31, 2018 as compared to the same period in 2017. This increase was driven primarily by an increase in fees paid to third party product development service providers, and to a lesser extent, by equipment and supplies used in the product development process.
We currently expect that our product development expenses will continue to remain at higher than historical levels during the first half of 2018 as compared to previous periods as we continue to incur near-term costs associated with

the roll-out of new products. We expect these product development expenses will return to more recent historical levels during the second half of 2018.

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Sales and Marketing

(Dollars in thousands)	Three Months Ended March 31, 2018	March 31, 2017	2018 over 2017 $ Change	2018 over 2017 % Change
Sales and Marketing	$1,310	$1,462	$(152)	(10.4)%

Sales and marketing expenses consist primarily of payroll, commissions, and related expenses for sales and marketing personnel, travel and entertainment, facilities costs, advertising and product promotion, and other costs associated with our sales and marketing activities.

Our sales and marketing expenses decreased by 10% during the three months ended March 31, 2018, as compared to the same period in 2017. The primary cause of this decrease was a decrease in compensation charges for our sales and marketing personnel.

General and Administrative

(Dollars in thousands)	Three Months Ended March 31, 2018	March 31, 2017	2018 over 2017 $ Change	2018 over 2017 % Change
General and Administrative	$1,705	$1,924	$(219)	(11.4)%

General and administrative expenses consist primarily of payroll and related expenses for executive, finance, and administrative personnel, professional fees for legal and accounting services rendered to the company, facility costs, insurance, and other general corporate expenses.

General and administrative expenses decreased by 11% during the three months ended March 31, 2018, as compared to the same period in 2017. This reduction was driven in large part by a reduction in compensation related costs for our general and administrative personnel, as well as a reduction in fees paid to third party service providers.

Interest and Other Income (Expense), Net

(Dollars in thousands)	Three Months Ended March 31, 2018	March 31, 2017	2018 over 2017 $ Change	2018 over 2017 % Change
Interest and Other Income (Expense), Net	$258	$(65)	$ 323	(496.9)%

Interest and other income (expense), net, primarily reflects interest earned by our company on cash and short-term investment balances as well as foreign exchange translation gains and losses related to short-term intercompany balances.

Interest and other income, net, increased by $323,000 during the three months ended March 31, 2018 as compared to the same period in 2017. This increase is primarily due to the fact that, during the quarter ended March 31, 2018, we completed the liquidation of our Chinese joint venture, Zhejiang Echelon-Holley Technology Co., Ltd. The liquidation resulted in a gain of approximately $424,000, which we have reflected in the Interest and other income (expense), net line in the Company's Condensed Consolidated Statement of Operations. In conjunction with the liquidation, we are required to remit approximately $438,000 to our joint venture partner, Holley Metering Ltd., which represents Holley-Metering's share of the remaining cash balance on the liquidation date. This payable obligation is reflected in Accrued Liabilities on our Condensed Consolidated Balance Sheet at March 31, 2018. For more

information on our joint venture with Holler Metering, please refer to Note 13 - Joint Venture, in the Notes to our Condensed Consolidated Financial Statements.

Partly offsetting the gain on the joint venture liquidation were foreign currency translation losses of $223,000 we incurred during the quarter ended March 31, 2018. This compares to foreign currency translation losses of $88,000 during the first quarter of 2017. These foreign currency fluctuations are primarily attributable to our foreign currency denominated short-term intercompany balances. We account for translation gains and losses associated with these balances by reflecting these amounts as either other income or loss in our condensed consolidated statements of operations. During periods when the U.S. dollar

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weakens in value against these foreign currencies, the associated translation losses negatively impact other income. Conversely, when the U.S. dollar strengthens, the resulting translation gains favorably impact other income.

We do not currently anticipate interest income on our investment portfolio will improve during 2018 as we expect interest rates to remain historically low. Future gains or losses associated with translating our foreign currency denominated short-term intercompany balances will depend on exchange rates in effect at the time of translation.

Income Tax Expense

(Dollars in thousands)	Three Months Ended March 31, 2018	March 31, 2017	2018 over 2017 $ Change	2018 over 2017 % Change
Income Tax Expense (Benefit)	$(6)	$ (6)	$ —	—%

The income tax benefit for both the three months ended March 31, 2018 and 2017, was $6,000. The difference between the statutory rate and our effective tax rate is primarily due to the impact of foreign taxes, changes in the valuation allowance on deferred tax assets, and changes in the accruals related to unrecognized tax benefits.

OFF-BALANCE-SHEET ARRANGEMENTS AND OTHER CONTRACTUAL OBLIGATIONS

Off-Balance-Sheet Arrangements. We have not entered into any transactions with unconsolidated entities whereby we have financial guarantees, subordinated retained interests, derivative instruments, or other contingent arrangements that expose our company to material continuing risks, contingent liabilities, or any other obligation under a variable interest in an unconsolidated entity that provides financing, liquidity, market risk, or credit risk support to us.

Lease Commitments. In September 2015, we entered into a lease agreement for our corporate headquarters facility in Santa Clara, California. This lease commenced in November 2015 and will expire in July 2019. In addition, we lease facilities under operating leases for our sales, marketing, and product development personnel located elsewhere within the United States and in several foreign countries throughout Europe and Asia. These operating leases expire on various dates through 2019, and in some instances are cancelable with advance notice. Lastly, we also lease certain equipment and, for some of our sales personnel, automobiles. These operating leases are generally less than five years in duration.

Purchase Commitments. We utilize several contract manufacturers who manufacture and test our products requiring assembly. These contract manufacturers acquire components and build product based on demand information supplied by us in the form of purchase orders and demand forecasts. These purchase orders and demand forecasts generally cover periods up to twelve months, and in rare cases, up to eighteen months. We also obtain individual components for our products from a wide variety of individual suppliers. We generally acquire these components through the issuance of purchase orders, and in some cases through demand forecasts, both of which cover periods up to twelve months.

We also utilize purchase orders when procuring capital equipment, supplies, and services necessary for our day-to-day operations. These purchase orders generally cover periods ranging up to twelve months, but in some instances cover a longer duration.

Indemnifications. In the normal course of business, we provide indemnifications of varying scope to customers against claims of intellectual property infringement made by third parties arising from the use of our products. Historically, costs related to these indemnification provisions have not been significant. However, we are unable to estimate the maximum potential impact of these indemnification provisions on our future results of operations.

As permitted under Delaware law, we have agreements whereby we indemnify our officers and directors for certain events or occurrences while the officer or director is, or was serving, at our request in such capacity. The indemnification period covers all pertinent events and occurrences during the officer’s or director’s lifetime. The maximum potential amount of future payments we could be required to make under these indemnification agreements is unlimited; however, we have director and officer insurance coverage that would enable us to recover a portion of

any future amounts paid. We believe the estimated fair value of these indemnification agreements in excess of the applicable insurance coverage is minimal.

Royalties. We have certain royalty commitments associated with the shipment and licensing of certain products. Royalty expense is generally based on a U.S. dollar amount per unit shipped or a percentage of the underlying revenue. Royalty

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expense, which is recorded as cost of revenues in our condensed consolidated statements of operations, was approximately $125,000 for the three months ended March 31, 2018, and $80,000 for the same period in 2017.

We will continue to be obligated for royalty payments in the future associated with the shipment and licensing of certain of our products. While we are currently unable to estimate the maximum amount of these future royalties, such amounts will continue to be dependent on the number of units shipped or the amount of revenue generated from these products.

Taxes. We conduct our operations in many tax jurisdictions throughout the world. In many of these jurisdictions, non-income based taxes such as property taxes, sales and use taxes, and value-added taxes are assessed on Echelon's operations in that particular location. While we strive to ensure compliance with these various non-income based tax filing requirements, there have been instances where potential non-compliance exposures have been identified. In accordance with generally accepted accounting principles, we make a provision for these exposures when it is both probable that a liability has been incurred and the amount of the exposure can be reasonably estimated. To date, such provisions have been immaterial, and we believe that, as of March 31, 2018, we have adequately provided for such contingencies. However, it is possible that our results of operations, cash flows, and financial position could be harmed if one or more non-compliance tax exposures are asserted by any of the jurisdictions where we conduct our operations.

Legal Actions. From time to time, in the ordinary course of business, we are subject to legal proceedings, claims, investigations, and other proceedings, including claims of alleged infringement of third-party patents and other intellectual property rights, and commercial, employment, and other matters. In accordance with generally accepted accounting principles, we make a provision for a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. These provisions are reviewed at least quarterly and adjusted to reflect the impacts of negotiations, settlements, rulings, advice of legal counsel, and other information and events pertaining to a particular case. While we believe we have adequately provided for such contingencies as of March 31, 2018, it is possible that our results of operations, cash flows, and financial position could be harmed by the resolution of any such outstanding claims.

LIQUIDITY AND CAPITAL RESOURCES

Since our inception, we have financed our operations and met our capital expenditure requirements primarily from the sale of preferred stock and common stock, although during 2012 and certain earlier years, we were also able to finance our operations through operating cash flows.

The following table presents selected financial information as of March 31, 2018, and for each of the last three fiscal years (dollars in thousands):

	March 31,	December 31,		
	2018	2017	2016	2015
Cash, cash equivalents, and short-term investments*	$19,056	$20,478	$23,036	$26,070
Trade accounts receivable, net	2,556	2,296	2,695	4,030
Working capital	21,548	22,209	23,083	26,713
Stockholders' equity	22,611	23,727	24,678	28,921

* As of March 31, 2018 and December 31, 2017, includes $1.3 million of restricted investments presented separately on condensed consolidated balance sheet

As of March 31, 2018, we had $19.1 million in cash, cash equivalents, restricted cash and short-term investments, a decrease of $1.4 million as compared to December 31, 2017. Historically, our primary source of cash, other than stock sales, has been receipts from revenue, and to a lesser extent, proceeds from the exercise of stock options by our employees and directors, and the exercise of warrants. Our primary uses of cash have been cost of product revenue, payroll (salaries, commissions, bonuses, and benefits), general operating expenses (costs associated with our offices such as rent, utilities, and maintenance; fees paid to third party service providers such as consultants, accountants, and attorneys; travel and entertainment; equipment and supplies; advertising; and other miscellaneous expenses),

acquisitions, capital expenditures, and purchases under our stock repurchase programs.

Cash flows from operating activities. Cash flows from operating activities have historically been driven by net income (loss) levels; adjustments for non-cash charges such as stock-based compensation, depreciation, and amortization; changes in accrued investment income; and fluctuations in operating asset and liability balances. Net cash used in operating activities was $1.4 million for the three months ended March 31, 2018, a decrease in cash outflows of approximately $143,000 as compared to the same period in 2017. During the three months ended March 31, 2018, net cash used in operating activities was primarily the result of our net loss of $1.4 million, changes in our operating assets and liabilities of $69,000, and the non-cash gain on

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liquidation of our joint venture with Holley Metering of $424,000; partially offset by stock-based compensation expenses of $444,000, and depreciation and amortization expense of $119,000. The primary components of the $69,000 net change in our operating assets and liabilities were a $315,000 increase in inventories and a $270,000 increase in accounts receivable; all of which was partially offset by a $290,000 increase in accounts payable, a $135,000 increase in accrued liabilities, and a $65,000 decrease in other current assets. Inventories increased in anticipation of additional product shipments in the second quarter. Accounts receivable increased based on the timing of shipments during the quarter and the corresponding due dates of the receivables. Accounts payable increased based on the timing of purchases in the first quarter. Accrued liabilities increased due to a variety of items, including a $73,000 increase in accrued royalties owed to third parties and a $66,000 increase in our warranty reserve. Other current assets decreased primarily as a result of a reduction in prepaid expenses.

During the three months ended March 31, 2017, net cash used in operating activities was primarily the result of our net loss of $1.3 million, and changes in our operating assets and liabilities of $789,000; partially offset by stock-based compensation expenses of $467,000, and depreciation and amortization expense of $110,000. The primary components of the $789,000 net change in our operating assets and liabilities were a $545,000 decrease in accrued liabilities, a $159,000 increase in deferred cost of revenues, and a $124,000 increase in other current assets. Accrued liabilities decreased primarily due to the payment of bonuses that were accrued as of December 31, 2016. Deferred cost of revenues increased due to the mix of products for which revenue was deferred at March 31, 2017. Other current assets increased primarily as a result of an increase in prepaid expenses.

Cash flows from investing activities. Cash flows from investing activities have historically been driven by transactions involving our short-term investment portfolio, capital expenditures, changes in our long-term assets, and acquisitions and divestitures. Net cash used in investing activities was $26,000 for the three months ended March 31, 2018, an increase in cash outflows of $42,000 from the same period in 2017. During the three months ended March 31, 2018, net cash used in investing activities was primarily the result of proceeds from maturities and sales of available-for-sale short-term investments of $6.0 million, partially offset by purchases of available-for-sale short-term investments of $5.9 million, and capital expenditures of $87,000.

During the three months ended March 31, 2017, net cash provided by investing activities was primarily the result of proceeds from maturities and sales of available-for-sale short-term investments of $6.0 million, partially offset by purchases of available-for-sale short-term investments of $6.0 million, and capital expenditures of $16,000.

Cash flows from financing activities. Cash flows from financing activities have historically been driven by the proceeds from issuance of common and preferred stock offset by transactions under our stock repurchase programs and principal payments on our lease financing obligations. Net cash used in financing activities was $66,000 for the three months ended March 31, 2018, an increase in cash outflows of $49,000 as compared to the same period in 2017. During the three months ended March 31, 2018, net cash used in financing activities was primarily the result of $66,000 worth of shares repurchased from employees for payment of employee taxes on vesting of performance shares.

During the three months ended March 31, 2017, net cash used in financing activities was primarily the result of $17,000 worth of shares repurchased from employees for payment of employee taxes on vesting of performance shares.

As noted above, our cash and investments totaled $19.1 million as of March 31, 2018. Of this amount, approximately 6% was held by our foreign subsidiaries. Our intent is to permanently reinvest a significant portion of our earnings from foreign operations, and current plans do not anticipate that we will need funds generated from foreign operations to fund our domestic operations. In the event funds from foreign operations are needed to fund operations in the United States and if U.S. tax has not already been previously provided, we would provide for and pay any additional U.S. taxes due in connection with repatriating these funds.

Of our cash and investment balance of $19.1 million as of March 31, 2018, approximately $894,000 was held at Zhejiang Echelon-Holley Technology Co., Ltd., our Chinese joint venture with Holley Metering Limited ("Holley Metering"). As discussed earlier, we have completed the process to liquidate the joint venture. We are now working to distribute the remaining cash balance to Echelon and Holley Metering in relation to their respective ownership percentages (51% to Echelon and 49% to Holley Metering). We expect to complete this cash distribution within the

next three months.

We use well-regarded investment managers to manage our invested cash. Our portfolio of investments managed by these investment managers is primarily composed of highly rated U.S. government securities, and to a lesser extent, money market funds. All investments are made according to guidelines and within compliance of policies approved by the Audit Committee of our Board of Directors.

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We maintain an operating credit line of $1.0 million with our primary bank for company credit card purchases. This line of credit continues to be secured by a collateral of the first priority on $1.3 million of our investments (presented as restricted investments in the condensed consolidated balance sheets).

In the future, our cash reserves may be used to strategically acquire or invest in other companies, products, or technologies that are complementary to our business. In addition, our combined cash, cash equivalents, and short-term investments balances could be negatively affected by various risks and uncertainties, including, but not limited to, the risks detailed in this Quarterly Report in the section titled “Factors That May Affect Future Results of Operations.” For example, any continued weakening of economic conditions or changes in our planned cash outlay could negatively affect our existing cash reserves.

Based on our current business plan and revenue prospects, we believe that our existing cash reserves will be sufficient to meet our projected working capital and other cash requirements for at least the next twelve months. However, we currently expect that our combined cash, cash equivalent, and short-term investment balance will decline during the remainder of 2018. In the event that we require additional financing, such financing may not be available to us in the amounts or at the times that we require, or on acceptable terms. If we fail to obtain additional financing, when and if necessary, our business would be harmed.

RELATED PARTY TRANSACTIONS

In June 2000, we entered into a stock purchase agreement with Enel pursuant to which Enel purchased 300,000 newly issued shares of our common stock for $130.7 million. The closing of this stock purchase occurred on September 11, 2000. At the closing, Enel had agreed that it would not, except under limited circumstances, sell or otherwise transfer any of those shares for a specified time period. That time period expired September 11, 2003. To our knowledge, Enel has not disposed of any of its 300,000 shares. Under the terms of the stock purchase agreement, Enel has the right to nominate a member of our board of directors. A representative of Enel served on our board until March 14, 2012; no Enel representative is presently serving on our board.

At the time we entered into the stock purchase agreement with Enel, we also entered into a research and development agreement with an affiliate of Enel (the “R&D Agreement”). Under the terms of the R&D Agreement, we cooperated with Enel to integrate our LONWORKS technology into Enel’s remote metering management project in Italy, the Contatore Elettronico. We completed the sale of our components and products for the deployment phase of the Contatore Elettronico project during 2005. During 2006, we supplied Enel and its designated manufacturers with limited spare parts for the Contatore Elettronico system. In October 2006, we entered into a new development and supply agreement and a software enhancement agreement with Enel. Under the development and supply agreement, Enel and its contract manufacturers purchase additional electronic components and finished goods from us. Under the software enhancement agreement, we provided software enhancements to Enel for use in its Contatore Elettronico system. The software enhancement was assigned to S&T as part of the sale of our Grid division in September 2014. The development and supply agreement expired in March 2016.

For the three months ended March 31, 2018 and 2017, the Company recognized no revenue from products and services sold to Enel and its designated manufacturers. As of March 31, 2018 and December 31, 2017, none of the Company’s total accounts receivable balance related to amounts owed by Enel and its designated manufacturers.

RECENTLY ISSUED ACCOUNTING STANDARDS

During the three months ended March 31, 2018, there have been no new recent accounting pronouncements or changes in accounting pronouncements, other than those noted in Note 1 in the Notes to Condensed Consolidated Financial Statements in Part I, Item 1 of this report, that are of significance, or potential significance, to our company.

FACTORS THAT MAY AFFECT FUTURE RESULTS OF OPERATIONS

Interested persons should carefully consider the risks described below in evaluating our company. Additional risks and uncertainties not presently known to us, or that we currently consider immaterial, may also impair our business operations. If any of the following risks actually occur, our business, financial condition or results of operations could be materially adversely affected. In that case, the trading price of our common stock would likely decline. Before deciding to purchase, hold or sell our common stock, you should carefully consider the risks described in this section. This section should be read in conjunction with the condensed consolidated financial statements and accompanying notes thereto, and Management’s Discussion and Analysis of Financial Condition and Results of Operations included

in this Quarterly Report on Form 10-Q.

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There can be no guarantee that the IIoT market in general, and the lighting market segment in particular, will develop as expected, or that we will be successful in pursuing these market opportunities.

We have devoted and will continue to devote significant effort and resources to leverage our technology and develop and launch our platform to customers within the IIoT market. However, to date, the market for our products has not developed as quickly as anticipated, and our efforts to capitalize on these opportunities have not produced the results we anticipated. Our efforts to capitalize on these opportunities may not be successful in the near term, or at all.

Although revenues from our legacy embedded systems products have been increasing in recent quarters, prior to 2017 they had been declining annually for several years. We cannot guarantee that the recent improvement in sales of these products will continue.

We have decided to focus heavily on lighting controls within the IIoT as our targeted market. As we have a limited operating history in this market segment, we are subject to a number of risks and uncertainties that may impact our ability to gain market acceptance for our lighting control products.

In recent years, we have invested substantial resources in the development and commercialization of control networking solutions for the lighting market. However, we have a limited operating history in this market segment, and we may not recognize a meaningful amount of revenues from these efforts in the near future, or at all. Our efforts to gain market acceptance for our lighting control products and solutions are subject to considerable risk and uncertainty, including:

- the risk of competition and emerging technologies (see “If we do not develop and maintain adequate distribution channels, our revenues will be harmed” for additional information on the risks associated with competing for market share);
- the risk that we will not be able to develop adequate sales channels for these new products and services (see “Our IIoT revenues may not meet expectations, which could cause volatility in the price of our stock” for additional information on the risks associated with establishing new sales channels);
- the risk that we misjudge the market and fail to develop solutions that meet the requirements of our existing or potential customers;
- the risk that our solutions will suffer security breaches or otherwise allow unauthorized access to, or acquisition of, data;
- the risk that our products will not perform adequately due to defect or misuse by customers (see “Liabilities resulting from defects in or misuse of our products, whether or not covered by insurance, may delay our revenues and increase our liabilities and expenses” for additional information on the risks associated with defective or misused products); and
- the risk that our supply chain for components is unable to meet our demand (see “Because we depend on a limited number of key suppliers and in certain cases, a sole supplier, the failure of any key supplier to produce timely and compliant products could result in a failure to ship products, or could subject us to higher prices, which would harm our results of operations and financial position” for additional information on the risks associated with manufacturing).

We have changed our business model significantly in recent years, which makes it difficult to evaluate our prospects and forecast our future results of operations.

Although we commenced our business in 1988, we have made significant changes to our business model in recent years. Historically, we derived all of our revenues from our embedded systems and Grid businesses. However, in 2014, we sold our Grid business, and prior to 2017, we had been experiencing a decline in revenues from our legacy embedded systems products and services, including a cessation in our shipments to Enel.

In recent years, we have shifted our focus to networking solutions for the outdoor lighting market. Unlike our legacy embedded systems products, which are typically sold to OEMs for incorporation into their products, which are then sold to their commercial and industrial customers, our lighting solutions products are more project based, being sold

through energy services companies and distributors to municipalities, enterprise and educational campuses, retailers, and other end users. In addition, our outdoor lighting solutions typically generate lower overall gross margins than do our embedded systems products.

As we have a limited operating history with our lighting solutions, our ability to evaluate our current business and forecast our future results of operations and effectively assess our future prospects is subject to a number of uncertainties that may impact our ability to plan for and model future growth. Our historical revenue growth should not be considered indicative of our future performance and such growth may stagnate or decline over time. Further, in future periods, our revenues could decline for a number of reasons, including the failure to offset the expected decline in revenues from our embedded systems products by an increase in sales of our lighting solutions, changes in our pricing structure, increased competition in the IIoT market generally or in the lighting market in particular, or our failure, for any reason, to capitalize on growth opportunities. We have encountered and will continue

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to encounter risks and uncertainties frequently experienced by companies in rapidly changing industries. If our assumptions regarding these risks and uncertainties, which we use to plan our business, are incorrect or change, or if we do not address these risks successfully, our operating and financial results could differ materially from our expectations, and our business could suffer.

Our revenues may not meet expectations, and our operating expenses may be higher than we anticipate, which could cause volatility in the price of our stock.

As we attempt to grow our IIoT business, we expect to commit significant resources developing new products in emerging markets. In addition, our IIoT business operates in nascent markets, such as outdoor lighting and controls, in which we have yet to build a reliable customer base. As a result, sales of our products are unpredictable and yet to be proven, and sales and marketing costs related to our products may be significant. These factors could have a negative impact on our revenues and make it difficult to project our financial results, which could cause declines and volatility in our stock price. Additionally, because we are operating in an emerging market, risks that we are not currently able to identify are likely to materialize and could negatively impact our operations and financial condition.

Emerging markets are particularly dynamic and highly competitive, and we may lose sales to our competitors, which would harm our revenues and results of operations.

Competition in the IIoT market is intense and involves rapidly changing technologies, evolving industry standards, frequent new product introductions, industry consolidations, effective management of distribution channels, rapid changes in customer or regulatory requirements, and localized market requirements. In each of our existing and target markets, we compete with a wide array of manufacturers, vendors, strategic alliances, systems developers and other businesses. The future of our IIoT business depends significantly on our ability to react to changing customer needs by enhancing our existing products and developing new products. There can be no guarantee, however, that new products and product enhancements will be accepted by businesses and consumers. If we make investments in technologies that do not gain market acceptance, our business may not grow as anticipated. In addition, future product offerings by our competitors can render our products obsolete. Any failure to evolve with emerging technologies and our competitors could cause a loss of market share and result in declining revenues.

The principal competitive factors that affect the markets for our products include the following:

- our ability to anticipate changes in customer or regulatory requirements and to develop, or improve, our products to meet these requirements in a timely manner;
- the price and features of our products such as adaptability, scalability, functionality, ease of use, and the ability to integrate with other products;
- our product reputation, quality, performance, and conformance with established industry standards;
- our ability to expand our product line to address our customers' requirements;
- our ability to effectively manage and expand our distribution channels to address new markets for current and future products;
- our ability to meet a customer's required delivery schedules;
- a customer's willingness to do business with us because of our size and perceived concerns regarding our liquidity and financial strength relative to our competitors;
- the risk of industry consolidation, which is particularly high in emerging markets such as the IIoT;
- our customer service and support;
- warranties, indemnities, and other contractual terms; and
- customer relationships and market awareness.

Competitors for our IIoT products include some of the largest companies in the electronics industry, operating either alone or together with trade associations and partners. Key company competitors include companies such as Cimcon Lighting, Inc., Cree Inc., Digi International, General Electric, LED Roadway Lighting, Maxim Integrated Products, Philips, Siemens, Silver Spring Networks, STMicroelectronics, Telensa, Texas Instruments, and Tridium. Key industry standard and trade group competitors include BACnet, DALI, DeviceNet, HART, Konnex, Profibus, ZigBee, and the ZWave Alliance in the IIoT market. Each of these standards and/or alliances is backed by one or more

competitors. For example, the ZigBee alliance includes over 300 member companies with promoter members, such as Ember, Emerson, Freescale, Kroger, Landis+Gyr (a subsidiary of Toshiba), Philips, Reliant Energy, Schneider Electric, STMicroelectronics, Tendril, and Texas Instruments. Additionally, because we are operating in an emerging market, it is likely that additional competitors could surface and rapidly gain market share.

Many of our competitors, alone or together with their trade associations and partners, have significantly greater financial, technical, marketing, service and other resources, significantly greater name recognition, and broader product offerings, all of which may impact the willingness of customers and potential customers to do business with us. Our future success will depend

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on our ability to enhance our existing products, to introduce new products to meet changing customer requirements and emerging technologies, and to demonstrate the performance advantages and cost-effectiveness of our products over competing products. If we are unable to do so and thus are unable to compete effectively in any of the markets we serve, our revenues, results of operations, and financial position would be harmed.

Fluctuations in our results of operations may cause our stock price to decline.

Our quarterly and annual results of operation have varied significantly from period to period, and we have sometimes failed to meet market expectations. Moreover, we have a history of losses and negative cash flow and cannot assure you that we will achieve sustained profitability in the future. We expect that our results of operations will continue to vary as a result of a number of factors, many of which are outside of our control, including the following:

- orders may be cancelled;
- the mix of products and services that we sell may change to a less profitable mix;
- shipment, payment schedules, and product acceptance may be delayed;
- our products may not be purchased by OEMs, systems integrators, service providers and end-users at the levels we project;
- our ability to develop products that comply with future regulations and trade association guidelines;
- the revenue recognition rules relating to certain of our products could require us to defer some or all of the revenue associated with product shipments until certain conditions, such as delivery and acceptance criteria for our software and/or hardware products, are met in a future period;
- our CEMs may not be able to provide quality products on a timely basis, especially during periods where capacity in the CEM market is limited;
- our products may not be manufactured in accordance with specifications or our established quality standards, or may not perform as designed;
- downturns in any customer's or potential customer's business, or declines in general economic conditions, could cause significant reductions in capital spending, thereby reducing the levels of orders from our customers;
- we may incur costs associated with any future business acquisitions; and
- any future impairment charges related to our intangible assets that are required to be recorded under generally accepted accounting principles in the United States may negatively affect our earnings and financial condition.

Any of the above factors could, individually or in the aggregate, have a material adverse effect on our results of operations and our financial condition, which could cause our stock price to decline

If we are not able to develop or enhance our products in a timely manner, our revenues will suffer.

Due to the nature of development efforts in general, we can experience delays in the introduction of new or improved products beyond our original projected shipping date for such products. Historically, when these delays have occurred, we experienced an increase in our development costs and a delay in our ability to generate revenues from these new products. In addition, such delays could cause us to incur penalties if our deliveries are delayed, could otherwise impair our relationship with any of our customers that were relying on the timely delivery of our products in order to complete their own products or projects, or could cause the customer to cancel orders or to seek alternate sources of supply or other remedies. Any delay in the introduction of new products could impact future revenue targets or forecasts.

We are sometimes required to modify our products to meet local rules and regulations. Given the competitive nature of these markets, we may not be able to increase the price of such products to reflect the costs of such modifications. In addition, given the long-term nature of development activities, we may be required to undertake such modifications prior to receiving firm commitments or orders from our customers. In either of these or other similar scenarios, we may not be able to recover our costs attributable to required product modifications.

When we develop new products, there is no guarantee that these new products will meet our customers' requirements or will otherwise be acceptable to them, which could cause them to discontinue buying our products. This could have a material adverse effect on our revenues and results of operations.

We intend to continue investing resources in our development activities, which could expose us to risks, such as protection of intellectual property, investment risk, and labor costs and other matters. We could also be adversely affected by delays or cost increases experienced by third parties that are developing products on our behalf.
The sales cycle for our products is often lengthy and unpredictable.

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The sales cycle between initial customer contact and execution of a contract or license agreement with a customer or purchaser of our products can vary widely. Initially, we must educate our customers about the potential applications of and cost savings associated with our products.

If we are successful in this effort for our embedded systems products, OEMs will typically conduct extensive and lengthy product evaluations before making a decision to design our products into their offerings. Once the OEM decides to incorporate our products, volume purchases of our products are generally delayed until the OEM's product development, system integration, and product introduction periods have been completed. In addition, changes in our customers' budgets, or the priority they assign to control network development, could also affect the sales cycle.

For our outdoor lighting controls products, the sales cycle can also be extended. As a nascent market, many of our sales channel partners, as well as end use customers, are not aware of the benefits our controls technology can bring to their lighting systems. This requires extensive educational efforts on our part and these efforts may not be successful or meet our objectives. Even with the benefit of this eduction, when dealing with larger projects such as to municipalities, the post-education sales cycle typically commences with a trial deployment of relatively low value to us. If the trial is successful, the end use customer may commence a full scale deployment that could take months or years to complete, if at all.

In addition, potential customers for our products, both embedded systems and outdoor lighting controls, include local, state and federal government authorities. Sales to government authorities can be extended and unpredictable. Government authorities generally have complex budgeting, purchasing, and regulatory processes that govern their capital spending, and their spending is likely to be adversely impacted by economic conditions. In addition, in many instances, sales to government authorities may require field trials and may be delayed by the time it takes for government officials to evaluate multiple competing bids, negotiate terms, and award contracts. We further face the risk of cancellation during development and production due to regulatory, government and geopolitical changes, and delays in installing, operating, and evaluating the results of any field trials before full implementation of our products. For these reasons, the sales cycle associated with our IIoT products is subject to a number of significant risks that are beyond our control. Consequently, if our forecasted customer orders are not realized, or are delayed, our revenues and results of operations could be materially and adversely affected. In addition, an extended sales cycle may result in our inability to recognize revenue from existing or new projects until the end of several fiscal quarters. This may also make it difficult to predict our financial results and increase the volatility of our stock price.

If we do not develop and maintain adequate distribution channels, our revenues will be harmed.

The market for our products is new and unproven, and we cannot rely solely on our existing distributors to sell our products. Therefore, we are focused on expanding our distribution channel to include new distributors in order to generate revenue from product sales. We expect that the distribution channel for our products will be dispersed and it is difficult to predict how long it will take and how costly it will be to develop. We may not be successful in developing and maintaining an adequate distribution channels within our expected timeframe and cost expectations, if at all. In addition, if any of our new or existing distributor partners fail to dedicate sufficient resources to market and sell our products, our revenues could suffer. Furthermore, if our existing distributor partners were to significantly reduce their inventory levels for our products, we could expect a decrease in service levels to our end-use customers. Sales of our products may fail to meet our financial targets, which would negatively impact our results of operations and expected return on investment in the IIoT market.

We have invested and intend to continue to invest significant resources in the development and sales of products in the emerging IIoT market, particularly in the outdoor lighting market segment. If we are unable to receive orders for, ship, and recognize revenue for our products in a timely manner, and in the quantities and at prices in line with our targets, our financial results will be harmed. Our long-term financial goals include expectations for a return on these investments, but we may or may not ever realize any return whatsoever on this investment of resources.

Over the last several years, our market share in our existing embedded systems business has declined due to increased competition, reduced levels of investment in our LONWORKS product line, and pricing pressures faced around the world. However, during 2017, our embedded systems revenues grew across a broad base of customer applications, ranging from semiconductor manufacturing monitoring, to building automation, HVAC controls, and more. We believe this trend may be taking hold and working to Echelon's benefit, as companies expand into IIoT deployments

and leverage LONWorks' capability.

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Prior to 2017, annual revenues generated from our embedded systems business failed to meet our expectations. If this revenue decline were to return, our ability to continue funding our entry into the outdoor lighting segment could be harmed.

In order to achieve our financial targets, we believe that we must meet the following objectives:

- achieve acceptance of our products in the IIoT market, particularly the outdoor lighting market, in order to increase our revenues;
- manage our operating expenses to a reasonable percentage of revenues; and
- manage our cash resources prudently.

Even if we meet these objectives, there can be no assurance that we will meet our overall financial targets and objectives.

A significant portion of our operating expenses are fixed. Therefore, if we cannot achieve our revenue targets, our use of cash balances would increase, our losses would increase, and/or we would be required to take additional actions necessary to reduce expenses. We cannot assure you that we will meet any or all of these objectives to the extent necessary to achieve our financial goals and, if we fail to achieve our goals, our results of operations are likely to be harmed.

In our legacy embedded systems business, we may be unable to promote and expand acceptance of our open, interoperable control systems over competing protocols, standards, or technologies.

LONWORKS and IzoT technology are open, meaning that many of our technology patents are broadly licensed without royalties or license fees. As a result, our IIoT customers are able to develop hardware and software solutions that compete with some of our products. Because some of our customers are OEMs that develop and market their own control systems, these customers, in particular, could develop competing products based on our open technology. For instance, we have published all of the network management commands required to develop software that competes with our LNS software.

In addition, many of our IIoT competitors are dedicated to promoting closed or proprietary systems, technologies, software and network protocols or product standards that differ from or are incompatible with ours. We also face strong competition from large trade associations that promote alternative technologies and standards for particular vertical applications or for use in specific countries. These include BACnet, DALI, and KNX in the buildings market; DeviceNet, HART, and ProfiBus in the industrial controls market; TCN in the rail transportation market; and Echonet, ZigBee, and Z-Wave in the home control markets.

The ability of our IIoT products to interoperate with multiple standards is important to our success. Our technologies, protocols, or standards may not be successful or we may decide not to invest our resources at the levels required in order to compete with new or enhanced products or standards introduced by our IIoT product line competitors, which would have a material adverse effect on our revenues, results of operations, and financial condition.

We are increasingly dependent on third-party developers.

We are increasingly reliant on various third parties for the development of software used in our products. There is a risk that the software provided by these third parties could contain errors or defects that could adversely impact the quality of our products. In addition, these third parties may use open source or other code that contains security flaws, which may cause our products to be more prone to hacking or other security incidents. We may also be negatively impacted by employee turnover or other challenges that these third-party developers face in their own businesses. Third parties may also choose not to develop software for our products if we do not have adequate market share or sufficient perception of future success. The materialization of any of these risks would impact our ability to deliver quality products on a timely basis, which could adversely impact our reputation and brand and harm our business and results of operations.

In addition, many of these third-party developers are located in markets that are subject to political risk, intellectual property misappropriation, corruption, infrastructure problems and natural disasters, in addition to country specific privacy and data security risks, given current legal and regulatory environments. The failure of these third parties to

meet their obligations and adequately deploy business continuity plans in the event of a crisis and/or the development of significant disagreements, natural or man-made disasters or other factors that materially disrupt our ongoing relationship with these developers could negatively affect our operations.

Because we depend on a limited number of key suppliers and, in certain cases, a sole supplier, the failure of any key supplier to produce timely and compliant products could result in a failure to ship products, or could subject us to higher prices, which would harm our results of operations and financial position.

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Our future success will depend significantly on our ability to timely manufacture our products cost effectively, in sufficient volumes, and in accordance with quality standards. For most of our products requiring assembly, we rely on a limited number of contract electronic manufacturers (CEMs), principally Bel-Fuse. These CEMs procure material and assemble, test, and inspect the final products to our specifications. This strategy involves certain risks, including reduced control over quality, costs, delivery schedules, availability of materials, components, finished products, and manufacturing yields. For example, an extended delay in the supply of a key component could disrupt the manufacturing of our products. Any such interruption in the supply of key components could therefore have a material adverse effect on our customer relationships and revenues. As a result of these and other risks, our CEMs could demand price increases for manufacturing our products. The Bel-Fuse factories, where our products are manufactured, are located in China. The Chinese government maintains programs, whereby labor rates for the manufacture of our products will increase over time. In addition, our agreements with our CEMs make us responsible for components and subassemblies purchased by the CEMs when based on our forecasts or purchase orders. Accordingly, we will be at risk for any excess and obsolete inventory purchased by our CEMs. Lastly, CEMs can experience turnover, instability, and lapses in manufacturing or component quality, exposing us to additional risks as well as missed commitments to our customers.

We also maintain manufacturing agreements with a limited number of semiconductor manufacturers for the production of key products. Cypress Semiconductor is the sole licensee, manufacturer and distributor for the Cypress Neuron, which is an important part of the LONWORKS portfolio. As a result, we or our customers may experience longer lead times and higher pricing for these parts, which could result in reduced orders for our products from these same customers. In addition, Cypress Semiconductor could decide to reduce or cease production of the Neuron chip in the future, at any time, with or without advance notice to us.

The FT 5000 free topology transceiver and the Neuron 5000 are sole sourced from the Taiwan Semiconductor Manufacturing Company (TSMC) foundry through our aggregator Open Silicon. In addition, we currently purchase several key products and components from sole or limited source suppliers with which we do not maintain signed agreements that would obligate them to supply to us on negotiated terms. Any sole source relationship could make us vulnerable to price increases, particularly where we do not maintain long-term supply agreements with the supplier, or to supply disruptions that would result if the supplier issued an end of life notice with respect to a key product.

We are continuing to review the impact that economic factors are having on our suppliers. Some of these suppliers are large, well-capitalized companies, while others are smaller and more highly leveraged. In order to mitigate these risks, we may take actions such as increasing our inventory levels and/or adding additional sources of supply. Such actions may increase our costs and increase the risk of excess and obsolete inventories. Even if we undertake such actions, there can be no assurance that we will be able to prevent any disruption in the supply of goods and services we receive from these suppliers.

We may also elect to change any of these key suppliers. As part of such a transition, we may be required to purchase certain raw material and in-process inventory from the existing supplier and resell it to the new source. In addition, if any of our key suppliers were to stop manufacturing our products or supplying us with our key components, it could be expensive and time consuming to find a replacement. Also, as our business grows, we will be required to expand our business with our key suppliers or find additional sources of supply. There is no guarantee that we would be able to find acceptable alternative or additional sources. Additional risks that we face if we must transition between CEMs include:

- moving raw material, in-process inventory, and capital equipment between locations, some of which may be in different parts of the world;
- reestablishing acceptable manufacturing processes with a new work force; and
- exposure to excess or obsolete inventory held by contract manufacturers for use in our products.

The failure of any key manufacturer to produce a sufficient number of products on time, at agreed quality levels, and fully compliant with our product, assembly and test specifications could result in our failure to ship products in a timely manner or at all, which would adversely affect our revenues and gross profit, and could result in claims against

us by our customers, which could harm our results of operations and financial position. Any such failures could also have a negative impact on our ability to project our financial results, which could result in volatility in our stock price. Because our products use components or materials that may be subject to price fluctuations, shortages, interruptions of supply, or discontinuation, we may be unable to ship our products in a timely fashion, which would adversely affect our revenues, harm our reputation, and negatively impact our results of operations.

We may be vulnerable to price increases for products, components, or materials, such as silver, copper, and cobalt. We generally do not enter into forward contracts or other methods of hedging against supply risk for these items. In addition, we have in the past and may in the future experience shortages or interruptions in supply for certain of these items, including products or components that have been or will be discontinued, which can cause us to delay shipments beyond targeted or announced dates. We have also

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reduced our inventory levels from historical levels, which could impact our ability to supply our customers with products in a timely manner if there was an unexpected increase in demand. Such shortages or interruptions could result from events outside our control, as was the case with the earthquake and tsunami in Japan in March 2011. To help address these issues, we may decide from time to time to purchase quantities of these items that are in excess of our estimated requirements. As a result, we could be forced to increase our excess and obsolete inventory reserves to provide for these excess quantities, which could harm our results of operations. In addition, if a component or other product goes out of production, we may be required to requalify substitute components or products, or even redesign our products to incorporate an alternative component or product.

If we experience any shortage of products or components of acceptable quality, or any interruption in the supply of these products or components, or if we are not able to procure them from alternate sources at acceptable prices and within a reasonable period of time, our revenues, gross profits or both could decrease. In addition, under the terms of some of our contracts with our customers, we may also be subject to penalties if we fail to deliver our products on time.

Our business depends on the Internet and its continued and unimpeded access and development.

The Internet is crucial to the operations of many of our IIoT products and is a key component of the IIoT market as a whole. Our reliance on the Internet exposes us to a number of risks and uncertainties that are beyond our control, including risks related to privacy and data security. It is difficult to quantify the impact that any future security or performance problems associated with the Internet may have on our products and revenues.

In addition, state, federal and foreign regulators could adopt laws and regulations that impose additional burdens on companies that conduct business over the Internet. The growth and development of the market for online services may prompt calls for more stringent consumer protection laws or laws that may inhibit the use of Internet-based communications or the information contained in these communications. The adoption of any additional laws or regulations may impact the growth of the IIoT market. Any new legislation or regulations, application of laws and regulations from jurisdictions whose laws do not currently apply to our business, or application of existing laws and regulations to the IIoT and other related services could increase our costs and harm our growth.

In particular, there is increasing focus on privacy and data security laws and regulations applicable to the IoT. A wide variety of provincial, state, national, and international laws and regulations apply to the collection, use, retention, protection, disclosure, transfer and other processing of personal data. Regulatory authorities have increased their privacy- and data security-related activity in the IoT domain in recent years. For example, the Federal Trade Commission released a report on January 27, 2015 with recommendations for privacy and data security applicable to connected devices, objects and sensors.We also may become obligated to comply with, or may choose to comply with, self-regulatory or other requirements applicable to privacy or data security.

The privacy- and data security-related laws and regulations that may apply to us are evolving and subject to differing interpretation and enforcement, and may result in ever-increasing regulatory and public scrutiny and escalating levels of enforcement and sanctions. For example, the European Union General Data Protection Regulation, which becomes fully effective in May 2018, imposes more stringent data protection requirements and provides for greater penalties for noncompliance. Our actual or perceived failure to comply with applicable laws and regulations or other actual or alleged obligations relating to privacy or data security, or to protect personal data, could result in regulatory investigations or regulatory enforcement actions and remedies against us, including fines, imprisonment of company officials and public censure, private litigations, claims for damages, damage to our reputation and loss of goodwill (both in relation to existing end use customers and prospective end use customers), any of which could have a material adverse effect on our operations, financial performance, and business.

If our IIoT solutions become subject to cyber-attacks, or if public perception is that they are vulnerable to cyber-attacks, our reputation and business would suffer.

We have designed our IIoT products, including our outdoor lighting solutions products, to interoperate with other third-party products and systems. Although we attempt to safeguard our products and solutions from cybersecurity

threats, the potential for cyber security attacks and other incidents continues to evolve in scope and frequency.

Advances in and expanding availability of technical tools to enable cybersecurity attacks, and increasing sophistication of the threats, deepen the risk of potential security incidents. This risk expands as new protocols and devices are implemented into our products and systems, and as customer requirements evolve. Should our products, or the combination of our products into third party systems, fail to prevent or be unable to withstand any such threats or cyber-attacks, or if our partners or customers fail to safeguard applicable technologies, products or the systems with adequate security policies and measures or otherwise, our business and reputation may be harmed.

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We have attempted to design certain of our products to prevent and monitor unauthorized access, misuse, modification or other activities related to those products and the systems into which the products are intended to be placed. Despite our security measures, our products or systems may be subject to unauthorized break ins, viruses, disruptions, high-jacking, cyber terrorism, misuse, tampering, other unauthorized access or modification, or unauthorized access to, or acquisition, loss, or alteration of, data. Should our products fail to perform, be unable to withstand a cyber-attack, or otherwise suffer a security incident, or be perceived to have suffered any kind of security vulnerability or cyber incidents, we could face legal liability, and encounter material adverse financial and reputational harm.

In addition, we believe that there could be incidents of security breaches in the future which could receive significant publicity and visibility. Any such publicity or visibility, regardless of whether the problem is due or related to the performance or security measures of our products or systems, could have a negative effect on public confidence, or cause a perception that our solutions are or could be subject to similar attacks or breaches, and our business, results of operations and financial condition may be materially and adversely affected. Such an event could also result in a material adverse effect on the market price of our common stock, independent of the direct effects on our business.

Furthermore, because some of the information collected by some of our solutions is or may be considered personal data or otherwise may be alleged to be confidential or proprietary to our customers or third parties, a cyber-attack or other data security incident, including any unauthorized access to, loss of, or acquisition of data collected or maintained by our solutions, could violate, or be alleged to violate, applicable privacy, consumer or information security laws, regulations or other obligations. Any of the foregoing could cause us to face regulatory investigations and enforcement actions, private litigation, and other financial or legal liability, as well as harm to our reputation and business, any of which could have a material adverse effect on our business and financial performance.

We are dependent on technology systems and third-party content that are beyond our control.

Our success in the IIoT market will depend in part on the availability of online services and Internet connections to facilitate data transmission. In most instances, these services will be provided by third parties and will be outside of our control. Even when we are not responsible for connectivity or other problems, users of our products may attribute the problem to us. For example, many of our customers rely on the capacity, reliability and security of wireless networks owned and controlled by third parties to use our IIoT products. However, the price of access and operational integrity of online services, wireless networks and Internet connections are beyond our control. As a result, it may be difficult to identify the source of problems if they occur. This could diminish our brand and harm our business, divert the attention of our technical personnel from our product development efforts or cause significant customer relations problems.

Information Technology system security failures, cyber-attacks, and other technological breaches could cause harms to our business.

We also rely on the security of our third party providers to protect our proprietary information and information of our customers. Information technology system failures, including a breach of our or our third party providers' data security, could disrupt our ability to function in the normal course of business by potentially causing, among other things, an unintentional disclosure of customer information. Despite our implementation of security measures or those of our third party providers, information systems may be vulnerable to threats such as computer hacking, cyber-terrorism or other unauthorized attempts by third parties to access, modify or delete our or our customers' data or otherwise disrupt our systems. Any such breach could have a material adverse effect on our business, results of operations, and our reputation as a provider of data collection, and secure and reliable device connection, collaboration and communications solutions, including legal claims for damages or injunctive relief under state, federal and foreign laws, reputational damage, and decreased revenues.

We have designed our IIoT products and solutions products to interoperate with other third party products and systems. Although we attempt to safeguard our products and solutions from cybersecurity threats, the potential for cyber security attacks continues to evolve in scope and frequency.

We face operational and other risks associated with our international operations, which may adversely affect our revenues, results of operations, and financial condition.

We have operations located in seven countries and our products are sold in many more countries around the world. Revenues from international sales, which include both export sales and sales by international subsidiaries, accounted for about 60.9% and 68.2% of our total revenues for the years ended December 31, 2017 and 2016, respectively. We expect that international sales will continue to constitute a significant portion of our total revenues. Given our high dependency on sales of our products into

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Europe, the ongoing financial crisis in that region, which may be adversely impacted by the "Brexit" vote in the United Kingdom, could adversely affect our financial results.

Other risks inherent in our international business activities include, but are not limited to, the following:

- timing of and costs associated with localizing products for foreign countries and lack of acceptance of non-local products in foreign countries;
- that the nature and composition of our products may subject us to any number of additional legal requirements, which might include, but are not limited to, data privacy regulations, import/export regulations and other similar requirements;
- challenges in managing international operations;
- the burdens of complying with a wide variety of foreign laws and any related implementation costs;
- the applicability of foreign laws that could affect our business or revenues, such as laws that purport to require that we return payments that we received from insolvent customers in certain circumstances; and unexpected changes in regulatory requirements, tariffs, and other trade barriers;
- cultural differences that could make it more difficult to sell our products or could result in allegations that sales activities have violated the U.S. Foreign Corrupt Practices Act or similar laws that prohibit improper payments in connection with efforts to obtain business;
- exchange rate fluctuations;
- the imposition of tariffs or other trade barriers on the importation of our products;
- potentially adverse tax consequences, including restrictions on repatriation of earnings;
- economic and political conditions in the countries where we do business;
- differing vacation and holiday patterns in other countries, particularly in Europe;
- increased costs of labor, particularly in China;
- labor actions generally affecting individual countries, regions, or any of our customers, which could result in reduced demand for, or could delay delivery or acceptance of, our products; and
- international terrorism.

Any of these factors could have a material adverse effect on our revenues, results of operations, and our financial condition.

Our executive officers and technical personnel are critical to our business and the loss of one or more key employees or our inability to attract and retain qualified personnel could harm our business.

Our success depends substantially on the performance of our executive officers and key employees. Due to the specialized technical nature of our business and limited staff, we are particularly dependent on our Chief Executive Officer and other executive officers, as well as our technical personnel. Our future success will depend on our ability to attract, integrate, motivate and retain qualified executive, managerial, technical, sales, and operations personnel, particularly given the overall economic climate and the emphasis on reducing expenses at our company. Competition for qualified personnel in our business areas is intense, and we may not be able to continue to retain qualified executive officers and key personnel and attract new officers and personnel when necessary. Our product development and marketing functions are largely based in Silicon Valley, which is a highly competitive marketplace. It may be particularly difficult to recruit, relocate and retain qualified personnel in this geographic area. Moreover, the cost of living, including the cost of housing, in Silicon Valley is known to be high. Because we are legally prohibited from making loans to executive officers, we will not be able to assist potential key personnel as they acquire housing or incur other costs that might be associated with joining our company. We may need to invest significant amounts of cash and equity to attract and retain new employees and expend significant time and resources to identify, recruite, train, and integrate such employees, and we may never realize returns on these investments. In addition, if we lose the services of any of our key personnel and are not able to find suitable replacements in a timely manner or fail to adequately plan for the succession of key personnel, our business could be disrupted, other key personnel may decide to leave, and we may incur increased operating expenses in finding and compensating their replacements.

If we are unable to obtain additional funds when needed, our business could suffer.

For the last several years, our combined cash, cash equivalent, and short-term investment balance has declined. As we continue to implement our long-term strategic focus on the IIoT business, including the outdoor lighting controls market, this trend may continue.

As our cash balances decline, customers or potential customers may become less interested in doing business with us, or we may not satisfy the financial criteria they have established for their suppliers. In addition, from time to time we may also decide to use a portion of our cash balances to settle alleged warranty issues that may arise with our customers or¸ as noted under the

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heading "Legal Proceedings," in connection with litigation. We may do so even if we do not believe we have liability to our customers or in connection with such litigation, in order to limit our risk, reduce outlays to third party providers, and for administrative convenience. In the future, to the extent that our revenues grow or as we may determine necessary to maintain adequate supply levels, we may experience higher levels of inventory and accounts receivable, which will also use our cash balances. In addition, to the extent we plan to make alternate uses of our facilities, we may incur additional cash expenditures. We may also use our cash reserves to strategically acquire or invest in other companies, products, or technologies that are complementary to our business. Lastly, our combined cash, cash equivalents, and short-term investment balances could be negatively affected by the various risks and uncertainties that we face, especially in light of our focus on the nascent and emerging IIoT things market, and any changes in our planned cash outlay could negatively affect our existing cash reserves.

There can be no assurance that we will be able to obtain financing on terms acceptable to us, or at all, in the future. In addition, if we do not meet our revenue targets, our use of our cash balances would increase due to the fact that a significant portion of our operating expenses are fixed. If we are not able to obtain additional financing when needed, or on acceptable terms, our ability to support our business growth, invest in additional research and development and sales and marketing, or respond to business opportunities, challenges, or other circumstances could be adversely affected, and our business may be harmed.

Our current stock price and corresponding market valuation could give rise to stockholder activism or hostile takeover attempts, which could be harmful to our business.

Because the current trading price of our common stock and aggregate market capitalization are low, there is a risk that we could face stockholder activism or hostile takeover attempts, which could divert management’s attention from its strategic plan to build stockholder value through the expansion of our lighting solutions business. If the IIoT market in general, and the outdoor lighting market segment in particular, do not materialize as anticipated, if our control networking solutions and other product offerings are not accepted and utilized, or if we are subject to a hostile takeover at a depressed valuation, we may have to devote a significant amount of time and resources to address these matters without any return on our investment. This could cause us to suffer significant financial losses and could also have a negative impact on our reputation and results of operations, any of which would likely cause our stock price to decline.

Voluntary and/or industry standards and governmental regulatory actions in our markets could limit our ability to sell our products.

Standards bodies, which are formal and informal associations that attempt to set voluntary, non-governmental product standards, are influential in many of our target markets. We participate in many voluntary and/or industry standards organizations around the world in order to help prevent the adoption of exclusionary standards as well as to promote standards for our products. However, we do not have the resources to participate in all standards processes that may affect our markets, and our efforts to influence the direction of those standards bodies in which we do participate may not be successful. Many of our competitors have significantly more resources focused on standards activities and may influence those standards in a way that would be disadvantageous to our products and thereby make it difficult for us to achieve our business and financial objectives.

Many of our products and the industries in which they are used are subject to U.S. and foreign regulation. In addition, the markets for our IIoT products may experience a movement towards standards based protocols driven by governmental action, such as those being considered in the U.S. by the National Institute of Standards and Technology. To the extent that we do not adopt such protocols or do not succeed in achieving adoption of our own protocols as standards or de facto standards, sales of our IIoT products may be adversely affected. Moreover, even if our own protocols are adopted as standards, we run the risk that we could lose business to competing implementations.

The adoption of voluntary and/or industry standards or the passage of governmental regulations, for example by state utility commissions or national regulatory bodies such as Federal Energy Regulatory Commissions in the United States and PTB or BSI in Germany, that are incompatible with our products or technology could limit the market opportunity for our products or result in increased costs, which could harm our revenues, results of operations, and financial condition.

We are subject to numerous governmental regulations concerning the manufacturing and use of our products. We must stay in compliance with all such regulations and any future regulations. Any failure to comply with such regulations, and the unanticipated costs of complying with future regulations, may adversely affect our business, financial condition, and results of operations.

We manufacture and sell products incorporating electronic components that may contain materials that are subject to government regulation in the locations in which our products are manufactured and assembled, as well as the locations where we sell our products. Since we operate on a global basis, maintaining compliance with regulations concerning the materials used in

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our products is a complex process that requires continual monitoring of regulations and ongoing compliance procedures. For example, in 2012 the European Union issued recast regulations regarding the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment ("RoHS"), and in 2014, the SEC rules requiring companies to publicly disclose their use of "conflict minerals" that originated in the Democratic Republic of the Congo (DRC) or an adjoining country also become effective. The adoption of any unanticipated new regulations that significantly impact the various components we use or require that we use more expensive components would have a material adverse impact on our business, financial condition and results of operations.

Our reliance on third-party manufacturers exposes us to the risk that conflict minerals that are contained in our products have originated in the DRC or an adjoining country. We have incurred and expect to incur additional costs to comply with the disclosure requirements. Moreover, the implementation of these requirements could adversely affect the sourcing, availability and pricing of materials used in the manufacture of our products to the extent that there may be only a limited number of suppliers offering “conflict free” minerals that can be used in our products. There can be no assurance that we will be able to obtain such minerals in sufficient quantities or at competitive prices. We may also encounter customers who require that all of the components of our products be certified as conflict free. If we are not able to meet customer requirements, such customers may choose to not purchase our products, which could impact our sales.

Our manufacturing processes, including the processes used by our suppliers, are also subject to numerous governmental regulations that cover both the use of various materials as well as environmental concerns. Since we and our suppliers operate on a global basis, maintaining compliance with regulations concerning our production processes is also a complex process that requires continual monitoring of regulations and ongoing compliance procedures. For example, environmental issues such as pollution and climate change have seen significant legislative and regulatory interest on a global basis. Changes in these areas could directly increase the cost of energy, which may have an impact on the way we or our suppliers manufacture products or use energy to produce our products. In addition, any new regulations or laws in the environmental area might increase the cost of raw materials we use in our products. We are currently unable to predict how any such changes will impact us and if any such impact could be material to our business. Any new law or regulation that significantly increases our costs of manufacturing or causes us or our suppliers to significantly alter the way that our products are manufactured would have a material adverse effect on our business, financial condition and results of operations.

Liabilities resulting from defects in or misuse of our products, whether or not covered by insurance, may delay our revenues and increase our liabilities and expenses.

Our products are manufactured with highly complex electronic components and may, as a result, contain or may be alleged to contain errors or failures, including those relating to actual or potential security breaches. In addition, our customers or their installation partners may improperly install or implement our products, which could delay completion of a deployment or hinder our ability to win a subsequent award. Furthermore, because of the low cost and interoperable nature of our IIoT products, LONWORKS technology could be used in a manner for which it was not intended.

Even if we determine that an alleged error or failure in our products does not exist, we may incur significant expense and shipments and revenues may be delayed while we analyze the alleged error or failure. If errors or failures are found in our products, we may not be able to successfully correct them in a timely manner, or at all, and our reputation may suffer. Such errors or failures could delay our product shipments and divert our engineering resources while we attempt to correct them. In addition, we could decide to extend the warranty period, or incur other costs outside of our normal warranty coverage, to help address any known errors or failures in our products and mitigate the impact on our customers. For example, we could decide to replace defective products at a cost that is significantly higher than the value of the original products. This could delay our revenues and increase our expenses.

To address these issues, the agreements we maintain with our customers may contain provisions intended to limit our exposure to potential errors and omissions claims as well as any liabilities arising from them. However, our customer contracts may not effectively protect us against the liabilities and expenses associated with errors or failures attributable to our products.

Defects in our products may also cause us to be liable for losses in the event of property damage, harm or death to persons, claims against our directors or officers, and the like. For example, our outdoor lighting control products operate in a variety of settings under diverse conditions that may present the risk of product failure, which could subject us to liability. For instance, a failure of our automated smart lighting product used by a customer to enhance security could subject us to liability in the event of unlawful activity by third parties. Moreover, our IIoT products may present risks beyond our control such as operational misuse that could ultimately subject us to liability. Such liabilities could harm our reputation, expose our company to liability, and adversely affect our operating results and financial position.

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To help reduce our exposure to these types of liabilities, we currently maintain property, general commercial liability, errors and omissions, directors and officers, and other lines of insurance. However, it is possible that such insurance may not be available in the future or, if available, may be insufficient in amount to cover any particular claim, or we might not carry insurance that covers a specific claim. In addition, we believe that the premiums for the types of insurance we carry will continue to fluctuate from period to period. Significant cost increases could also result in increased premiums or reduced coverage limits. Consequently, if we elect to reduce our coverage, or if we do not carry insurance for a particular type of claim, we will face increased exposure to these types of claims.

We may be unable to realize the benefits of our net operating loss carry-forwards (“NOLs”).

NOLs may be carried forward to offset federal and state taxable income in future years and eliminate income taxes otherwise payable on such taxable income, subject to certain adjustments. Based on current federal and state corporate income tax rates, our NOLs and other carry-forwards could provide a benefit to us, if fully utilized, of significant future tax savings. However, our ability to use these tax benefits in future years will depend upon the amount of our otherwise federal and state taxable income. If we do not have sufficient federal and state taxable income in future years to use the tax benefits before they expire, we will lose the benefit of these NOLs permanently. Consequently, in addition to dependence on the generation of future business profits, our ability to use the tax benefits associated with our substantial NOLs will depend significantly on our success in identifying suitable acquisition or investment candidates, and once identified, successfully consummating an acquisition of or investment in these candidates.

Additionally, federal NOLs are subject to annual limitations under the change of ownership rules within Section 382 of the Internal Revenue Code. In general, an ownership change occurs when the percentage of stock held by one or more 5-percent shareholders increases by more than 50 percentage points over the lowest stock ownership held by such shareholders at any time within a prescribed period, usually three years. If an ownership change were to occur, we may be unable to use a significant portion of our NOLs to offset taxable income. As discussed in Note 7 to our consolidated financial statements included in our Annual Report on Form 10-K, filed with the Securities and Exchange Commission in March 2017, on April 22, 2016, the Company’s Board of Directors adopted a Tax Benefit Preservation Plan (“Tax Plan”) intended to reduce the likelihood that changes in the Company’s investor base have the unintended effect of limiting the Company’s use of its tax benefits. The Tax Plan is intended to require any person acquiring shares of the Company’s securities equal to or exceeding 4.99% of the Company’s outstanding shares to obtain the approval of the Board of Directors. This would protect the tax benefits because changes in ownership by a person owning less than 4.99% of the Company’s stock are considered and included in one or more public groups in the calculation of “ownership change” for purposes of Section 382 of the Code. However, there can be no assurance that the Tax Plan would be effective under all circumstances. Moreover, the Tax Plan, as amended on April 17, 2017, will expire on April 25, 2019, unless renewed by our Board of Directors.

The amount of NOLs that we have claimed has not been audited or otherwise validated by the U.S. Internal Revenue Service (“IRS”). The IRS could challenge our calculation of the amount of our NOLs or our determinations as to when a prior change in ownership occurred, and other provisions of the Internal Revenue Code may limit our ability to carry forward our NOLs to offset taxable income in future years. If the IRS was successful with respect to any such challenge, the potential tax benefit of the NOLs to us could be substantially reduced.

Lastly, in December 2017, the Tax Cuts and Jobs Act ("the Act") was signed into law. Among other changes is a permanent reduction in the federal U.S. corporate income tax rate from 35% to 21%, effective January 1, 2018. As a result of the change in the corporate income tax rate, the value of our NOLs has decreased.

We have limited ability to protect our intellectual property rights.

Our success depends significantly upon our intellectual property rights, which can vary significantly from jurisdiction to jurisdiction. We rely on a combination of patent, copyright, trademark and trade secret laws, non-disclosure agreements and other contractual provisions to establish, maintain and protect these intellectual property rights, all of

which afford only limited protection, particularly in those countries that lack robust or accessible enforcement mechanisms. For example, we have in the past and may in the future form joint ventures with foreign companies, including those in China, where intellectual property mechanisms are generally less stringent than those found in the U.S. We have also outsourced certain development activities to third parties. If any of our patents fail to protect our technology, or if we do not obtain patents in certain countries, our competitors may find it easier to offer equivalent or superior technology. In addition, our trade secrets or other intellectual property that we license to third parties could be used improperly or otherwise in violation of the license terms.

We have also registered or applied for registration for certain trademarks, and will continue to evaluate the registration of additional trademarks as appropriate. If we fail to properly register or maintain our trademarks, or to otherwise take all necessary

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steps to protect our trademarks, the value associated with the trademarks may diminish. In addition, if we fail to protect our trade secrets or other intellectual property rights, we may not be able to compete as effectively in our markets.

Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy aspects of our products or services or use information that we regard as proprietary, or it may not be economically feasible to enforce them. Any of our patents, trademarks, copyrights, trade secrets, or intellectual property rights could be challenged, invalidated or circumvented. In addition, we cannot assure you that we have taken or will take all necessary steps to protect our intellectual property rights. Third parties may also independently develop similar technology without breach of our trade secrets or other proprietary rights. In addition, the laws of some foreign countries, including several in which we operate or sell our products, do not protect proprietary rights to as great an extent as do the laws of the United States, and it may take longer to receive a remedy from a court outside of the United States. Also, some of our products are licensed under shrink-wrap license agreements that are not signed by licensees and therefore may not be binding under the laws of certain jurisdictions.

From time to time, litigation may be necessary to defend and enforce our proprietary rights. As a result, we could incur substantial costs and divert management resources, which could harm our business, regardless of the final outcome. Despite our efforts to safeguard and maintain our proprietary rights both in the United States and abroad, we may be unsuccessful in doing so. Also, the steps that we take to safeguard and maintain our proprietary rights may be inadequate to deter third parties from infringing, misusing, misappropriating, or independently developing our technology or intellectual property rights, or to prevent an unauthorized third party from misappropriating our products or technology.

Our business may suffer if it is alleged or found that our products infringe the intellectual property rights of others, or if we are unable to secure rights to use the intellectual property rights of others on reasonable terms.

We may be contractually obligated to indemnify our customers or other third parties that use our products in the event our products are alleged to infringe a third party’s intellectual property rights. From time to time, we may also receive notice that a third party believes that our products may be infringing patents or other intellectual property rights of that third party. Responding to those claims, regardless of their merit, can be time consuming, result in costly litigation, divert management’s attention and resources, and cause us to incur significant expenses. We do not insure against infringement of a third party’s intellectual property rights.

As the result of such a claim, we may elect or be required to redesign our products that are alleged to infringe the third party’s patents or other intellectual property rights, which could cause those product offerings to be delayed. Or we could be required to cease distributing those products altogether. In the alternative, we could seek a license to the third party’s intellectual property. Even if our products do not infringe, we may elect to take a license or settle to avoid incurring litigation costs. However, it is possible that we would not be able to obtain such a license or settle on reasonable terms, or at all.

In some cases, even though no infringement has been alleged, we may attempt to secure rights to use the intellectual property rights of others that would be useful to us. We cannot guarantee that we would be able to secure such rights on reasonable terms, or at all.

Lastly, our customers may not purchase our products if they are concerned our products may infringe third party intellectual property rights. This could reduce the market opportunity for the sale of our products and services.

Any of the foregoing risks could have a material adverse effect on our revenues, results of operations, and financial condition.

We may be unable to anticipate or fail to adequately mitigate against increasingly sophisticated methods to engage in illegal or fraudulent activities against us.

Despite any defensive measures we take to manage threats to our business, our risk and exposure to these matters remain heightened because of, among other things, the evolving nature of such threats in light of advances in computer capabilities, new discoveries in the field of cryptography, new and sophisticated methods used by criminals including phishing, social engineering or other illicit acts, or other events or developments that we may be unable to anticipate or fail to adequately mitigate. These threats, events, and developments could lead to, for example,

unauthorized access to or acquisition of our sensitive business information or intellectual property, or the personal data of our employees. If any such efforts against us were to be successful, we could face financial and legal liability and suffer damage to our business and reputation, any of which could have a material adverse effect on our results of operations and financial condition.

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Future acquisitions, strategic investments, partnerships or alliances could be difficult to identify and integrate, divert the attention of management, disrupt our business, dilute stockholder value and adversely affect our results of operations and financial condition.

As opportunities present themselves, we may from time to time evaluate and enter into strategic partnerships or transactions involving acquisitions of or investments in other businesses, products or technologies that we believe could complement or expand our services, enhance our technical capabilities or otherwise offer growth opportunities. The pursuit of potential transactions may divert the attention of management and cause us to incur various expenses in identifying, investigating, and pursuing suitable opportunities, whether or not transactions are ultimately completed. If we acquire businesses, we may not be able to integrate successfully the acquired personnel, operations and technologies, or effectively manage the combined business following the acquisition. We may not be able to find and identify desirable opportunities or be successful in entering into an agreement with respect to the opportunities that we do identify. Acquisitions and other transactions could also result in dilutive issuances of equity securities, use of our existing cash reserves or the incurrence of debt. In addition, a transaction may fail to meet our expectations. The occurrence of any of these risks could harm our results of operations, business and financial condition.

Natural disasters, power outages, and other factors outside of our control such as widespread pandemics could disrupt our business.

We must protect our business and our network infrastructure against damage from earthquake, flood, hurricane and similar events, as well as from power outages. Our corporate headquarters is located in the San Francisco Bay Area, a region known for earthquakes. A natural disaster, power outage, or other unanticipated problem could also adversely affect our business by, among other things, harming our primary data center or other internal operations, limiting our ability to communicate with our customers, limiting our ability or our partners' or customers' ability to sell or use our products, affecting our third party developer's ability to complete developments on schedule or at all, or affecting our suppliers' ability to provide us with components or products. These risks bay be further increased if the disaster recover plans for us and our suppliers prove to be inadequate. For example, the 2011 earthquake and tsunami in Japan adversely impacted our revenues from customers located in Japan and/or our ability to source parts from companies located in Japan. Shortly after the earthquake, we received notice from Toshiba (one of two manufacturers of the Neuron Chip - an important component that we and our customers use in control network devices), that they would no longer be able to manufacture Neuron Chips due to earthquake damage suffered at the semiconductor manufacturing facility that produced the Neuron Chips. However, the abrupt termination of Toshiba's Neuron Chip manufacturing capability caused a disruption in supply and an increase in prices from the remaining supplier, Cypress Semiconductor. We do not insure against several natural disasters, including earthquakes.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISKS

We have not experienced any material change in our exposure to interest rate and foreign currency risks since the date of our Annual Report on Form 10-K for the year ended December 31, 2017.

Market Risk Disclosures. The following discussion about our market risk disclosures involves forward-looking statements. Actual results could differ materially from those projected in the forward-looking statements. We are exposed to market risk related to changes in interest rates and foreign currency exchange rates. We do not use derivative financial instruments to hedge these exposures.

Interest Rate Sensitivity. We maintain a short-term investment portfolio consisting mainly of fixed income securities with a weighted average maturity of less than one year. These available-for-sale securities are subject to interest rate risk and will fall in value if market interest rates increase. If market rates were to increase immediately and uniformly by 10% from levels at March 31, 2018 and December 31, 2017, the fair value of the portfolio would decline by an immaterial amount. We currently intend to hold our fixed income investments until maturity, and therefore we would not expect our operating results or cash flows to be affected to any significant degree by a sudden change in market interest rates. However, if necessary, we may sell short-term investments prior to maturity to meet the liquidity needs of the company.

Foreign Currency Exchange Risk. We have international subsidiaries and operations and are, therefore, subject to foreign currency rate exposure. To date, our exposure to exchange rate volatility has not been significant. If foreign

exchange rates were to fluctuate by 10% from rates at March 31, 2018, and December 31, 2017, our financial position and results of operations would not be materially affected. However, we could experience a material impact in the future.

In addition, for our cost of goods sold, our products are generally assembled by CEMs in China, although our transactions with these vendors have historically been denominated in U.S. dollars. These vendors may require us to pay in their local currency, or demand a U.S. dollar price adjustment or other payment to address a change in exchange rates, which would

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increase our cost to procure our products. This is particularly a risk in China, where any future revaluations of the Chinese currency against the U.S. dollar could result in significant cost increases.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Effectiveness of Disclosure Controls and Procedures

We have designed our disclosure controls and procedures to ensure that information we are required to disclose in reports that we file or submit under the Securities and Exchange Act of 1934 is accumulated and communicated to our management, including our principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure, and that such information is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms. As of the end of the period covered by this Quarterly Report on Form 10-Q, under the supervision of our Chief Executive Officer and our Chief Financial Officer, we evaluated the effectiveness of our disclosure controls and procedures, as such terms are defined in Rule 13a-15(e) and Rule 15d-15(e) under the Securities and Exchange Act of 1934. Based on this evaluation, our Chief Executive Officer and our Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of March 31, 2018.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rule 13a-15(e) of the Exchange Act) that occurred during the quarter ended March 31, 2018, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

For a discussion regarding our legal proceedings and matters, please refer to the “Legal Actions” section of Note 6, Commitments and Contingencies, to our condensed consolidated financial statements included under Item 1 of Part I, Financial Information, which information is incorporated herein by reference.

ITEM 1A. RISK FACTORS

A restated description of the risk factors associated with our business is included under “Factors That May Affect Future Results of Operations” in “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” contained in Item 2 of Part I of this report. This description includes any material changes to and supersedes the description of the risk factors associated with our business previously disclosed in Item 1A of our 2017 Annual Report on Form 10-K and is incorporated herein by reference.

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

The following table provides information about the repurchase of our common stock during the quarter ended March 31, 2018:

Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs (1)
January 1 - January 31	1,909	$ 5.87	—	—
February 1 - February 28	571	$ 4.74	—	—
March 1 - March 31	11,237	$ 4.67	—	—
Total	13,717	$ 4.84	—	—

(1) Shares purchased represent those shares surrendered to us by employees in order to satisfy stock-for-stock option exercises, also commonly referred to as "net exercises", and/or withholding tax obligations related to stock-based compensation.

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ITEM 6. EXHIBITS

Exhibit No.	Description of Document
31.1 #	Certificate of Echelon Corporation Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2 #	Certificate of Echelon Corporation Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32 **	Certification by the Chief Executive Officer and the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, furnished herewith.
101.INS+	XBRL Instance Document
101.SCH+	XBRL Taxonomy Extension Schema
101.CAL+	XBRL Taxonomy Extension Calculation Linkbase
101.DEF+	XBRL Taxonomy Extension Definition Linkbase
101.LAB+	XBRL Taxonomy Extension Label Linkbase
101.PRE+	XBRL Taxonomy Extension Presentation Linkbase

#Filed herewith

** The information in this exhibit is furnished and deemed not filed with the Securities and Exchange Commission for purposes of section 18 of the Exchange Act of 1934, as amended (the "Exchange Act"), and is not to be incorporated by reference into any filing of Echelon Corporation under the Securities Act of 1933, as amended (the "Securities Act"), or the Exchange Act, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

+ The financial information contained in these XBRL documents is unaudited and is furnished, not filed with the Securities and Exchange Commission.

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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.

ECHELON CORPORATION

Date: May 10, 2018

By: /s/ C. Michael Marszewski

C. Michael Marszewski
Vice President and Chief Financial Officer (Duly Authorized Officer and Principal Financial Officer)

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