

COGNEX CORP

FORM 10-Q (Quarterly Report)

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Address ONE VISION DR
NATICK, MA 01760
Telephone 5086503000
CIK 0000851205
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

Quarterly Report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the quarterly period ended July 2, 2017 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 001-34218

COGNEX CORPORATION

(Exact name of registrant as specified in its charter)

Massachusetts

04-2713778

(State or other jurisdiction of
incorporation or organization)

(I.R.S. Employer
Identification No.)

**One Vision Drive
Natick, Massachusetts 01760-2059
(508) 650-3000**

(Address, including zip code, and telephone number, including area code, of principal executive offices)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§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 No

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

Large accelerated filer Accelerated filer
Non-accelerated filer (Do not check if a smaller reporting company)
Smaller reporting company
Emerging growth company

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

As of July 2, 2017, there were 86,572,316 shares of Common Stock, \$.002 par value per share, of the registrant outstanding.

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PART I: FINANCIAL INFORMATION
ITEM 1: FINANCIAL STATEMENTS

COGNEX CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)

	Three-months Ended		Six-months Ended	
	July 2, 2017	July 3, 2016	July 2, 2017	July 3, 2016
	(unaudited)		(unaudited)	
Revenue	\$ 172,904	\$ 147,274	\$ 307,846	\$ 243,479
Cost of revenue	37,471	35,213	65,696	56,181
Gross margin	135,433	112,061	242,150	187,298
Research, development, and engineering expenses	23,377	19,671	46,147	40,226
Selling, general, and administrative expenses	52,518	42,715	99,039	81,053
Operating income	59,538	49,675	96,964	66,019
Foreign currency gain (loss)	(184)	330	(447)	230
Investment income	2,138	1,447	4,150	2,584
Other income (expense)	(169)	222	101	429
Income from continuing operations before income tax expense	61,323	51,674	100,768	69,262
Income tax expense (benefit) on continuing operations	5,251	8,660	(959)	11,363
Net income from continuing operations	56,072	43,014	101,727	57,899
Net income (loss) from discontinued operations (Note 14)	—	(255)	—	(255)
Net income	\$ 56,072	\$ 42,759	\$ 101,727	\$ 57,644
Basic earnings per weighted-average common and common-equivalent share:				
Net income from continuing operations	\$ 0.65	\$ 0.51	\$ 1.18	\$ 0.68
Net income (loss) from discontinued operations	\$ —	\$ (0.01)	\$ —	\$ —
Net income	\$ 0.65	\$ 0.50	\$ 1.18	\$ 0.68
Diluted earnings per weighted-average common and common-equivalent share:				
Net income from continuing operations	\$ 0.63	\$ 0.50	\$ 1.14	\$ 0.67
Net income (loss) from discontinued operations	\$ —	\$ (0.01)	\$ —	\$ (0.01)
Net income	\$ 0.63	\$ 0.49	\$ 1.14	\$ 0.66
Weighted-average common and common-equivalent shares outstanding:				
Basic	86,639	85,107	86,480	85,024
Diluted	89,614	86,806	89,452	86,713
Cash dividends per common share	\$ 0.085	\$ 0.075	\$ 0.160	\$ 0.145

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

COGNEX CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)

	Three-months Ended		Six-months Ended	
	July 2, 2017	July 3, 2016	July 2, 2017	July 3, 2016
	(unaudited)		(unaudited)	
Net income	\$ 56,072	\$ 42,759	\$ 101,727	\$ 57,644
Other comprehensive income (loss), net of tax:				
Cash flow hedges:				
Net unrealized gain (loss), net of tax of \$7 and (\$15) in the three-month periods and net of tax of \$3 and (\$97) in the six-month periods, respectively	59	(302)	(12)	(879)
Reclassification of net realized (gain) loss into current operations	(9)	190	35	186
Net change related to cash flow hedges	50	(112)	23	(693)
Available-for-sale investments:				
Net unrealized gain (loss), net of tax of \$58 and \$243 in the three-month periods and net of tax of \$150 and \$510 in the six-month periods, respectively	307	1,351	818	2,632
Reclassification of net realized (gain) loss into current operations	(42)	(141)	(107)	(128)
Net change related to available-for-sale investments	265	1,210	711	2,504
Foreign currency translation adjustments:				
Foreign currency translation adjustments, net of tax of \$0 and (\$155) in the three-month periods and net of tax of \$0 and \$174 in the six-month periods, respectively	10,263	(2,546)	12,744	2,614
Net change related to foreign currency translation adjustments	10,263	(2,546)	12,744	2,614
Other comprehensive income (loss), net of tax	10,578	(1,448)	13,478	4,425
Total comprehensive income	<u>\$ 66,650</u>	<u>\$ 41,311</u>	<u>\$ 115,205</u>	<u>\$ 62,069</u>

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

COGNEX CORPORATION
CONSOLIDATED BALANCE SHEETS
(In thousands)

	July 2, 2017 (unaudited)	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 68,266	\$ 79,641
Short-term investments	342,402	341,194
Accounts receivable, less reserves of \$1,061 and \$873 in 2017 and 2016, respectively	78,593	55,438
Unbilled revenue	5,939	2,217
Inventories	36,491	26,984
Prepaid expenses and other current assets	50,157	20,870
Total current assets	581,848	526,344
Long-term investments	354,658	324,335
Property, plant, and equipment, net	61,196	53,992
Goodwill	115,089	95,280
Intangible assets, net	15,226	8,312
Deferred income taxes	29,681	28,022
Other assets	3,300	2,319
Total assets	\$ 1,160,998	\$ 1,038,604
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 22,815	\$ 9,830
Accrued expenses	42,621	42,539
Accrued income taxes	4,957	5,193
Deferred revenue and customer deposits	18,011	8,211
Total current liabilities	88,404	65,773
Deferred income taxes	5,215	—
Reserve for income taxes	6,122	5,361
Other non-current liabilities	9,281	4,871
Total liabilities	109,022	76,005
Shareholders' equity:		
Common stock, \$.002 par value – Authorized: 200,000 shares in 2017 and 2016, respectively, issued and outstanding: 86,572 and 85,939 shares in 2017 and 2016, respectively	173	172
Additional paid-in capital	425,406	375,030
Retained earnings	669,347	643,825
Accumulated other comprehensive loss, net of tax	(42,950)	(56,428)
Total shareholders' equity	1,051,976	962,599
	\$ 1,160,998	\$ 1,038,604

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

COGNEX CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Six-months Ended	
	July 2, 2017	July 3, 2016
	(unaudited)	
Cash flows from operating activities:		
Net income	\$ 101,727	\$ 57,644
Adjustments to reconcile net income to net cash provided by operating activities:		
(Gain) loss on sale of discontinued business	—	255
Stock-based compensation expense	15,329	11,261
Depreciation of property, plant, and equipment	6,288	5,577
Amortization of intangible assets	1,740	1,862
Amortization of discounts or premiums on investments	171	204
Realized (gain) loss on sale of investments	(107)	(128)
Revaluation of contingent consideration	(151)	(463)
Change in deferred income taxes	2,998	(2,943)
Change in operating assets and liabilities:		
Accounts receivable	(18,841)	(17,737)
Unbilled revenue	(3,315)	(25,507)
Inventories	(7,711)	11,964
Prepaid expenses and other current assets	(27,717)	(7,449)
Accounts payable	11,814	6,224
Accrued expenses	(157)	1,762
Accrued income taxes	(566)	2,245
Deferred revenue and customer deposits	9,110	3,998
Other	8	542
Net cash provided by operating activities	<u>90,620</u>	<u>49,311</u>
Cash flows from investing activities:		
Purchases of investments	(304,611)	(455,915)
Maturities and sales of investments	279,654	427,196
Purchases of property, plant, and equipment	(12,172)	(5,347)
Cash paid for acquisition of businesses, net of cash acquired	(25,519)	—
Cash paid related to discontinued business	(291)	(113)
Net cash provided by (used in) investing activities	<u>(62,939)</u>	<u>(34,179)</u>
Cash flows from financing activities:		
Issuance of common stock under stock plans	35,050	8,700
Repurchase of common stock	(62,343)	(8,718)
Payment of dividends	(13,864)	(12,335)
Payment of contingent consideration	—	(337)
Net cash provided by (used in) financing activities	<u>(41,157)</u>	<u>(12,690)</u>
Effect of foreign exchange rate changes on cash and cash equivalents	2,101	512
Net change in cash and cash equivalents	<u>(11,375)</u>	<u>2,954</u>
Cash and cash equivalents at beginning of period	79,641	51,975
Cash and cash equivalents at end of period	<u>\$ 68,266</u>	<u>\$ 54,929</u>

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

COGNEX CORPORATION
CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY
(In thousands)

	Common Stock		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Shareholders' Equity
	Shares	Par Value				
Balance as of December 31, 2016	85,939	\$ 172	\$ 375,030	\$ 643,825	\$ (56,428)	\$ 962,599
Issuance of common stock under stock plans	1,365	3	35,047	—	—	35,050
Repurchase of common stock	(732)	(2)	—	(62,341)	—	(62,343)
Stock-based compensation expense	—	—	15,329	—	—	15,329
Payment of dividends	—	—	—	(13,864)	—	(13,864)
Net income	—	—	—	101,727	—	101,727
Net unrealized gain (loss) on cash flow hedges, net of tax of \$3	—	—	—	—	(12)	(12)
Reclassification of net realized (gain) loss on cash flow hedges	—	—	—	—	35	35
Net unrealized gain (loss) on available-for-sale investments, net of tax of \$150	—	—	—	—	818	818
Reclassification of net realized (gain) loss on the sale of available-for-sale investments	—	—	—	—	(107)	(107)
Foreign currency translation adjustment, net of tax of \$0	—	—	—	—	12,744	12,744
Balance as of July 2, 2017 (unaudited)	<u>86,572</u>	<u>\$ 173</u>	<u>\$ 425,406</u>	<u>\$ 669,347</u>	<u>\$ (42,950)</u>	<u>\$ 1,051,976</u>

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

COGNEX CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

NOTE 1: Summary of Significant Accounting Policies

As permitted by the rules of the Securities and Exchange Commission applicable to Quarterly Reports on Form 10-Q, these notes are condensed and do not contain all disclosures required by generally accepted accounting principles (GAAP). Cognex Corporation (the "Company") has provided new disclosures related to inventories and internal-use software in this quarterly report on Form 10-Q. Reference should be made to the consolidated financial statements and related notes included in the Company's Annual Report on Form 10-K for the year ended December 31, 2016 for a full description of significant accounting policies.

In the opinion of the management of the Company, the accompanying consolidated unaudited financial statements contain all adjustments, consisting of normal, recurring adjustments and financial statement reclassifications, including those related to the disposition of a business, necessary to present fairly the Company's financial position as of July 2, 2017, and the results of its operations for the three-month and six-month periods ended July 2, 2017 and July 3, 2016, and changes in shareholders' equity, comprehensive income, and cash flows for the periods presented.

The results disclosed in the Consolidated Statements of Operations for the three-month and six-month periods ended July 2, 2017 are not necessarily indicative of the results to be expected for the full year.

Inventories

On January 1, 2017, the Company adopted Accounting Standards Update (ASU) 2015-11 "Inventory - Simplifying the Measurement of Inventory." This Update requires companies to measure inventory at the lower of cost and net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. This adoption did not have an impact on the Company's inventory value.

Internal-use Software

The Company accounts for the costs of computer software developed or obtained for internal use under Accounting Standards Codification 350-40 "Intangibles - Goodwill and Other, Internal-use Software." Internal-use software is software acquired, internally developed, or modified solely to meet the entity's internal needs, and during the software's development, no substantive plan exists to sell the software.

The preliminary project stage includes conceptual formulation of design alternatives, determination of system requirements, vendor demonstrations, and final selection of vendors, and during this stage costs are expensed as incurred. The application development stage includes software configuration, coding, hardware installation, and testing. During this stage, certain costs are capitalized, including external direct costs of materials and services, as well as payroll and payroll-related costs for employees who are directly associated with the project, while certain costs are expensed as incurred, including training and data conversion costs. The post-implementation stage includes training and maintenance, and during this stage costs are expensed as incurred.

Capitalization begins when both the preliminary project stage is completed and management commits to funding the project. Capitalization ceases at the point the project is substantially complete and ready for its intended use, that is, after all substantial testing is completed. Costs of specified upgrades and enhancements to internal-use software are capitalized if it is probable that those expenditures result in additional functionality. Capitalized costs are amortized on a straight line basis over the estimated useful life.

NOTE 2: New Pronouncements

Accounting Standards Update (ASU) 2014-09, "Revenue from Contracts with Customers"

The amendments in ASU 2014-09 will supersede and replace all currently existing U.S. GAAP, including industry-specific revenue recognition guidance, with a single, principle-based revenue recognition framework. The concept guiding this new model is that revenue recognition will depict transfer of control to the customer in an amount that reflects consideration to which an entity expects to be entitled. The core principles supporting this framework include (1) identifying the contract with a customer, (2) identifying separate performance obligations within the contract, (3) determining the transaction price, (4) allocating the transaction price to the performance obligations, and (5) recognizing revenue. This new framework will require entities to apply significantly more judgment. This increase in management judgment will require expanded disclosure on estimation methods, inputs, and assumptions for revenue recognition.

In March 2016, ASU 2016-08, "Principal versus Agent Considerations (Reporting Revenue Gross versus Net)," was issued, in April 2016, ASU 2016-10, "Identifying Performance Obligations and Licensing," was issued, in May 2016,

ASU 2016-12, "Narrow-Scope Improvements and Practical Expedients," was issued, and in December 2016, ASU 2016-20, "Technical Corrections and Improvements," was issued. These Updates do not change the core principle of the guidance under ASU 2014-09, but rather provide implementation guidance. ASU 2015-14, "Deferral of the effective date," amended the effective date of ASU 2014-09 for public companies to annual reporting periods beginning after December 15, 2017. Early adoption is permitted, but only beginning after December 15, 2016. The Financial Accounting Standards Board may release additional implementation guidance in future periods.

We expect to adopt this standard using the full retrospective method to present all periods reported on a consistent basis. Upon adoption, revenue for software-only products sold as part of multiple-deliverable arrangements will no longer be deferred when vendor-specific objective evidence of fair value does not exist for undelivered elements of the arrangement. This change will likely result in earlier recognition of revenue. In addition, we expect certain of the Company's product accessory sales, which are currently reported on a net basis, to be reported on a gross basis as a result of applying the expanded guidance in the new standard related to principal versus agent considerations. This change will result in the Company reporting higher revenue and higher cost of revenue when these sales are reported on a gross basis, although the gross margin dollars will not change. Furthermore, for arrangements that include customer-specified acceptance criteria, we expect to recognize revenue when we can objectively determine that control has been transferred to the customer in accordance with the agreed-upon specifications in the contract, which may occur before formal customer acceptance. This change will primarily impact revenue recognition for arrangements in the logistics industry where certain customer solutions include installed ID products and will likely result in earlier recognition of revenue. We do not expect these changes to have a material impact on total revenue. Management is currently in the process of updating the Company's revenue accounting policy, internal controls, and disclosures to finalize the implementation of this standard.

Accounting Standards Update (ASU) 2016-01, "Financial Instruments - Recognition and Measurement of Financial Assets and Financial Liabilities"

ASU 2016-01 provides guidance related to certain aspects of recognition, measurement, presentation, and disclosure of financial instruments. The amendments in this Update affect all entities that hold financial assets or owe financial liabilities. This ASU requires equity investments (except those accounted under the equity method) to be measured at fair value with changes in fair value recognized in net income. However, an entity may choose to measure equity investments that do not have readily determinable fair values at cost minus impairment. This ASU also eliminates the requirement for public companies to disclose the methods and significant assumptions used to estimate the fair value for financial instruments measured at amortized cost on the balance sheet, and it requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset on the balance sheet or the accompanying notes to the financial statements. For public companies, the guidance in ASU 2016-01 is effective for annual periods beginning after December 15, 2017, and interim periods within those annual periods. Early adoption is not permitted except for certain amendments in this Update. Management does not expect ASU 2016-01 to have a material impact on the Company's financial statements and disclosures.

Accounting Standards Update (ASU) 2016-02, "Leases"

ASU 2016-02 creates Topic 842, Leases. The objective of this Update is to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet, and disclosing key information about leasing arrangements. This ASU applies to any entity that enters into a lease, although lessees will see the most significant changes. The main difference between current U.S. GAAP and Topic 842 is the recognition of lease assets and lease liabilities on the balance sheet for those leases classified as operating leases under current U.S. GAAP. Topic 842 distinguishes between finance leases and operating leases, which are substantially similar to the classification criteria for distinguishing between capital leases and operating leases under current U.S. GAAP. For public companies, the guidance in ASU 2016-02 is effective for annual periods beginning after December 15, 2018, and interim periods within those annual periods. This ASU should be applied using a modified retrospective approach. Management is in the process of evaluating the impact of this Update.

Accounting Standards Update (ASU) 2016-13, "Financial Instruments - Measurement of Credit Losses"

ASU 2016-13 applies to all reporting entities holding financial assets that are not accounted for at fair value through net income (debt securities). The amendments in this Update eliminate the probable initial recognition threshold to recognize a credit loss under current U.S. GAAP and, instead, reflect an entity's current estimate of all expected credit losses. In addition, this Update broadens the information an entity must consider in developing the credit loss estimate, including the use of reasonable and supportable forecasted information. The amendments in this Update require that credit losses on available-for-sale debt securities be presented as an allowance rather than as a write-down and an entity will be able to record reversals of credit losses in current period net income. For public companies, the guidance in ASU 2016-13 is effective for annual periods beginning after December 15, 2019, and interim periods within those

annual periods. This ASU should be applied through a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. Management does not expect ASU 2016-13 to have a material impact on the Company's financial statements and disclosures.

Accounting Standards Update (ASU) 2016-16, "Income Taxes - Intra-Entity Transfers of Assets Other than Inventory"

ASU 2016-16 applies to all reporting entities with intra-entity transfers of assets other than inventory. The amendments in this Update allow the recognition of deferred income taxes for an intra-entity transfer of an asset other than inventory when the transfer occurs, as opposed to when the asset has been sold to an outside party under current U.S. GAAP. Two common examples of assets included in the scope of this Update are intellectual property and property, plant, and equipment. For public companies, the amendments in ASU 2016-16 are effective for annual reporting periods beginning after December 15, 2017, and interim reporting periods within those annual periods. Early adoption is permitted for all entities as of the beginning of an annual reporting period for which financial statements (interim or annual) have not been issued or made available for issuance. This ASU should be applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. Management is in the process of evaluating the impact of this Update.

Accounting Standards Update (ASU) 2017-01, "Business Combinations - Clarifying the Definition of a Business"

ASU 2017-01 applies to all reporting entities that must determine whether they have acquired or sold a business. The amendments in this Update clarify the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. For public companies, the amendments in ASU 2017-01 are effective for annual reporting periods beginning after December 15, 2017, and interim reporting periods within those annual periods. This ASU should be applied prospectively on or after the effective date and no disclosures are required at transition. Early adoption is permitted for transactions for which the acquisition date occurs before the issuance date or the effective date of the amendments in this Update, only when the transaction has not been reported in financial statements that have been issued. Management does not expect ASU 2017-01 to have a material impact on the Company's financial statements and disclosures.

Accounting Standards Update (ASU) 2017-04, "Intangibles - Goodwill and Other - Simplifying the Test for Goodwill Impairment"

ASU 2017-04 applies to all reporting entities that have goodwill reported in their financial statements. The amendments in this Update eliminate Step 2 from the goodwill impairment test reducing the cost and complexity of evaluating goodwill for impairment. In computing the implied fair value of goodwill under Step 2, an entity had to perform procedures to determine the fair value at the impairment date of its assets and liabilities as would be required in a business combination. Instead, under the amendments in this Update, an entity should perform its goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. For public companies, the amendments in ASU 2017-04 are effective for the annual or any interim goodwill impairment tests for reporting periods beginning after December 15, 2019. This ASU should be applied prospectively and an entity is required to disclose the nature of and reason for the change in accounting principle upon transition. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. Management does not expect ASU 2017-04 to have a material impact on the Company's financial statements and disclosures.

Accounting Standards Update (ASU) 2017-08, "Receivables - Nonrefundable Fees and Other Costs - Premium Amortization on Purchased Callable Debt Securities"

ASU 2017-08 applies to all reporting entities that hold investments in callable debt securities that have an amortized cost basis in excess of the amount that is repayable by the issuer at the earliest call date (that is, at a premium). The amendments in this Update shorten the amortization period for certain callable debt securities held at a premium. Specifically, the amendments require the premium to be amortized to the earliest call date. The amendments do not require an accounting change for securities held at a discount; the discount continues to be amortized to maturity. Under current GAAP, premiums and discounts on callable debt securities generally are amortized to the maturity date. If that callable debt security is subsequently called, the entity records a loss equal to the unamortized premium. The amendments in this Update more closely align the amortization period of premiums and discounts to expectations incorporated in market pricing on the underlying securities. For public companies, the amendments in ASU 2017-08 are effective for annual periods beginning after December 15, 2019 and interim reporting periods within annual years beginning after December 15, 2020. This ASU should be applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption, and, in the period of adoption, the entity is required to provide disclosures about a change in accounting principle. Early adoption is

permitted, including adoption in an interim period. Management is in the process of evaluating the impact of this Update.

Accounting Standards Update (ASU) 2017-09, "Compensation - Stock Compensation - Scope of Modification Accounting"

ASU 2017-09 applies to all reporting entities that change the terms or conditions of a share-based payment award. Currently, the definition of the term modification is broad and its interpretation results in diversity in practice. The amendments in this Update provide guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718. An entity should account for the effects of a modification unless all the following are met: 1) the fair value of the modified award is the same as the fair value of the original award immediately before the original award is modified, 2) the vesting conditions of the modified award are the same as the vesting conditions of the original award immediately before the original award is modified, and 3) the classification of the modified award as an equity instrument or a liability instrument is the same as the classification of the original award immediately before the original award is modified. For public companies, the amendments in ASU 2017-09 are effective for annual reporting periods beginning after December 15, 2017, and interim reporting periods within those annual periods. Early adoption is permitted including adoption in an interim period, for reporting periods for which financial statements have not yet been issued. This ASU should be applied prospectively to an award modified on or after the adoption date. Management does not expect ASU 2017-09 to have a material impact on the Company's financial statements and disclosures.

NOTE 3: Fair Value Measurements

Financial Assets and Liabilities that are Measured at Fair Value on a Recurring Basis

The following table summarizes the financial assets and liabilities required to be measured at fair value on a recurring basis as of July 2, 2017 (in thousands):

	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
Assets:			
Money market instruments	\$ 3,554	\$ —	\$ —
Corporate bonds	—	325,159	—
Treasury bills	—	152,563	—
Asset-backed securities	—	87,260	—
Euro liquidity fund	—	79,256	—
Sovereign bonds	—	30,933	—
Agency bonds	—	13,412	—
Municipal bonds	—	8,477	—
Cash flow hedge forward contracts	—	71	—
Economic hedge forward contracts	—	45	—
Liabilities:			
Economic hedge forward contracts	—	4	—
Contingent consideration liabilities	—	—	3,959

The Company's money market instruments are reported at fair value based upon the daily market price for identical assets in active markets, and are therefore classified as Level 1.

The Company's debt securities and forward contracts are reported at fair value based upon model-driven valuations in which all significant inputs are observable or can be derived from or corroborated by observable market data for substantially the full term of the asset or liability, and are therefore classified as Level 2. Management is responsible for estimating the fair value of these financial assets and liabilities, and in doing so, considers valuations provided by a large, third-party pricing service. For debt securities, this service maintains regular contact with market makers, brokers, dealers, and analysts to gather information on market movement, direction, trends, and other specific data. They use this information to structure yield curves for various types of debt securities and arrive at the daily valuations. The Company's forward contracts are typically traded or executed in over-the-counter markets with a high degree of pricing transparency. The market participants are generally large commercial banks.

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The Company did not record an other-than-temporary impairment of these financial assets during the six -month period ended July 2, 2017 .

The Company's contingent consideration liabilities are reported at fair value based upon probability-adjusted present values of the consideration expected to be paid, using significant inputs that are not observable in the market, and are therefore classified as Level 3. Key assumptions used in these estimates include probability assessments with respect to the likelihood of achieving certain revenue milestones, and the likelihood of completing certain tasks. The fair values of these contingent consideration liabilities were calculated using discount rates consistent with the level of risk of achievement, and are remeasured each reporting period with changes in fair value recorded in "Other income (expense)" on the Consolidated Statements of Operations.

The following table summarizes the activity for the Company's liability measured at fair value using Level 3 inputs for the six-month period ended July 2, 2017 (in thousands):

Balance as of December 31, 2016	\$	4,173
Payment of EnShape contingent consideration		(1,401)
Fair value adjustment to Manatee contingent consideration		(275)
Fair value adjustment to Chiaro contingent consideration		124
Contingent consideration resulting from GVi acquisition		1,299
Foreign exchange rate changes		39
Balance as of July 2, 2017	\$	3,959

Non-financial Assets that are Measured at Fair Value on a Non-recurring Basis

Non-financial assets such as property, plant and equipment, goodwill, and intangible assets are required to be measured at fair value only when an impairment loss is recognized. The Company did not record an impairment charge related to these assets during the six -month period ended July 2, 2017 .

NOTE 4: Cash, Cash Equivalents, and Investments

Cash, cash equivalents, and investments consisted of the following (in thousands):

	July 2, 2017	December 31, 2016
Cash	\$ 64,712	\$ 77,307
Money market instruments	3,554	2,334
Cash and cash equivalents	68,266	79,641
Treasury bills	97,018	67,175
Corporate bonds	86,000	141,188
Euro liquidity fund	79,256	46,499
Asset-backed securities	42,449	69,614
Sovereign bonds	24,454	7,298
Agency bonds	7,610	2,903
Municipal bonds	5,615	6,517
Short-term investments	342,402	341,194
Corporate bonds	239,159	169,952
Treasury bills	55,545	92,280
Asset-backed securities	44,811	26,946
Sovereign bonds	6,479	23,585
Agency bonds	5,802	10,339
Municipal bonds	2,862	1,233
Long-term investments	354,658	324,335
	\$ 765,326	\$ 745,170

Treasury bills consist of debt securities issued by the U.S. government; corporate bonds consist of debt securities issued by both domestic and foreign companies; the Euro liquidity fund invests in a portfolio of investment-grade bonds; asset-backed securities consist of debt securities collateralized by pools of receivables or loans with credit enhancement; sovereign bonds consist of direct debt issued by foreign governments; agency bonds consist of domestic or foreign obligations of government agencies and government sponsored enterprises that have government backing;

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and municipal bonds consist of debt securities issued by state and local government entities. The Euro liquidity fund is denominated in Euros, and the remaining securities are denominated in U.S. Dollars.

The following table summarizes the Company's available-for-sale investments as of July 2, 2017 (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Short-term:				
Treasury bills	\$ 97,218	\$ —	\$ (200)	\$ 97,018
Corporate bonds	85,918	85	(3)	86,000
Euro liquidity fund	78,824	432	—	79,256
Asset-backed securities	42,467	2	(20)	42,449
Sovereign bonds	24,495	4	(45)	24,454
Agency bonds	7,600	10	—	7,610
Municipal bonds	5,615	—	—	5,615
Long-term:				
Corporate bonds	238,417	929	(187)	239,159
Treasury bills	55,671	—	(126)	55,545
Asset-backed securities	44,733	95	(17)	44,811
Sovereign bonds	6,519	1	(41)	6,479
Agency bonds	5,787	16	(1)	5,802
Municipal bonds	2,860	2	—	2,862
	\$ 696,124	\$ 1,576	\$ (640)	\$ 697,060

The following table summarizes the Company's gross unrealized losses and fair values for available-for-sale investments in an unrealized loss position as of July 2, 2017 (in thousands):

	Unrealized Loss Position For:					
	Less than 12 Months		12 Months or Greater		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Treasury bills	\$ 143,666	\$ (306)	\$ 8,897	\$ (20)	\$ 152,563	\$ (326)
Corporate bonds	62,295	(190)	—	—	62,295	(190)
Asset-backed securities	52,141	(37)	—	—	52,141	(37)
Sovereign bonds	24,737	(84)	3,001	(2)	27,738	(86)
Agency bonds	3,076	(1)	—	—	3,076	(1)
	\$ 285,915	\$ (618)	\$ 11,898	\$ (22)	\$ 297,813	\$ (640)

As of July 2, 2017, the Company did not recognize any other-than-temporary impairment of these investments. In its evaluation, management considered the type of security, the credit rating of the security, the length of time the security has been in a loss position, the size of the loss position, the Company's intent and ability to hold the security to expected recovery of value, and other meaningful information. The Company does not intend to sell, and is unlikely to be required to sell, any of these available-for-sale investments before their effective maturity or market price recovery.

The Company recorded gross realized gains and gross realized losses on the sale of debt securities totaling \$55,000 and \$13,000, respectively, during the three-month period ended July 2, 2017 and \$141,000 and \$0, respectively, during the three-month period ended July 3, 2016. The Company recorded gross realized gains and gross realized losses on the sale of debt securities totaling \$143,000 and \$36,000, respectively, during the six-month period ended July 2, 2017 and \$225,000 and \$97,000, respectively, during the six-month period ended July 3, 2016. These gains and losses are included in "Investment income" on the Consolidated Statement of Operations. Prior to the sale of these securities, unrealized gains and losses for these debt securities, net of tax, are recorded in shareholders' equity as other comprehensive income (loss).

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The following table presents the effective maturity dates of the Company's available-for-sale investments as of July 2, 2017 (in thousands):

	<1 year	1-2 Years	2-3 Years	3-4 Years	4-5 Years	5-7 Years	Total
Corporate bonds	\$ 86,000	\$ 112,337	\$ 86,773	\$ 7,602	\$ 32,447	\$ —	\$ 325,159
Treasury bills	97,018	55,545	—	—	—	—	152,563
Asset-backed securities	42,449	21,856	20,100	—	—	2,855	87,260
Euro liquidity fund	79,256	—	—	—	—	—	79,256
Sovereign bonds	24,454	3,819	2,660	—	—	—	30,933
Agency bonds	7,610	2,726	3,076	—	—	—	13,412
Municipal bonds	5,615	2,862	—	—	—	—	8,477
	<u>\$ 342,402</u>	<u>\$ 199,145</u>	<u>\$ 112,609</u>	<u>\$ 7,602</u>	<u>\$ 32,447</u>	<u>\$ 2,855</u>	<u>\$ 697,060</u>

NOTE 5: Inventories

Inventories consisted of the following (in thousands):

	July 2, 2017	December 31, 2016
Raw materials	\$ 23,197	\$ 18,224
Work-in-process	6,970	2,760
Finished goods	6,324	6,000
	<u>\$ 36,491</u>	<u>\$ 26,984</u>

NOTE 6: Goodwill

The changes in the carrying value of goodwill were as follows (in thousands):

	Amount
Balance as of December 31, 2016	\$ 95,280
Acquisition of ViDi Systems S.A.	18,333
Acquisition of GVi Ventures, Inc.	1,476
Balance as of July 2, 2017	<u>\$ 115,089</u>

Refer to Note 15 to the Consolidated Financial Statements for further information regarding acquisitions.

NOTE 7: Intangible Assets

Amortized intangible assets consisted of the following (in thousands):

	Gross Carrying Value	Accumulated Amortization	Net Carrying Value
Distribution networks	\$ 38,060	\$ 38,060	\$ —
Completed technologies	13,687	2,961	10,726
Customer relationships	9,205	5,044	4,161
Non-compete agreements	370	31	339
Balance as of July 2, 2017	<u>\$ 61,322</u>	<u>\$ 46,096</u>	<u>\$ 15,226</u>

	Gross Carrying Value	Accumulated Amortization	Net Carrying Value
Distribution networks	\$ 38,060	\$ 37,422	\$ 638
Completed technologies	8,003	2,098	5,905
Customer relationships	6,605	4,836	1,769
Balance as of December 31, 2016	<u>\$ 52,668</u>	<u>\$ 44,356</u>	<u>\$ 8,312</u>

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As of July 2, 2017, estimated future amortization expense related to intangible assets is as follows (in thousands):

Year Ended December 31,	Amount
Remainder of fiscal 2017	\$ 1,598
2018	3,196
2019	2,821
2020	2,305
2021	2,097
2022	1,691
Thereafter	1,518
	\$ 15,226

NOTE 8: Warranty Obligations

The Company records the estimated cost of fulfilling product warranties at the time of sale based upon historical costs to fulfill claims. Obligations may also be recorded subsequent to the time of sale whenever specific events or circumstances impacting product quality become known that would not have been taken into account using historical data. While we engage in extensive product quality programs and processes, including actively monitoring and evaluating the quality of our component suppliers and third-party contract manufacturers, the Company's warranty obligation is affected by product failure rates, material usage, and service delivery costs incurred in correcting a product failure. An adverse change in any of these factors may result in the need for additional warranty provisions. Warranty obligations are included in "Accrued expenses" on the Consolidated Balance Sheets.

The changes in the warranty obligation were as follows (in thousands):

Balance as of December 31, 2016	\$ 4,335
Provisions for warranties issued during the period	1,456
Fulfillment of warranty obligations	(1,249)
Foreign exchange rate changes	395
Balance as of July 2, 2017	\$ 4,937

NOTE 9: Derivative Instruments

The Company's foreign currency risk management strategy is principally designed to mitigate the potential financial impact of changes in the value of transactions and balances denominated in foreign currencies resulting from changes in foreign currency exchange rates. Currently, the Company enters into two types of hedges to manage this risk. The first are economic hedges which utilize foreign currency forward contracts with maturities of up to 45 days to manage the exposure to fluctuations in foreign currency exchange rates arising primarily from foreign-denominated receivables and payables. The gains and losses on these derivatives are intended to be offset by the changes in the fair value of the assets and liabilities being hedged. These economic hedges are not designated as hedging instruments for hedge accounting treatment. The second are cash flow hedges which utilize foreign currency forward contracts with maturities of up to 18 months to hedge specific forecasted transactions of the Company's foreign subsidiaries with the goal of protecting our budgeted revenues and expenses against foreign currency exchange rate changes compared to our budgeted rates. These cash flow hedges are designated as hedging instruments for hedge accounting treatment.

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The Company had the following outstanding forward contracts (in thousands):

Currency	July 2, 2017		December 31, 2016	
	Notional Value	USD Equivalent	Notional Value	USD Equivalent
<i>Derivatives Designated as Hedging Instruments:</i>				
Japanese Yen	62,500	\$ 627	342,500	\$ 2,960
Hungarian Forint	—	—	39,000	130
Singapore Dollar	—	—	150	97
<i>Derivatives Not Designated as Hedging Instruments:</i>				
Japanese Yen	665,000	\$ 5,954	650,000	\$ 5,554
British Pound	1,690	2,197	1,350	1,658
Korean Won	2,100,000	1,839	1,750,000	1,450
Hungarian Forint	445,000	1,648	425,000	1,448
Singapore Dollar	2,025	1,473	1,350	929
Taiwanese Dollar	29,100	959	26,000	802

Information regarding the fair value of the outstanding forward contracts was as follows (in thousands):

	Asset Derivatives				Liability Derivatives			
	Balance Sheet Location	Fair Value		Balance Sheet Location	Fair Value			
		July 2, 2017	December 31, 2016		July 2, 2017	December 31, 2016		
<i>Derivatives Designated as Hedging Instruments:</i>								
Cash flow hedge forward contracts	Prepaid expenses and other current assets	\$ 71	\$ 43	Accrued expenses	\$ —	\$ —		
<i>Derivatives Not Designated as Hedging Instruments:</i>								
Economic hedge forward contracts	Prepaid expenses and other current assets	\$ 45	\$ 1	Accrued expenses	\$ 4	\$ 11		

The following table presents the gross activity for all derivative assets and liabilities which were presented on a net basis on the Consolidated Balance Sheets due to the right of offset with each counterparty (in thousands):

	Asset Derivatives		Liability Derivatives	
	July 2, 2017	December 31, 2016	July 2, 2017	December 31, 2016
Gross amounts of recognized assets	\$ 116	\$ 117	Gross amounts of recognized liabilities	\$ 4 \$ 11
Gross amounts offset	—	(73)	Gross amounts offset	—
Net amount of assets presented	\$ 116	\$ 44	Net amount of liabilities presented	\$ 4 \$ 11

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Information regarding the effect of derivative instruments on the consolidated financial statements was as follows (in thousands):

Location in Financial Statements	Three-months Ended		Six-months Ended		
	July 2, 2017	July 3, 2016	July 2, 2017	July 3, 2016	
<i>Derivatives Designated as Hedging Instruments:</i>					
Gains (losses) recorded in shareholders' equity (effective portion)	Accumulated other comprehensive income (loss), net of tax	\$ 60	\$ (487)	\$ 60	\$ (487)
Gains (losses) reclassified from accumulated other comprehensive income (loss) into current operations (effective portion)	Revenue	\$ 9	\$ (200)	\$ (46)	\$ (203)
	Research, development, and engineering expenses	—	2	3	4
	Selling, general, and administrative expenses	—	8	8	13
	Total gains (losses) reclassified from accumulated other comprehensive income (loss) into current operations	\$ 9	\$ (190)	\$ (35)	\$ (186)
Gains (losses) recognized in current operations (ineffective portion and discontinued derivatives)	Foreign currency gain (loss)	\$ —	\$ —	\$ —	\$ —
<i>Derivatives Not Designated as Hedging Instruments:</i>					
Gains (losses) recognized in current operations	Foreign currency gain (loss)	\$ 177	\$ (705)	\$ 96	\$ (1,065)

The following table provides the changes in accumulated other comprehensive income (loss), net of tax, related to derivative instruments (in thousands):

Balance as of December 31, 2016	\$ 37
Net unrealized loss on cash flow hedges	(12)
Reclassification of net realized loss on cash flow hedges into current operations	35
Balance as of July 2, 2017	<u>\$ 60</u>

Net gains expected to be reclassified from accumulated other comprehensive income (loss), net of tax, into current operations within the next twelve months are \$60,000 .

NOTE 10: Stock-Based Compensation Expense

The Company's share-based payments that result in compensation expense consist of stock option grants and restricted stock awards. As of July 2, 2017 , the Company had 6,205,027 shares available for grant. Stock options are granted with an exercise price equal to the market value of the Company's common stock at the grant date and generally vest over four years based upon continuous service and expire ten years from the grant date. Restricted stock awards are granted with an exercise price equal to the market value of the Company's common stock at the time of grant. Conditions of the award may be based on continuing employment and/or achievement of pre-established performance goals and objectives. Vesting for performance-based restricted stock awards and time-based restricted stock awards must be greater than one year and three years, respectively.

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The following table summarizes the Company's stock option activity for the six -month period ended July 2, 2017 :

	Shares (in thousands)	Weighted- Average Exercise Price	Weighted- Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding as of December 31, 2016	6,433	\$ 32.16		
Granted	1,937	77.36		
Exercised	(1,365)	25.68		
Forfeited or expired	(64)	43.11		
Outstanding as of July 2, 2017	6,941	\$ 45.95	7.91	\$ 270,790
Exercisable as of July 2, 2017	2,015	\$ 27.39	5.85	\$ 115,900
Options vested or expected to vest as of July 2, 2017 (1)	6,033	\$ 44.28	7.74	\$ 245,371

(1) In addition to the vested options, the Company expects a portion of the unvested options to vest at some point in the future. Options expected to vest are calculated by applying an estimated forfeiture rate to the unvested options.

The fair values of stock options granted in each period presented were estimated using the following weighted-average assumptions:

	Three-months Ended		Six-months Ended	
	July 2, 2017	July 3, 2016	July 2, 2017	July 3, 2016
Risk-free rate	2.4%	1.7%	2.4%	1.7%
Expected dividend yield	0.39%	0.84%	0.39%	0.84%
Expected volatility	41%	41%	41%	41%
Expected term (in years)	5.2	5.4	5.3	5.5

Risk-free rate

The risk-free rate was based upon a treasury instrument whose term was consistent with the contractual term of the option.

Expected dividend yield

Generally, the current dividend yield is calculated by annualizing the cash dividend declared by the Company's Board of Directors and dividing that result by the closing stock price on the grant date.

Expected volatility

The expected volatility was based upon a combination of historical volatility of the Company's common stock over the contractual term of the option and implied volatility for traded options of the Company's stock.

Expected term

The expected term was derived from the binomial lattice model from the impact of events that trigger exercises over time.

The Company stratifies its employee population into two groups: one consisting of senior management and another consisting of all other employees. The Company currently expects that approximately 75% of its stock options granted to senior management and 72% of its options granted to all other employees will actually vest. Therefore, the Company currently applies an estimated annual forfeiture rate of 10% to all unvested options for senior management and a rate of 12% for all other employees. The Company revised its estimated forfeiture rate in the first quarter of 2017, resulting in a decrease to compensation expense of \$673,000 . The Company also revised its estimated forfeiture rate in the first quarter of 2016, resulting in an increase to compensation expense of \$334,000 .

The weighted-average grant-date fair values of stock options granted during the three-month periods ended July 2, 2017 and July 3, 2016 were \$31.01 and \$12.22 , respectively. The weighted-average grant-date fair values of stock options granted during the six-month periods ended July 2, 2017 and July 3, 2016 were \$29.95 and \$12.25 , respectively.

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The total intrinsic values of stock options exercised for the three-month periods ended July 2, 2017 and July 3, 2016 were \$19,408,000 and \$5,652,000, respectively. The total intrinsic values of stock options exercised for the six-month periods ended July 2, 2017 and July 3, 2016 were \$72,451,000 and \$9,376,000, respectively. The total fair values of stock options vested for the three-month periods ended July 2, 2017 and July 3, 2016 were \$725,000 and \$709,000, respectively. The total fair values of stock options vested for the six-month periods ended July 2, 2017 and July 3, 2016 were \$18,713,000 and \$16,045,000, respectively.

As of July 2, 2017, total unrecognized compensation expense related to non-vested stock options was \$48,313,000, which is expected to be recognized over a weighted-average period of 1.89 years.

The following table summarizes the Company's restricted stock activity for the six-month period ended July 2, 2017:

	Shares (in thousands)	Weighted-Average Grant Fair Value	Aggregate Intrinsic Value (in thousands)(1)
Nonvested as of December 31, 2016	20	\$ 34.05	
Granted	—	—	
Vested	(10)	34.05	825
Forfeited or expired	—	—	
Nonvested as of July 2, 2017	10	\$ 34.05	\$ 849

(1) Fair market value as of April 22, 2017 for vested shares, and as of July 2, 2017 for nonvested shares.

The fair values of restricted stock awards granted were determined based upon the market value of the Company's common stock at the time of grant. The initial cost is then amortized over the period of vesting until the restrictions lapse. These restricted shares will be fully vested in 2018. Participants are entitled to dividends on restricted stock awards, but only receive those amounts if the shares vest. The sale or transfer of these shares is restricted during the vesting period.

The total stock-based compensation expense and the related income tax benefit recognized for the three-month period ended July 2, 2017 were \$7,846,000 and \$2,583,000, respectively, and for the three-month period ended July 3, 2016 were \$4,457,000 and \$1,462,000, respectively. The total stock-based compensation expense and the related income tax benefit recognized for the six-month period ended July 2, 2017 were \$15,329,000 and \$5,022,000, respectively, and for the six-month period ended July 3, 2016 were \$11,261,000 and \$3,690,000, respectively. No compensation expense was capitalized as of July 2, 2017 or December 31, 2016.

The following table presents the stock-based compensation expense by caption for each period presented on the Consolidated Statements of Operations (in thousands):

	Three-months Ended		Six-months Ended	
	July 2, 2017	July 3, 2016	July 2, 2017	July 3, 2016
Cost of revenue	\$ 454	\$ 229	\$ 884	\$ 522
Research, development, and engineering	2,715	1,397	5,325	3,576
Selling, general, and administrative	4,677	2,831	9,120	7,163
	\$ 7,846	\$ 4,457	\$ 15,329	\$ 11,261

NOTE 11: Stock Repurchase Program

In November 2015, the Company's Board of Directors authorized the repurchase of \$100,000,000 of the Company's common stock. As of July 2, 2017, the Company has repurchased 1,271,000 shares at a cost of \$93,428,000 under this program, including 732,000 shares at a cost of \$62,343,000 for the six-month period ended July 2, 2017. In April 2017, the Company's Board of Directors authorized the repurchase of an additional \$100,000,000 of the Company's common stock. Purchases under this April 2017 program will commence upon completion of the November 2015 program. The Company may repurchase shares under these programs in future periods depending upon a variety of factors, including, among other things, the impact of dilution from employee stock options, stock price, share availability, and cash requirements.

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NOTE 12: Taxes

A reconciliation of the United States federal statutory corporate tax rate to the Company's income tax expense on continuing operations, or effective tax rate, was as follows:

	Three-months Ended		Six-months Ended	
	July 2, 2017	July 3, 2016	July 2, 2017	July 3, 2016
Income tax provision at federal statutory corporate tax rate	35 %	35 %	35 %	35 %
State income taxes, net of federal benefit	1 %	1 %	1 %	1 %
Foreign tax rate differential	(18)%	(18)%	(18)%	(18)%
Tax credit	(1)%	(1)%	(1)%	(1)%
Discrete tax benefit related to stock option exercises	(9)%	(1)%	(19)%	(2)%
Other	1 %	1 %	1 %	1 %
Income tax provision on continuing operations	<u>9 %</u>	<u>17 %</u>	<u>(1)%</u>	<u>16 %</u>

The majority of income earned outside of the United States is permanently reinvested to provide funds for international expansion. The Company is tax resident in numerous jurisdictions around the world and has identified its major jurisdictions as the United States, Ireland, and China. The statutory tax rate is 12.5% in Ireland and 25% in China, compared to the U.S. federal statutory corporate tax rate of 35%. International rights to certain of the Company's intellectual property are held by a subsidiary whose legal jurisdiction does not tax this income, resulting in a foreign effective tax rate that is lower than the above mentioned statutory rates. These differences resulted in a decrease in the effective tax rate by 18 percentage points for the three-month and six-month periods ended July 2, 2017 and July 3, 2016.

The excess tax benefit arising from the difference between the deduction for tax purposes and the compensation cost recognized for financial reporting purposes from stock option exercises resulted in a decrease of the effective tax rate by 9 and 1 percentage points for the three-month periods ended July 2, 2017 and July 3, 2016, respectively, and a decrease of the effective tax rate by 19 and 2 percentage points for the six-month periods ended July 2, 2017 and July 3, 2016, respectively.

During the six -month period ended July 2, 2017 , the Company recorded a \$702,000 increase in reserves for income taxes, net of deferred tax benefit. Estimated interest and penalties included in these amounts totaled \$86,000 for the six -month period ended July 2, 2017 .

The Company's reserve for income taxes, including gross interest and penalties, was \$7,150,000 as of July 2, 2017 , which included \$6,122,000 classified as a non-current liability and \$1,028,000 recorded as a reduction to non-current deferred tax assets. The amount of gross interest and penalties included in these balances was \$798,000 . If the Company's tax positions were sustained or the statutes of limitations related to certain positions expired, these reserves would be released and income tax expense would be reduced in a future period. As a result of the expiration of certain statutes of limitations, there is a potential that a portion of these reserves could be released, which would decrease income tax expense by approximately \$800,000 to \$900,000 over the next twelve months.

The Company has defined its major tax jurisdictions as the United States, Ireland, and China, and within the United States, Massachusetts and California. Within the United States, the tax years 2013 through 2016 remain open to examination by the Internal Revenue Service and various state tax authorities. The tax years 2012 through 2016 remain open to examination by various taxing authorities in other jurisdictions in which the Company operates.

NOTE 13: Weighted-Average Shares

Weighted-average shares were calculated as follows (in thousands):

	Three-months Ended		Six-months Ended	
	July 2, 2017	July 3, 2016	July 2, 2017	July 3, 2016
Basic weighted-average common shares outstanding	86,639	85,107	86,480	85,024
Effect of dilutive stock options	2,975	1,699	2,972	1,689
Weighted-average common and common-equivalent shares outstanding	<u>89,614</u>	<u>86,806</u>	<u>89,452</u>	<u>86,713</u>

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Stock options to purchase 1,896,132 and 1,357,254 shares of common stock, on a weighted-average basis, were outstanding during the three-month and six-month periods ended July 2, 2017, respectively, and 3,904,396 and 4,502,777 for the same periods in 2016, but were not included in the calculation of dilutive net income per share because they were anti-dilutive.

NOTE 14: Discontinued Operations

On July 6, 2015, the Company completed the sale of its Surface Inspection Systems Division (SISD). A binding arbitration was concluded in the second quarter of 2016 with respect to certain product performance claims made by an SISD customer, for which the Company remained responsible under the indemnity provisions of the sale transaction. In that proceeding, the tribunal ordered the Company to pay the customer approximately \$326,000, primarily representing a refund of the product purchase price. The tribunal also ordered the customer to pay the Company approximately \$45,000, primarily representing reimbursement of legal fees. The net settlement of \$281,000 was recorded in discontinued operations in the second quarter of 2016, along with \$123,000 of legal fees. The tax benefit related to this expense was \$149,000, resulting in a net loss from discontinued operations of \$255,000.

The losses included in discontinued operations were as follows (in thousands):

	Three-months Ended		Six-months Ended	
	July 2, 2017	July 3, 2016	July 2, 2017	July 3, 2016
Operating income from discontinued operations	\$ —	\$ —	\$ —	\$ —
Gain (loss) on sale of discontinued operations	—	(404)	—	(404)
Income (loss) from discontinued operations before income tax expense (benefit)	—	(404)	—	(404)
Income tax expense (benefit) on discontinued operations	—	(149)	—	(149)
Net income (loss) from discontinued operations	<u>\$ —</u>	<u>\$ (255)</u>	<u>\$ —</u>	<u>\$ (255)</u>

NOTE 15: Acquisitions

ViDi Systems S.A.

On April 4, 2017, the Company acquired all of the outstanding shares of ViDi Systems, S.A. (ViDi), a privately-held vision software company based in Switzerland. This transaction has been accounted for as a business combination.

The total purchase price of \$23,015,000 included cash payment of \$ 20,019,000, with the remaining \$ 2,996,000 recorded as a holdback to secure potential claims under the agreement. The holdback limitation period is 18 months, and therefore, this amount has been recorded in "Other non-current liabilities" on the Consolidated Balance Sheet. In addition, the Company entered into a special incentive payment tied to employment, which is not material, that the Company will record as compensation expense.

Under this transaction, in addition to completed technologies, the Company acquired a team of software engineers that are expected to help the Company broaden the scope of applications that can be addressed with Cognex vision. ViDi's deep learning software uses artificial intelligence techniques to improve image analysis in applications where it is difficult to predict the full range of image variations that might be encountered. Using feedback, ViDi's software trains the system to distinguish between acceptable variations and defects. Assets acquired and liabilities assumed have been recorded at their estimated fair values as of the acquisition date.

COGNEX CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

The purchase price was allocated as follows (in thousands):

Cash	\$	146
Accounts receivable		425
Prepaid expenses		129
Property, plant, and equipment		40
Accounts payable		(98)
Accrued expenses		(716)
Deferred income tax liability		(388)
Non-compete agreement		370
Completed technologies		4,774
Goodwill		18,333
Purchase price	\$	23,015

The non-compete agreement and completed technology are included in "Intangible assets" on the Consolidated Balance Sheet. The non-compete agreement will be amortized to research, development and engineering expenses over three years, and the completed technology will be amortized to cost of revenue over six years, both on a straight-line basis. The portion of the acquired goodwill deductible for tax purposes is \$5,112,000 . Transaction costs were immaterial and were expensed as incurred.

GVi Ventures, Inc.

On April 12, 2017, the Company acquired selected assets and assumed selected liabilities of GVi Ventures, Inc., a privately-held maker of pre-configured vision solutions for common automotive applications based in the United States. This transaction has been accounted for as a business combination.

The total purchase price of \$5,368,000 included cash payment of \$4,069,000 and contingent consideration valued at \$1,299,000 . In addition, the Company entered into special incentive payments tied to employment, none of which are material, that the Company will record as compensation expense.

The undiscounted potential outcomes related to the contingent consideration range from \$0 to \$3,500,000 based upon certain milestone revenue levels over the next five years. As of July 2, 2017, the fair value of the contingent consideration was \$1,299,000 , with \$274,000 recorded in "Accrued expenses," and \$1,025,000 recorded in "Other non-current liabilities" on the Consolidated Balance Sheet. The contingent consideration will be remeasured each reporting period with changes in fair value recorded in "Other income (expense)" on the Consolidated Statements of Operations.

Under this transaction, in addition to customer relationships and completed technologies, the Company acquired a team of software engineers that are expected to develop new products and increase the Company's ability to serve large customers in the automotive industry. Assets acquired and liabilities assumed have been recorded at their estimated fair values as of the acquisition date.

COGNEX CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

The purchase price was allocated as follows (in thousands):

Accounts receivable	\$	423
Inventories		120
Prepaid expenses and other current assets		1
Accounts payable		(152)
Accrued expenses		(10)
Completed technologies		910
Customer relationships		2,600
Goodwill		1,476
Purchase price	\$	5,368

The customer relationships and completed technologies are included in "Intangible assets" on the Consolidated Balance Sheet. The customer relationships are being amortized to selling, general, and administrative expenses over eight years, and the completed technologies are being amortized to cost of revenue over five years, both on a straight-line basis. A portion of the acquired goodwill is deductible for tax purposes. Transaction costs were immaterial and were expensed as incurred.

Pro-forma information for these acquisitions has not been presented because they are not material, either individually or in the aggregate.

NOTE 16: Subsequent Events

On July 31, 2017, the Company's Board of Directors declared a cash dividend of \$0.085 per share. The dividend is payable September 1, 2017 to all shareholders of record as of the close of business on August 18, 2017.

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

Forward-Looking Statements

Certain statements made in this report, as well as oral statements made by the Company from time to time, constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Readers can identify these forward-looking statements by our use of the words "expects," "anticipates," "estimates," "believes," "projects," "intends," "plans," "will," "may," "shall," "could," "should," and similar words and other statements of a similar sense. These statements are based upon our current estimates and expectations as to prospective events and circumstances, which may or may not be in our control and as to which there can be no firm assurances given. These forward-looking statements, which include statements regarding business and market trends, future financial performance, customer order rates, the timing for recognition of revenue, expected areas of growth, emerging markets, future product mix, research and development activities, the impact of acquisitions, the Company's new Enterprise Resource Planning (ERP) system, investments, and strategic plans, involve known and unknown risks and uncertainties that could cause actual results to differ materially from those projected. Such risks and uncertainties include: (1) the loss of a large customer; (2) current and future conditions in the global economy; (3) the reliance on revenue from the consumer electronics or automotive industries; (4) the inability to penetrate new markets; (5) the inability to achieve significant international revenue; (6) fluctuations in foreign currency exchange rates and the use of derivative instruments; (7) information security breaches or business system disruptions; (8) the inability to attract and retain skilled employees; (9) the reliance upon key suppliers to manufacture and deliver critical components for our products; (10) the failure to effectively manage product transitions or accurately forecast customer demand; (11) the inability to design and manufacture high-quality products; (12) the technological obsolescence of current products and the inability to develop new products; (13) the failure to properly manage the distribution of products and services; (14) the inability to protect our proprietary technology and intellectual property; (15) our involvement in time-consuming and costly litigation; (16) the impact of competitive pressures; (17) the challenges in integrating and achieving expected results from acquired businesses; (18) potential impairment charges with respect to our investments or for acquired intangible assets or goodwill; and (19) exposure to additional tax liabilities. The foregoing list should not be construed as exhaustive and we encourage readers to refer to the detailed discussion of risk factors included in Part I - Item 1A of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2016. The Company cautions readers not to place undue reliance upon any such forward-looking statements, which speak only as of the date made. The Company disclaims any obligation to subsequently revise forward-looking statements to reflect the occurrence of anticipated or unanticipated events or circumstances after the date such statements are made.

Executive Overview

Cognex Corporation is a leading worldwide provider of machine vision products that capture and analyze visual information in order to automate tasks, primarily in manufacturing processes, where vision is required. In addition to product revenue derived from the sale of machine vision products, the Company also generates revenue by providing maintenance and support, consulting, and training services to its customers; however, service revenue accounted for less than 10% of total revenue for all periods presented.

The Company's customers are predominantly in the factory automation market. Factory automation customers purchase Cognex products and incorporate them into their manufacturing processes. Customers in the consumer electronics and automotive industries contribute the largest percentage to the Company's factory automation revenue. Virtually every manufacturer can achieve better quality and manufacturing efficiency by using machine vision, and therefore, this market also includes a broad base of customers across a variety of other industries, including consumer products, food and beverage, medical devices, and pharmaceuticals. Factory automation customers also purchase Cognex products for use outside of the manufacturing process, such as using ID products in logistics automation for package sorting and distribution. A small percentage of the Company's customers are in the semiconductor and electronics capital equipment market. These customers purchase Cognex products and integrate them into the automation equipment that they manufacture and then sell to their customers to either make semiconductor chips or assemble printed circuit boards.

Revenue for the six-month period ended July 2, 2017 totaled \$307,846,000, representing an increase of \$64,367,000, or 26%, from same period in 2016 driven primarily by strong consumer electronics sales in Asia and strong logistics sales in the Americas. Manufacturing efficiencies achieved from the higher sales volume resulted in a gross margin of 79% of revenue for the six-month period in 2017 compared to 77% of revenue for the six-month period in 2016. Operating expenses increased by \$23,907,000, or 20%, from the six-month period in 2016 due principally to higher personnel-related costs and incentive compensation plan expenses. The significant increase in revenue resulted in

an operating income margin of 31% of revenue for the six-month period in 2017 compared to 27% of revenue for the six-month period in 2016. Substantial tax benefits related to stock option exercises in 2017 further contributed to a net income margin of 33% of revenue for the six-month period in 2017 compared to 24% of revenue for the six-month period in 2016. Net income from continuing operations per diluted share was \$1.14 for the six-month period in 2017 compared to \$0.67 for the six-month period in 2016.

Results of Operations

As foreign currency exchange rates are a factor in understanding period-to-period comparisons, we believe the presentation of results on a constant-currency basis in addition to reported results helps improve investors' ability to understand our operating results and evaluate our performance in comparison to prior periods. We also use results on a constant-currency basis as one measure to evaluate our performance. Constant-currency information compares results between periods as if exchange rates had remained constant period-over-period. We generally refer to such amounts calculated on a constant-currency basis as excluding the impact of foreign currency exchange rate changes. Results on a constant-currency basis are not in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP) and should be considered in addition to, and not as a substitute for, results prepared in accordance with U.S. GAAP.

Revenue

Revenue increased by \$25,630,000, or 17%, for the three-month period and increased by \$64,367,000, or 26%, for the six-month period. Changes in foreign currency exchange rates did not have a material impact on revenue. The largest dollar and percentage growth came from customers based in Asia, where revenue increased by 53% and 73% for the three-month and six-month periods, respectively, driven primarily by higher sales in the consumer electronics industry in this region. Revenue from customers based in the Americas increased by 38% and 27% for the three-month and six-month periods, respectively, driven primarily by higher sales to customers in the logistics industry in this region.

Revenue from customers based in Europe was lower than both prior-year comparisons due to the timing of large customer orders in the consumer electronics industry in this region. In 2017, we expect more of these large orders to be recognized as revenue in the third quarter of 2017, while revenue from large orders in this industry was more evenly split between the second and third quarters in 2016. Accordingly, as of the date of this report, we expect revenue for the third quarter of 2017 to be higher than both the second quarter of 2017 and the third quarter of 2016. The future quarterly timing of revenue in the consumer electronics industry will depend upon a number of factors, including the product introduction cycles of our large customers in this industry.

Gross Margin

Gross margin as a percentage of revenue was 78% and 79% for the three-month and six-month periods in 2017, respectively, compared to 76% and 77% for the same periods in 2016. The increase was primarily due to manufacturing efficiencies achieved from a higher volume of machine vision products sold, as fixed manufacturing costs were spread over a larger revenue base.

The Company's gross margin percentage has ranged from the mid-to-high 70s for the past several years. As of the date of this report, we expect the gross margin percentage to be closer to the mid-point of this range in the third quarter of 2017 due to anticipated higher revenue from a material customer under a preferred pricing arrangement.

Operating Expenses

Research, Development, and Engineering Expenses increased by \$3,706,000, or 19%, for the three-month period and increased by \$5,921,000, or 15%, for the six-month period as detailed in the table below (in thousands).

	Three-month period	Six-month period
RD&E expense in 2016	\$ 19,671	40,226
Personnel-related costs	2,121	3,719
Stock-based compensation expense	1,304	1,760
Other	281	442
RD&E expenses in 2017	<u>\$ 23,377</u>	<u>46,147</u>

RD&E expenses increased due to higher personnel-related costs resulting primarily from headcount additions to support new product initiatives and the higher business level. These headcount additions included engineering talent from six business acquisitions completed in the past year that are expected to help accelerate the development of

future products. Stock-based compensation expense was also higher than the prior year due to a higher valuation of stock options issued as part of the Company's annual grant during the first quarter of 2017.

RD&E expenses as a percentage of revenue were 14% and 15% for the three-month and six-month periods in 2017, respectively, compared to 13% and 17% for the same periods in 2016. We believe that a continued commitment to RD&E activities is essential in order to maintain or achieve product leadership with our existing products and to provide innovative new product offerings, as well as to provide engineering support for large customers. In addition, we consider our ability to accelerate time to market for new products to be critical to our revenue growth. Therefore, we expect to continue to make significant RD&E investments in the future, and we target our RD&E spending to be between 10% and 15% of revenue on an annual basis. This quarterly percentage is impacted by revenue levels and investing cycles.

Selling, General, and Administrative Expenses

Selling, general, and administrative (SG&A) expenses increased by \$9,803,000, or 23%, for the three-month period and increased by \$17,986,000, or 22%, for the six-month period as detailed in the table below (in thousands).

	Three-month period	Six-month period
SG&A expenses in 2016	\$ 42,715	\$ 81,053
Personnel-related costs	3,444	6,069
Incentive compensation plans	1,714	4,049
Travel expenses	1,132	2,194
Stock-based compensation expense	1,845	1,989
ERP expenses	1,114	1,554
Other	554	2,131
SG&A expenses in 2017	\$ 52,518	\$ 99,039

SG&A expenses increased due to higher personnel-related costs resulting primarily from headcount additions, principally sales personnel. In addition, higher incentive compensation plan expenses, including sales commission and bonus plans, were recorded in 2017 as a result of the additional headcount and higher achievement levels based upon the Company's performance. Travel expenses were also higher than the prior year due to the additional sales personnel and the higher business level. Stock-based compensation expense was also higher than the prior year due to a higher valuation of stock options issued as part of the Company's annual grant during the first quarter of 2017.

In the first half of 2017, the Company incurred expenses related to vendor selection and project planning activities for a new Enterprise Resource Planning (ERP) system, which is the management information system that integrates the Company's manufacturing, order fulfillment, and financial activities. Although expenses will continue to be incurred for the remainder of 2017, we expect a large portion of these costs to be capitalized as part of the application development of the new ERP system, which we expect to place into service in the first half of 2018.

Non-operating Income (Expense)

The Company recorded foreign currency losses of \$184,000 and \$447,000 for the three-month and six-month periods in 2017, respectively, compared to foreign currency gains of \$330,000 and \$230,000 for the same periods in 2016. Foreign currency gains and losses result primarily from the revaluation and settlement of accounts receivable, accounts payable, and intercompany balances that are reported in one currency and collected in another.

Investment income increased by \$691,000, or 48%, for the three-month period and increased by \$1,566,000, or 61%, for the six-month period. The increase was due to higher yields, as well as additional funds available for investment in the Company's portfolio of debt securities.

The Company recorded other expense of \$169,000 and other income of \$101,000 for the three-month and six-month periods in 2017, respectively, compared to other income of \$222,000 and 429,000 for the same periods in 2016. Other income included a \$124,000 expense and a \$151,000 benefit for the three-month and six-month periods in 2017, respectively, and a \$200,000 benefit and a \$463,000 benefit for the same periods in 2016 resulting from the revaluation of contingent consideration liabilities arising from business combinations. Other income (expense) also included rental income, net of associated expenses, from leasing space in buildings adjacent to the Company's corporate headquarters.

Income Tax Expense

The Company's effective tax rate was an expense of 9% and a benefit of 1% of pre-tax income for the three-month and six-month periods in 2017, respectively, compared to an expense of 17% and an expense of 16% of pre-tax income for the same periods in 2016.

The effective tax rate included a decrease in tax expense of \$5,787,000 and \$18,954,000 for the three-month and six-month periods in 2017, respectively, and \$745,000 and \$1,208,000 in the same periods in 2016 from the excess tax benefit arising from the difference between the deduction for tax purposes and the compensation cost recognized for financial reporting purposes from stock option exercises. The Company cannot predict the level of stock option exercises by employees in future periods.

Excluding the impact of these discrete tax events, the Company's effective tax rate was 18% for all periods presented. The majority of income earned outside of the United States is permanently reinvested to provide funds for international expansion. The Company is tax resident in numerous jurisdictions around the world and has identified its major tax jurisdictions as the United States, Ireland, and China. The statutory tax rate is 12.5% in Ireland and 25% in China, compared to the U.S. federal statutory corporate tax rate of 35%. International rights to certain of the Company's intellectual property are held by a subsidiary whose legal jurisdiction does not tax this income, resulting in a foreign effective tax rate that is lower than the above mentioned statutory rates.

Liquidity and Capital Resources

The Company has historically been able to generate positive cash flow from operations, which has funded its operating activities and other cash requirements and has resulted in an accumulated cash and investment balance of \$765,326,000 as of July 2, 2017. The Company has established guidelines relative to credit ratings, diversification, and maturities of its investments that maintain liquidity.

The Company's cash requirements during the six-month period ended July 2, 2017 were met with positive cash flows from operations, investment maturities, and the proceeds from stock option exercises. Cash requirements consisted of operating activities, investment purchases, the repurchase of common stock, the payment of dividends, cash paid for business acquisitions, and capital expenditures. Significant operating cash outflows included working capital requirements to support the higher business level, the prepayment of estimated 2017 income taxes, and the payment of company bonuses that were earned and accrued in 2016. Capital expenditures totaled \$12,172,000 and consisted primarily of computer hardware, computer software, manufacturing test equipment related to new product introductions, and improvements made to the Company's headquarters building in Natick, Massachusetts and the Company's distribution center in Cork, Ireland.

During the six-month period ended July 2, 2017, the Company incurred \$1,554,000 related to vendor selection and project planning activities for a new Enterprise Resource Planning (ERP) system. During the remainder of 2017, the Company expects cash outflows related to this project to be approximately \$8,000,000, with a large portion of these costs to be capitalized as part of the new system, which the Company expects to place into service in the first half of 2018.

In November 2015, the Company's Board of Directors authorized the repurchase of \$100,000,000 of the Company's common stock. As of July 2, 2017, the Company has repurchased 1,271,000 shares at a cost of \$93,428,000 under this program, including 732,000 shares at a cost of \$62,343,000 for the six-month period ended July 2, 2017. In April 2017, the Board authorized the repurchase of an additional \$100,000,000 of the Company's common stock. Purchases under this April 2017 program will commence upon completion of the November 2015 program. The Company may repurchase shares under these programs in future periods depending upon a variety of factors, including, among other things, the impact of dilution from employee stock options, stock price, share availability, and cash requirements.

The Company's Board of Directors declared and paid a cash dividend of \$0.075 per share in the first quarter of 2017 and \$0.085 per share in the second quarter of 2017, totaling \$13,864,000 for the six-month period ended July 2, 2017. Future dividends will be declared at the discretion of the Company's Board of Directors and will depend upon such factors as the Board deems relevant including, among other things, the Company's ability to generate positive cash flows from operations.

The Company's business strategy includes selective expansion into new machine vision markets and applications through the acquisition of businesses and technologies. The Company has completed seven business acquisitions since August 2015, none of which are material individually or in the aggregate to the Company's financial position or operating results. Certain of these acquisitions have contractual obligations for deferred cash payments, contingent cash payments tied to performance, and special incentive cash payments tied to employment, none of which are material individually or in the aggregate to the Company's cash flows.

The Company believes that its existing cash and investment balances, together with cash flow from operations, will be sufficient to meet its operating, investing, and financing activities for the next twelve months. As of July 2, 2017, the Company had \$765,326,000 in cash and investments. In addition, the Company has no debt and does not anticipate

needing debt financing in the near future. We believe that our strong cash position has put us in a relatively good position with respect to our longer-term liquidity needs.

New Pronouncements

Accounting Standards Update (ASU) 2014-09, "Revenue from Contracts with Customers"

The amendments in ASU 2014-09 will supersede and replace all currently existing U.S. GAAP, including industry-specific revenue recognition guidance, with a single, principle-based revenue recognition framework. The concept guiding this new model is that revenue recognition will depict transfer of control to the customer in an amount that reflects consideration to which an entity expects to be entitled. The core principles supporting this framework include (1) identifying the contract with a customer, (2) identifying separate performance obligations within the contract, (3) determining the transaction price, (4) allocating the transaction price to the performance obligations, and (5) recognizing revenue. This new framework will require entities to apply significantly more judgment. This increase in management judgment will require expanded disclosure on estimation methods, inputs, and assumptions for revenue recognition.

In March 2016, ASU 2016-08, "Principal versus Agent Considerations (Reporting Revenue Gross versus Net)," was issued, in April 2016, ASU 2016-10, "Identifying Performance Obligations and Licensing," was issued, in May 2016, ASU 2016-12, "Narrow-Scope Improvements and Practical Expedients," was issued, and in December 2016, ASU 2016-20, "Technical Corrections and Improvements," was issued. These Updates do not change the core principle of the guidance under ASU 2014-09, but rather provide implementation guidance. ASU 2015-14, "Deferral of the effective date," amended the effective date of ASU 2014-09 for public companies to annual reporting periods beginning after December 15, 2017. Early adoption is permitted, but only beginning after December 15, 2016. The Financial Accounting Standards Board may release additional implementation guidance in future periods.

We expect to adopt this standard using the full retrospective method to present all periods reported on a consistent basis. Upon adoption, revenue for software-only products sold as part of multiple-deliverable arrangements will no longer be deferred when vendor-specific objective evidence of fair value does not exist for undelivered elements of the arrangement. This change will likely result in earlier recognition of revenue. In addition, we expect certain of the Company's product accessory sales, which are currently reported on a net basis, to be reported on a gross basis as a result of applying the expanded guidance in the new standard related to principal versus agent considerations. This change will result in the Company reporting higher revenue and higher cost of revenue when these sales are reported on a gross basis, although the gross margin dollars will not change. Furthermore, for arrangements that include customer-specified acceptance criteria, we expect to recognize revenue when we can objectively determine that control has been transferred to the customer in accordance with the agreed-upon specifications in the contract, which may occur before formal customer acceptance. This change will primarily impact revenue recognition for arrangements in the logistics industry where certain customer solutions include installed ID products and will likely result in earlier recognition of revenue. We do not expect these changes to have a material impact on total revenue. Management is currently in the process of updating the Company's revenue accounting policy, internal controls, and disclosures to finalize the implementation of this standard.

Accounting Standards Update (ASU) 2016-01, "Financial Instruments - Recognition and Measurement of Financial Assets and Financial Liabilities"

ASU 2016-01 provides guidance related to certain aspects of recognition, measurement, presentation, and disclosure of financial instruments. The amendments in this Update affect all entities that hold financial assets or owe financial liabilities. This ASU requires equity investments (except those accounted under the equity method) to be measured at fair value with changes in fair value recognized in net income. However, an entity may choose to measure equity investments that do not have readily determinable fair values at cost minus impairment. This ASU also eliminates the requirement for public companies to disclose the methods and significant assumptions used to estimate the fair value for financial instruments measured at amortized cost on the balance sheet, and it requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset on the balance sheet or the accompanying notes to the financial statements. For public companies, the guidance in ASU 2016-01 is effective for annual periods beginning after December 15, 2017, and interim periods within those annual periods. Early adoption is not permitted except for certain amendments in this Update. Management does not expect ASU 2016-01 to have a material impact on the Company's financial statements and disclosures.

Accounting Standards Update (ASU) 2016-02, "Leases"

ASU 2016-02 creates Topic 842, Leases. The objective of this Update is to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet, and disclosing key information about leasing arrangements. This ASU applies to any entity that enters into a lease, although lessees will see the most significant changes. The main difference between current U.S. GAAP and Topic 842 is the recognition of lease assets and lease liabilities on the balance sheet for those leases classified as operating leases under current U.S. GAAP. Topic 842 distinguishes between finance leases and operating leases, which are substantially similar to the classification criteria for distinguishing between capital leases and operating leases under current U.S. GAAP. For public companies, the guidance in ASU 2016-02 is effective for annual periods beginning after December 15, 2018, and interim periods within those annual periods. This ASU should be applied using a modified retrospective approach. Management is in the process of evaluating the impact of this Update.

Accounting Standards Update (ASU) 2016-13, "Financial Instruments - Measurement of Credit Losses"

ASU 2016-13 applies to all reporting entities holding financial assets that are not accounted for at fair value through net income (debt securities). The amendments in this Update eliminate the probable initial recognition threshold to recognize a credit loss under current U.S. GAAP and, instead, reflect an entity's current estimate of all expected credit losses. In addition, this Update broadens the information an entity must consider in developing the credit loss estimate, including the use of reasonable and supportable forecasted information. The amendments in this Update require that credit losses on available-for-sale debt securities be presented as an allowance rather than as a write-down and an entity will be able to record reversals of credit losses in current period net income. For public companies, the guidance in ASU 2016-13 is effective for annual periods beginning after December 15, 2019, and interim periods within those annual periods. This ASU should be applied through a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. Management does not expect ASU 2016-13 to have a material impact on the Company's financial statements and disclosures.

Accounting Standards Update (ASU) 2016-16, "Income Taxes - Intra-Entity Transfers of Assets Other than Inventory"

ASU 2016-16 applies to all reporting entities with intra-entity transfers of assets other than inventory. The amendments in this Update allow the recognition of deferred income taxes for an intra-entity transfer of an asset other than inventory when the transfer occurs, as opposed to when the asset has been sold to an outside party under current U.S. GAAP. Two common examples of assets included in the scope of this Update are intellectual property and property, plant, and equipment. For public companies, the amendments in ASU 2016-16 are effective for annual reporting periods beginning after December 15, 2017, and interim reporting periods within those annual periods. Early adoption is permitted for all entities as of the beginning of an annual reporting period for which financial statements (interim or annual) have not been issued or made available for issuance. This ASU should be applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. Management is in the process of evaluating the impact of this Update.

Accounting Standards Update (ASU) 2017-01, "Business Combinations - Clarifying the Definition of a Business"

ASU 2017-01 applies to all reporting entities that must determine whether they have acquired or sold a business. The amendments in this Update clarify the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. For public companies, the amendments in ASU 2017-01 are effective for annual reporting periods beginning after December 15, 2017, and interim reporting periods within those annual periods. This ASU should be applied prospectively on or after the effective date and no disclosures are required at transition. Early adoption is permitted for transactions for which the acquisition date occurs before the issuance date or the effective date of the amendments in this Update, only when the transaction has not been reported in financial statements that have been issued. Management does not expect ASU 2017-01 to have a material impact on the Company's financial statements and disclosures.

Accounting Standards Update (ASU) 2017-04, "Intangibles - Goodwill and Other - Simplifying the Test for Goodwill Impairment"

ASU 2017-04 applies to all reporting entities that have goodwill reported in their financial statements. The amendments in this Update eliminate Step 2 from the goodwill impairment test reducing the cost and complexity of evaluating goodwill for impairment. In computing the implied fair value of goodwill under Step 2, an entity had to perform procedures to determine the fair value at the impairment date of its assets and liabilities as would be required in a business combination. Instead, under the amendments in this Update, an entity should perform its goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. For public companies, the amendments in ASU 2017-04 are

effective for the annual or any interim goodwill impairment tests for reporting periods beginning after December 15, 2019. This ASU should be applied prospectively and an entity is required to disclose the nature of and reason for the change in accounting principle upon transition. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. Management does not expect ASU 2017-04 to have a material impact on the Company's financial statements and disclosures.

Accounting Standards Update (ASU) 2017-08, "Receivables - Nonrefundable Fees and Other Costs - Premium Amortization on Purchased Callable Debt Securities"

ASU 2017-08 applies to all reporting entities that hold investments in callable debt securities that have an amortized cost basis in excess of the amount that is repayable by the issuer at the earliest call date (that is, at a premium). The amendments in this Update shorten the amortization period for certain callable debt securities held at a premium. Specifically, the amendments require the premium to be amortized to the earliest call date. The amendments do not require an accounting change for securities held at a discount; the discount continues to be amortized to maturity. Under current GAAP, premiums and discounts on callable debt securities generally are amortized to the maturity date. If that callable debt security is subsequently called, the entity records a loss equal to the unamortized premium. The amendments in this Update more closely align the amortization period of premiums and discounts to expectations incorporated in market pricing on the underlying securities. For public companies, the amendments in ASU 2017-08 are effective for annual periods beginning after December 15, 2019 and interim reporting periods within annual years beginning after December 15, 2020. This ASU should be applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption, and, in the period of adoption, the entity is required to provide disclosures about a change in accounting principle. Early adoption is permitted, including adoption in an interim period. Management is in the process of evaluating the impact of this Update.

Accounting Standards Update (ASU) 2017-09, "Compensation - Stock Compensation - Scope of Modification Accounting"

ASU 2017-09 applies to all reporting entities that change the terms or conditions of a share-based payment award. Currently, the definition of the term modification is broad and its interpretation results in diversity in practice. The amendments in this Update provide guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718. An entity should account for the effects of a modification unless all the following are met: 1) the fair value of the modified award is the same as the fair value of the original award immediately before the original award is modified, 2) the vesting conditions of the modified award are the same as the vesting conditions of the original award immediately before the original award is modified, and 3) the classification of the modified award as an equity instrument or a liability instrument is the same as the classification of the original award immediately before the original award is modified. For public companies, the amendments in ASU 2017-09 are effective for annual reporting periods beginning after December 15, 2017, and interim reporting periods within those annual periods. Early adoption is permitted including adoption in an interim period, for reporting periods for which financial statements have not yet been issued. This ASU should be applied prospectively to an award modified on or after the adoption date. Management does not expect ASU 2017-09 to have a material impact on the Company's financial statements and disclosures.

ITEM 3: QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

There have been no material changes to the Company's exposures to market risk since December 31, 2016 .

ITEM 4: CONTROLS AND PROCEDURES

As required by Rules 13a-15 and 15d-15 of the Securities Exchange Act of 1934, the Company has evaluated, with the participation of management, including the Chief Executive Officer and the Chief Financial Officer, the effectiveness of its disclosure controls and procedures (as defined in such rules) as of the end of the period covered by this report. Based on such evaluation, the Chief Executive Officer and Chief Financial Officer concluded that such disclosure controls and procedures were effective as of that date. From time to time, the Company reviews its disclosure controls and procedures, and may from time to time make changes aimed at enhancing their effectiveness and to ensure that the Company's systems evolve with its business. There was no change in the Company's internal control over financial reporting that occurred during the quarter ended July 2, 2017 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

PART II: OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

Various claims and legal proceedings generally incidental to the normal course of business are pending or threatened on behalf of or against the Company. While we cannot predict the outcome of these matters, we believe that any liability arising from them will not have a material adverse effect on our financial position, liquidity, or results of operations.

ITEM 1A. RISK FACTORS

For a list of factors that could affect the Company's business, results of operations, and financial condition, see the risk factors discussion provided in Part I—Item 1A of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2016 .

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

The following table sets forth information with respect to purchases by the Company of shares of its common stock during the three-month period ended July 2, 2017:

	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (1)	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs
April 3 - April 30, 2017	—	\$ —	—	\$ 138,848,000
May 1 - May 28, 2017	165,000	90.46	165,000	123,922,000
May 29 - July 2, 2017	187,000	92.78	187,000	106,572,000
Total	352,000	\$ 91.69	352,000	\$ 106,572,000

(1) In November 2015, the Company's Board of Directors authorized the repurchase of \$100,000,000 of the Company's common stock. Purchases under this program commenced in the third quarter of 2016. In April 2017, the Company's Board of Directors authorized the repurchase of an additional \$100,000,000 of the Company's common stock. Purchases under this program will commence once the November 2015 program is complete.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

<u>Exhibit Number</u>	
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a) under the Securities Exchange Act of 1934*
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a) under the Securities Exchange Act of 1934*
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**
101	xBRL (Extensible Business Reporting Language)
	The following materials from Cognex Corporation's Quarterly Report on Form 10-Q for the period ended July 2, 2017, formatted in xBRL: (i) Consolidated Statements of Operations for the three-month and six-month periods ended July 2, 2017 and July 3, 2016; (ii) Consolidated Statements of Comprehensive Income for the three-month and six-month periods ended July 2, 2017 and July 3, 2016; (iii) Consolidated Balance Sheets as of July 2, 2017 and December 31, 2016; (iv) Consolidated Statements of Cash Flows for the six-month periods ended July 2, 2017 and July 3, 2016; (v) Consolidated Statement of Shareholders' Equity for the six-month period ended July 2, 2017; and (vi) Notes to Consolidated Financial Statements.
*	Filed herewith
**	Furnished herewith

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Date: July 31, 2017

COGNEX CORPORATION

By: /s/ Robert J. Willett

Robert J. Willett
President and Chief Executive Officer
(principal executive officer)

By: /s/ John J. Curran

John J. Curran
Senior Vice President of Finance
and Chief Financial Officer
(principal financial and accounting officer)

CERTIFICATION

I, Robert J. Willett, certify that:

- 1 I have reviewed this quarterly report on Form 10-Q of Cognex Corporation;
- 2 Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 3 Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
- 4 The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
- 5 The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 31, 2017

By: /s/ Robert J. Willett

Robert J. Willett

President and Chief Executive Officer

CERTIFICATION

I, John J. Curran, certify that:

- 1 I have reviewed this quarterly report on Form 10-Q of Cognex Corporation;
- 2 Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 3 Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
- 4 The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
- 5 The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 31, 2017

By: /s/ John J. Curran

John J. Curran
Senior Vice President of Finance
and Chief Financial Officer

CERTIFICATION PURSUANT TO
18 U.S.C. 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

The undersigned officer of Cognex Corporation (the "Company") hereby certifies to his knowledge that the Company's quarterly report on Form 10-Q for the quarterly period ended July 2, 2017 (the "Report"), as filed with the Securities and Exchange Commission on the date hereof, fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended, and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: July 31, 2017

By: /s/ Robert J. Willett

Robert J. Willett

President and Chief Executive Officer

(principal executive officer)

* This certification shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section, nor shall it be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.

CERTIFICATION PURSUANT TO
18 U.S.C. 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

The undersigned officer of Cognex Corporation (the "Company") hereby certifies to his knowledge that the Company's quarterly report on Form 10-Q for the quarterly period ended July 2, 2017 (the "Report"), as filed with the Securities and Exchange Commission on the date hereof, fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended, and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: July 31, 2017

By: /s/ John J. Curran

John J. Curran

Senior Vice President of Finance

and Chief Financial Officer

(principal financial officer)

* This certification shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section, nor shall it be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.