EMCORE CORP
Form 10-K
December 04, 2018
FORM 10-K

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended September 30, 2018
or
¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from ___ to ___

Commission File Number 001-36632

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

New Jersey	22-2746503
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

2015 W. Chestnut Street, Alhambra, California, 91803
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (626) 293-3400

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

Title of Each Class	Name of Each Exchange on Which Registered
Common stock, no par value	The Nasdaq Stock Market LLC (Nasdaq Global Market)

Securities registered pursuant to Section 12(g) of the Act: None
Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act ¨ Yes þ No
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. ¨ Yes þ No

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. þ Yes ¨ No

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. þ

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 definition of “large accelerated filer”, “accelerated filer”, “smaller reporting company” and “emerging growth company” in Rule 12b-2 of the Exchange Act. ¨ Large accelerated filer þ Accelerated filer ¨ Non-accelerated filer þ 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 Act). ¨ Yes þ No

The aggregate market value of our common stock held by non-affiliates as of March 29, 2018 (the last business day of our most recently completed second fiscal quarter) was approximately $132.2 million, based on the closing sale price of $5.70 per share of common stock as reported on the Nasdaq Global Market. For purposes of this disclosure, shares of common stock held by officers and directors and by each person known by us to own 10% or more of our outstanding common stock have been excluded. This determination of affiliate status is not necessarily a conclusive determination for any other purpose.

As of November 29, 2018, the number of shares outstanding of our no par value common stock totaled 27,607,194.

DOCUMENTS INCORPORATED BY REFERENCE

In accordance with General Instruction G(3) of Form 10-K, certain information required by Part III hereof will either be incorporated into this Form 10-K by reference to our Definitive Proxy Statement for our Annual Meeting of Shareholders filed within 120 days of September 30, 2018 or will be included in an amendment to this Form 10-K filed within 120 days of September 30, 2018.

CAUTIONARY STATEMENT
REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K includes 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 (the “Exchange Act”). These forward-looking statements are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based on our current expectations and projections about future events and financial trends affecting the financial condition of our business. Such forward-looking statements include, in particular, projections about our future results included in our Exchange Act reports and statements about our plans, strategies, business prospects, changes and trends in our business and the markets in which we operate. These forward-looking statements may be identified by the use of terms and phrases such as “anticipates,” “believes,” “can,” “could,” “estimates,” “expects,” “forecasts,” “intends,” “may,” “plans,” “projects,” “s
“will,” “would,” and similar expressions or variations of these terms and similar phrases. Additionally, statements concerning future matters such as our expected liquidity, development of new products, enhancements or technologies, sales levels, expense levels, expectations regarding the outcome of legal proceedings and other statements regarding matters that are not historical are forward-looking statements. Management cautions that these forward-looking statements relate to future events or our future financial performance and are subject to business, economic, and other risks and uncertainties, both known and unknown, that may cause actual results, levels of activity, performance, or achievements of our business or our industry to be materially different from those expressed or implied by any forward-looking statements. Factors that could cause or contribute to such differences in results and outcomes include without limitation the following: (a) the rapidly evolving markets for the Company's products and uncertainty regarding the development of these markets; (b) the Company's historical dependence on sales to a limited number of customers and fluctuations in the mix of products and customers in any period; (c) delays and other difficulties in commercializing new products; (d) the failure of new products: (i) to perform as expected without material defects, (ii) to be manufactured at acceptable volumes, yields, and cost, (iii) to be qualified and accepted by our customers, and (iv) to successfully compete with products offered by our competitors; (e) uncertainties concerning the availability and cost of commodity materials and specialized product components that we do not make internally; (f) actions by competitors; (g) risks and uncertainties related to applicable laws and regulations, including the impact of changes to applicable tax laws and tariff regulations and (h) other risks and uncertainties discussed in Part I, Item 1A, Risk Factors in this Annual Report as well as those discussed elsewhere in this Annual Report, as such risk factors may be amended, supplemented or superseded from time to time by other reports we file with the Securities and Exchange Commission (“SEC”). These cautionary statements apply to all forward-looking statements wherever they appear in this Annual Report.

Forward-looking statements are based on certain assumptions and analysis made in light of our experience and perception of historical trends, current conditions and expected future developments as well as other factors that we believe are appropriate under the circumstances. While these statements represent our judgment on what the future may hold, and we believe these judgments are reasonable, these statements are not guarantees of any events or financial results. All forward-looking statements in this Annual Report are made as of the date hereof, based on information available to us as of the date hereof, and subsequent facts or circumstances may contradict, obviate, undermine, or otherwise fail to support or substantiate such statements. We caution you not to rely on these statements

without also considering the risks and uncertainties associated with these statements and our business that are addressed in this Annual Report on Form 10-K. Certain information included in this Annual Report may supersede or supplement forward-looking statements in our other reports filed with the SEC. We assume no obligation to update any forward-looking statement to conform such statements to actual results or to changes in our expectations, except as required by applicable law or regulation.

EMCORE Corporation
FORM 10-K
For The Fiscal Year Ended September 30, 2018

TABLE OF CONTENTS

			Page
Part I:			
	Item 1.	Business	4
	Item 1A.	Risk Factors	15
	Item 1B.	Unresolved Staff Comments	40
	Item 2.	Properties	40
	Item 3.	Legal Proceedings	40
	Item 4.	Mine Safety Disclosures	40
Part II:			
	Item 5.	Market for Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities	41
	Item 6.	Selected Financial Data	42
	Item 7.	Management's Discussion and Analysis of Financial Condition and Results of Operation	45
	Item 7A.	Quantitative and Qualitative Disclosures about Market Risk	59
	Item 8.	Financial Statements and Supplementary Data	60
		Consolidated Statements of Operations and Comprehensive (Loss) Income for the Fiscal Years Ended September 30, 2018, 2017 and 2016	60
		Consolidated Balance Sheets as of September 30, 2018 and 2017	61
		Consolidated Statements of Shareholders' Equity for the Fiscal Years Ended September 30, 2018, 2017 and 2016	62
		Consolidated Statements of Cash Flows for the Fiscal Years Ended September 30, 2018, 2017 and 2016	63
		Notes to our Consolidated Financial Statements	64
		Report of Independent Registered Public Accounting Firm - KPMG LLP	90
	Item 9.	Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	91
	Item 9A.	Controls and Procedures	91
Part III:			
	Item 10.	Directors, Executive Officers and Corporate Governance	93
	Item 11.	Executive Compensation	93
	Item 12.	Security Ownership of Certain Beneficial Owners and Mnagement and Related Stockholder Matters	93
	Item 13.	Certain Relationships, Related Transactions and Director Independence	93
	Item 14.	Principal Accounting Fees and Services	93

Part IV.

Item 15.	Exhibits and Financial Statement Schedules	94
Item 16.	Form 10-K Summary	96
	SIGNATURES	97

PART I.

Item 1. Business

Company Overview

EMCORE Corporation, together with its subsidiaries (referred to herein as the “Company,” “we,” “our,” or “EMCORE”), was established in 1984 as a New Jersey corporation. The Company became publicly traded in 1997 and is listed on the Nasdaq Stock Exchange under the ticker symbol EMKR. EMCORE pioneered the linear fiber optic transmission technology that enabled the world’s first delivery of Cable TV directly on fiber, and today is a leading provider of advanced Mixed-Signal Optics products that enable communications systems and service providers to meet growing demand for increased bandwidth and connectivity. The Mixed-Signal Optics technology at the heart of our broadband communications products is shared with our fiber optic gyros and inertial sensors to provide the aerospace and defense markets with state-of-the-art navigations systems technology. With both analog and digital circuits on multiple chips, or even a single chip, the value of Mixed-Signal device solutions is often far greater than traditional digital applications and requires a specialized expertise held by EMCORE which is unique in the optics industry.

EMCORE has fully vertically-integrated manufacturing capability through our Indium Phosphide (“InP”) compound semiconductor wafer fabrication facility at our headquarters in Alhambra, CA. The facility supports EMCORE’s vertically-integrated manufacturing for our laser, transmitter and receiver products for Cable TV and other broadband applications, fiber optic gyro sensors for Navigation Systems, and chip devices for Telecom and Datacom applications.

We currently have one reporting segment: Fiber Optics. This segment is comprised of three product lines: Broadband, Chip Devices and Navigation Systems. Please see our consolidated financial statements and footnotes included in this Annual Report for financial information regarding this segment. Until the quarter ended December 31, 2014, we operated as two segments: Fiber Optics and Photovoltaics. EMCORE's former Solar Photovoltaics business, which was sold in December 2014, provided products for space power applications including high-efficiency multi-junction solar cells, covered interconnect cells and complete satellite solar panels. In addition, as further described below, EMCORE sold certain assets, and transferred certain liabilities, of the Company's telecommunications business, including the ITLA (Integrable Tunable Laser Assembly) micro-ITLA, T-TOSA (Tunable Transmitter Optical Subassembly) and T-XFP (Tunable 10 Gigabit Form Factor Pluggable) product lines within the Company’s telecommunications business, in January 2015. See Note 2 - Summary of Significant Accounting Policies in the notes to our consolidated financial statements for disclosures related to the reclassification of prior period amounts related to discontinued operations as a result of the sale of these businesses to conform to the current period financial statement presentation.

EMCORE’s headquarters and principal executive offices are located at 2015 W. Chestnut Avenue, Alhambra, California, 91803 and our main telephone number is (626) 293-3400. For specific information about us, our products or the markets we serve, please visit our website at http://www.emcore.com. The information contained in or linked to our website is not a part of, nor incorporated by reference into, this Annual Report on Form 10-K or a part of any other report or filing with the Securities and Exchange Commission (the “SEC”).

We are subject to the information requirements of the Securities Exchange Act of 1934 (the “Exchange Act”). We file periodic reports, current reports, proxy statements, and other information with the SEC. The SEC maintains a website at http://www.sec.gov that contains all of our information that has been filed or furnished electronically with the SEC. We make available free of charge on our website a link to our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as soon as reasonably practicable, after such material is electronically filed with,

or furnished to, the SEC.

Overview of Our Industry and Markets We Serve

InP compound semiconductor-based products provide the foundation of components, subsystems, and systems used in a broad range of technology markets. Compound semiconductor materials can provide electrical or electro-optical functions, such as emitting optical communications signals and detecting optical communications signals.

Specifically, within our Fiber Optics reporting segment, our Broadband products serve the Cable TV (“CATV”), Satellite Communications and Wireless markets; our Chip products serve the Telecommunications, Fiber-To-The-Premises (“FTTP”), Long-Term Evolution (“LTE”) and Data Center markets; and our Navigation Systems products primarily serve the Aerospace and Defense markets.

Broadband Product Line

Our broadband fiber optic products enable information that is modulated on light signals to be transmitted, routed (switched) and received in communication systems and networks. Our products in this area include:

CATV Products - EMCORE is an established market leader in providing Radio Frequency (“RF”) over fiber products for the CATV industry. Our products enable cable systems providers to increase data transmission distance, speed and bandwidth in Hybrid Fiber Coaxial (“HFC”) networks, with lower noise and power consumption. This empowers cable service operators to meet the growing demand for high-speed Internet, HDTV, Ultra HDTV, video streaming and other advanced services. Our CATV products include forward and return-path analog lasers, receivers, photodetectors and subassembly components; analog and digital fiber-optic transmitters, Quadrature Amplitude Modulation (“QAM”) transmitters, optical switches and CATV fiber amplifiers. EMCORE’s latest series of CATV transmitters feature the Company’s breakthrough Linear Externally Modulated Laser (“L-EML”) technology that enables long distance optical link performance approaching traditional lithium niobate-based externally-modulated transmitters, but is more cost-effective and far exceeds the performance of Distributed Feedback (“DFB”) laser-based systems. EMCORE’s CATV transmitter products are offered on an OEM and ODM basis for integration into complete CATV transmission systems, and the Company also offers its own branded line of EMCORE Medallion series rack-mount CATV transmitters, optical switches and fiber amplifiers. EMCORE’s Medallion series products include DOCSIS 3.1, 1550 nm externally-modulated transmitters, 1550 nm directly-modulated transmitters, optical A/B switches, and 1RU and 2RU rack-mount CATV fiber amplifiers. EMCORE’s Medallion series transmitters, optical switches and fiber amplifiers, in conjunction with EMCORE’s components and Radio Frequency over Glass (“RFoG”) products, comprise a complete end-to-end CATV system.

Table of Contents

Laser, Receiver and Photodetector Component Products - We are a leading provider of optical components including lasers, receivers and photodetectors (also called "photodiodes"). Our products include CWDM ("Coarse Wavelength Division Multiplexing") and DWDM ("Dense Wavelength Division Multiplexing"), 1310 nm and 1550 nm DFB lasers and optical receivers optimized for CATV, DOCSIS (Data Over Cable Service Interface Specification) 3.1 and wireless applications. Form-factors for laser products include 14-pin butterfly and coaxial TO-Can. In addition, we offer broadband photodiodes used in forward-and return-path broadband and FTTP applications. EMCORE's component products to the global fiber optics industry leverage the benefits of our vertically-integrated infrastructure, low-cost manufacturing and early access to newly developed internally-produced components.

- Radio Frequency over Glass (RFoG) FTTP Products - EMCORE supports deployments of RFoG access networks for homes and businesses worldwide with customer qualified FTTP products for video, voice and data services. Our products include an RFoG Optical Networking Unit ("ONU") transceiver that features breakthrough OBI ("Optical Beat Interference") mitigation technology to significantly improve RFoG network performance in high-density customer environments. Additional products for RFoG networks include analog fiber optic transmitters for video overlay, high-power Erbium-Doped Fiber Amplifiers ("EDFA"), analog and digital lasers, photodetectors and subassembly components. Our RFoG-FTTP products provide our customers with higher performance designs and support exceptional network performance capabilities for service providers.

Table of Contents

- Satellite/Microwave Communications Products - EMCORE has an established history as a pioneer of innovative RF over fiber solutions for high-performance fiber optic links in the terrestrial portion of satellite communications networks. EMCORE’s satellite/microwave band components and complete systems transport an ultra-broadband frequency range including IF, L, S, C, X, DBS, Ku, K, Ka, and Ultra-Wideband signal transport. A wide range of high-dynamic-range applications are supported including satellite antenna remoting and signal distribution, inter- and intra-facility links, site diversity systems, high-performance supertrunking links, electronic warfare systems and radar testing. EMCORE’s complete line of satellite and microwave components, subassemblies and systems eliminate the distance limitations of copper-based coaxial systems. Our rack-mount Optiva Platform RF & Microwave Fiber Optic Transport System features a wide range of Simple Network Management Protocol (“SNMP”) managed fiber optic transmitters, receivers, optical amplifiers, RF and optical switches, passive devices and Ethernet products that provide high-performance fiber optic transmission between satellite hub equipment and antenna dishes. EMCORE also offers a series of ruggedized microwave flange-mount transmitters, receivers and optical delay line products that meet the reliability and durability requirements of the U.S. government and defense markets. These products are tailored to the requirements of higher frequency applications such as microwave antenna signal distribution, electronic warfare systems and radar system calibration and testing. They provide our customers with high frequency, dynamic range, compact form-factors, and extreme temperature, shock and vibration tolerance. To the extent sales of our satellite/microwave communications products are related to U.S. government contracts or subcontracts, this portion of the business may be subject to renegotiation of profits or termination of contracts or subcontracts at the election of the U.S. government or an agency thereof.

- Wireless Communications Products - The increasing dependence on wireless access for social media, text, email, uploading and downloading of apps, music, videos and photos has created greater demand for deployment of cost-effective, high-performance, integrated wireless Distributed Antenna System (“DAS”) networks. Wireless systems providers are building systems in subway tunnels, stadiums, hotels, high-speed trains and cruise ships. EMCORE has developed highly linear fiber optic products that are optimized for wireless applications which we believe integrate extremely well into these systems. They enhance bandwidth and linearity to enable the delivery of consistent, reliable signals in areas where interference is high or signals are weak. EMCORE’s products for wireless applications include DFB lasers and optical receivers specifically designed for wireless networks, 3 GHz and 6.5 GHz fiber optic links for cellular backhaul, 4G LTE and DAS.

Chip Devices Product Line

Telecommunications companies throughout the world have been extending their Passive Optical Network ("PON") infrastructure to business, enterprise and residential customers for several years. Since the sale of the Company's telecom module products in 2015, EMCORE has supported this market through commercialization of products developed in our InP wafer fab to become a merchant supplier of high-performance chip devices to the Telecom industry. EMCORE's semiconductor wafer fabrication facility features Metal-Organic Chemical Vapor Deposition ("MOCVD") reactors for 2" or 3" wafer processing for InP-based devices including high-power gain chips, laser chips, Avalanche Photodiode ("APD") and P-type Intrinsic N-type ("PIN") photodetector chips. Our technical team has expertise in device design, epitaxial growth, wafer processing, device characterization, and Chip-On-Block ("COB"), TO-Can and Optical Sub-Assembly ("OSA") from development through manufacturing.

- High-Power Gain Chips Products - EMCORE, through our previous experience in the Telecom tunable module market, has design and engineering expertise in development and manufacturing of high-power gain chips for tunable lasers and transceivers utilized in coherent DWDM optical transmission systems.

- GPON Fiber-To-The-Premises (FTTP) and Data Center Chip Products - EMCORE's chip devices portfolio is continually developing to support the latest advances in PON including GPON, 10G-EPON, XG-PON, XGS-PON, along with 4G LTE and data center applications. The Company's laser chip devices offering includes 2.5G and 10G PON DFB and 10G Fabry-Perot laser chips. Wavelengths supported include 1270, 1290, 1310, 1330, 1490, 1550 and 1610 nm. In addition, EMCORE offers 2.5G and 10G APD top and bottom illuminated chips and COB, along with 10G PIN photodiode chips, with additional products in development.

Navigation Systems Product Line

EMCORE, through our vertically-integrated infrastructure, has been able to adapt the same technologies, chip designs and production assets applicable to our CATV products to the development of state-of-the-art Fiber Optic Gyroscopes (“FOG”) that have broad application within the aerospace and defense markets for land, sea, air and space navigation. This gives EMCORE the ability to leverage our high-volume infrastructure for lower volume, higher value-added product. EMCORE has expanded its FOG-based product line to include Inertial Measurement Units (“IMU or IMUs”) and Inertial Navigation Systems (“INS”) that provide superior Size, Weight and Power (“SWaP”) compared to competing or legacy systems. To the extent sales of our navigation system products are related to U.S. government contracts or subcontracts, this portion of the business may be subject to renegotiation of profits or termination of contracts or subcontracts at the election of the U.S. government or an agency thereof.

- Fiber Optic Gyroscope Products - EMCORE’s FOG program has received multiple U.S. patents and has been qualified for several key military programs for applications including Unmanned Aerial Systems (“UAS”), line-of-site stabilization, aviation and aeronautics. All EMCORE FOGs feature advanced optics with only three components for simplified assembly along with Digital Signal Processing (“DSP”) or Field Programmable Gate Array (“FPGA”) for higher accuracy, lower noise and greater efficiency. The integrated DSP or FGPA also improves optical drift stability and enables higher linearity and greater environmental flexibility. EMCORE’s FOG products range from tactical to navigational grade gyros where the critical specifications for fiber length, Angle Random Walk (“ARW”) and drift rate improves through the product line to provide customers greater flexibility in choosing the performance level that best meets their application.

- Inertial Measurement Units and Navigation Systems Products - EMCORE’s IMU and INS systems are based on our advanced FOG technology and provide superior SWaP compared to competing systems. Our products provide customers the flexibility to choose options from straightforward IMU operation to full navigation and are higher performance form, fit and function replacements for other IMUs and legacy systems. EMCORE’s IMUs and INS products deliver high-precision with up to five-times better performance than competing units in compact, portable form-factors that provide standalone aircraft grade navigator performance at one-third the size of competing systems. Recently EMCORE launched its new EMCORE-Orion™ series of high-precision Micro Inertial Navigation (MINAV) systems designed primarily for applications where navigation aids such as GPS are unavailable or denied. The advanced technology incorporated enables these systems to provide performance close to that of traditional RLG (Ring Laser) INS with one-third the SWaP. We believe the EMCORE MINAV’s low SWaP makes it an ideal inertial navigation system for unmanned aerial vehicle and dismounted soldier applications, and the units can operate as navigators or very precise IMUs with lower noise and greater stability than competing systems.

Customers

Our major customers include: ARRIS International plc, BUPT-GuoAn Broadband, Cisco Systems Inc. and Commscope and their respective affiliates, who each at times have represented greater than 10% of our consolidated revenue in the fiscal years ended September 30, 2018, 2017 and 2016. In the fiscal year ended September 30, 2018, ARRIS International plc and Cisco Systems Inc. and their respective affiliates each represented greater than 10% of our consolidated revenue. See Note 15 - Geographical Information in the notes to our consolidated financial statements for additional information about our significant customers.

Strategic Plan

Strategy and Alternatives Committee of the Board of Directors

In addition to organic growth and development of our existing Fiber Optics business, we intend to pursue other strategies to enhance shareholder value. The Strategy and Alternatives Committee of the Company's Board of Directors (the "Strategy Committee"), which was established in December 2013, is charged with overseeing the Company’s strategic plan and evaluating strategic opportunities and alternatives available to the Company, including potential mergers, acquisitions, divestitures and other key strategic transactions outside the ordinary course of the Company’s business. Accordingly, the Strategy Committee may from time to time consider strategic opportunities to enhance shareholder value, which may include acquisitions, investments in joint ventures, partnerships, and other strategic alternatives, such as dispositions, reorganizations, recapitalizations or other similar transactions, the repurchase of shares of our outstanding common stock or payment of dividends to our shareholders. The Strategy Committee may engage financial and other advisors to assist it in doing so. Accordingly, the Strategy Committee and our management may from time to time be engaged in evaluating potential strategic opportunities and may enter into definitive agreements with respect to such transactions or other strategic alternatives. However, there is no assurance that the Strategy Committee will identify further strategic opportunities that the Company will determine to pursue, or that the consideration of any such opportunity would result in the completion of a strategic transaction. The Strategy Committee met six (6) times during the fiscal year ended September 30, 2018.

Sale of Photovoltaics and Digital Products Businesses

On September 17, 2014, EMCORE entered into an Asset Purchase Agreement (the “Photovoltaics Agreement”) with SolAero Acquisition Corporation ("SolAero"), a Delaware corporation and an affiliate of private equity firm Veritas Capital, pursuant to which SolAero acquired substantially all of the assets, and assumed substantially all of the liabilities, primarily related to or used in connection with the Company’s photovoltaics business, including EMCORE's subsidiaries EMCORE Solar Power, Inc. and EMCORE IRB Company, LLC (collectively, the "Photovoltaics Business", and the sale of the Photovoltaics Business, the "Photovoltaics Asset Sale") for $150.0 million in cash, prior to a $0.1 million working capital adjustment pursuant to the Photovoltaics Agreement finalized and paid by EMCORE during the fiscal year ended September 30, 2015. On December 10, 2014, EMCORE completed the Photovoltaics Asset Sale.

On October 22, 2014, EMCORE entered into an Asset Purchase Agreement (the "Digital Products Agreement") with NeoPhotonics Corporation, a Delaware corporation ("NeoPhotonics"), pursuant to which the Company sold certain assets and transfer certain liabilities of the Company's telecommunications business (collectively, the "Digital Products Business", and the sale of the Digital Products Business, the "Digital Products Assets Sale") to NeoPhotonics for an aggregate purchase price of $17.5 million, subject to certain purchase price adjustments, consisting of $1.5 million in cash at closing and a promissory note in the principal amount of $16.0 million (the "Promissory Note"). The Promissory Note provided that it would bear interest of 5.0% per annum for the first year and 13.0% per annum for the second year, payable semi-annually in cash, and would mature two years from the closing of the transaction. In addition, the Promissory Note was subject to prepayments under certain circumstances, and was secured by certain of the assets sold to NeoPhotonics in the transaction.
On January 2, 2015, EMCORE and NeoPhotonics entered into Amendment No. 1 (the "APA Amendment") to the Digital Products Agreement. Among other things, the APA Amendment revised the nature and timing of the financial deliverable requirements of the Company to NeoPhotonics under the original Digital Products Agreement. The assets sold pursuant to the Digital Products Agreement included certain fixed assets, inventory, accounts receivable and intellectual property for the ITLA, micro-ITLA, T-TOSA and T-XFP product lines within the Company’s

telecommunications business. On January 2, 2015, EMCORE completed the sale of the Digital Products Business. On April 16, 2015, EMCORE and NeoPhotonics entered into an agreement to adjust the purchase price for the Digital Products Business, resulting in an adjusted balance of the Promissory Note of $15.5 million. On April 17, 2015, NeoPhotonics paid in full the balance outstanding of the Promissory Note of $15.5 million, plus accrued interest of $0.2 million.

We used a portion of the proceeds from the Photovoltaics Asset Sale and the Digital Products Assets Sale (collectively, the "Asset Sales") to pay for transaction costs associated with the Asset Sales, make payments required pursuant to existing retention award agreements, repay certain indebtedness, and for general working capital purposes. In June 2015, we also used a portion of the proceeds from the Asset Sales to repurchase 6.9 million shares of our common stock for an aggregate cost of $45.0 million (excluding fees and expenses) pursuant to a modified "Dutch auction" tender offer we commenced in May 2015. In addition, in July 2016, we used a portion of the proceeds from the Asset Sales to pay a special cash dividend to our shareholders of $1.50 per share, or a total of $39.2 million. The dividend was paid on July 29, 2016 to shareholders of record as of July 18, 2016. See Note 14 - Equity for additional information.

Sources of Raw Materials

We depend on a limited number of suppliers for certain raw materials, components, and equipment used in our products. We continually review our supplier relationships to mitigate risks and lower costs, especially where we depend on one or two suppliers for critical components or raw materials. While maintaining inventories that we believe are sufficient to meet our near-term needs, we strive not to carry significant inventories of raw materials. Accordingly, we maintain ongoing communications with our suppliers in order to prevent any interruptions in supply, and have implemented a supply-chain management program to maintain quality and lower purchase prices through standardized purchasing efficiencies and design requirements. To date, we generally have been able to obtain sufficient quantities of critical supplies in a timely manner.

We are subject to rules promulgated by the SEC pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act regarding the use of "conflict minerals". These rules have imposed and will continue to impose additional costs and may introduce new risks related to our ability to verify the origin of any "conflict minerals" used in our products.

Manufacturing

We utilize MOCVD (metal-organic chemical vapor deposition) systems that are capable of processing virtually all compound semiconductor-based materials. Our operations include wafer fabrication, device design and production and fiber optic module, subsystem and system design and manufacture. Many of our manufacturing operations are computer monitored or controlled to enhance production output and statistical control. We employ a strategy of minimizing ongoing capital investments, while maximizing the variable nature of our cost structure. We maintain supply agreements with key suppliers. Where we can gain cost advantages while maintaining quality and intellectual property control, we outsource the production of certain products, subsystems, components, and subassemblies to contract manufacturers located overseas. Our contract manufacturers maintain comprehensive quality assurance and delivery systems, and we continuously monitor them for compliance.

Our various manufacturing processes involve extensive quality assurance systems and performance testing. Our facilities have acquired and maintain certification status for their quality management systems. Our manufacturing facilities located in Alhambra, California; and Beijing, China are registered to ISO 9001 standards.

Sales and Marketing

We sell our products worldwide through our direct sales force, application engineers, third party sales representatives and distributors. Our sales force communicates with our customers' engineering, manufacturing, and purchasing personnel to provide optimized customer solutions through product design, qualifications, performance, and price. Our strategy is to use our direct sales force to sell to original equipment manufacturers and key accounts and to expand our

use of distribution partners for increased coverage in both international markets and certain domestic segments.

Throughout our sales cycle, we work closely with our customers to qualify our products into their product lines and platforms. As a result, we develop strategic and long-lasting customer relationships with products and services that are tailored to our customers' requirements. We focus our marketing communication efforts on increasing brand awareness, communicating our technologies' advantages, and generating leads for our sales force. We use a variety of marketing methods, including our website, participation at trade shows, and selective advertising to achieve these goals.

Externally, our marketing group works with customers to define requirements, characterize market trends, define new product development activities, identify cost reduction initiatives, and manage new product introductions. Internally, our marketing group communicates and manages customer requirements with the goal of ensuring that our product development activities are aligned with our customers' needs. These product development activities allow our marketing group to manage new product introductions and market trends. See Note 15 - Geographical Information in the notes to the consolidated financial statements for disclosures related to geographic revenue and significant customers.

Research and Development

Our research and development efforts have been focused on maintaining our technological competitive edge by working to improve the quality and features of our product lines. We are also making investments to expand our existing technology and infrastructure in an effort to develop new products and production technology that we can use to expand into new markets. Our industry is characterized by rapid changes in process technologies with increasing levels of functional integration. Our efforts are focused on designing new proprietary processes and products, on improving the performance of our existing materials, components, and subsystems, and on reducing costs in the product manufacturing process.

As part of the ongoing effort to cut costs, many of our projects have focused on developing lower cost versions of our existing products. In view of the high cost of development, we solicit research contracts that provide opportunities to enhance our core technology base and promote the commercialization of targeted products. Generally, internal research and development funding is used for the development of products that will be released within twelve months and external funding is used for long-term research and development efforts.

We believe that in order to remain competitive, we must invest significant financial resources in developing new product features and enhancements and in maintaining customer satisfaction worldwide. Research and development expense was $15.4 million, $12.5 million and $9.9 million for the fiscal years ended September 30, 2018, 2017 and 2016, respectively. As a percentage of revenue, research and development expenses were 18.0%, 10.2% and 10.8% for the fiscal years ended September 30, 2018, 2017 and 2016, respectively. Our research and development expense consists primarily of compensation expense including non-cash stock-based compensation expense, as well as engineering and prototype costs, depreciation expense, and other overhead expenses, as they relate to the design, development, and testing of our products. These costs are expensed as incurred.

Intellectual Property and Licensing

We protect our proprietary technology by applying for patents, where appropriate, and in other cases by preserving the technology, related know-how, and information as trade secrets. The success and competitive advantage enjoyed by our product lines depends heavily on our ability to obtain intellectual property protection for our proprietary technologies. We also acquire, through license grants or assignments, rights to patents on inventions originally developed by others. As of September 30, 2018, we held approximately 55 U.S. patents and approximately 25 foreign patents and had over 5 additional patent applications pending. The issued patents cover various products in the major markets we serve. Our U.S. patents will expire on varying dates between 2019 and 2035. These patents and patent applications claim protection for various aspects of current or planned commercial versions of our materials, components, subsystems, and systems.

We also have entered into license agreements with other organizations, under which we have obtained exclusive or non-exclusive rights to practice inventions claimed in various patents and applications issued or pending in the U.S. or other foreign jurisdictions. We do not believe our financial obligations under any of these agreements adversely affects our business, financial condition, or results of operations.

We rely on trade secrets to protect our intellectual property when we believe that publishing patents would make it easier for others to reverse engineer our proprietary processes. We also rely on other intellectual property rights such as trademarks and copyrights where appropriate.

Environmental Regulations

We are subject to U.S. federal, state, and local laws and regulations concerning the use, storage, handling, generation, treatment, emission, release, discharge, and disposal of certain materials used in our research and development and production operations, as well as laws and regulations concerning environmental remediation, homeland security, and employee health and safety. The production of wafers and devices involves the use of certain hazardous raw materials, including, but not limited to, ammonia, phosphine, and arsine. We have in-house professionals to address compliance with applicable environmental, homeland security, and health and safety laws and regulations. We believe that we are currently in compliance with all applicable federal, state, and local environmental protection laws and regulations.

Competition

The markets for our products are extremely competitive and are characterized by rapid technological change, frequent introduction of new products, short product life cycles, and with respect to certain of our product lines, significant price erosion. We face actual and potential competition from numerous domestic and international companies. Many of these companies have significant engineering, manufacturing, marketing, and financial resources.

Partial lists of our competitors in the markets in which we participate include:

Broadband
CATV Systems - Our primary competitors include BK Tel, Hangzhou-Prevail, Oplink and Furukawa
Lasers & Components - Our primary competitors include Applied Optoelectronics, Finisar, Sumitomo Electric and Fujitsu
Satellite & Microwave Communications - Our primary competitors include Foxcom, MITEQ, Inc., Glenair, Microwave Photonic Systems and Vialite

Chip Level Devices - Our primary competitors include MACOM, Broadcom, Mitsubishi, GCS and Renesas

Navigation Systems - Our primary competitors include Northrup Grumman, Honeywell, iXblue and KVH Industries

In addition to the companies listed above, we compete with many research institutions and universities for research funding. We also sell our products to current competitors and companies with the capability of becoming competitors. As the markets for our products grow, new competitors are likely to emerge and current competitors may increase their market share. In the European Union (“EU”) and certain countries throughout the world, political and legal arrangements encourage the purchase of domestically produced goods, which places us at a disadvantage in those regions or countries.

There are substantial barriers to entry by new competitors across our product lines. These barriers include the large number of existing patents, the time and costs required to develop products, the technical difficulty in manufacturing semiconductor-based products, the lengthy sales and qualification cycles, and the difficulties in hiring and retaining skilled employees with the required scientific and technical backgrounds. We believe that the primary competitive factors within our current markets are product cost, yield, throughput, performance and reliability, breadth of product line, product heritage, customer satisfaction, and customer commitment to competing technologies. Competitors may develop enhancements to or future generations of competitive products that offer superior price and performance characteristics. We believe that in order to remain competitive, we must invest significant financial resources in developing new product features and enhancements and in maintaining customer satisfaction worldwide.

Order Backlog

EMCORE's product sales are made pursuant to purchase orders, often with short lead times. These orders are subject to revision or cancellation and often are made without deposits. Products typically ship within the same quarter in which a purchase order is received; therefore, our order backlog at any particular date is not necessarily indicative of actual revenue or the level of orders for any succeeding period and may not be comparable to prior periods.

Seasonality

In certain of our previous fiscal years, we have experienced an increase in revenues in our third and fourth fiscal quarters due to increased sales of our CATV products resulting from an increased build of cable networks during seasons with warmer weather.

Employees

As of September 30, 2018, we had approximately 391 employees, including approximately 188 international employees that are located primarily in China. This represents an increase of approximately 27 employees when compared to September 30, 2017, primarily as a result of an increase in international employees. None of our employees are covered by a collective bargaining agreement. We have never experienced any labor-related work stoppage and believe that our employee relations are good.

Competition is intense in the recruiting of personnel in the semiconductor industry and fiber optics industries. Our ability to attract and retain qualified personnel is essential to our continued success. We are focused on retaining key contributors, developing our staff, and cultivating their commitment to our Company.

ITEM 1A. Risk Factors

We are a small company and dependent on a few products for our success.

We are a small company with a narrow, focused portfolio of products. Our small size could cause our cash flow and growth prospects to be more volatile and makes us more vulnerable to focused competition. As a small company, we will be subject to greater revenue fluctuations if our older product lines' sales were to decline faster than we anticipate. In addition, we may not be able to appropriately restructure or maintain our supporting functions to fit the needs of a small company, which could adversely affect our business, financial condition, results of operations, and cash flows.

We are substantially dependent on revenues from our cable television ("CATV") business and from a small number of customers. A substantial decrease in sales in our CATV business or the loss of or decrease in sales from any one of these customers could adversely affect our business, financial condition, results of operations, and cash flows.

We are substantially dependent on revenues from sales of our CATV products. Sales of our CATV products may decline or fluctuate significantly in the future, and we may not be able to offset any decline in sales of our CATV products with sales of other products. Any decrease in sales of our CATV products without a corresponding increase in sales of our other products would harm our business, operating results, financial condition and cash flows.

Also, a small number of customers account for a significant portion of our revenue, and our dependence on orders from a relatively small number of customers makes our relationship with each customer critically important to our business. For example, for the fiscal year ended September 30, 2018, sales to two customers accounted for an aggregate of 60.3% of our total consolidated revenues, for the fiscal year ended September 30, 2017, sales to three customers accounted for an aggregate of 71% of our total consolidated revenues and for the fiscal year ended September 30, 2016, sales to three customers accounted for an aggregate of 61% of our total consolidated revenues. Sales from any of our major customers may decline or fluctuate significantly in the future. We may not be able to offset any decline in sales from our existing major customers with sales from new customers or other existing customers. Because of our reliance on a limited number of customers, any decrease in sales from, or loss of, one or more of these customers without a corresponding increase in sales from other customers would harm our business, operating results, financial condition and cash flows.

In addition, any negative developments in the business of existing significant customers could result in significantly decreased sales to these customers, which could seriously harm our business, operating results, financial condition and cash flows, and if there is consolidation among our customer base, our customers may be able to command increased leverage in negotiating prices and other terms of sale, which could adversely affect our profitability. If we are required to reduce our pricing, our revenue and gross margins would be adversely impacted. Consolidation among our customer base may also lead to reduced demand for our products, replacement of our products by the combined entity with those of our competitors and cancellations of orders, each of which could adversely affect our business, financial condition, results of operations, and cash flows.

Although we are attempting to expand our customer base, the markets in which we sell our products are dominated by a relatively small number of companies, thereby limiting the number of potential customers. Accordingly, our success will depend on our continued ability to develop and manage relationships with significant customers, and we expect that the majority of our sales will continue to depend on sales of our products to a limited number of customers for the foreseeable future.

If spending for CATV and optical communications networks declines, our business may suffer.

Our future success depends on continued capital investment in CATV and global communications networks infrastructure and on continued demand for high-bandwidth, high-speed communications networks and the ability of original equipment manufacturers to meet this demand. Spending on CATV and communications networks is limited by several factors, including limited investment resources, uncertainty regarding the long-term evolution and sustainability of service provider business models, and a changing regulatory environment. We cannot be certain that demand for bandwidth-intensive content will continue to grow at the same pace in the future or that communications service providers will continue to increase spending to meet such demand. If expectations for growth of CATV and communications networks and bandwidth consumption are not realized and investment in CATV and communications networks does not grow as anticipated, our business, results of operations, and gross margins could be harmed.

We have incurred losses from continuing operations and our future profitability is not certain.

For the fiscal year ended September 30, 2018, loss from continuing operations was $17.5 million. For the fiscal years ended September 30, 2017, and 2016, income from continuing operations was $8.2 million and $2.6 million, respectively. Our operating results for future periods are subject to numerous uncertainties and we cannot be certain that we will be profitable or that we will not experience substantial losses in the future. If we are not able to increase revenue and reduce our costs, we may not be able to achieve profitability in future periods and our business, financial condition, results of operations and cash flows may be adversely affected.

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

In the past, the markets in which we compete have experienced significant downturns, often connected with, or in anticipation of, the maturation of product cycles, for both manufacturers' and their customers' products, and declining general economic conditions. These downturns have been characterized by diminished product demand, production overcapacity, high inventory levels, and accelerated erosion of average selling prices. These markets are impacted by the aggregate capital expenditures of service providers and enterprises as they build out and upgrade their network infrastructure. These markets are highly cyclical and characterized by constant and rapid technological change, pricing pressures, evolving standards, and wide fluctuations in product supply and demand.

We may experience substantial period-to-period fluctuations in future results of operations. Any future downturn in the markets in which we compete, or changes in demand for our products from our customers, could result in a significant reduction in our revenue and may also increase the volatility of the price of our common stock.

In addition, the communication networks industry from time to time has experienced and may again experience a pronounced downturn. To respond to a downturn, many service providers and enterprises may slow their capital expenditures, cancel or delay new developments, reduce their workforces and inventories, and take a cautious approach to acquiring new equipment and technologies, any of which could cause our results of operations to fluctuate from period to period and harm our business.

Our future revenue is inherently unpredictable. As a result, our operating results are likely to fluctuate from period to period, and we may fail to meet the expectations of our analysts and/or investors, which may cause volatility in our stock price and may cause our stock price to decline.

Our quarterly and annual operating results have fluctuated substantially in the past and are likely to fluctuate significantly in the future due to a variety of factors, some of which are outside of our control. Factors that could cause our quarterly or annual operating results to fluctuate include:

- a downturn in the markets for our customers' products;
- discontinuation by our vendors of, or unavailability of, components or services used in our products;
- disruptions or delays in our manufacturing processes or in our supply of raw materials or product components;
- a failure to anticipate changing customer product requirements;

- market acceptance of our products;
- cancellations or postponements of previously placed orders;
- increased financing costs or any inability to obtain necessary financing;
- the impact on our business of current or future cost reduction measures;
- a loss of key personnel or the shortage of available skilled workers;

- economic conditions in various geographic areas where we or our customers do business;
- the impact of political uncertainties, such as government sequestration and uncertainties surrounding the federal budget, customer spending and demand for our products;
- significant warranty claims, including those not covered by our suppliers;
- product liability claims;
- other conditions affecting the timing of customer orders;
- reductions in prices for our products or increases in the costs of our raw materials;
- effects of competitive pricing pressures, including decreases in average selling prices of our products;
- fluctuations in manufacturing yields;
- obsolescence of products;
- research and development expenses incurred associated with new product introductions;
- natural disasters, such as hurricanes, earthquakes, fires, and floods;
- the emergence of new industry standards;
- the loss or gain of significant customers;
- the introduction of new products and manufacturing processes;
- changes in technology;
- intellectual property disputes;
- customs (including tariffs imposed on our products or raw materials, equipment or components used in the production of our products), import/export, and other regulations of the countries in which we do business;
- the occurrence of M&A activities; and
- acts of terrorism or violence and international conflicts or crises.

In addition, the limited lead times with which several of our customers order our products restrict our ability to forecast
revenue. We may also experience a delay in generating or recognizing revenue for a number of reasons. For example, orders at the beginning of each quarter typically represent a small percentage of expected revenue for that quarter. We depend on obtaining orders during each quarter for shipment in that quarter to achieve our revenue objectives. Failure to ship these products by the end of a quarter may adversely affect our results of operations and cash flows.

As a result of the foregoing factors, we believe that period-to-period comparisons of our results of operations should not be solely relied upon as indicators of future performance.

Changes in U.S. and international trade policies, particularly with regard to China, may adversely impact our business and operating results.

The U.S. government has recently made statements and taken certain actions that may lead to potential changes to U.S. and international trade policies, including recently imposed tariffs affecting certain products manufactured in China. The U.S. and China have applied tariffs or announced tariffs to be applied in the future to certain of each other's exports. With respect to the tariffs that took effect in September 2018, certain of our broadband products manufactured by our Chinese affiliate were included in the tariffs imposed on imports into the U.S. from China. In addition, other products manufactured by our Chinese affiliate may be included on lists of products to be targeted by proposed tariff increases that may be implemented in the future. As a result of these tariffs imposed by the U.S. government, China has recently imposed retaliatory tariffs affecting certain products manufactured in the U.S. In September 2018, certain of our chip products manufactured by us in the U.S. were included in the tariffs imposed on imports into China from the U.S., and other products manufactured by us in the U.S. may be included on lists of products to be targeted by proposed tariff increases that may be implemented by China in the future. Due to the implementation of these tariffs, sales of our products manufactured in China and shipped to the U.S. and sales of our products manufactured in the U.S. and shipped to China could each decrease, which would negatively impact our business.

In addition, it is unknown whether and to what extent new tariffs (or other new laws or regulations) will be adopted that increase the cost of importing products into the U.S., or that might trigger retaliatory action by U.S. trading partners. Further, it is unknown what effect that any such new tariffs or retaliatory actions would have on us or our industry and customers. For example, there are risks that the Chinese government may, among other things, require the use of local suppliers, compel companies that do business in China to partner with local companies to conduct business and provide incentives to government-backed local customers to buy from local suppliers. If any new tariffs, legislation and/or regulations are implemented, or if existing trade agreements are renegotiated or if China or other affected countries take retaliatory trade actions, such changes could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We have substantial operations in China, which exposes us to risks inherent in doing business in China.

In an effort to keep manufacturing costs down, we operate a manufacturing facility in China. Our China-based activities are subject to greater political, legal, and economic risks than those faced by our other operations. In particular, the political, legal, and economic climate in China (both at the national and regional levels) is extremely volatile and unpredictable. Our ability to operate in China may be adversely affected by changes in, or our failure to comply with, Chinese laws and regulations, such as those relating to taxation, import and export tariffs, environmental regulations, land use rights, intellectual property, labor and employment laws and other matters, which laws and regulations remain highly underdeveloped and subject to change for political or other reasons, with little or no prior notice. Moreover, the enforceability of applicable existing Chinese laws and regulations is uncertain. For example, since Chinese administrative and court authorities have significant discretion in interpreting and implementing statutory and contract terms, it may be more difficult to evaluate the outcome of administrative and court proceedings and the level of legal protection we would receive. These uncertainties may impede our ability to enforce the contracts we have entered into with our distributors, business partners, customers and suppliers. In addition, protections of intellectual property rights and confidentiality in China may not be as effective as in the U.S. or other countries or regions. All of these uncertainties could limit the legal protections available to us and could materially and adversely affect our business, financial condition, cash flows and results of operations.

Also, if we are found to be, or to have been, in violation of Chinese laws or regulations governing technology import and export, the relevant regulatory authorities have broad discretion in dealing with such violations, including, but not

limited to, issuing a warning, levying fines, restricting us from benefiting from these technologies inside or outside of China, confiscating our earnings generated from the import or export of such technology or even restricting our future import and export of any technology.

In addition, we may not obtain the requisite legal permits to continue to operate in China and costs or operational limitations may be imposed in connection with obtaining and complying with such permits. Our business could be adversely harmed by any changes in the political, legal, or economic climate in China, our failure to comply with applicable laws and regulations or our inability to enforce applicable Chinese laws and regulations.

Table of Contents

While under certain circumstances we previously were not subject to certain Chinese taxes and were exempt from customs duty assessment on imported components or materials when our finished products were exported from China, we are no longer eligible for such exemptions due to our current Beijing facility being located in a non-economic zone. In addition, we are required to pay income taxes in China subject to certain tax relief. We may become subject to other forms of taxation and duty assessments in China, including import tariffs as described in more detail above, or may be required to pay for export license fees in the future. In the event that we become subject to any increased taxes or new forms of taxation imposed by authorities in China, our results of operations and cash flows could be adversely affected.

Employee turnover of direct labor in the manufacturing sector in China is high and retention of such personnel is a challenge to companies located in or with operations in China. Although direct labor costs do not represent a high proportion of our overall manufacturing costs, direct labor is required for the manufacture of our products. If our direct labor turnover rates are higher than we expect, or we otherwise fail to adequately manage our direct labor turnover rates, then our business and results of operations could be adversely affected.

We may have difficulty establishing and maintaining adequate management and financial controls over our China operations.

Businesses in China have historically not adopted a western style of management and financial reporting concepts and practices, which includes strong corporate governance, internal controls and computer, financial and other control systems. Moreover, familiarity with accounting principles generally accepted in the United States of America (“U.S. GAAP”) principles and reporting procedures is less common in China. As a consequence and due to our significant operations in China, we may have difficulty finding accounting personnel experienced with U.S. GAAP, and we may have difficulty training and integrating our China-based accounting staff with our U.S.-based finance organization. As a result of these factors, we may experience difficulty in establishing management and financial controls over our China operations. These difficulties include collecting financial data and preparing financial statements, books of account and corporate records and instituting business practices that meet U.S. public-company reporting requirements. We may, in turn, experience difficulties in implementing and maintaining adequate internal controls as required under Section 404 of the Sarbanes-Oxley Act. If we cannot provide reliable and timely financial reports, our brand, operating results, and the market value of our equity securities could be harmed.

We have a large amount of intercompany balances with our China entities, which may be subject to taxes and penalties when we try to pay them down or collect them.

Payments for goods and services into and out of China are subject to numerous and over-lapping government regulation with respect to foreign exchange controls, banking controls, import and export controls, and taxes. We have been operating in China for an extended period of time and have accumulated significant intercompany balances with our related entities. Our ability to repay or collect these balances may be restricted by Chinese laws and, as a result, we may be unable to successfully pay down or collect on these balances. As a consequence, we may be assessed additional taxes in China if we are unable to claim bad debt deductions or incur debt forgiveness income from the cancellation of these intercompany balances. Additionally, if we are found not to have complied with the various local laws surrounding cross border payments, we may incur penalties and fines for non-compliance. Any such taxes, penalties and/or fines could be significant in amount and, as a result, could have an adverse effect on our financial condition and results of operations, including our cash and cash equivalent balances.

19

Table of Contents

We expect to consider from time to time further strategic opportunities that may involve acquisitions, dispositions, investments in joint ventures, partnerships, and other strategic alternatives that may enhance shareholder value, any of which may result in the use of a significant amount of our management resources or significant costs, and we may not be able to fully realize the potential benefit of such transactions.

We expect to continue to consider acquisitions, dispositions, investments in joint ventures, partnerships, and other strategic alternatives that may enhance shareholder value. The Strategy and Alternatives Committee of the Board and our management may from time to time be engaged in evaluating potential transactions and other strategic alternatives. In addition, from time to time, we may engage financial advisors, enter into non-disclosure agreements, conduct discussions, and undertake other actions that may result in one or more transactions. Although there would be uncertainty that any of these activities or discussions would result in definitive agreements or the completion of any transaction, we may devote a significant amount of our management resources to analyzing and pursuing such a transaction, which could negatively impact our operations. In addition, we may incur significant costs in connection with seeking such transactions or other strategic alternatives regardless of whether the transaction is completed. In the event that we consummate an acquisition, disposition, partnership, or other or strategic alternative in the future, we cannot be certain that we would fully realize the potential benefit of such a transaction and cannot predict the impact that such strategic transaction might have on our operations or stock price. We do not undertake to provide updates or make further comments regarding the evaluation of strategic alternatives, unless otherwise required by law.

Acquisitions of other companies or investments in joint ventures with other companies could adversely affect our operating results, dilute our shareholders' equity, or cause us to incur additional debt or assume contingent liabilities.

To increase our business, maintain our competitive position or for other business or strategic reasons, we may acquire other companies or engage in joint ventures or similar transactions in the future. Acquisitions, joint ventures and similar transactions involve a number of risks that could harm our business and result in the acquired business or joint venture not performing as expected, including:

- insufficient experience with technologies and markets in which the acquired business is involved, which may be necessary to successfully operate and integrate the business;
- problems integrating the acquired operations, personnel, technologies, or products with the existing business and products;
- diversion of management's time and attention from our core business to the acquired business or joint venture;
- potential failure to retain key technical, management, sales, and other personnel of the acquired business or joint venture;
- difficulties in retaining relationships with suppliers and customers of the acquired business, particularly where such customers or suppliers compete with us;
- reliance upon joint ventures which we do not control;
- subsequent impairment of goodwill and acquired long-lived assets, including intangible assets; and
- assumption of liabilities including, but not limited to, lawsuits, environmental liabilities, regulatory liabilities, tax examinations and warranty issues.

We may decide that it is in our best interests to enter into acquisitions, joint ventures or similar transactions that are dilutive to earnings per share or that adversely impact margins as a whole. In addition, acquisitions or joint ventures could require investment of significant financial resources and require us to obtain additional equity financing, which may dilute our shareholders' equity, or require us to incur indebtedness.

Our ability to achieve operational and material cost reductions and to realize production efficiencies for our operations is critical to our ability to achieve long-term profitability.

We have implemented a number of operational and material cost reductions and productivity improvement initiatives, which are intended to reduce our cost structure at both the cost of revenue and the operating expense levels. Cost reduction initiatives often involve the re-design of our products, which requires our customers to accept and qualify the new designs, potentially creating a competitive disadvantage for our products. These initiatives can be time-consuming, disruptive to our operations, and costly in the short-term. Successfully implementing these and other cost-reduction initiatives throughout our operations is critical to our future competitiveness and ability to achieve long-term profitability. However, we cannot be certain that these initiatives will be successful in creating profit margins sufficient to sustain our current operating structure and business.

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

We make planning and spending decisions, including determining the levels of business that we will seek and accept, production schedules, component procurement commitments, personnel needs and other resource requirements, based on our estimates of customer demand. While our customers generally provide us with their demand forecasts, they are typically not contractually committed to buy any quantity of products beyond firm purchase orders. The short-term nature of our customer commitments and the possibility of unexpected changes in demand for their products limit our ability to accurately predict future customer demand. On occasion, customers have required rapid increases in production, which has strained our resources. We may not have sufficient capacity at any given time to meet the volume demands of our customers, or one or more of our suppliers may not have sufficient capacity at any given time to meet our volume demands. Conversely, a downturn in the markets in which our customers compete can cause, and in the past has caused, our customers to significantly reduce the amount of products ordered from us or to cancel existing orders, leading to lower utilization of our facilities. Because many of our costs and operating expenses are relatively fixed, reduction in customer demand would have an adverse effect on our gross margin, results of operations, and cash flow. During an industry downturn, there is also a higher risk that a larger portion of our trade receivables would be uncollectible. In addition, certain of our arrangements with component vendors require us to purchase minimum quantities of components within specific time periods, which could cause us to hold excess inventories of these components during periods concurrent with a decrease in customer demand for our products.

We have limited operating history in the fiber to the home (“FTTH”) market, and our business could be harmed if this market does not develop as we expect and we do not grow our business in this market to the level we expect.

In 2017, we began offering products to the FTTH market, and our radio frequency over glass (“RFoG”) products designed for this market have not yet, and may never, gain widespread acceptance by large multiple system operators (“MSOs”). Our business in this market is dependent on the deployment of our optical components, modules and subassemblies. We are relying on increasing demand for bandwidth-intensive services and telecommunications service providers’ acceptance and deployment of RFoG as a technology supporting service to the home. Without network and bandwidth growth and adoption of our solutions by operators in these markets, we will not be able to sell our products in these markets in high volume or at our targeted margins, which would adversely affect our business, financial condition, results of operations and cash flows. For example, RFoG technology may not be adopted by equipment and service providers in the FTTH market as rapidly as we expect or in the volumes we need to achieve acceptable margins. Network and bandwidth growth may be limited by several factors, including an uncertain regulatory environment, high infrastructure costs to purchase and install equipment and uncertainty as to which competing content delivery solution, such as CATV, will gain the most widespread acceptance. In addition, as we

enter new markets for RFoG or expand our RFoG product offerings in existing markets, our margins may be adversely affected due to competition in those markets and commoditization of competing products. We may also face limitations due to sole or limited sources for components of our RFoG products. If our expectations for the growth of these markets are not realized, our business, financial condition, results of operations and cash flows may be adversely affected.

Our operating results could be harmed if we are unable to obtain timely deliveries of sufficient components of acceptable quality from sole or limited sources of materials, components, or services, or if the prices of components for which we do not have alternative sources increase.

We currently obtain materials, components, and services used in our products from limited or sole sources. We generally do not carry significant inventories of any raw materials. The reliance on a sole supplier, single qualified vendor or limited number of suppliers could result in delivery or quality problems or reduced control over product pricing, reliability and performance. Because we often do not account for a significant part of our suppliers' businesses, we may not have access to sufficient capacity from these suppliers in periods of high demand. In addition, since we generally do not have guaranteed supply arrangements with our suppliers, we risk serious disruption to our operations if an important supplier terminates product lines, changes business focus, or goes out of business, and we may need large end of life purchases when a sole source supplier is ceasing manufacturing of required components. Because some of these suppliers are located overseas, we may be faced with higher costs of purchasing these materials if the U.S. dollar weakens against other currencies, or if import tariffs are imposed on these materials. If we were to change any of our limited or sole source suppliers, we would be required to re-qualify each new supplier. Re-qualification could prevent or delay product shipments that could adversely affect our results of operations and cash flows. In addition, our reliance on these suppliers may adversely affect our production if the components vary in quality or quantity. If we are unable to obtain timely deliveries of sufficient components of acceptable quality or if the prices of components for which we do not have alternative sources increase, our business, financial condition, results of operations, and cash flows could be materially adversely affected.

If our contract manufacturers fail to deliver qualified products at reasonable prices and on a timely basis, our business, financial condition, results of operations, and cash flows could be adversely affected.

We primarily use contract manufacturers located outside of the U.S. as a less-expensive alternative to our manufacturing of certain products. Contract manufacturers in Asia currently manufacture a significant portion of our high-volume fiber optics products. We supply inventory to our contract manufacturers, and we bear the risk of loss, theft, or damage to our inventory while it is held in their facilities.

If these contract manufacturers do not fulfill their obligations to us, or if we do not properly manage these relationships and the transition of production to these contract manufacturers, our existing customer relationships may suffer. In addition, by undertaking these activities, we run the risk that the reputation and competitiveness of our products and services may deteriorate as a result of the reduction of our ability to oversee and control the assembly process, quality and delivery schedules. If we fail to manage our relationship with our contract manufacturers, or if any of the contract manufacturers experience financial difficulty, delays, disruptions, capacity constraints or quality control problems in their operations, our ability to ship products to our customers could be impaired and our competitive position and reputation could be harmed.

The use of contract manufacturers located outside of the U.S. also subjects us to the following additional risks that could significantly impair our ability to source our contract manufacturing requirements internationally, including:

- unexpected changes in regulatory requirements;

- legal uncertainties regarding liability, tariffs, and other trade barriers;

- inadequate protection of intellectual property in some countries;

- greater incidence of shipping delays;

- greater difficulty in overseeing manufacturing operations;
- greater difficulty in hiring talent needed to oversee manufacturing operations;
- potential political and economic instability and natural disasters;
- potential adverse actions by the U.S. government pursuant to its stated intention to reduce the loss of U.S. jobs;

- natural disasters;
- trade and travel restrictions; and
- the outbreak of infectious diseases which could result in travel restrictions or the closure of the facilities of our contract manufacturers.

Any of these factors could significantly impair our ability to source our contract manufacturing requirements internationally. Prior to our customers accepting products manufactured at our contract manufacturers, they must qualify the product and manufacturing processes. The qualification process can be lengthy and expensive, with no guarantee that any particular product qualification process will lead to profitable product sales. The qualification process determines whether the product manufactured at our contract manufacturer achieves our customers' quality, performance, and reliability standards. Our expectations as to the time periods required to qualify a product line and ship products in volumes to our customers may be erroneous. Delays in qualification can impair our expected timing of the transfer of a product line to our contract manufacturer and may impair our expected amount of sales of the affected products. Any of these uncertainties could adversely affect our operating results and customer relationships.

In addition, our contract manufacturers may terminate our agreements with them upon prior notice to us or immediately for reasons such as if we become insolvent, or if we fail to perform a material obligation under the agreements. If we are required to change contract manufacturers or assume internal manufacturing operations for any reason, including the termination of one of our contracts, we will likely suffer manufacturing and shipping delays, lost revenue, increased costs and damage to our customer relationships, any of which could harm our business, financial condition, results of operations and cash flows.

We participate in vendor managed inventory programs for the benefit of certain of our customers, which could result in increased inventory levels and/or decreased visibility into the timing of sales.

Certain of our more significant customers have implemented a supply chain management tool called vendor managed inventory (“VMI”) that requires us to assume responsibility for maintaining an agreed upon level of consigned inventory at the customer’s location or at a third-party logistics provider, based on the customer’s demand forecast. Notwithstanding the fact that the supplier builds and ships the inventory, the customer does not purchase the consigned inventory until the inventory is drawn or pulled from the customer or third-party location to be used in the manufacture of the customer’s product. Though the consigned inventory may be at the customer’s or third-party logistics provider’s physical location, it remains inventory owned by the supplier until the inventory is drawn or pulled, which is the time at which the sale takes place. In addition, certain of our customers require us to maintain agreed levels of product inventory at our own locations. Our participation in VMI programs and our commitment to other product inventory requirements at our own locations has resulted in our experiencing higher levels of inventory than we might otherwise and has decreased our visibility into the timing of when our finished goods will ultimately result in revenue-generating sales.

Such VMI programs and other inventory requirements increase the likelihood that estimates of our customers’ requirements that prove to be greater than our customers’ actual purchases could result in surplus inventory and we could be required to record charges for obsolete or excess inventories. If we are unable to effectively manage our customers’ VMI programs or other inventory requirements, our business, financial condition, results of operations and cash flows may be adversely affected.

If we do not keep pace with rapid technological change, our products may not be competitive.

We compete in markets that are characterized by rapid technological change, frequent new product introductions, changes in customer requirements, evolving industry standards, continuous improvement in products and the use of our existing products in new applications. We may not be able to develop the underlying core technologies necessary to create new products and enhancements to our existing products at the same rate as or faster than our competitors, to develop products that effectively compete with competitors' products used in new applications, such as remote physical layer ("remote PHY"), or to license the technology from third parties that is necessary for our products. Product development delays may result from numerous factors, including:

- changing product specifications and customer requirements;

- unanticipated engineering complexities;

Table of Contents

- expense reduction measures we have implemented and others we may implement;
- difficulties in hiring and retaining necessary technical personnel; and
- difficulties in allocating engineering resources and overcoming resource limitations.

We cannot be certain that we will be able to identify, develop, manufacture, market, or support new or enhanced products successfully, if at all, or on a timely, cost effective, or repeatable basis. Our future performance will depend on our successful development and introduction of, as well as market acceptance of, new and enhanced products that address market changes, as well as current and potential customer requirements and our ability to respond effectively to product announcements by competitors, technological changes, or emerging industry standards. Because it is generally not possible to predict the amount of time required and the costs involved in achieving certain research, development and engineering objectives, actual development costs may exceed budgeted amounts and estimated product development schedules may be extended. If we are unable to develop, manufacture, market, or support new or enhanced products successfully, or incur budget overruns or delays in our research and development efforts, our business, financial condition, results of operations, and cash flows may be adversely affected.

Spending to develop and improve our technology may adversely impact our financial results.

We may need to increase our research and development and/or capital expenditures and expenses above our historical run-rate model in order to attempt to improve our existing technology and develop new technology. Increasing our investments in research and development of technology could cause our cost structure to fall out of alignment with demand for our products, which would have a negative impact on our financial results. If we are unable to fund these types of expenditures, we may be unable to improve our technology or develop new technologies, which may adversely affect our business, financial condition, results of operations and cash flows. Further, our research and development programs may not produce successful results, and our new products and services may not achieve market acceptance, create additional revenue or become profitable, which could materially harm our business, prospects, financial results and liquidity.

The competitive and rapidly evolving nature of our industries and pressure from competitors with greater resources has in the past resulted in and is likely in the future to result in reductions in our product prices and periods of reduced demand for our products.

We face substantial competition from a number of companies, many of which have greater financial, marketing, manufacturing, and technical resources than we do. Larger-sized competitors often spend more on research and development, which could give those competitors an advantage in meeting customer demands and introducing technologically innovative products before we do. We expect that existing and new competitors will continue to improve the design of their existing products and will introduce new products with enhanced performance characteristics.

The introduction of new products and more efficient production of existing products by our competitors have resulted and are likely in the future to result in price reductions, increases in expenses, and reduced demand for our products. In addition, some of our competitors may be willing to provide their products at lower prices, accept a lower profit margin, or spend more capital in order to obtain or retain business. Competitive pressures have required us to reduce the prices of some of our products. These competitive forces could diminish our market share and gross margins,

resulting in an adverse effect on our business, financial condition, results of operations, and cash flows.

New competitors may also enter our markets, including some of our current and potential customers who may attempt to integrate their operations by producing their own components and subsystems or acquiring one of our competitors, thereby reducing demand for our products. In addition, rapid product development cycles, increasing price competition due to maturation of technologies, the emergence of new competitors in Asia with lower cost structures, and industry consolidation resulting in competitors with greater financial, marketing, and technical resources could result in lower prices or reduced demand for our products, which could have an adverse effect on our business, financial condition, results of operations, and cash flows.

Expected and actual introductions of new and enhanced products may cause our customers to defer or cancel orders for existing products and may cause our products to become obsolete. A slowdown in demand for existing products ahead of a new product introduction could result in a write-down in the value of inventory on hand related to existing products. We have in the past experienced a slowdown in demand for existing products and delays in new product development and such delays may occur in the future. To the extent customers defer or cancel orders for existing products due to a slowdown in demand or in anticipation of a new product release, or if there is any delay in development or introduction of our new products or enhancements of our products, our business, financial condition, results of operations, and cash flows could be adversely affected.

Our products are difficult to manufacture. Our production could be disrupted and our results of operations and cash flows could suffer if our production yields are low as a result of manufacturing difficulties.

We manufacture many of our wafers and products in our own production facilities. Difficulties in the production process, such as contamination, raw material quality issues, human error, or equipment failure, could cause a substantial percentage of wafers and devices to be nonfunctional. These problems may be difficult to detect at an early stage of the manufacturing process and often are time-consuming and expensive to correct. Lower-than-expected production yields may delay shipments or result in unexpected levels of warranty claims, either of which could adversely affect our results of operations and cash flows. We have experienced difficulties in achieving planned yields in the past, particularly in pre-production and upon initial commencement of full production volumes, which have adversely affected our gross margins. Because the majority of our manufacturing costs are fixed, achieving planned production yields is critical to our results of operations and cash flows. Changes in manufacturing processes required as a result of changes in product specifications, changing customer needs and the introduction of new product lines could significantly reduce our manufacturing yields, resulting in low or negative margins on those products. In addition, transitioning to automation in certain manufacturing processes could result in manufacturing delays or significantly reduce our manufacturing yields.

Manufacturing yields depend on a number of factors, including the stability and manufacturability of the product design, manufacturing improvements gained over cumulative production volumes, the quality and consistency of component parts and the nature and extent of customization requirements by customers. Higher volume demand for more mature designs requiring less customization generally results in higher manufacturing yields than products with lower volumes, less mature designs and requiring extensive customization. Capacity constraints, raw materials shortages, logistics issues, the introduction of new product lines and changes in our customer requirements, manufacturing facilities or processes or those of our third-party contract manufacturers and component suppliers have historically caused, and may in the future cause, significantly reduced manufacturing yields, negatively impacting the gross margins on, and our production capacity for, those products. Our ability to maintain sufficient manufacturing yields is particularly important with respect to certain products we manufacture, as a result of the long manufacturing process. Moreover, an increase in the rejection and rework rate of products during the quality control process before, during or after manufacture would result in lower yields, gross margins and production capacity. Finally, manufacturing yields and margins can also be lower if we receive and inadvertently use defective or contaminated materials from our suppliers.

Also, we have substantial risk of interruption in manufacturing resulting from fire, natural disaster, equipment failures, or similar events, because we manufacture most of our products using a few facilities, and do not have back-up facilities available for manufacturing these products. We could also incur significant costs to repair and/or replace products that are defective and in some cases costly product redesigns and/or rework may be required to correct a defect. Additionally, any defect could adversely affect our reputation and result in the loss of future orders.

Some of the capital equipment used in the manufacture of our products have been developed and made specifically for us, may not be readily available from multiple vendors, and would be difficult to repair or replace if they were to become damaged or stop working. If any of these suppliers were to experience financial difficulties or go out of business, or if there were any damage to, or a breakdown of our manufacturing equipment at a time when we are manufacturing commercial quantities of our products, our business, financial condition, results of operations, and cash flows could be adversely affected.

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

Our products are complex and undergo quality testing and formal qualification by our customers and us. However, defects may occur from time to time. Our customers' testing procedures involve evaluating our products under likely and foreseeable failure scenarios and over varying amounts of time. For various reasons, such as the occurrence of performance problems that are unforeseeable in testing or that are detected only when products age or are operated under peak stress conditions, our products may fail to perform as expected long after customer acceptance. Failures could result from faulty components or design, problems in manufacturing, or other unforeseen reasons. For the majority of our products, we provide a product warranty of one year or less from date of shipment. For select customers, we provide extended warranties beyond our normal product warranty period for specified failures on a case-by-case basis. As a result, we could incur significant costs to repair or replace defective products under warranty, particularly when such failures occur in installed systems. We have experienced failures in the past and will continue to face this risk going forward, as our products are widely deployed throughout the world in multiple demanding environments and applications. In addition, we may in certain circumstances honor warranty claims after the warranty has expired or for problems not covered by warranty in order to maintain customer relationships. Any significant product failure could result in product recalls, product liability claims, lost future sales of the affected product and other products, as well as customer relations problems, litigation, and damage to our reputation.

In addition, our products are typically embedded in, or deployed in conjunction with, our customers' products, which incorporate a variety of components, modules and subsystems and may be expected to interpolate with modules and subsystems produced by third parties. As a result, not all defects are immediately detectable and when problems occur, it may be difficult to identify the source of the problem. These problems may cause us to incur significant damages or warranty and repair costs, divert the attention of our engineering personnel from our product development efforts, and cause significant customer relations problems or loss of customers, all of which would harm our business. The occurrence of any defects in our products could also give rise to liability for damages caused by such defects. Although we carry product liability insurance to mitigate this risk, insurance may not adequately cover costs that may arise from defects in our products or otherwise, nor will it protect us from reputational harm that may result from such defects. Costs incurred in connection with product recalls or warranty or product liability claims may adversely affect our business, financial condition, results of operations, and cash flows.

Our products are complex and may take longer to develop and qualify than anticipated and we face lengthy sales and qualification cycles for our new products and, in many cases, must invest a substantial amount of time and money before we receive orders.

We are constantly developing new products and using new technologies in these products. These products often take substantial time to develop because of their complexity, rigorous testing and qualification requirements and because customer and market requirements can change during the product development or qualification process. Most of our products are tested by current and potential customers to determine whether they meet customer or industry specifications. The length of the qualification process, which can span a year or more, varies substantially by product and customer and, thus, can cause our results of operations and cash flows to be unpredictable. During a given qualification period, we invest significant resources and allocate substantial production capacity to manufacture these new products prior to any commitment to purchase by customers. In addition, it is difficult to obtain new customers during the qualification period as customers are reluctant to expend the resources necessary to qualify a new supplier if they have one or more existing qualified sources. If we are unable to meet applicable specifications or do not receive sufficient orders to profitably use our allocated production capacity, our business, financial condition, results of operations, and cash flows may be adversely affected.

Our historical and future budgets for operating expenses, capital expenditures, operating leases, and service contracts are based upon our assumptions as to the future market acceptance of our products. Because of the lengthy lead times required for product development and the changes in technology that typically occur while a product is being developed, it is difficult to accurately estimate customer demand for any given product. If our products do not achieve an adequate level of customer demand, our business, financial condition, results of operations, and cash flows may be adversely affected.

Table of Contents

Shifts in industry-wide demands and inventories could result in significant inventory write-downs.

The life cycles of some of our products depend heavily upon the life cycles of the end products into which our products are designed. Products with short life cycles require us to manage production and inventory levels closely. We evaluate our ending inventories on a quarterly basis for excess quantities, impairment of value, and obsolescence. This evaluation includes analysis of sales levels by product and projections of future demand based upon input received from our customers, sales team, and management. If inventories on hand are in excess of demand, or if they are generally greater than 12-months old, appropriate write-downs may be recorded. In addition, we write off inventories that are considered obsolete based upon changes in customer demand, manufacturing process changes that result in existing inventory obsolescence, or new product introductions, which eliminate demand for existing products. Remaining inventory balances are adjusted to approximate the lower of our manufacturing cost or net realizable market value.

If future demand or market conditions are less favorable than our estimates, inventory write-downs may be required. We cannot be certain that obsolete or excess inventories, which may result from unanticipated changes in the estimated total demand for our products and/or the estimated life cycles of the end products into which our products are designed, will not affect us beyond the inventory charges that we have already taken.

The types of sales contracts we use in the markets we serve subject us to unique risks in each of those markets.

We generally do not have long-term supply contracts with our customers, we typically sell our products pursuant to purchase orders with short lead times, and even where we do have supply contracts, our customers are not obligated to purchase any minimum amount of our products. As a result, our customers could stop purchasing our products at any time, and we must fulfill orders in a timely manner to keep our customers satisfied.

Risks associated with the absence of long-term purchase commitments with our customers include the following:

- our customers can stop purchasing our products at any time without penalty;
- our customers may purchase products from our competitors; and
- our customers are not required to make minimum purchases.

These risks are increased by the fact that our customers in this market are large sophisticated companies which have considerable purchasing power and control over their suppliers. If we are unable to fulfill these orders in a timely manner, it is likely that we will lose sales and customers.

Fixed-price development work inherently has more uncertainty than production contracts and, therefore, entails more variability in estimates of the cost to complete the work. Many of these development programs have very complex designs. As technical or quality issues arise, we may experience schedule delays and adverse cost impacts, which could increase our estimated cost to perform the work, either of which could adversely affect our results of operations. Some fixed-price development contracts include initial production units in their scope of work. Successful performance of these contracts depends on our ability to meet production specifications and delivery rates. If we are unable to perform and deliver to contract requirements, our contract price could be reduced through the incorporation of liquidated damages, termination of the contract for default, or other financially significant consequences. Management uses its best judgment to estimate the cost to perform the work and the price we will eventually be paid on fixed-price development programs. While we believe the cost and price estimates incorporated in the financial statements are appropriate, future events could result in either favorable or unfavorable adjustments to those estimates.

27

If we identify deficiencies in our current system of internal controls or fail to remediate them, we may not be able to accurately report our financial results or prevent fraud. As a result, our business could be harmed and current and potential investors could lose confidence in our financial reporting, which could have an adverse effect on the trading price of our equity securities.

We are subject to the ongoing internal control provisions of Section 404 of the Sarbanes-Oxley Act of 2002. These provisions provide for the identification of material weaknesses or other lesser deficiencies in internal control over financial reporting, which is a process to provide reasonable assurance regarding the reliability of financial reporting for external purposes in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). If we cannot provide reliable and timely financial reports, our brand, operating results, and the market value of our equity securities could be harmed. We have in the past discovered, and may in the future discover, areas of our internal controls that need improvement.

We have devoted significant resources to remediate and improve our internal controls. We have also been monitoring the effectiveness of these remediated measures. We cannot be certain that these measures will ensure adequate controls over our financial processes and reporting in the future. Any failure to implement required new or improved controls, or difficulties encountered in their implementation, could harm our operating results or cause us to fail to meet our reporting obligations.

Inadequate internal controls could also cause investors to lose confidence in our reported financial information, which could have an adverse effect on the trading price of our equity securities. Further, the impact of these events could also make it more difficult for us to attract and retain qualified persons to serve on our Board of Directors or as executive officers, which could harm our business.

We could be required to record an impairment charge as a result of changes to assumptions used in our impairment testing.

We have substantial long-lived assets recorded on our balance sheet. As of September 30, 2018, we had $18.2 million of property and equipment, net, on our consolidated balance sheet. If we make changes in our business strategy or if market or other conditions adversely affect our business operations, we may be forced to record an impairment charge related to these assets, which would adversely impact our results of operations. Impairment assessment inherently involves judgment as to assumptions about expected future cash flows and the impact of market conditions on those assumptions. Future events and changes in market conditions, underlying business operations, competition or technologies may impact our assumptions as to prices, costs, holding periods, or other factors that may result in changes in our estimates of future cash flows. Although we believe the assumptions we used in testing for impairment are reasonable, we will continue to evaluate the recoverability of the carrying amount of our property, plant and equipment on an ongoing basis, and significant changes in any one of our assumptions could produce a significantly different result. In such a circumstance, we may incur substantial impairment charges, which would adversely affect our financial results. In any period where our stock price, as determined by our market capitalization, is less than our book value, this too could indicate a potential impairment and we may be required to record an impairment charge in that period.

Changes in accounting standards issued by the Financial Accounting Standards Board (“FASB”) could have a material effect on our balance sheet, revenue and result of operations, and could require a significant expenditure of time, attention and resources, especially by senior management.

Our accounting and financial reporting policies conform to U.S. GAAP, which are periodically revised and/or expanded. The application of accounting principles is also subject to varying interpretations over time. Accordingly, we are required to adopt new or revised accounting standards or comply with revised interpretations that are issued from time to time by various parties, including accounting standard setters and those who interpret the standards, such as the FASB and the SEC and our independent registered public accounting firm. Such new financial accounting standards may result in significant changes that could adversely affect our financial condition and results of operations.

In February 2016, the FASB issued ASU 2016-02, Leases, which requires all operating leases with lease terms longer than twelve months be recorded as lease assets and lease liabilities on our consolidated balance sheets. Implementing changes required by new standards, requirements or laws likely will require a significant expenditure of time, attention and resources. It is impossible to completely predict the impact, if any, on us of future changes to accounting standards and financial reporting and corporate governance requirements.

Table of Contents

Refer to Note 1 - Description of Business, Note 2 - Summary of Significant Accounting Policies and Note 3 - Recent Accounting Pronouncements and U.S. Tax Reform of the notes to the consolidated financial statements for further discussion of these new accounting standards, including the implementation status and potential impact to our consolidated financial statements.

We have significant international sales, which expose us to additional risks and uncertainties.

For the fiscal years ended September 30, 2018, 2017 and 2016, sales to customers located outside the U.S. accounted for approximately 19%, 20% and 28%, respectively, of our annual consolidated revenue, with revenue assigned to geographic regions based on our customers' billing address. Sales to customers in Asia represent the majority of our international sales. We believe that international sales will continue to account for a significant percentage of our revenue as we seek international expansion opportunities. In addition, certain of our sales to customers with a U.S. billing address may be physically shipped to a location outside of the U.S. Our international sales and operations are subject to a number of material risks, including, but not limited to:

- political and economic instability or changes in U.S. government policy with respect to these foreign countries may inhibit export of our products and limit potential customers' access to U.S. dollars in a country or region in which those potential customers are located;
- we may experience difficulties in enforcing our legal contracts or the collecting of foreign accounts receivable in a timely manner and we may be forced to write off these receivables;
- tariffs and other barriers may make our products less cost competitive;
- the laws of certain foreign countries may not adequately protect our trade secrets and intellectual property or may be burdensome to comply with;
- potentially adverse tax consequences to our customers may damage our cost competitiveness;
- customs, import/export, and other regulations of the countries in which we do business may adversely affect our business;
- different technical standards or requirements, such as country or region-specific requirements to eliminate the use of lead
- currency fluctuations may make our products less cost competitive, affecting overseas demand for our products or otherwise adversely affecting our business; and
- language and other cultural barriers may require us to expend additional resources competing in foreign markets or hinder our ability to effectively compete.

Negative developments in one or more countries or regions in which we operate or sell our products could result in a reduction in demand for our products, the cancellation or delay of orders already placed, difficulties in producing and delivering our products, threats to our intellectual property, difficulty in collecting receivables, or a higher cost of doing business, any of which could negatively impact our business, financial condition, cash flows and results of operations. In addition, we may be exposed to legal risks under the laws of the countries outside the U.S. in which we do business, as well as the laws of the U.S. governing our business activities in those other countries, such as the U. S. Foreign Corrupt Practices Act ("FCPA").

Our failure to successfully manage the transition of certain of our manufacturing operations from our Langfang facility to our new Beijing location could harm our business, financial condition, results of operations and cash flows.

In February 2016, we leased a new manufacturing facility near Beijing, China. We have relocated the manufacture of our existing product lines and sub-assemblies previously manufactured at our Langfang facility to our Beijing facility and have closed our Langfang facility. This transition has and may continue to cause us to incur costs associated with some duplication of facilities, equipment and personnel, and require us to install and/or transplant complex manufacturing equipment and processes and to hire and train a new workforce. In addition, we are subject to the requirements of a different regional government than we were subject to at our Langfang facility, which creates additional uncertainty. If we are unable to manage this transfer and training smoothly and comprehensively, we could suffer delays in recognizing efficiencies, harm to our reputation with our customers, and loss of customers. If we are unable to successfully manage the relocation or initiation of the manufacture of these products, our business, financial condition, results of operations and cash flows could be harmed.

We could be subject to legal and regulatory consequences if we fail to comply with applicable export control laws and regulations.

Exports of certain of our products are subject to export controls imposed by the U.S. government and administered by the United States Departments of State and Commerce. In certain instances, these regulations may require pre-shipment authorization from the administering department. For products subject to the Export Administration Regulations, or EAR, administered by the Department of Commerce's Bureau of Industry and Security, the requirement for a license is dependent on the type and end use of the product, the final destination, the identity of the end user and whether a license exception might apply. Virtually all exports of products subject to the International Traffic in Arms Regulations, or ITAR, administered by the Department of State's Directorate of Defense Trade Controls, require a license.

Obtaining necessary export licenses can be difficult and time-consuming. Failure to obtain necessary export licenses could significantly reduce our revenue and adversely affect our business, financial condition, results of operations and cash flows. We could be subject to investigation and potential regulatory consequences, including, but not limited to, a no-action letter, monetary penalties, debarment from government contracting or denial of export privileges and criminal sanctions, any of which would adversely affect our business, financial condition, results of operations and cash flows. Compliance with U.S. government regulations may also subject us to significant fees and expenses, including legal expenses, and require us to expend significant time and resources. Finally, the absence of comparable restrictions on competitors in other countries may adversely affect our competitive position.

For a portion of our business, we are subject to extensive government regulation, and our failure to comply with applicable regulations could subject us to penalties that may restrict our ability to conduct our business.

As a contractor and/or subcontractor to the U.S. government, we are subject to and must comply with various government regulations that impact our revenue, operating costs, profit margins and the internal organization and operation of our business. The most significant regulations and regulatory authorities affecting the portion of our business related to U.S. government contracts include the following:

- the Federal Acquisition Regulations, Defense Federal Acquisition Regulation Supplement and other supplemental agency regulations, which comprehensively regulate the formation and administration of, and performance under, U.S. government contracts;

- the Truth in Negotiations Act, which requires certification and disclosure of all factual cost and pricing data in connection with contract negotiations;
- the False Claims Act and the False Statements Act, which impose penalties for payments made on the basis of false facts provided to the government and on the basis of false statements made to the government, respectively; and
- the Foreign Corrupt Practices Act, which prohibits U.S. companies from providing anything of value to a foreign official to help obtain, retain or direct business, or obtain any unfair advantage.

Our failure to comply with applicable regulations, rules and approvals or misconduct by any of our employees could result in the imposition of fines and penalties, the loss of our government contracts or our suspension or debarment from contracting with the U.S. government generally, any of which could harm our business, financial condition, results of operations and cash flows. We are also subject to certain regulations of comparable government agencies in other countries, and our failure to comply with these non-U.S. regulations could also harm our business, financial condition, results of operations and cash flows.

Our business related to government contracts subjects us to additional risks.

We believe that the growth of our navigation business for the foreseeable future will depend to a certain degree on our ability to win government contracts and subcontracts, in particular from the Department of Defense. Many of our government customers are subject to budgetary constraints and our continued performance under these contracts or subcontracts, or award of additional contracts or subcontracts from these agencies, could be jeopardized by spending reductions, including constraints on government spending imposed by the Budget Control Act of 2011 and its subsequent amendments, or budget cutbacks at these agencies. The funding of U.S. government programs is uncertain and dependent on continued congressional appropriations and administrative allotment of funds based on an annual budgeting process. We cannot be certain that current levels of congressional funding for our products and services will continue and that our business related to these products will not decline or increase at currently anticipated levels, or that we will not be subject to delays in the negotiation of contracts or increased costs due to changes in the funding of U.S. government programs. A significant decline in government expenditures generally, or with respect to programs for which we provide products, could adversely affect our business and prospects.

In addition, our business could be adversely affected by a negative audit or investigation by the U.S. government. U.S. government agencies, primarily the Defense Contract Audit Agency and the Defense Contract Management Agency, routinely audit and investigate government contractors. These agencies review a contractor’s performance under its contracts, cost structure and compliance with applicable laws, regulations and standards. These agencies also may review the adequacy of, and a contractor’s compliance with, its internal control systems and policies, including the contractor’s purchasing, quality, accounting, property, estimating, compensation and management information systems. Any costs found to be improperly allocated to a specific cost reimbursement contract will not be reimbursed, while such costs already reimbursed must be refunded. If an audit or investigation of our business were to uncover improper or illegal activities, then we could be subject to civil and criminal penalties and administrative sanctions, including termination of contracts, suspension of payments, fines and suspension or debarment from doing business with the U.S. government. We could experience serious harm to our reputation if allegations of impropriety or illegal acts were made against us, even if the allegations were inaccurate. In addition, responding to governmental audits or investigations may involve significant expense and divert management attention. Moreover, if any of our administrative processes and business systems are found not to comply with the applicable requirements, we may be subjected to increased government scrutiny or required to obtain additional governmental approvals that could delay or otherwise adversely affect our ability to compete for or perform contracts. If any of the foregoing were to occur, our business, financial condition, operating results and cash flows may be adversely affected.

Our failure to obtain or maintain the right to use certain intellectual property may adversely affect our business, financial condition, results of operations, and cash flows.

Our industries are characterized by frequent litigation regarding patent and other intellectual property rights. From time to time we have received, and may receive in the future, notice of claims of infringement of other parties’ proprietary rights and licensing offers to commercialize third party patent rights. Numerous patents in our industry are held by others, including our competitors and certain academic institutions. Our competitors may seek to gain a

competitive advantage or other third parties may seek an economic return on their intellectual property portfolios by making infringement claims against us. We cannot be certain that:

- infringement claims (or claims for indemnification resulting from infringement claims) will not be asserted against us or that such claims will not be successful;
- future assertions will not result in an injunction against the sale of infringing products, which could require us to cease the manufacture, use or sale of the infringing products, processes or technology and expend significant resources to develop non-infringing technology, adversely affecting our business, results of operations, and cash flows;
- any patent owned or licensed by us will not be invalidated, circumvented, or challenged; or

- we will not be required to obtain licenses or pay substantial damages for past, present and future use of the infringing technology, the expense of which may adversely affect our results of operations, and cash flows.

In addition, effective copyright and trade secret protection may be unavailable or limited in certain foreign jurisdictions. Litigation, which could result in substantial cost and diversion of our resources, may be necessary to defend our rights or defend us against claimed infringement of the rights of others. In certain circumstances, our intellectual property rights associated with government contracts may be limited.

If we fail to protect, or incur significant costs in defending, our intellectual property and other proprietary rights, our business and results of operations could be materially harmed.

Our success depends to a significant degree on our ability to protect our intellectual property and other proprietary rights. We rely on a combination of patent, trademark, trade secret and unfair competition laws, as well as license agreements and other contractual provisions, to establish and protect our intellectual property and other proprietary rights. We have applied for patent registrations in the United States and selected international jurisdictions, most of which have been issued. We cannot guarantee that our pending applications will be approved by the applicable governmental authorities. Moreover, our existing and future patents and trademarks may not be sufficiently broad to protect our proprietary rights or may be held invalid or unenforceable in court. Failure to obtain patent registrations or a successful challenge to our registrations in the United States or other foreign countries may limit our ability to protect the intellectual property rights that these applications and registrations are intended to cover.

We also attempt to protect our intellectual property, including our trade secrets and know-how, through the use of trade secret and other intellectual property laws, and contractual provisions. We enter into confidentiality and invention assignment agreements with our employees and independent consultants. We also use non-disclosure agreements with other third parties who may have access to our proprietary technologies and information. Such measures, however, provide only limited protection, and we cannot be certain that our confidentiality and non-disclosure agreements will not be breached, especially after our employees or those of our third-party contract manufacturers end their employment or engagement, and that our trade secrets will not otherwise become known by competitors or that we will have adequate remedies in the event of unauthorized use or disclosure of proprietary information. Unauthorized third parties may try to copy or reverse engineer our products or portions of our products, otherwise obtain and use our intellectual property, or may independently develop similar or equivalent trade secrets or know-how. If we fail to protect our intellectual property and other proprietary rights, or if such intellectual property and proprietary rights are infringed or misappropriated, we could lose our competitive advantage and our business, results of operations, financial condition and cash flows could be materially harmed.

Policing unauthorized use of our technology is difficult, and we cannot be certain that the steps we have taken will prevent the misappropriation, unauthorized use, or other infringement of our intellectual property rights. Further, we may not be able to effectively protect our intellectual property rights from misappropriation or other infringement in foreign countries where we have not applied for patent protections, and where effective patent, trademark, trade secret, and other intellectual property laws may be unavailable, or may not protect our proprietary rights as fully as U.S. law.

In the future, we may need to take legal actions to prevent third parties from infringing upon or misappropriating our intellectual property or from otherwise gaining access to our technology. Protecting and enforcing our intellectual property rights and determining their validity and scope could result in significant litigation costs and require significant time and attention from our technical and management personnel, which could significantly harm our business. The availability of financial resources may limit our ability to commence or defend such litigation. In addition, we may not prevail in such proceedings. An adverse outcome of such proceedings may reduce our

competitive advantage or otherwise harm our business, financial condition, results of operations and cash flows.

We may be obligated to indemnify our customers and vendors for claims that our intellectual property infringes the rights of others, which may result in substantial expenses to us.

We may be required to indemnify our customers or vendors for intellectual property claims made against them for products incorporating our technology. As such, claims against our customers and vendors may require us to incur substantial expenses, such as legal expenses, damages for past infringement or royalties for future use. Future indemnity claims could adversely affect our business relationships and result in substantial costs to us.

We face certain litigation risks that could harm our business.

We are and may become subject to various legal proceedings and claims that arise in or outside the ordinary course of business. The results of complex legal proceedings are difficult to predict. Moreover, many of the complaints filed against us do not specify the amount of damages that plaintiffs seek, and we therefore are unable to estimate the possible range of damages that might be incurred should these lawsuits be resolved against us. However, certain of these lawsuits assert types of claims that, if resolved against us, could give rise to substantial damages. Thus, an unfavorable outcome or settlement of one or more of these lawsuits may have an adverse effect on our business, financial condition, results of operations and cash flows. Even if these lawsuits are not resolved against us, the uncertainty and expense associated with unresolved lawsuits could seriously harm our business, financial condition, and reputation. Litigation is costly, time-consuming and disruptive to normal business operations. The costs of defending these lawsuits, particularly the securities class actions and shareholder derivative actions, have been significant, will continue to be costly, and may not be covered by our insurance policies. The defense of these lawsuits could also result in continued diversion of our management's time and attention away from business operations, which could harm our business. For additional discussion regarding litigation in which we are involved, see Note 13 - Commitments and Contingencies in the notes to our consolidated financial statements.

The costs of compliance with state, federal and international legal and regulatory requirements, such as environmental, labor, trade and tax regulations, and customers' standards of corporate citizenship could cause an increase in our operating costs.

We are subject to environmental and health and safety laws and regulations and must obtain certain permits and licenses relating to the use of hazardous materials in our production activities. If our control systems are unsuccessful in preventing a release of these materials into the environment or other adverse environmental conditions or human exposure occurs, we could experience interruptions in our operations and incur substantial remediation and other costs or liabilities. In addition, certain foreign laws and regulations place restrictions on the concentration of certain hazardous materials, including, but not limited to, lead, mercury, and cadmium, in our products. Failure to comply with such laws and regulations could subject us to future liabilities or result in the limitation or suspension of the sale or production of our products. These regulations include the European Union's (EU) Restrictions on Hazardous Substances and Directive on Waste Electrical and Electronic Equipment. Failure to comply with environmental and health and safety laws and regulations may limit our ability to export products to the EU and could adversely affect our business, financial condition, results of operations, and cash flows. In addition, the Department of Homeland Security has commenced a program to evaluate the security of certain chemicals which may be of interest to terrorists, including chemicals utilized by us. This evaluation may lead to regulations or restrictions affecting our ability to utilize these chemicals or the costs of doing so.

In connection with our compliance with such environmental laws and regulations, as well as our compliance with industry environmental initiatives, the standards of business conduct required by some of our customers, and our commitment to sound corporate citizenship in all aspects of our business, we could incur substantial compliance and operating costs and be subject to disruptions to our operations. In addition, in the last few years, there has been increased media scrutiny and associated reports focusing on a potential link between working in semiconductor manufacturing clean room environments and certain illnesses, primarily different types of cancers. Regulatory agencies and industry associations have begun to study the issue to see if any actual correlation exists. Because we utilize clean rooms, we may become subject to liability claims. These reports may also affect our ability to recruit and retain employees. If we were found to be in violation of environmental and safety regulations laws or noncompliance with industry initiatives or standards of conduct, we could be subject to government fines or liabilities owed to our customers, which could have an adverse effect on our business, financial condition, results of operations, and cash flows.

In addition, climate change is a significant topic of discussion and potential regulatory activity and has generated and may continue to generate federal or other regulatory responses in the near future. If we or our component suppliers fail to timely comply with applicable legislation, our customers may refuse to purchase our products or we may face increased operating costs as a result of taxes, fines or penalties, which may have an adverse effect on our business, financial condition, results of operations and cash flows.

In connection with our compliance with such environmental laws and regulations, as well as our compliance with industry environmental initiatives, the standards of business conduct required by some of our customers, and our commitment to sound corporate citizenship in all aspects of our business, we could incur substantial compliance and operating costs and be subject to disruptions to our operations and logistics. In addition, if we were found to be in violation of these laws or noncompliant with these initiatives or standards of conduct, we could be subject to governmental fines, liability to our customers and damage to our reputation and corporate brand which could cause our business, financial condition, results of operations and cash flows to suffer.

We are subject to anti-corruption laws in the jurisdictions in which we operate, including the FCPA. Our failure to comply with these laws could result in penalties which could harm our reputation and have an adverse effect on our business, results of operations and financial condition.

We are subject to the FCPA, which generally prohibits companies and their intermediaries from making improper payments to foreign officials for the purpose of obtaining or keeping business and/or other benefits, along with various other anticorruption laws. Although we have implemented policies and procedures designed to ensure that we, our employees and other intermediaries comply with the FCPA and other anticorruption laws to which we are subject, we cannot be certain that such policies or procedures will work effectively all of the time or protect us against liability under the FCPA or other laws for actions taken by our employees and other intermediaries with respect to our business or any businesses that we may acquire.

We have manufacturing operations in China and other jurisdictions, many of which pose elevated risks of anti-corruption violations, and we export our products for sale internationally. This puts us in frequent contact with persons who may be considered “foreign officials” under the FCPA, resulting in an elevated risk of potential FCPA violations. If we are not in compliance with the FCPA and other laws governing the conduct of business with government entities (including local laws), we may be subject to criminal and civil penalties and other remedial measures, which could have an adverse impact on our business, financial condition, results of operations and cash flows. Any investigation of any potential violations of the FCPA or other anticorruption laws by U.S. or foreign authorities could harm our reputation and have an adverse impact on our business, financial condition, results of operations and cash flows.

Compliance with regulations related to conflict minerals and other regulations with respect to our supply chains could increase costs and affect the manufacturing and sale of our products.

Public companies are required to disclose the use of tin, tantalum, tungsten and gold (collectively, “conflict minerals”) mined from the Democratic Republic of the Congo and adjoining countries (the “covered countries”) if a conflict mineral(s) is necessary to the functionality of a product manufactured, or contracted to be manufactured, by the company. We may determine, as part of our compliance efforts, that certain products or components we obtain from our suppliers contain conflict minerals. If we are unable to conclude that all our products are free from conflict minerals originating from covered countries, this could have a negative impact on our business, reputation and/or results of operations. We may also encounter challenges to satisfy customers who require that our products be certified as conflict free, which could place us at a competitive disadvantage if we are unable to substantiate such a claim. Compliance with these rules could also affect the sourcing and availability of some of the minerals used in the manufacture of products or components we obtain from our suppliers, including our ability to obtain products or components in sufficient quantities and/or at competitive prices. Certain of our customers are requiring additional information from us regarding the origin of our raw materials, and complying with these customer requirements may cause us to incur additional costs, such as costs related to determining the origin of any minerals used in our products. Our supply chain is complex and we may be unable to verify the origins for all metals used in our products.

In addition, the U.S. federal government has issued new policies for federal procurement focused on eradicating the practice of forced labor and human trafficking, and the United Kingdom and the State of California have issued laws that require us to disclose our policy and practices for identifying and eliminating forced labor and human trafficking in our supply chain. Several customers as well as the Electronic Industry Citizenship Coalition (EICC) have also issued expectations to eliminate these practices that may impact us. While we have a policy and management systems to identify and avoid these practices in our supply chain, we cannot guarantee that our suppliers will always be in conformance to these laws and expectations. We may face enforcement liability and reputational challenges if we are unable to sufficiently meet these expectations. Moreover, we are likely to encounter challenges with customers if we cannot satisfy their forced and trafficked labor polices and they may choose a competitor's product.

A failure to attract and retain managerial, technical, and other key personnel could reduce our revenue and our operational effectiveness.

Our future success depends, in part, on our ability to attract and retain certain key personnel, including scientific, operational, financial, and managerial personnel. In addition, our technical personnel represent a significant asset and serve as the source of our technological and product innovations. The competition for attracting and retaining key employees (especially scientists, technical personnel, and senior managers and executives) is intense. Because of this competition for skilled employees, we may be unable to retain our existing personnel or attract additional qualified employees in the future to keep up with our business demands and changes, and our business, financial condition, results of operations, and cash flows could be adversely affected. The risks involved in recruiting and retaining these key personnel may be increased by our historical lack of profitability, the volatility of our stock price, and the perceived effect of previously implemented reductions in force and other cost reduction efforts.

Our business and results of operations may continue to be negatively impacted by general economic and financial market conditions and market conditions in the industries in which we operate, and such conditions may increase the other risks that affect our business.

In recent years, the world’s financial markets have experienced significant turmoil, resulting in reductions in available credit, increased costs of credit, extreme volatility in security prices, potential changes to existing credit terms, and rating downgrades of investments. These conditions materially and adversely affected the market conditions in the industries in which we operate and caused many of our customers to reduce their spending plans, leading them to draw down their existing inventory and reduce orders for our products, which, in turn, had an adverse impact on our revenues. We cannot predict the timing, strength or duration of any economic slowdown or subsequent economic recovery, worldwide or within our industry. It is possible that economic conditions could result in further setbacks, and that these customers, or others, could as a result significantly reduce their capital expenditures, draw down their inventories, reduce production levels of existing products, defer introduction of new products or place orders and accept delivery for products for which they do not pay us due to their economic difficulties or other reasons. If any of these events occur, our business, financial condition, results of operations and cash flows may be adversely affected.

Natural disasters or other catastrophic events could have an adverse effect on our business.

Natural disasters, such as hurricanes, earthquakes, fires, and floods, could adversely affect our operations and financial performance. Such events could result in physical damage to one or more of our facilities, the temporary closure of one or more of our facilities or those of our suppliers, a temporary lack of an adequate work force in a market, a temporary or long-term disruption in the supply of products from some local and overseas suppliers, a temporary disruption in the transport of goods from overseas, and delays in the delivery of goods. Public health issues, whether occurring in the United States or abroad, could disrupt our operations, disrupt the operations of suppliers or customers, or have an adverse impact on customer demand. As a result of any of these events, we may be required to suspend operations in some or all of our locations, which could have an adverse effect on our business, financial condition, results of operations, and cash flows. These events could also reduce demand for our products or make it difficult or impossible to receive products from suppliers. Although we maintain business interruption insurance and other insurance intended to cover some or all of these risks, such insurance may be inadequate, whether because of coverage amount, policy limitations, the financial viability of the insurance companies issuing such policies, or other reasons.

We are subject to risks associated with the availability and coverage of insurance.

For certain risks, we do not maintain insurance coverage because of cost or availability. Because we retain some portion of our insurable risks, and in some cases self-insure completely, unforeseen or catastrophic losses in excess of insured limits may have an adverse effect on our business, financial condition, results of operations and cash flows.

Our business and operations could be adversely impacted in the event of a failure or security breach of our information technology infrastructure.

We rely upon the capacity, reliability, and security of our information technology hardware and software infrastructure and our ability to expand and update this infrastructure in response to our changing needs. We are constantly updating our information technology infrastructure. Although we have a disaster recovery plan, any failure to manage, expand, and update our information technology infrastructure or any failure in the operation of this infrastructure could harm our business.

The secure maintenance of this information is critical to our business and reputation. Despite our implementation of security measures, our systems are vulnerable to damages from computer viruses, computer denial-of-service attacks, worms, and other malicious software programs or other attacks, covert introduction of malware to computers and networks, unauthorized access, including impersonation of unauthorized users, efforts to discover and exploit any security vulnerabilities or securities weaknesses, and other similar disruptions. Our business is also subject to break-ins, sabotage, and intentional acts of vandalism by third parties as well as intentional and unintentional acts by employees or other insiders with access privileges. Our customers' network and storage applications may be subject to similar disruptions. It is often difficult to anticipate or immediately detect such incidents and the damage caused by such incidents. Data breaches and any unauthorized access or disclosure of our information, employee information or intellectual property could compromise our intellectual property, trade secrets and other sensitive business information, any of which could result in legal action against us, exposure of our intellectual property to our competitors, damages, fines and other adverse effects. A data security breach could also lead to public exposure of personal information of our employees, customers and others. Any such theft, loss or misuse of personal data collected, used, stored or transferred by us to run our business could result in significantly increased security costs or costs related to defending legal claims. Cyber attacks, such as computer viruses or other forms of cyber terrorism, may disrupt access to our network or storage applications. Such disruptions could result in delays or cancellations of customer orders or delays or interruptions in the production or shipment of our products. Data security breaches involving our data center customers could affect their financial condition and ability to continue to purchase our products. In addition, cyber attacks may cause us to incur significant remediation costs, result in product development delays, disrupt key business operations and divert attention of management and key information technology resources. These incidents could also subject us to liability, expose us to significant expense and cause significant harm to our reputation and business.

In addition, our technology infrastructure and systems are vulnerable to damage or interruption from natural disasters, power loss and telecommunications failures. Further, our products contain sophisticated hardware and operating system software and applications that may contain security problems, security vulnerabilities, or defects in design or manufacture, including "bugs" and other problems that could interfere with the intended operation of our products. To the extent that any disruption or security breach results in a loss or damage to our technology infrastructure, systems or data or inappropriate disclosure of confidential information or sensitive or personal information, it could harm our relationships with customers and other third parties and damage our brand and reputation and our business. In addition, we may be required to incur significant costs to protect against damage caused by these disruptions or security breaches in the future.

We may be subject to theft, loss, or misuse of personal data about our employees, customers, or other third parties, which could increase our expenses, damage our reputation, or result in legal or regulatory proceedings.

The theft, loss, or misuse of personal data collected, used, stored, or transferred by us to run our business could result in significantly increased security costs or costs related to defending legal claims. Global privacy legislation, enforcement, and policy activity in this area are rapidly expanding and creating a complex compliance regulatory

environment. Costs to comply with and implement these privacy-related and data protection measures could be significant. In addition, our even inadvertent failure to comply with federal, state, or international privacy-related or data protection laws and regulations could result in proceedings against us by governmental entities or others or cause us to incur penalties or other significant legal liability or change our business practices.

The market price for our common stock has experienced significant price and volume volatility and is likely to continue to experience significant volatility in the future. This volatility may impair our ability to finance strategic transactions with our stock and otherwise harm our business.

Our stock price has experienced significant price and volume volatility for the past several years, and our stock price is likely to experience significant volatility in the future. The trading price of our common stock may be influenced by factors beyond our control, such as the volatility of the financial markets, uncertainty surrounding domestic and foreign economies, conditions and trends in the markets we serve, changes in the estimation of the future size and growth rate of our markets, publication of research reports and recommendations by financial analysts relating to our business, the business of our competitors or the industry in which we operate and compete, changes in market valuation or earnings of our competitors, legislation or regulatory policies, practices, or actions, sales of our common stock by our principal shareholders, and the trading volume of our common stock. The historical market prices of our common stock may not be indicative of future market prices and we may be unable to sustain or increase the value of our common stock. We have historically used equity incentive compensation as part of our overall compensation arrangements. The effectiveness of equity incentive compensation in retaining key employees may be adversely impacted by volatility in our stock price. Significant declines in our stock price may also interfere with our ability, if needed, to raise additional funds through equity financing or to finance strategic transactions with our stock. In addition, there may be increased risk of securities litigation following periods of fluctuations in our stock price. Securities class action lawsuits are often brought against companies after periods of volatility in the market price of their securities. These and other consequences of volatility in our stock price which could be exacerbated by macroeconomic conditions that affect the market generally, or our industry in particular could have the effect of diverting management's attention and could materially harm our business.

We may not pay additional dividends on our common stock and, consequently, your only opportunity to achieve a return on your investment may be an increase in the price of our common stock.

Although we paid a special dividend in 2016, we cannot guarantee that that we will pay additional dividends in the future. In addition, the terms of our loan and security agreement with our financial institution restrict our ability to pay dividends. Consequently, your only opportunity to achieve a return on any shares of our common stock may be for you to sell your shares at a profit. There is no guarantee that the market price of our common stock will increase or ever exceed the price that you paid for the shares.

We may undergo an "ownership change" within the meaning of Section 382 of the Code, which could affect our ability to offset U.S. federal income tax against our net operating losses and certain of our tax credit carryovers.

Section 382 of the Internal Revenue Code, as amended (the “Code”) contains rules that limit the ability of a company that undergoes an ownership change to utilize its net operating losses and tax credits (the “Tax Benefits”) existing as of the date of such ownership change. Under the rules, such an ownership change is generally any change in ownership of more than 50% of a company's stock within a rolling three-year period. The rules generally operate by focusing on changes in ownership among shareholders considered by the rules as owning, directly or indirectly, 5% or more of the stock of a company and any change in ownership arising from new issuances of stock by the company.

If we were to undergo one or more "ownership changes" within the meaning of Section 382 of the Code, our net operating losses and certain of our tax credits existing as of the date of each ownership change may be unavailable, in whole or in part, to offset U.S. federal income tax resulting from our operations or any gains from the disposition of any of our assets and/or business, which could result in increased U.S. federal income tax liability.

Certain provisions of New Jersey law and our governing documents may make a takeover of our Company difficult even if such takeover could be beneficial to some of our shareholders.

Certain provisions of our organizational documents and New Jersey law could discourage potential acquisition proposals, delay or prevent a change in control of the Company or limit the price that investors may be willing to pay in the future for shares of our common stock. For example, our amended and restated certificate of incorporation and amended and restated bylaws:

- classify our Board of Directors into three classes, with staggered three-year terms and, until recent respective amendments to our certificate of incorporation and bylaws that became effective in March 2018 to declassify our Board of Directors are fully phased in beginning with our 2021 annual meeting of

shareholders, the current three-year terms of our directors will remain in effect until the current terms expire;

- provide that directors are not subject to removal except for cause by the vote of the holders of a majority of our capital stock;
- provide that a supermajority vote of our shareholders is required to amend some portions of our amended and restated certificate of incorporation and amended and restated bylaws, including requiring approval by the holders of 80% of our voting stock for certain business combinations unless these transactions meet certain fair price criteria and procedural requirements or are approved by two-thirds of our continuing directors;
- authorize the issuance of preferred stock that can be created and issued by our Board of Directors without prior shareholder approval, commonly referred to as “blank check” preferred stock, with rights senior to those of our common stock;
- limit the persons who can call special shareholder meetings;
- establish advance notice requirements to nominate persons for election to our Board of Directors or to propose matters that can be acted on by shareholders at shareholder meetings;
- do not provide for cumulative voting in the election of directors; and
- provide for the filling of vacancies on our Board of Directors by action of 66 2/3% of the directors and not by the shareholders.

These and other provisions in our organizational documents could allow our Board of Directors to affect the rights of our shareholders in a number of ways, including making it difficult for shareholders to replace members of the Board of Directors. Because our Board of Directors is responsible for approving the appointment of members of our management team, these provisions could in turn affect any attempt to replace the current management team. These provisions could also limit the price that investors would be willing to pay in the future for shares of our common stock. We may in the future adopt other measures that may have the effect of delaying or discouraging an unsolicited takeover, even if the takeover were at a premium price or favored by a majority of unaffiliated shareholders. Certain of these measures may be adopted without any further vote or action by our shareholders and this could depress the price of our common stock.

We may not be able to obtain capital when desired on favorable terms, if at all, or without dilution to our shareholders.

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

- invest in our research and development efforts, including by hiring additional technical and other personnel;
- maintain and expand our operating or manufacturing infrastructure;
- acquire complementary businesses, products, services or technologies; or

- otherwise pursue our strategic plans and respond to competitive pressures.

If we raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our shareholders could be significantly diluted, and these newly-issued securities may have rights, preferences or privileges senior to those of existing shareholders. We cannot be certain that additional financing will be available on terms favorable to us, or at all. If adequate funds are not available or are not available on acceptable terms, if and when needed, our ability to fund our operations, take advantage of unanticipated opportunities, develop or enhance our products, or otherwise respond to competitive pressures could be significantly limited. Furthermore, in the event adequate capital is not available to us as required, or is not available on favorable terms, our business, financial condition, results of operations, and cash flows may be adversely affected.

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The risks above are not the only risks we face. If any of the events described in our risk factors actually occur, or if additional risks and uncertainties not presently known to us or that we currently deem immaterial, materialize, then our business, financial condition, results of operations, and cash flows could be materially affected.

ITEM 1B. Unresolved Staff Comments

Not Applicable.

ITEM 2. Properties

The following chart contains certain information regarding each of our principal facilities.

Location	Function	Approximate Square Footage	Term (in calendar year)
Alhambra, California	Corporate Headquarters Manufacturing and research and development facilities	75,000	Leases covering two of six buildings expired in 2011; another lease covering four of six buildings expires in 2020 (1) and (2)
Langfang, China	Warehouse facility	1,100	Lease expires in 2019
Beijing, China	Manufacturing facility	23,200	Lease expires in 2021 (1)
Ivyland, Pennsylvania	Former manufacturing and research and development facility (3)	9,000	Lease expires in 2019 (3)

Footnotes

(1) Leases have the option to be renewed by us at fixed terms.

(2) Certain facility leases in Alhambra, California which have expired are being maintained on a month-to-month basis.

(3) The Ivyland, Pennsylvania facility was closed during the fiscal year ended September 30, 2018 and is no longer occupied.

ITEM 3. Legal Proceedings

See the disclosures under the caption "Legal Proceedings" in Note 13- Commitments and Contingencies in the notes to our consolidated financial statements for disclosures related to our legal proceedings, which disclosures are incorporated herein by reference.

ITEM 4. Mine Safety Disclosures

Not Applicable.

Table of Contents

PART II. Other Information

ITEM 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our common stock is traded on the Nasdaq Global Market and is quoted under the symbol "EMKR". As of November 29, 2018, we had approximately 92 shareholders of record. Many of our shares of common stock are held by brokers and other institutions on behalf of shareholders, and we are unable to estimate the number of these shareholders.

Price Range of Common Stock

The price ranges presented below represent the highest and lowest sales prices for our common stock on the Nasdaq Global Market during each quarter over the two most recent fiscal years.

High and Low Sales Price Ranges of EMCORE Corporation's Common Stock	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Fiscal 2018	$5.80 - $8.75	$4.90 - $7.25	$4.40 - $5.85	$4.40 - $5.50
Fiscal 2017	$5.15 - $9.50	$8.05 - $10.50	$8.10 - $11.95	$8.20 - $12.20

Dividend Policy

No dividends have been declared during the two most recent fiscal years. Under the terms of our credit facility with Wells Fargo Bank, N. A., we are restricted from paying dividends that result in the liquidity of the Company being less than $25.0 million after paying the dividend if any amounts are outstanding under our credit facility. The payment of dividends, if any, in the future is at the discretion of the Board of Directors.

Table of Contents

ITEM 6. Selected Financial Data

In the tables below, we have provided you with consolidated financial data. We derived the statement of operations data for the fiscal years ended September 30, 2018, 2017, and 2016 and the balance sheet data as of September 30, 2018 and 2017 from our audited consolidated financial statements included in Financial Statements and Supplementary Data under Item 8 within this Annual Report, after giving effect to the discontinued operations of the Photovoltaics and Digital Products Businesses.

We derived the statement of operations data for the years ended September 30, 2015 and 2014 and the selected balance sheet data as of September 30, 2016, 2015, and 2014 from audited consolidated financial statements that are not included in this Annual Report after giving effect to the discontinued operations of the Photovoltaics and Digital Products Businesses. You should read this financial data together with our Management's Discussion and Analysis of Financial Condition and Results of Operations under Item 7 and Financial Statements and Supplementary Data under Item 8 within this Annual Report. Our historic results are not necessarily indicative of the results that may be expected in the future.

Selected Financial Data

Statements of Operations Data (in thousands, except loss per share)	For the Fiscal Years Ended September 30,				
	2018	2017	2016	2015	2014
Revenue	$85,617	$122,895	$91,998	$81,685	$55,514
Gross profit	18,487	42,534	30,954	28,691	12,114
Operating (loss) income	(18,311)	7,741	2,939	(4,522)	(20,331)
(Loss) income from continuing operations	(17,453)	8,221	2,619	(2,272)	4,082
Income from discontinued operations	—	14	5,647	65,372	770
Net (loss) income	(17,453)	8,235	8,266	63,100	4,852
Net (loss) income per basic share					
Continuing operations	$(0.64)	$0.31	$0.10	$(0.08)	$0.13
Discontinued operations	—	0.00	0.22	2.18	0.03
Net (loss) income per basic share	$(0.64)	$0.31	$0.32	$2.10	$0.16
Net (loss) income per diluted share					
Continuing operations	$(0.64)	$0.30	$0.10	$(0.08)	$0.13
Discontinued operations	—	0.00	0.21	2.18	0.03
Net (loss) income per diluted share	$(0.64)	$0.30	$0.31	$2.10	$0.16

Balance Sheet Data (in thousands)	As of September 30,				
	2018	2017	2016	2015	2014
Cash, cash equivalents and restricted cash	$63,195	$68,754	$64,870	$112,260	$22,169
Working capital	88,848	103,042	92,957	127,994	30,914
Total assets	135,898	144,084	127,211	160,907	191,342
Long-term liabilities	1,891	1,667	1,635	1,774	6,018
Shareholders' equity	106,805	120,774	107,317	135,442	112,347

Working capital, calculated as current assets minus current liabilities, is a financial metric we use that represents available operating liquidity.

Significant Transactions

Significant transactions that affect the comparability of our operating results and financial condition include:

Fiscal 2018

Continuing Operations:

- We recorded a $1.0 million reserve on non-current inventory in the fiscal year ended September 30, 2018 due to the decline in sales and future demand of the inventory.
- As a result of the revision in the estimated amount and timing of cash flows for Asset Retirement Obligations (“ARO” or “AROs”) during the fiscal year ended September 30, 2018, the Company increased the ARO liability by $0.1 million and recorded a loss from change in estimate on ARO liability.

Fiscal 2017

Continuing Operations:

- We recorded a charge to impairments of approximately $0.5 million in the fiscal year ended September 30, 2017 in connection with the transition of our manufacturing operations in China to a new manufacturing facility. See Note 9 - Property, Plant, and Equipment, net for additional information.
- During the fiscal year ended September 30, 2017, the Company recorded charges of $2.0 million related to various reductions in workforce primarily related to the outsourcing of our wafer fabrication lab and operations assembly and the opening of our new manufacturing facility in China. See Note 10 - Accrued Expenses and Other Current Liabilities for additional information.

Fiscal 2016

Continuing Operations:

- On July 5, 2016, the Company declared a special cash dividend of $1.50 per share of the Company's common stock, for a total of $39.2 million. The dividend was paid on July 29, 2016 to shareholders of record as of the close of business on July 18, 2016. See Note 14 - Equity for additional information.
- On September 23, 2014, Sumitomo Electric Industries, Ltd. ("SEI") filed for arbitration against EMCORE, in accordance with the terms of the Master Purchase Agreement between the parties. SEI was seeking $47.5 million from EMCORE, relating to numerous claims. On April 12, 2016, the International Court of Arbitration tribunal rejected SEI's claims. The panel ruled that EMCORE owed SEI none of the amounts SEI sought in the arbitration and that the Company was entitled to collect the $1.9 million held in escrow, which was received in June 2016 and was included in cash at September 30, 2016. The Company was also entitled to recover $2.6 million in legal fees and costs from SEI, which was received in June 2016 and has been recorded by EMCORE within operating income. See Note 13 - Commitments and Contingencies for additional information.
- In September 2016, the Company paid $2.9 million previously accrued related to a termination fee for terminating a prior joint venture agreement. See Note 13 - Commitments and Contingencies for additional information.
- During fiscal year 2016, the Company paid $6.1 million for the purchase of long-term inventory as a result of the vendor announcing it would cease manufacturing a part.

Discontinued Operations:

- As a result of the SEI arbitration tribunal ruling above, during the fiscal year ended September 30, 2016, we recognized a gain associated with the release of $3.4 million of previously deferred gain associated with the sale of assets and reversal of other liabilities of $0.4 million, resulting in a credit of $3.8 million to recognition of previously deferred gain on sale of assets within discontinued operations of the Digital Products Business. See Note 5 - Discontinued Operations and Note 13 - Commitments and Contingencies for additional information.

Fiscal 2015

Continuing Operations:

- Common Stock Repurchase: In April 2015, EMCORE's Board of Directors authorized the Company to repurchase $45.0 million of shares of its common stock. On May 15, 2015, we announced the commencement of a modified "Dutch auction" tender offer to purchase for cash shares of our common stock (the "Tender Offer"). On June 15, 2015, we completed the Tender Offer and purchased 6.9 million shares of our common stock at a purchase price of $6.55 per share, for an aggregate cost of $45.0 million excluding fees and expenses. Repurchased common stock was recorded to treasury stock. The Company incurred costs of $0.7 million in connection with the Tender Offer, which were recorded to treasury stock.
- AROs: As a result of the revision in the estimated amount and timing of cash flows for AROs during the fiscal year ended September 30, 2015, the Company reduced ARO liability by $2.9 million with an offsetting reduction to property, plant, and equipment, net of $2.1 million, and recorded a gain from change in estimate on ARO of $0.8 million. The Company first reduced the net leasehold improvement asset to the extent of the carrying amount of the related asset initially recorded when the ARO was established. The amount of the remaining reduction to the ARO liability was recorded as a reduction to operating expenses. See Note 13 - Commitments and Contingencies in the notes to the consolidated financial statements for additional information.

Discontinued Operations:

- Photovoltaic and Digital Products Asset Sales: On December 10, 2014, we sold our Photovoltaics Business to SolAero Technologies Corporation (“SolAero”) purchased substantially all of the assets, and assumed substantially all of the liabilities, related to or used in connection with the Company’s photovoltaics business, including EMCORE’s subsidiaries EMCORE Solar Power, Inc. and EMCORE IRB Company, LLC (collectively, the “Photovoltaics Business”), for $149.9 million in cash, after giving effect to a $0.1 million working capital adjustment finalized and paid during the fiscal year ended September 30, 2015. On January 2, 2015, NeoPhotonics Corporation acquired certain assets, and assumed certain liabilities, of the Company’s telecommunications business (the “Digital Products Business”), for $17.0 million in cash and a notes receivable that was paid in April 2015. These asset sales are reported as discontinued operations, which require retrospective restatement of prior periods to classify the results of operations for the businesses sold as discontinued operations. No assets or liabilities that were sold from either the Photovoltaic Business or Digital Products Business remain on the consolidated balance sheet as of September 30, 2018, 2017, 2016 and 2015. See Note 5 - Discontinued Operations in the notes to the consolidated financial statements for additional information.

Fiscal 2014

Continuing Operations:

- We recorded a net deferred tax valuation allowance release of $24.1 million as an income tax benefit during fiscal year 2014. All of the $24.1 million in deferred tax assets were used in fiscal year 2015 when income tax expense was recorded as a result of the sale of the Photovoltaics Business, thus no cash was received for the deferred tax assets.

ITEM 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion of our financial condition and results of operations in conjunction with the financial statements and the notes thereto included in Financial Statements under Item 8 within this Annual Report. The following discussion contains forward-looking statements that reflect our plans, estimates, and beliefs. Our actual results could differ materially from those discussed in the forward-looking statements. See Cautionary Statement Regarding Forward-Looking Statements.

Business Overview

EMCORE Corporation (referred to herein, together with its subsidiaries, as the “Company,” “we,” “our,” or “EMCORE”), was established in 1984 as a New Jersey corporation. The Company became publicly traded in 1997 and is listed on the Nasdaq Stock Exchange under the ticker symbol EMKR. EMCORE pioneered the linear fiber optic transmission technology that enabled the world’s first delivery of Cable TV directly on fiber, and today is a leading provider of advanced Mixed-Signal Optics products that enable communications systems and service providers to meet growing demand for increased bandwidth and connectivity. The Mixed-Signal Optics technology at the heart of our broadband communications products is shared with our fiber optic gyros and inertial sensors to provide the aerospace and defense markets with state-of-the-art navigations systems technology. With both analog and digital circuits on multiple chips, or even a single chip, the value of Mixed-Signal device solutions is often far greater than traditional digital applications and requires a specialized expertise held by EMCORE which is unique in the optics industry.

Critical Accounting Policies

The preparation of consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities, as of the date of the financial statements, and the reported amounts of revenue and expenses during the reported period. The accounting estimates that require our most significant, difficult, and/or subjective judgments include:

- the valuation of inventory;
- the allowance for doubtful accounts; and,
- the valuation allowance for deferred tax assets.

We develop estimates based on historical experience and on various assumptions about the future that are believed to be reasonable based on the best information available to us. Our reported financial position or results of operations may be materially different under changed conditions or when using different estimates and assumptions, particularly with respect to significant accounting policies. In the event that estimates or assumptions prove to differ from actual results, adjustments are made in subsequent periods to reflect more current information. A listing and description of our critical accounting policies includes the following:

Accounts Receivable

We regularly evaluate the collectability of our accounts receivable and maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to meet their financial obligations to us. The allowance is based on the age of receivables and a specific identification of receivables considered at risk of collection. We classify charges associated with the allowance for doubtful accounts as sales, general, and administrative expense. If the financial condition of our customers were to deteriorate, impacting their ability to pay us, additional allowances may be required. See Note 7 - Accounts Receivable in the notes to the consolidated financial statements for additional information related to our receivables.

45

Inventory

Inventory is stated at the lower of cost or net realizable value (first-in, first-out). Inventory that is expected to be used within the next 12 months is classified as current inventory. We write-down inventory once it has been determined that conditions exist that may not allow the inventory to be sold for its intended purpose or the inventory is determined to be excess or obsolete based on assumptions about future demand and market conditions. The charge related to inventory write-downs is recorded as a cost of revenue. We evaluate inventory levels at least quarterly against sales forecasts on a significant part-by-part basis, in addition to determining its overall inventory risk. We have incurred, and may in the future incur, charges to write-down our inventory. See Note 8 - Inventory in the notes to the consolidated financial statements for additional information related to our inventory.

Income Taxes

In accordance with the authoritative guidance on accounting for income taxes, we recognize income taxes using an asset and liability approach. This approach requires the recognition of taxes payable or refundable for the current year and deferred tax liabilities and assets for the future tax consequences of events that have been recognized in our consolidated financial statements or tax returns. The measurement of current and deferred taxes is based on provisions of the enacted tax law and the effects of future changes in tax laws or rates are not anticipated.

The authoritative guidance provides for recognition of deferred tax assets if the realization of such deferred tax assets is more likely than not to occur based on an evaluation of all available evidence, both positive and negative, and the relative weight of the evidence. With the exception of the gains resulting from the completed sale of the photovoltaics business in December 2014, we have determined that at this time it is more likely than not that deferred tax assets attributable to all other items will not be realized, primarily due to uncertainties related to our ability to utilize our net operating loss carryforwards before they expire. Accordingly, we have established a valuation allowance for such deferred tax assets which we do not expect to realize. If there is a change in our ability to realize our deferred tax assets for which a valuation allowance has been established, then our tax valuation allowance may decrease in the period in which we determine that realization is more likely than not. Likewise, if we determine that it is not more likely than not that deferred tax assets will be realized, then a valuation allowance may be established for such deferred tax assets and our tax provision may increase in the period in which we make the determination. See Note 12 - Income and other Taxes in the notes to the consolidated financial statements for additional information related to our income taxes.

Revenue Recognition

Revenue is recognized upon shipment, provided persuasive evidence of a contract exists, the price is fixed, the product meets our customer's specifications, title and ownership have transferred to the customer, and there is reasonable assurance of collection of the sales proceeds. The majority of our products have shipping terms that are free on board or free carrier alongside (“FCA”) shipping point, which means that we fulfill our delivery obligation when the goods are handed over to the freight carrier at our shipping dock. This means the customer typically bears all costs and risks of loss or damage to the goods from that point. We account for shipping and related transportation costs by recording the charges that are invoiced to customers as revenue, with the corresponding cost recorded as cost of revenue. In those instances where inventory is maintained at a consigned location, revenue is recognized only when our customer pulls product for use and after title and ownership has transferred to the customer. Any warranty cost and remaining obligations that are inconsequential or perfunctory are accrued when the corresponding revenue is recognized.

Distributors. We use a number of distributors around the world and recognize revenue upon shipment of product to these distributors. Title and risk of loss pass to the distributors upon shipment, and our distributors are contractually obligated to pay us on standard commercial terms, just like our other direct customers. We do not sell to our distributors on consignment and, except in the event of product discontinuance, do not give distributors a right of return.

Table of Contents

Contract Manufacturers. Prior to certain customers accepting product that is manufactured at one of our contract manufacturers, these customers require that they first qualify the product and manufacturing processes at our contract manufacturer. The customers' qualification process determines whether the product manufactured at our contract manufacturer achieves their quality, performance, and reliability standards. After a customer completes the initial qualification process, we receive approval to ship qualified product to that customer. As part of the manufacturing process at our contract manufacturers, the finished product is tested prior to shipment to the customer using the same criteria that our customer uses to test product it receives. Revenue is recognized upon shipment of customer-qualified product, provided persuasive evidence of a contract exists, the price is fixed, the product meets our customer's specifications, title and ownership have transferred to the customer, and there is reasonable assurance of collection of the sales proceeds.

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The above listing is not intended to be a comprehensive list of all of our accounting policies. In many cases, U.S. GAAP specifically dictates the accounting treatment of a particular transaction. There are also areas in which management's judgment in selecting any available alternative would not produce a materially different result. For a complete discussion of our accounting policies, recently adopted accounting pronouncements, and other required U.S. GAAP disclosures, we refer you to the accompanying notes to our consolidated financial statements in this Annual Report.

Results of Operations

The following table sets forth our consolidated statements of operations data expressed as a percentage of revenue:

	For the fiscal year ended September 30,		
	2018	2017	2016
Revenue	100.0 %	100.0 %	100.0 %
Cost of revenue	78.4	65.4	66.4
Gross profit	21.6	34.6	33.6
Operating expense (income):			
Selling, general, and administrative	24.8	18.1	22.5
Research and development	18.0	10.2	10.8
Impairments	—	0.4	
Recovery of previously incurred litigation related fees and expenses from arbitration award	—	—	(2.8)
Loss (gain) from change in estimate on ARO	0.2	—	—
Loss (gain) on sale of assets	0.1	(0.4)	(0.1)
Total operating expense	43.1	28.3	30.4
Operating (loss) income	(21.5)	6.3	3.2
Other income (expense):			
Interest income, net	0.9	0.2	0.1
Foreign exchange (loss) gain	(0.5)	0.1	(0.4)
Other income	0.1	0.2	—
Total other income (expense)	0.5	0.5	(0.3)
(Loss) income from continuing operations before income tax benefit (expense)	(21.0)	6.8	2.9
Income tax benefit (expense)	0.5	(0.1)	(0.0)
(Loss) income from continuing operations	(20.5)	6.7	2.9

Loss from discontinued operations, net of tax	—	0.0	6.1
Net (loss) income	(20.4)%	6.7 %	9.0 %

47

Comparison of Financial Results for the Fiscal Years Ended September 30, 2018 and 2017

(in thousands, except percentages)	For the Fiscal Years Ended September 30,			
	2018	2017	$ Change	% Change
Revenue	$85,617	$122,895	$(37,278)	(30.3)%
Cost of revenue	67,130	80,361	(13,231)	(16.5)%
Gross profit	18,487	42,534	(24,047)	(56.5)%
Operating expense (income):				
Selling, general, and administrative	21,232	22,246	(1,014)	(4.6)%
Research and development	15,387	12,542	2,845	22.7%
Impairments	—	506	(506)	(100.0)%
Loss (gain) from change in estimate on ARO	145	(45)	190	422.2%
Loss (gain) on sale of assets	34	(456)	490	107.5%
Total operating expense	36,798	34,793	2,005	5.8%
Operating (loss) income	(18,311)	7,741	(26,052)	(336.5)%
Other income (expense):				
Interest income, net	733	245	488	199.2%
Foreign exchange (loss) gain	(434)	82	(516)	(629.3)%
Other income	110	316	(206)	(65.2)%
Total other income	409	643	(234)	(36.4)%
(Loss) income from continuing operations before income tax benefit (expense)	(17,902)	8,384	(26,286)	(313.5)%
Income tax benefit (expense)	449	(163)	612	375.5%
(Loss) income from continuing operations	(17,453)	8,221	(25,674)	(312.3)%
Income from discontinued operations, net of tax	—	14	(14)	(100.0)%
Net (loss) income	$(17,453)	$8,235	$(25,688)	(311.9)%

Revenue

For the fiscal year ended September 30, 2018, revenue decreased 30.3% compared to the prior year driven by lower sales volume of our CATV components and RFoG products primarily to U.S. customers partially offset by increases in revenue from our Chip Devices and Navigation Systems product lines. The decrease in CATV components is primarily the result of a significant customer experiencing a large inventory accumulation due to the consolidation of contract manufacturers' inventory in the U.S..

Gross Profit

Our cost of revenue consists of raw materials, compensation expense including non-cash stock-based compensation expense, depreciation expense and other manufacturing overhead costs, expenses associated with excess and obsolete inventories, and product warranty costs. Historically, our cost of revenue as a percentage of revenue, which we refer to as our gross margin, has fluctuated significantly due to product mix, manufacturing yields and sales volumes, and inventory and specific product warranty charges.

Consolidated gross margins were 21.6% and 34.6% for the fiscal years ended September 30, 2018 and 2017, respectively.

Stock-based compensation expense within cost of revenue totaled approximately $0.5 million during each of the fiscal years ended September 30, 2018 and 2017.

For the fiscal year ended September 30, 2018, gross profit decreased by 56.5% when compared to the prior year. The decrease in gross profit for the fiscal year ended September 30, 2018 was primarily due to lower sales and production volumes, resulting in lower operating leverage due to higher fixed manufacturing labor and expenses, and higher wafer fabrication expenses. The decrease in gross margin for the fiscal year ended September 30, 2018 was primarily due to lower revenue and cost of revenue comprising a higher percentage of revenue. During the fiscal year ended September 30, 2018, we recorded a $1.0 million reserve on non-current inventory due to the decline in sales and future demand of the inventory.

Selling, General and Administrative (“SG&A”)

SG&A consists primarily of compensation expense including non-cash stock-based compensation expense related to executive, finance, and human resources personnel, as well as sales and marketing expenses, professional fees, legal and patent-related costs, and other corporate-related expenses.

Stock-based compensation expense within SG&A totaled approximately $2.6 million during each of the fiscal years ended September 30, 2018 and 2017.

SG&A expense for the fiscal year ended September 30, 2018 was lower than the amount reported in the prior year primarily due to lower compensation costs and severance expenses partially offset by an increase in expense for professional services, an increase in the allowance for bad debts and the costs incurred in connection with the closing of our Pennsylvania facility.

As a percentage of revenue, SG&A expenses were 24.8% and 18.1% for fiscal years ended September 30, 2018 and 2017, respectively. The increase in SG&A expense as a percentage of revenue in the fiscal year ended September 30, 2018 compared to the prior year is due to the decrease in revenues in the fiscal year ended September 30, 2018.

Research and Development (“R&D”)

R&D consists primarily of compensation expense including non-cash stock-based compensation expense, as well as engineering and prototype costs, depreciation expense, and other overhead expenses, as they related to the design, development, and testing of our products. Our R&D costs are expensed as incurred. We believe that in order to remain competitive, we must invest significant financial resources in developing new product features and enhancements and in maintaining customer satisfaction worldwide.

Stock-based compensation expense within R&D totaled approximately $0.6 million and $0.5 million during the fiscal years ended September 30, 2018 and 2017, respectively.

R&D expense for the fiscal year ended September 30, 2018 was higher than the amounts reported in the same period in 2017 primarily due to an increase in compensation costs and project spending, primarily in navigation systems.

As a percentage of revenue, R&D expenses were 18.0% and 10.2% for the fiscal years ended September 30, 2018 and 2017, respectively. The increase in R&D expense as a percentage of revenue in the fiscal year ended September 30, 2018 compared to the prior year is due to the decrease in revenues and higher R&D expense in the fiscal year ended September 30, 2018.

Impairments

In March 2017, in connection with our opening of a new manufacturing facility in China, we identified equipment with a net book value of approximately $0.6 million that would no longer be utilized after the planned move later in fiscal year 2017. After taking into consideration the costs of disposal and estimated net funds from the sale of the equipment of approximately $0.1 million, we recorded a charge to impairments of approximately $0.5 million in the fiscal year ended September 30, 2017. See Note 9 - Property, Plant and Equipment, net in the notes to the consolidated financial statements for additional information.

Loss (Gain) from Change in Estimate on ARO

As a result of the revision in the estimated amount and timing of cash flows for ARO during the fiscal year ended September 30, 2018, the Company increased the ARO liability by $0.1 million and recorded a loss from change in estimate on ARO liability of $0.1 million. As a result of the revision in the estimated amount and timing of cash flows for ARO during the fiscal year ended September 30, 2017, the Company reduced the ARO liability by $45,000 and recorded a gain from change in estimate on ARO liability of $45,000. See Note 13 - Commitments and Contingencies in the notes to the consolidated financial statements for additional information.

Operating (Loss) Income

Operating (loss) income represents revenue less the cost of revenue and direct operating expenses incurred. Operating (loss) income is a measure of profit and loss that executive management uses to assess performance and make decisions. As a percentage of revenue, our operating (loss) income was (21.5)% and 6.3% for the fiscal years ended September 30, 2018 and 2017, respectively. The decrease in operating income as a percentage of revenue in the fiscal year ended September 30, 2018 compared to the prior year is primarily due to the decline in gross profit in the fiscal year ended September 30, 2018.

Other Income (Expense)

Interest Income, net
During the fiscal years ended September 30, 2018 and 2017, we recorded $0.7 million and $0.4 million, respectively, of interest income earned on cash and cash equivalents balances, which was partially offset by interest expense and letter of credit fees related to our Credit Facility (as defined below). Interest income for the fiscal year ended September 30, 2018 was higher than the amount reported in the prior year due to higher interest income earned on cash and cash equivalents balances.

Foreign Exchange
Gains or losses from foreign currency transactions denominated in currencies other than the U.S. dollar, both realized and unrealized, are recorded as foreign exchange gain (loss) on our consolidated statements of operations and comprehensive income. The gain (losses) recorded relate to the change in value of the Yuan Renminbi relative to the U.S. dollar.

Table of Contents

Income Tax Benefit (Expense)

For the fiscal year ended September 30, 2018, the Company recorded income tax benefit from continuing operations of approximately $0.4 million, and $0 of income tax benefit within income from discontinued operations. The income tax benefit is primarily comprised of the effect of recent changes in tax laws in December 2017 that eliminates the Alternative Minimum Tax ("AMT") and will result in a refund to the Company of amounts paid in prior fiscal years and the fiscal year 2018 operating loss. See Note 12 - Income and other Taxes in the notes to the consolidated financial statements for additional disclosures. For the fiscal year ended September 30, 2017, the Company recorded income tax expense from continuing operations of approximately $0.2 million and $0 of income tax expense within income from discontinued operations.

Comparison of Financial Results for the Fiscal Years Ended September 30, 2017 and 2016

(in thousands, except percentages)	For the Fiscal Years Ended September 30,			
	2017	2016	$ Change	% Change
Revenue	$122,895	$91,998	$30,897	33.6%
Cost of revenue	80,361	61,044	19,317	31.6%
Gross profit	42,534	30,954	11,580	37.4%
Operating expense (income):				
Selling, general, and administrative	22,246	20,734	1,512	7.3%
Research and development	12,542	9,921	2,621	26.4%
Impairments	506	—	506	N/A
Recovery of previously incurred litigation related fees and expenses from arbitration award	—	(2,599)	2,599	100.0%
Gain from change in estimate on ARO	(45)	—	(45)	N/A
Gain on sale of assets	(456)	(41)	(415)	(1,012.2)%
Total operating expense	34,793	28,015	6,778	24.2%
Operating income	7,741	2,939	4,802	163.4%
Other income (expense):				
Interest income, net	245	88	157	178.4%
Foreign exchange gain (loss)	82	(394)	476	120.8%
Other income	316	—	316	N/A
Total other income (expense)	643	(306)	949	310.1%
Income from continuing operations before income tax expense	8,384	2,633	5,751	218.4%
Income tax expense	(163)	(14)	(149)	(1,064.3)%
Income from continuing operations	8,221	2,619	5,602	213.9%
Income from discontinued operations, net of tax	14	5,647	(5,633)	(99.8)%
Net income	$8,235	$8,266	$(31)	(0.4)%

Revenue

For the fiscal year ended September 30, 2017, revenue increased 33.6% compared to the prior year driven by significantly higher sales of our CATV products primarily to U.S. customers.

Table of Contents

Gross Profit

Our cost of revenue consists of raw materials, compensation expense including non-cash stock-based compensation expense, depreciation expense and other manufacturing overhead costs, expenses associated with excess and obsolete inventories, and product warranty costs. Historically, our cost of revenue as a percentage of revenue, which we refer to as our gross margin, has fluctuated significantly due to product mix, manufacturing yields and sales volumes, and inventory and specific product warranty charges.

Consolidated gross margins were 34.6% and 33.6% for fiscal years ended September 30, 2017 and 2016, respectively.

Stock-based compensation expense within cost of revenue totaled approximately $0.5 million and $0.3 million during the fiscal years ended September 30, 2017 and 2016, respectively.

For the fiscal year ended September 30, 2017, gross margins increased by 37.4% when compared to the prior year. The increase in gross profit and margins for the fiscal year ended September 30, 2017 was primarily due to product mix and higher sales volume.

Selling, General and Administrative (“SG&A”)

SG&A consists primarily of compensation expense including non-cash stock-based compensation expense related to executive, finance, and human resources personnel, as well as sales and marketing expenses, professional fees, legal and patent-related costs, and other corporate-related expenses.

Stock-based compensation expense within SG&A totaled approximately $2.6 million and $1.4 million during the fiscal years ended September 30, 2017 and 2016, respectively. The increase in stock-based compensation within SG&A during the fiscal year ended September 30, 2017 when compared to the prior year is primarily due to expense associated with Performance Stock Units granted during the fiscal year ended September 30, 2017.

SG&A expense for the fiscal year ended September 30, 2017 was higher than the amount reported in the prior year primarily due to higher compensation costs, severance, including $1.0 million related to a workforce reduction we initiated in connection with the transition of our manufacturing operations in China to a new manufacturing facility in China during the fiscal year ended September 30, 2017, and stock-based compensation partially offset by lower legal and professional expenses.

As a percentage of revenue, SG&A expenses were 18.1% and 22.5% for the fiscal years ended September 30, 2017 and 2016, respectively. The decrease in SG&A expense as a percentage of revenue in the fiscal year ended September 30, 2017 compared to the prior year is due to the increase in revenues in the fiscal year ended September 30, 2017.

Research and Development (“R&D”)

R&D consists primarily of compensation expense including non-cash stock-based compensation expense, as well as engineering and prototype costs, depreciation expense, and other overhead expenses, as they related to the design, development, and testing of our products. Our R&D costs are expensed as incurred. We believe that in order to remain competitive, we must invest significant financial resources in developing new product features and enhancements and in maintaining customer satisfaction worldwide.

Stock-based compensation expense within R&D totaled approximately $0.5 million and $0.4 million during the fiscal years ended September 30, 2017 and 2016, respectively.

R&D expense for the fiscal year ended September 30, 2017 was higher than the amounts reported in the prior year primarily due to higher compensation costs and increased project spending primarily related to navigation products and Linear Externally Modulated Lasers.

As a percentage of revenue, R&D expenses were 10.2% and 10.8% for the fiscal years ended September 30, 2017 and 2016, respectively. The decrease in R&D expense as a percentage of revenue in the fiscal year ended September 30, 2017 compared to the prior year is due to the increase in revenues in the fiscal year ended September 30, 2017.

Impairments

In March 2017, in connection with the transition of our manufacturing operations in China to a new manufacturing facility in China, we identified equipment with a net book value of approximately $0.6 million that would no longer be utilized after the planned move later in fiscal year 2017. After taking into consideration the costs of disposal and estimated net funds from the sale of the equipment of approximately $0.1 million, we recorded a charge to impairments of approximately $0.5 million in the fiscal year ended September 30, 2017. See Note 9 - Property, Plant and Equipment, net in the notes to the consolidated financial statements for additional information.

Recovery of previously incurred litigation related fees and expenses from arbitration award

Recovery of previously incurred litigation related fees and expenses from arbitration award consists of the fees and costs recovered by the Company from Sumitomo Electric Industries Ltd. (“SEI”) as a result of a decision by the International Court of Arbitration tribunal in April 2016 related to an arbitration proceeding previously commenced by SEI. As a percentage of revenue, the recovery of previously incurred litigation related fees and expenses from arbitration award was 2.8% for the fiscal year ended September 30, 2016.

Operating Income

Operating income represents revenue less the cost of revenue and direct operating expenses incurred. Operating income is a measure of profit and loss that executive management uses to assess performance and make decisions. As a percentage of revenue, our operating income was 6.3% and 3.2% for the fiscal years ended September 30, 2017 and 2016, respectively. The increase in operating income as a percentage of revenue in the fiscal year ended September 30, 2017 compared to the prior year is due to the increase in operating income in the fiscal year ended September 30, 2017.

Other Income (Expense)

Interest Income, net
During the fiscal years ended September 30, 2017 and 2016, we recorded $0.4 million and $0.2 million, respectively, of interest income earned on cash and cash equivalents balances, which was partially offset by interest expense and letter of credit fees related to our Credit Facility (as defined below) . Interest income for the fiscal year ended September 30, 2017 was higher than the amount reported in the prior year due to higher interest income earned on cash and cash equivalents balances.

Foreign Exchange
Gains or losses from foreign currency transactions denominated in currencies other than the U.S. dollar, both realized and unrealized, are recorded as foreign exchange gain (loss) on our consolidated statements of operations and comprehensive income. The gain (losses) recorded relate to the change in value of the Yuan Renminbi relative to the U.S. dollar.

Income Tax Expense

For the fiscal year ended September 30, 2017, the Company recorded income tax expense from continuing operations of approximately $0.2 million, and $0 of income tax expense within income from discontinued operations.

For the fiscal year ended September 30, 2016, the Company recorded income tax expense from continuing operations of approximately $14,000 and $24,000 of income tax benefit within income from discontinued operations.

Income from Discontinued Operations, Net of Tax

(in thousands, except percentages)	For the fiscal years ended September 30,			
	2017	2016	$ Change	% Change
Revenue	$—	$—	$—	N/A
Cost of revenue	12	(659)	671	101.8%
Gross (loss) profit	(12)	659	(671)	(101.8)%
Operating expense (income)	15	(1,160)	(1,175)	(101.3)%
Recognition of previously deferred gain on sale of assets	—	3,804	(3,804)	(100.0)%
Other income	41	—	41	N/A
Income from discontinued operations before income tax expense	14	5,623	(5,609)	(99.8)%
Income tax expense	—	24	(24)	(100.0)%
Income from discontinued operations, net of tax	$14	$5,647	$(5,633)	(99.8)%

During the fiscal year ended September 30, 2016, we recorded income from discontinued operations from the Photovoltaics Business and Digital Products Business of $1.0 million and $4.6 million, respectively.

Included in cost of revenue for the fiscal year ended September 30, 2016 is $0.4 million due to a reduction in expected product warranty liabilities from a settlement agreement associated with the Digital Products Business and a gain of $0.3 million on the lease termination associated with the Digital Products Business.

During the fiscal year ended September 30, 2016, we recognized a gain associated with the release of the $3.4 million deferred gain and reversal of other liabilities of $0.4 million that had been recorded as of September 30, 2015, resulting in a credit of $3.8 million to recognition of previously deferred gain on sale of assets within discontinued operations of the Digital Products Business as the result of the favorable ruling from the SEI arbitration. See Note 13 - Commitments and Contingencies in the notes to the consolidated financial statements for additional information.

Order Backlog

EMCORE's product sales are made pursuant to purchase orders, often with short lead times. These orders are subject to revision or cancellation and often are made without deposits. Products typically ship within the same quarter in which a purchase order is received; therefore, our order backlog at any particular date is not necessarily indicative of actual revenue or the level of orders for any succeeding period and may not be comparable to prior periods.

Liquidity and Capital Resources

Other than the fiscal years ended September 30, 2018 and 2017, in recent years we have historically consumed cash from operations and, in most periods, we have incurred operating losses from continuing operations. We have managed our liquidity position through the sale of assets and cost reduction initiatives, as well as, from time to time in prior periods, borrowings from our Credit Facility (defined below) and capital markets transactions.

As of September 30, 2018, cash and cash equivalents totaled $63.1 million and net working capital totaled approximately $88.8 million. Net working capital, calculated as current assets minus current liabilities, is a financial metric we use which represents available operating liquidity. With respect to measures related to liquidity:

54

Credit Facility: On November 11, 2010, we entered into a Credit and Security Agreement ("Credit Facility") with Wells Fargo Bank, N.A. ("Wells Fargo"). The Credit Facility, as amended by its seventh amendment on November 10, 2015, currently provides us with a revolving credit of up to $15.0 million. On November 7, 2018 we entered into a Tenth Amendment of the Credit Facility which extended the maturity date of the facility to November 2021 that can be used for working capital requirements, letters of credit, and other general corporate purposes subject to a limitation of the Company having liquidity of at least $25,000,000 million after such use. The Credit Facility is secured by the Company's assets and is subject to a borrowing base formula based on the Company's eligible accounts receivable, inventory, and machinery and equipment accounts. See Note 11 - Credit Facilities in the notes to the consolidated financial statements for additional disclosures. As of November 29, 2018, there was no outstanding balance under this Credit Facility, $0.5 million reserved for one outstanding stand-by letter of credit and $11.1 million available for borrowing.

We believe that our existing balances of cash and cash equivalents, cash flows from operations and amounts expected to be available under our Credit Facility will provide us with sufficient financial resources to meet our cash requirements for operations, working capital, and capital expenditures for at least the next twelve months. At the discretion of our Board of Directors and subject to restrictions in our Credit Facility, we may use our existing balances of cash and cash equivalents to provide liquidity to our shareholders through one or more additional special dividends or the repurchase of additional shares of our outstanding common stock, make investments in our other businesses, pursue other strategic opportunities or a combination thereof. For example, under our Credit Facility, we are restricted from paying dividends that result in the liquidity of the Company being less than $25.0 million after paying the dividend if any amounts are outstanding under our Credit Facility. In addition, should we require more capital than what is generated by our operations, for example to fund significant discretionary activities, such as business acquisitions, we could elect to raise capital in the U.S. through debt or equity issuances. These alternatives could result in higher effective tax rates, increased interest expense, and/or dilution of our earnings. We have borrowed funds in the past and continue to believe we have the ability to do so at reasonable interest rates.

Cash Flow

The Consolidated Statements of Cash Flows for the fiscal years ended September 30, 2018, 2017 and 2016 reflects cash flows from both the continuing and discontinued operations of the Company.

Net Cash Provided By (Used In) Operating Activities

Operating Activities (in thousands, except percentages)	For the fiscal years ended September 30,			Fiscal 2018 vs Fiscal 2017		Fiscal 2017 vs Fiscal 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
Net cash provided by (used in) operating activities	$1,470	$11,701	$(5,552)	$(10,231)	(87.4)%	$17,253	310.8%

Fiscal 2018:
For the fiscal year ended September 30, 2018, our operating activities provided cash of $1.5 million primarily due to changes in our operating assets and liabilities (or working capital components, which includes non-current inventory) of $8.2 million, depreciation and amortization expense of $5.6 million, stock-based compensation expense of $3.6 million, provision for doubtful accounts of $0.6 million, warranty provision of $0.4 million and loss on disposal of equipment of $34,000 partially offset by our net loss of $17.5 million. The change in our operating assets and liabilities was primarily the result of a decrease in accounts receivable of $2.4 million and inventory of $5.1 million and an increase in accounts payable of $0.5 million and other liabilities of $4.2 million, partially offset by an increase in other assets of $3.9 million.

Fiscal 2017:
For the fiscal year ended September 30, 2017, our operating activities provided cash of $11.7 million primarily due to our net income of $8.2 million, depreciation, amortization and accretion expense of $3.8 million, stock-based compensation expense of $3.6 million, impairment charge of $0.5 million and warranty provision of $0.6 million, partially offset by a change in our operating assets and liabilities (or working capital components, which includes non-current inventory) of $4.5 million. The change in our operating assets and liabilities was primarily the result of an increase in accounts receivable of $3.9 million, inventory of $0.1 million and other assets of $4.5 million partially offset by an increase in accounts payable of approximately $2.1 million and accrued expenses and other liabilities of $1.9 million.

Fiscal 2016:
For the fiscal year ended September 30, 2016, our operating activities used cash of $5.6 million primarily due to decreases in our operating assets and liabilities (or working capital components, which includes non-current inventory) of $13.5 million, the recognition of the previously deferred gain on sale of assets from discontinued operations of $3.8 million, the gain on transfer of solar power assets and obligations of $0.7 million, the gain on reduction of product warranty of discontinued operations of $0.4 million and the payment and gain on settlement of the Newark restructuring lease of $0.3 million partially offset by depreciation, amortization and accretion expense of $2.5 million, stock-based compensation expense of $2.1 million, warranty provision of $0.4 million, and our net income of $8.3 million. The change in our operating assets and liabilities was primarily the result of an increase in accounts receivable of $1.2 million and inventory of $10.9 million, and a decrease in accrued expenses and other liabilities of $4.8 million, partially offset by a decrease in other assets of $0.1 million and an increase in accounts payable of approximately $3.2 million.

Working Capital Components:

Accounts Receivable: We generally expect the level of accounts receivable at any given quarter to reflect the level of sales in that quarter. Our accounts receivable balances have fluctuated historically due to the timing of account collections, timing of product shipments, and/or change in customer credit terms.

Inventory: We generally expect the level of inventory at any given quarter to reflect the change in our expectations of forecasted sales. Our inventory balances have fluctuated historically due to the timing of customer orders and product shipments, changes in our internal forecasts related to customer demand, as well as adjustments related to excess and obsolete inventory and the purchase of non-current inventory.

Accounts Payable: The fluctuation of our accounts payable balances is primarily driven by changes in inventory purchases as well as changes related to the timing of actual payments to vendors.

Accrued Expenses: Our largest accrued expense typically relates to compensation. Historically, fluctuations of our accrued expense accounts have primarily related to changes in the timing of actual compensation payments, receipt or application of advanced payments, adjustments to our warranty accrual, and accruals related to professional fees.

Net Cash Used In Investing Activities

Investing Activities (in thousands, except percentages)	For the fiscal year ended September 30,			Fiscal 2018 vs Fiscal 2017		Fiscal 2017 vs Fiscal 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
Net cash used in investing activities	$(6,501)	$(9,126)	$(3,826)	$2,625	28.8%	$(5,300)	(138.5)%

Fiscal 2018:
For the fiscal year ended September 30, 2018, our investing activities used $6.5 million of cash for capital related expenditures of $6.6 million primarily related to investment in our wafer fabrication facility.

Fiscal 2017:
For the fiscal year ended September 30, 2017, our investing activities used $9.1 million of cash primarily for capital related expenditures of $9.6 million, partially offset by the receipt of proceeds from the disposal of equipment of $0.5 million.

Fiscal 2016:
For the fiscal year ended September 30, 2016, our investing activities used $3.8 million of cash primarily from capital related expenditures of $5.8 million, partially offset by the receipt of escrow funds from sale of assets of $1.9 million.

Table of Contents

Net Cash (Used In) Provided By Financing Activities

Financing Activities (in thousands, except percentages)	For the fiscal year ended September 30,			Fiscal 2018 vs Fiscal 2017		Fiscal 2017 vs Fiscal 2016	
	2018	2017	2016	$ Change	% Change	$ Change	% Change
Net cash (used in) provided by financing activities	$(487)	$1,306	$(38,254)	$(1,793)	(137.3)%	$39,560	103.4%

Fiscal 2018:
For the fiscal year ended September 30, 2018, our financing activities used cash of $0.5 million primarily for tax withholding paid on behalf of employees for stock-based awards of $1.3 million partially offset by proceeds from stock plan transactions of $0.8 million.

Fiscal 2017:
For the fiscal year ended September 30, 2017, our financing activities provided cash of $1.3 million from proceeds from stock transactions.

Fiscal 2016:
For the fiscal year ended September 30, 2016, our financing activities used cash of $38.3 million due to the payment of a special dividend of $39.2 million, partially offset by proceeds from stock plan transactions of $1.0 million.

Contractual Obligations and Commitments

Our contractual obligations and commitments for fiscal 2019 and over the next five fiscal years are summarized in the table below:
(in thousands)

	Total	2019	2020 to 2021	2022 to 2023	2024 and later
Purchase obligations	$21,669	$21,223	$227	$160	$59
Asset retirement obligations	2,192	40	—	59	2,093
Operating lease obligations	3,488	803	1,425	1,260	—
Total contractual obligations and commitments	$27,349	$22,066	$1,652	$1,479	$2,152

Interest payments are not included in the contractual obligations and commitments table above since they are insignificant to our consolidated results of operations.

The contractual obligations and commitments table above also excludes unrecognized tax benefits because we are unable to reasonably estimate the period during which this obligation may be incurred, if at all. As of September 30, 2018, we had unrecognized tax benefits of $0.4 million.

Purchase Obligations
Our purchase obligations represent agreements to purchase goods or services that are enforceable and legally binding, that specify all significant terms, including: fixed or minimum quantities to be purchased; fixed, minimum or variable price provisions; and the approximate timing of the transactions.

Asset Retirement Obligations

We have known conditional ARO conditions, such as certain asset decommissioning and restoration of rented facilities to be performed in the future. Our ARO includes assumptions related to renewal option periods where we expect to extend facility lease terms. Revisions in estimated liabilities can result from revisions of estimated inflation rates, escalating retirement costs, and changes in the estimated timing of settling the ARO. See Note 13 - Commitments and Contingencies in the notes to the consolidated financial statements for additional information related to our AROs.

Operating Leases

Operating leases include non-cancelable terms and exclude renewal option periods, property taxes, insurance and maintenance expenses on leased properties. See Note 13 - Commitments and Contingencies in the notes to the consolidated financial statements for additional information related to our operating lease obligations.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements other than our operating leases described above that have or are reasonably likely to have a current or future material effect on our consolidated financial condition, results of operations, liquidity, capital expenditures or capital resources.

Recent Accounting Pronouncements

See Note 3 - Recent Accounting Pronouncements in the notes to the consolidated financial statements for disclosures related to recent accounting pronouncements.

Restructuring Accruals

See Note 10 - Accrued Expenses and Other Current Liabilities in the notes to the consolidated financial statements for disclosures related to our severance and restructuring-related accrual accounts.

ITEM 7A. Quantitative and Qualitative Disclosures about Market Risks

We are exposed to financial market risks, including changes in currency exchange rates and interest rates. We do not use derivative financial instruments for speculative purposes.

Foreign Currency Exchange Risks

The United States dollar is the reporting currency for our consolidated financial statements. The functional currency for our China subsidiary is the Yuan Renminbi.

We recognize translation adjustments due to the effect of changes in the value of the Yuan Renminbi relative to the U.S. dollar associated with our operations in China. The assets and liabilities of our foreign operations are translated from their respective functional currencies into U.S. dollars at the rates in effect at the consolidated balance sheet dates, and the revenue and expense amounts are translated at the average rate during the applicable periods reflected on the consolidated statements of operations and comprehensive income. Foreign currency translation adjustments are recorded as accumulated other comprehensive income.

Gains and losses from foreign currency transactions denominated in currencies other than the U.S. dollar, both realized and unrealized, are recorded as foreign exchange gain (loss) on our consolidated statements of operations and comprehensive income.

During the normal course of business, we are exposed to market risks associated with fluctuations in foreign currency exchange rates due to the Yuan Renminbi. To reduce the impact of these risks on our earnings and to increase the predictability of cash flows, we use natural offsets in receipts and disbursements within the applicable currency as the primary means of reducing the risk.

Some of our foreign suppliers may adjust their prices (in US dollars) from time to time to reflect currency exchange fluctuations, and such price changes could impact our future financial condition or results of operations. We do not currently hedge our foreign currency exposure.

Interest Rate Risks

We monitor our interest rate risk on cash balances primarily through cash flow forecasting. Cash that is surplus to immediate requirements is invested in short-term deposits with banks accessible with short notice and invested in money market accounts. We believe our current interest rate risk is immaterial.

Inflation Risks

Inflationary factors, such as increases in material costs and operating expenses, may adversely affect our results of operations and cash flows. Although we do not believe that inflation has had a material impact on our financial position or results of operations to date, an increase in the rate of inflation in the future may have an adverse effect on the levels of gross profit and operating expenses as a percentage of revenue if the sales prices for our products do not proportionately increase with these increases in expenses.

Credit Market Conditions

The U.S. and global capital markets have periodically experienced turbulent conditions, particularly in the credit markets, as evidenced by tightening of lending standards, reduced availability of credit, and reductions in certain asset values. This could impact our ability to obtain additional funding through financing or asset sales.

Table of Contents

ITEM 8. Financial Statements and Supplementary Data

EMCORE CORPORATION
Consolidated Statements of Operations and Comprehensive (Loss) Income
For the Fiscal Years Ended September 30, 2018, 2017 and 2016
(in thousands, except per share data)

	For the Fiscal Years ended September 30,		
	2018	2017	2016
Revenue	$85,617	$122,895	$91,998
Cost of revenue	67,130	80,361	61,044
Gross profit	18,487	42,534	30,954
Operating expense (income):			
Selling, general, and administrative	21,232	22,246	20,734
Research and development	15,387	12,542	9,921
Impairments	—	506	—
Recovery of previously incurred litigation related fees and expenses from arbitration award	—	—	(2,599)
Loss (gain) from change in estimate on ARO obligation	145	(45)	—
Loss (gain) on sale of assets	34	(456)	(41)
Total operating expense	36,798	34,793	28,015
Operating (loss) income	(18,311)	7,741	2,939
Other income (expense):			
Interest income, net	733	245	88
Foreign exchange (loss) gain	(434)	82	(394)
Other income	110	316	—
Total other income (expense)	409	643	(306)
(Loss) income from continuing operations before income tax benefit (expense)	(17,902)	8,384	2,633
Income tax benefit (expense)	449	(163)	(14)
(Loss) income from continuing operations	(17,453)	8,221	2,619
Income from discontinued operations, net of tax	—	14	5,647
Net (loss) income	$(17,453)	$8,235	$8,266
Foreign exchange translation adjustment	324	(18)	(268)
Comprehensive (loss) income	$(17,129)	$8,217	$7,998
Per share data:			
Net (loss) income per basic share:			
Continuing operations	$(0.64)	$0.31	$0.10
Discontinued operations	—	0.00	0.22
Net (loss) income per basic share	$(0.64)	$0.31	$0.32
Net (loss) income per diluted share:			
Continuing operations	$(0.64)	$0.30	$0.10
Discontinued operations	—	0.00	0.21
Net (loss) income per diluted share	$(0.64)	$0.30	$0.31
Weighted-average number of basic shares outstanding	27,266	26,659	25,979
Weighted-average number of diluted shares outstanding	27,266	27,544	26,518

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

Table of Contents

EMCORE CORPORATION
Consolidated Balance Sheets
As of September 30, 2018 and 2017
(in thousands)

	As of September 30, 2018	As of September 30, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$ 63,117	$ 68,333
Restricted cash	78	421
Accounts receivable, net of allowance of $548 and $22, respectively	19,275	22,265
Inventory	20,850	25,139
Prepaid expenses and other current assets	12,730	8,527
Total current assets	116,050	124,685
Property, plant, and equipment, net	18,216	16,635
Non-current inventory	1,433	2,686
Other non-current assets	199	78
Total assets	$ 135,898	$ 144,084
LIABILITIES and SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 12,997	$ 11,818
Accrued expenses and other current liabilities	14,205	9,825
Total current liabilities	27,202	21,643
Asset retirement obligations	1,809	1,638
Other long-term liabilities	82	29
Total liabilities	29,093	23,310
Commitments and contingencies (Note 11)		
Shareholders' equity:		
Common stock, no par value, 50,000 shares authorized; 34,487 shares issued and 27,577 shares outstanding as of September 30, 2018; 33,938 shares issued and 27,028 shares outstanding as of September 30, 2017	734,066	730,906
Treasury stock at cost; 6,910 shares	(47,721)	(47,721)
Accumulated other comprehensive income	885	561
Accumulated deficit	(580,425)	(562,972)
Total shareholders' equity	106,805	120,774
Total liabilities and shareholders' equity	$ 135,898	$ 144,084

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

Table of Contents

EMCORE CORPORATION
Consolidated Statements of Shareholders' Equity
For the Fiscal Years Ended September 30, 2018, 2017 and 2016
(in thousands)

	Shares of Common Stock	Value of Common Stock	Treasury Stock	Accumulated Other Comprehensive Income	Accumulated Deficit	Total Shareholders' Equity
Balance as of September 30, 2015	25,676	$762,003	$(47,721)	$ 847	(579,687)	$ 135,442
Net income	—	—	—	—	8,266	8,266
Translation adjustment	—	—	—	(268)	—	(268)
Stock-based compensation	284	1,868	—	—	—	1,868
Stock option exercises	45	225	—	—	—	225
Special dividend paid	—	(39,214)	—	—	—	(39,214)
Issuance of common stock - ESPP	193	735	—	—	—	735
Issuance of common stock - Board of Directors	46	263	—	—	—	263
Cumulative adjustment for adoption of accounting standard	—	(214)	—	—	214	—
Balance as of September 30, 2016	26,244	725,666	(47,721)	579	(571,207)	107,317
Net income	—	—	—	—	8,235	8,235
Translation adjustment	—	—	—	(18)	—	(18)
Stock-based compensation	432	3,602	—	—	—	3,602
Stock option exercises	158	534	—	—	—	534
Issuance of common stock - ESPP	133	773	—	—	—	773
Issuance of common stock - Board of Directors	61	331	—	—	—	331
Balance as of September 30, 2017	27,028	730,906	(47,721)	561	(562,972)	120,774
Net loss	—	—	—	—	(17,453)	(17,453)
Translation adjustment	—	—	—	324	—	324
Stock-based compensation	372	3,648	—	—	—	3,648
Stock option exercises	6	28	—	—	—	28
Tax withholding paid on behalf of employees for stock-based awards	—	(1,257)	—	—	—	(1,257)
Issuance of common stock - ESPP	171	741	—	—	—	741
Balance as of September 30, 2018	27,577	$734,066	$(47,721)	$ 885	$(580,425)	$ 106,805

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

62

Table of Contents
EMCORE CORPORATION
Consolidated Statements of Cash Flows
For the Fiscal Years Ended September 30, 2018, 2017 and 2016
(in thousands)

	For the fiscal year ended September 30,		
	2018	2017	2016
Cash flows from operating activities:			
Net (loss) income	$(17,453)	$8,235	$8,266
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization expense	5,617	3,757	2,506
Stock-based compensation expense	3,648	3,602	2,086
Provision adjustments related to doubtful accounts	599	23	23
Provision adjustments related to product warranty	431	573	376
Impairments of equipment	—	506	—
Recognition of previously deferred gain on sale of assets from discontinued operations	—	—	(3,804)
Net loss (gain) on disposal of equipment	34	(456)	(41)
Other	412	(50)	(1,422)
Total non-cash adjustments	10,741	7,955	(276)
Changes in operating assets and liabilities:			
Accounts receivable	2,372	(3,859)	(1,171)
Inventory	5,067	(140)	(10,904)
Other assets	(3,925)	(4,455)	148
Accounts payable	477	2,095	3,179
Accrued expenses and other current liabilities	4,191	1,870	(4,794)
Total change in operating assets and liabilities	8,182	(4,489)	(13,542)
Net cash provided by (used in) operating activities	1,470	11,701	(5,552)
Cash flows from investing activities:			
Purchase of equipment	(6,583)	(9,600)	(5,779)
Receipt of escrow funds from sale of assets	—	—	1,853
Proceeds from disposal of property, plant and equipment	82	474	100
Net cash used in investing activities	(6,501)	(9,126)	(3,826)
Cash flows from financing activities:			
Payment of special dividend	—	—	(39,214)
Proceeds from stock plans	770	1,306	960
Tax withholding paid on behalf of employees for stock-based awards	(1,257)	—	—
Net cash (used in) provided by financing activities	(487)	1,306	(38,254)
Effect of exchange rate changes on foreign currency	(41)	3	242
Net (decrease) increase in cash, cash equivalents and restricted cash	(5,559)	3,884	(47,390)
Cash, cash equivalents and restricted cash at beginning of period	68,754	64,870	112,260
Cash, cash equivalents and restricted cash at end of period	$63,195	$68,754	$64,870
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION			
Cash paid during the period for interest	$63	$71	$88
Cash paid during the period for income taxes	$131	$114	$124

NON-CASH INVESTING AND FINANCING ACTIVITIES			
Changes in accounts payable related to purchases of equipment	$755	$(861)	$282
Issuance of common stock to Board of Directors	$—	$331	$263

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

EMCORE Corporation
Notes to our Consolidated Financial Statements

NOTE 1. Description of Business

Business Overview

EMCORE Corporation (referred to herein, together with its subsidiaries, as the “Company,” “we,” “our,” or “EMCORE”) was established in 1984 as a New Jersey corporation. The Company became publicly traded in 1997 and is listed on the Nasdaq stock exchange under the ticker symbol EMKR. EMCORE pioneered the linear fiber optic transmission technology that enabled the world’s first delivery of Cable TV directly on fiber, and today is a leading provider of advanced Mixed-Signal Optics products that enable communications systems and service providers to meet growing demand for increased bandwidth and connectivity. The Mixed-Signal Optics technology at the heart of our broadband communications products is shared with our fiber optic gyros and inertial sensors to provide the aerospace and defense markets with state-of-the-art navigation systems technology. With both analog and digital circuits on multiple chips, or even a single chip, the value of Mixed-Signal device solutions is often far greater than traditional digital applications and requires a specialized expertise held by EMCORE which is unique in the optics industry.

We currently have one reporting segment: Fiber Optics. This segment is comprised of three product lines: Broadband (which includes Cable TV (“CATV”) systems and components, radio frequency over glass (“RFoG”) products, satellite/microwave communications products and wireless communication products), Chip Devices and Navigation Systems.

Sale of Photovoltaics and Digital Products Businesses

In the fiscal year ended September 30, 2015, EMCORE completed the sale of the Company's Photovoltaics Business to SolAero Technologies Corporation (“SolAero”) pursuant to the Asset Purchase Agreement (the “Photovoltaics Agreement”) under which SolAero acquired substantially all of the assets, and assumed substantially all of the liabilities, primarily related to or used in connection with the Company's Photovoltaics Business, including EMCORE's subsidiaries EMCORE Solar Power, Inc. and EMCORE IRB Company, LLC (collectively, the “Photovoltaics Business” and, the sale of the Photovoltaics Business, the “Photovoltaics Asset Sale”), for $149.9 million in cash.

In the fiscal year ended September 30, 2015, EMCORE completed the sale of the Company's telecommunications business (the “Digital Products Business”) to NeoPhotonics Corporation, a Delaware corporation (“NeoPhotonics”), pursuant to the Asset Purchase Agreement (the “Digital Products Agreement”), under which NeoPhotonics acquired certain assets, and certain liabilities, related to the Company's Digital Products Business for an aggregate purchase price of $17.5 million. On January 2, 2015, EMCORE completed the sale of the Digital Products Business for $1.5 million in cash and a promissory note in the principal amount of $16.0 million (the "Promissory Note"). On April 16, 2015, EMCORE and NeoPhotonics entered into an agreement to adjust the purchase price for the Digital Products Business, resulting in an adjusted balance of the Promissory Note of $15.5 million. On April 17, 2015, NeoPhotonics paid in full the outstanding balance of the Promissory Note of $15.5 million, plus accrued interest of $0.2 million.

No Photovoltaics Business or Digital Products Business assets or liabilities that were sold remain on the consolidated balance sheet as of September 30, 2018 or September 30, 2017. The financial results of the Photovoltaics Business and the Digital Products Business are presented as “discontinued operations” on the consolidated statements of operations and comprehensive income for the fiscal years ended September 30, 2018, 2017 and 2016. See Note 5 - Discontinued Operations for additional information. The notes to our consolidated financial statements relate to our continuing operations only, unless otherwise indicated.

NOTE 2. Summary of Significant Accounting Policies

Principles of Consolidation: Our consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP) and include the assets, liabilities, shareholders' equity, and operating results of the Company and its wholly owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation. We are not the primary beneficiary of, nor do we hold a significant variable interest in, any variable interest entity.

Use of Estimates: The preparation of consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities, as of the date of the financial statements, and the reported amounts of revenue and expenses during the reported period. The accounting estimates that require our most significant, difficult, and/or subjective judgments include:

- the valuation of inventory;
- the allowance for doubtful accounts; and,
- the valuation allowance for deferred tax assets.

We develop estimates based on historical experience and on various assumptions about the future that are believed to be reasonable based on the best information available to us. Our reported financial position or results of operations may be materially different under changed conditions or when using different estimates and assumptions, particularly with respect to significant accounting policies. In the event that estimates or assumptions prove to differ from actual results, adjustments are made in subsequent periods to reflect more current information.

Concentration of Credit Risk: Financial instruments that may subject us to concentrations of credit risk consist primarily of cash and cash equivalents and accounts receivable. Our cash and cash equivalents are held in safekeeping primarily with Wells Fargo. When necessary, we perform credit evaluations on our customers' financial condition and occasionally we request deposits in advance of shipping product to our customers. These financial evaluations require significant judgment and are based on a variety of factors including, but not limited to, current economic trends, historical payment patterns, bad debt write-off experience, and financial review of the particular customer.

Cash and Cash Equivalents: Cash and cash equivalents consists primarily of bank deposits and highly liquid short-term investments with a maturity of three months or less at the time of purchase.

Restricted Cash: Restricted cash represents recently deposited cash that is temporarily restricted by our bank in accordance with the terms of the outstanding credit facility.

Accounts Receivable: We regularly evaluate the collectability of our accounts receivable and maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to meet their financial obligations to us. The allowance is based on the age of receivables and a specific identification of receivables considered at risk of collection. We classify charges associated with the allowance for doubtful accounts as selling, general, and administrative expense.

Inventory: Inventory is stated at the lower of cost or net realizable value (first-in, first-out). Inventory that is expected to be used within the next 12 months is classified as current inventory. We write-down inventory once it has been determined that conditions exist that may not allow the inventory to be sold for its intended purpose or the inventory is determined to be excess or obsolete based on assumptions about future demand and market conditions. The charge related to inventory write-downs is recorded as a cost of revenue. We evaluate inventory levels at least quarterly against sales forecasts on a significant part-by-part basis, in addition to determining its overall inventory risk. We have incurred, and may in the future incur charges to write-down our inventory. See Note 8 - Inventory in the notes to the consolidated financial statements for additional information related to our inventory.

Property, Plant, and Equipment: Our property, plant, and equipment are recorded at cost. Plant and equipment are depreciated on a straight-line basis over the following estimated useful lives of the assets:

Description	Estimated Useful Life

Equipment	three to ten years
Furniture and fixtures	five years
Computer hardware and software	five to seven years
Leasehold improvements	three to six years

Leasehold improvements are amortized over the lesser of the asset life or the lease term. Expenditures for repairs and maintenance are charged to expense as incurred. The costs for major renewals and improvements are capitalized and depreciated over their estimated useful lives of the related asset. The cost and related accumulated depreciation of the assets are removed from the accounts upon disposition and any resulting gain or loss is reflected in the consolidated statement of operations and comprehensive income.

Valuation of Long-lived Assets: Long-lived assets consist primarily of property, plant, and equipment, net. Since our long-lived assets are subject to amortization, we review these assets for impairment in accordance with the provisions of Accounting Standards Codification ("ASC") 360, Property, Plant, and Equipment. We review long-lived assets for impairment whenever events or changes in circumstances indicate that its carrying amount may not be recoverable. Our impairment testing of long-lived assets consists of determining whether the carrying amount of the long-lived asset (asset group) is recoverable, in other words, whether the sum of the future undiscounted cash flows expected to result from the use and eventual disposition of the asset (asset group) exceeds its carrying amount. The determination of the existence of impairment involves judgments that are subjective in nature and may require the use of estimates in forecasting future results and cash flows related to an asset or group of assets. In making this determination, we use certain assumptions, including estimates of future cash flows expected to be generated by these assets, which are based on additional assumptions such as asset utilization, the length of service that assets will be used in our operations, and estimated salvage values.

Asset Retirement and Environmental Obligations: Pursuant to ASC 410, Asset Retirement and Environmental Obligations, an asset retirement obligation (“ARO” or “AROs”) is recorded when there is a legal obligation associated with the retirement of a tangible long-lived asset and the fair value of the liability can reasonably be estimated. Upon initial recognition of an asset retirement obligation, a company increases the carrying amount of the long-lived asset by the same amount as the liability. Over time, the liabilities are accreted for the change in their present value through charges to operations costs. The initial capitalized costs are depleted over the useful lives of the related assets through charges to depreciation, and/or amortization. If the fair value of the estimated ARO changes, an adjustment is recorded to both the ARO and the asset retirement cost. Revisions in estimated liabilities can result from revisions of estimated inflation rates, escalating retirement costs, and changes in the estimated timing of settling ARO liabilities.

We have known asset retirement conditions, such as certain asset decommissioning and restoration of rented facilities to be performed in the future.

Fair Value of Financial Instruments: We determine the fair value of our financial instruments in accordance with ASC 820, Fair Value Measurements and Disclosures.

Revenue Recognition: Revenue is recognized upon shipment, provided persuasive evidence of a contract exists, the price is fixed, the product meets our customer's specifications, title and ownership have transferred to the customer, and there is reasonable assurance of collection of the sales proceeds. The majority of our products have shipping terms that are free on board or free carrier alongside (“FCA”) shipping point, which means that we fulfill our delivery obligation when the goods are handed over to the freight carrier at our shipping dock. This means the customer bears all costs and risks of loss or damage to the goods from that point. We account for shipping and related transportation costs by recording the charges that are invoiced to customers as revenue, with the corresponding cost recorded as cost of revenue. In those instances where inventory is maintained at a consigned location, revenue is recognized only when our customer pulls product for use and after title and ownership has transferred to the customer. Any warranty cost and remaining obligations that are inconsequential or perfunctory are accrued when the corresponding revenue is recognized.

Distributors: We use a number of distributors around the world and recognize revenue upon shipment of product to these distributors. Title and risk of loss pass to the distributors upon shipment, and our distributors are contractually obligated to pay us on standard commercial terms, just like direct customers. We do not sell to our distributors on consignment and, except in the event of product discontinuance, do not give distributors a right of return.

Contract Manufacturers: Prior to certain customers accepting product that is manufactured at one of our contract manufacturers, these customers require that they first qualify the product and manufacturing processes at our contract manufacturer. The customers' qualification process determines whether the product manufactured at our contract

manufacturer achieves their quality, performance, and reliability standards. After a customer completes the initial qualification process, we receive approval to ship qualified product to that customer. As part of the manufacturing process at our contract manufacturers, the finished product is tested prior to shipment to the customer using the same criteria that our customer uses to test product it receives. Revenue is recognized upon shipment of customer-qualified product, provided persuasive evidence of a contract exists, the price is fixed, the product meets our customer's specifications, title and ownership have transferred to the customer, and there is reasonable assurance of collection of the sales proceeds.

Product Warranty Reserves: We provide our customers with limited rights of return for non-conforming shipments and warranty claims for certain products. Pursuant to ASC 450, Contingencies, we make estimates of product warranty expense using historical experience rates as a percentage of revenue and accrue estimated warranty expense as a cost of revenue. We estimate the costs of our warranty obligations based on historical experience of known product failure rates and anticipated rates of warranty claims, use of materials to repair or replace defective products, and service delivery costs incurred in correcting product issues. In addition, from time to time, specific warranty accruals may be made if unforeseen technical problems arise. Should our actual experience relative to these factors differ from our estimates, we may be required to record additional warranty reserves. Alternatively, if we provide more reserves than needed, we may reverse a portion of such provisions in future periods.

Research and Development: Research and development costs are charged as an expense when incurred.

Stock-Based Compensation: Stock-based compensation expense is measured at the stock option or award grant date, based on the fair value of the award, and is recorded to cost of revenue, sales, general, and administrative, and research and development expense based on an employee's responsibility and function over the requisite service period. We use the Black-Scholes option-pricing model or the Monte-Carlo lattice model and the straight-line attribution approach to determine the fair value of stock-based awards in accordance with ASU 2016-09, Compensation. These option-pricing models require the input of highly subjective assumptions, including the option's expected life, the expected volatility of the price of the Company’s common stock, risk-free interest rates and the expected dividend yield of the Company’s common stock. Stock-based compensation expense is reduced for forfeitures.

Foreign Exchange: We recognize gains and losses due to the effect of exchange rate changes on foreign currency primarily due to our operations in China. The assets and liabilities of our foreign operations are translated from their respective functional currencies into U.S. dollars at the rates in effect at the consolidated balance sheet dates, and the revenue and expense amounts are translated at the average rate during the applicable periods reflected on the consolidated statements of operations and comprehensive income. Foreign currency translation adjustments are recorded as other comprehensive income. Gains and losses from foreign currency transactions denominated in currencies other than the U.S. dollar, both realized and unrealized, are recorded as foreign exchange (loss) gain on our consolidated statements of operations and comprehensive income.

Income Taxes: In accordance with ASC 740, Income Taxes, deferred tax assets and liabilities are recognized for the expected tax consequences of temporary differences between the tax bases of assets and liabilities and their reported amounts. We record valuation allowances against all deferred tax assets for amounts which are not considered more likely to be realized.

Income (Loss) Per Share: We are required, in periods in which we have net income, to calculate basic and diluted income per share using the two-class method. The two-class method is required because our unvested restricted stock awards are considered participating securities as these securities have the right to receive dividends or dividend equivalents should we declare dividends on our common stock. Under the two-class method, during periods of net income, net income is first reduced for distributions declared on all classes of securities to arrive at undistributed earnings. The undistributed earnings are then allocated on a pro-rata basis between the common shareholders and participating securities holders. The weighted-average number of common shares and participating securities outstanding during the period is then used to calculate basic and diluted income per share.

In periods in which we have a net loss, basic loss per share is calculated by dividing the loss attributable to common shareholders by the weighted-average number of common shares outstanding during the period.

NOTE 3. Recent Accounting Pronouncements and U.S. Tax Reform

There have been no recent accounting pronouncements or changes in accounting pronouncements that are of significance, or of potential significance, to us other than those discussed below:

- In May 2017, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2017-09, Compensation — Stock Compensation (Topic 718): Scope of Modification Accounting. ASU 2017-09 clarifies when changes to the terms or conditions of a share-based payment award must be accounted for as modifications. The new guidance is intended to reduce diversity in practice and result in fewer changes to the terms of an award being accounted for as a modification. Under ASU 2017-09, an entity will not apply modification accounting to a share-based payment award if the award's fair value, vesting conditions and classification as an equity or liability instrument are the same immediately before and after the change. ASU 2017-09 will be applied prospectively to awards modified on or after the adoption date. The new standard is effective for annual periods, beginning after December 15, 2017 and interim periods within those annual periods. The new standard will be effective for our fiscal year beginning October 1, 2018 and early adoption is permitted. The Company does not expect the adoption of ASU 2017-09 will have a material impact on the Company's consolidated financial statements.

- In June 2016, the FASB issued ASU 2016-13 Financial Instruments - Credit Losses, Measurement of Credit Losses on Financial Instruments, which changes the way entities measure credit losses for most financial assets and certain other instruments that are not measured at fair value through net earnings. The new standard is effective for annual periods beginning after December 15, 2019, including interim periods within those annual periods. The new standard will be effective for our fiscal year beginning October 1, 2020 and early adoption is permitted. We are evaluating the impact the adoption of the new standard will have on our consolidated financial statements and related disclosures.

- In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842). ASU 2016-02 introduces a lessee model that requires recognition of assets and liabilities arising from qualified leases on the consolidated balance sheets and disclosure of qualitative and quantitative information about lease transactions. This guidance is effective for fiscal years beginning after December 15, 2018 and interim periods within those years. We are in the process of implementing changes to our systems and processes in conjunction with our review of lease agreements. Topic 842 will be effective for our fiscal year beginning October 1, 2019 and expect to elect certain available transitional practical expedients. Early adoption is permitted.

As currently issued, entities are required to use a modified retrospective transition approach for leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements. There are additional optional practical expedients that an entity may elect to apply. The Company is continuing to evaluate the effect of this update on its consolidated financial statements and related disclosures.

- In January 2016, the FASB issued ASU 2016-01, Financial Instruments-Overall (Topic 825): Recognition and Measurement of Financial Assets and Financial Liabilities. This ASU amends certain aspects of recognition, measurement, presentation and disclosure of financial instruments, and supersedes the guidance to classify equity securities with readily determinable fair values into different categories (that is, trading or available-for-sale) and requires equity securities to be measured at fair value with changes in the fair value recognized through net income. This ASU is effective for annual and interim periods beginning after December 15, 2017. The new standard will be effective for our fiscal year beginning October 1, 2018. The Company does not anticipate the adoption will have a material impact on our consolidated financial statements and related disclosures.

- In July 2015, the FASB issued ASU 2015-11, Inventory (Topic 330): Simplifying the Measurement of Inventory. This standard requires inventory to be measured at the lower of cost and net realizable value. The guidance clarifies that net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. This guidance was effective for fiscal years beginning after December 15, 2016 and interim periods within those fiscal years. The new standard was effective for our fiscal year beginning October 1, 2017, but there was no significant impact on our consolidated financial statements.

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers which will supersede most current U.S. GAAP guidance on this topic. In April 2016, the FASB issued ASU No. 2016-10, Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing to clarify two aspects of the guidance within ASU No. 2014-09 on identifying performance obligations and the licensing implementation guidance. Under the new standards, recognition of revenue occurs when the seller satisfies a performance obligation by transferring to the customer promised goods or services in an amount that reflects the consideration the entity expects to receive for those goods or services. The new standard, as amended through December 2016, was effective for our fiscal year beginning October 1, 2018. The standard permits the use of either the full retrospective or modified retrospective method. We established a cross-functional implementation team to implement ASU 2014-09. We have substantially completed and implemented changes to our systems, processes and internal controls to meet the reporting and disclosure requirements upon adoption as of October 1, 2018.

We believe that the key revenue streams will be split between product sales and firm fixed price contracts, which comprise the majority of our business. Based upon our evaluation completed, the Company believes that the pattern of revenue recognition for these revenue streams upon implementation will generally be at a point-in-time for product sales and over a period of time for firm fixed price contracts, which is consistent with current guidance. As of September 30, 2018, the Company plans to adopt ASU 2014-09 utilizing a modified retrospective method on October 1, 2018. The adoption of ASU 2014-09 will not have a material impact on the Company's consolidated financial statements and related disclosures.

U.S. Tax Reform

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the “Tax Act”). The Tax Act significantly revises the future ongoing U.S. corporate income tax by, among other things, lowering U. S. corporate income tax rates and implementing a territorial tax system. As the Company has a September 30 fiscal year-end, the lower corporate income tax rate will be phased in, resulting in a U.S. statutory federal rate of approximately 25% for our fiscal year ending September 30, 2018, and 21% for subsequent fiscal years. However, the Tax Act provides for a credit for historical Alternative Minimum Taxes (“AMT”) paid against future taxes. As a result, the Company has taken a tax benefit of $0.5 million in the fiscal year ended September 30, 2018 for historical AMT payments. In addition, the Tax Act eliminates the domestic manufacturing deduction and moves to a territorial system, which also eliminates the ability to credit certain foreign taxes that existed prior to enactment of the Tax Act. For the fiscal year ended September 30, 2018, the elimination of the manufacturing deduction and credit for certain foreign taxes paid did not result in a significant impact on our consolidated financial statements.

There are also certain transitional impacts of the Tax Act. As part of the transition to the new territorial tax system, the Tax Act imposes a one-time repatriation tax on deemed repatriation of historical earnings of foreign subsidiaries. In addition, the reduction of the U.S. corporate tax rate will cause us to adjust our U.S. deferred tax assets and liabilities to the lower federal base rate of 21%. Due to historical foreign losses and a full valuation allowance on our deferred tax assets as of September 30, 2018, these transitional impacts did not result in an impact on our consolidated financial statements for the fiscal year ended September 30, 2018.

The changes included in the Tax Act are broad and complex. The final transition impacts of the Tax Act may differ from the above estimate, possibly materially, due to, among other things, changes in interpretations of the Tax Act, any legislative action to address questions that arise because of the Tax Act, any changes in accounting standards for income taxes or related interpretations in response to the Tax Act, or any updates or changes to estimates the Company has utilized to calculate the transition impacts, including impacts from changes to current year earnings estimates and foreign exchange rates of foreign subsidiaries. The SEC has issued rules that allow for a measurement period of up to one year after the enactment date of the Tax Act to finalize the recording of the related tax impacts. We

completed finalizing and recording any resulting adjustments during our fiscal year ending September 30, 2018. See also Note 12 - Income and other Taxes.

NOTE 4. Cash, Cash Equivalents and Restricted Cash

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the unaudited consolidated balance sheets that sum to the total of the same amounts shown in the unaudited statements of consolidated cash flows:

69

Table of Contents

(in thousands)	As of September 30, 2018	2017	2016
Cash	$2,965	$8,054	$3,989
Cash equivalents	$60,152	$60,279	$59,916
Restricted cash	78	421	965
Total cash, cash equivalents and restricted cash	$63,195	68,754	64,870

The Company's restricted cash includes cash balances which are legally or contractually restricted to use. The Company's restricted cash is included in current assets as of September 30, 2018, 2017, and 2016.

NOTE 5. Discontinued Operations

Sale of Photovoltaics Business

The following table presents the statements of operations for the discontinued operations of the Photovoltaics Business:

	For the Fiscal Years Ended September 30,		
(in thousands)	2018	2017	2016
Revenue	$—	$—	$—
Cost of revenue	—	12	(159)
Gross (loss) income	—	(12)	159
Operating expense (income)	—	13	(868)
(Loss) income from discontinued operations before income tax expense	—	(25)	1,027
Income tax benefit	—	—	20
(Loss) income from discontinued operations, net of tax	$—	$(25)	$1,047

On December 22, 2015, we settled all of the outstanding rights and obligations of a solar power venture in Spain, including outstanding non-current receivables, for a payment of $0.7 million. The outstanding non-current receivables had a net book value of $0 at the time of settlement as they were fully allowed for previously. The resulting gain was recorded in the discontinued operations of the Photovoltaics Business for the fiscal year ended September 30, 2016. Included in discontinued operations of the Photovoltaics Business during the fiscal year ended September 30, 2016 were $0.4 million of New Mexico incentive tax credits received. There were no incentive tax credits received during the fiscal years ended September 30, 2018 and 2017.

Table of Contents

Sale of Digital Products Business

The following table presents the statements of operations for the discontinued operations of the Digital Products Business:

(in thousands)	For the Fiscal Years Ended September 30, 2018	2017	2016
Revenue	$—	$—	$—
Cost of revenue	—	—	(500)
Gross profit	—	—	500
Operating expense (income)	—	2	(292)
Recognition of previously deferred gain on sale of assets	—	—	3,804
Other income	—	41	—
Income from discontinued operations before income tax expense	—	39	4,596
Income tax benefit	—	—	4
Income from discontinued operations, net of tax	$—	$39	$4,600

In December 2015, we entered into an agreement to terminate our lease and related obligations associated with a facility in Newark, California which we abandoned effective February 2016 following the sale of the Digital Products Business. As a result of this agreement, we paid $0.2 million and recorded a gain of $0.3 million on the lease termination in the discontinued operations of the Digital Products Business during the fiscal year ended September 30, 2016. Also see Note 10 - Accrued Expenses and Other Current Liabilities.

Included in cost of revenue for the fiscal year ended September 30, 2016 is $0.4 million due to a reduction in expected product warranty liabilities from a settlement associated with the Digital Products Business.

During the fiscal year ended September 30, 2016, we recognized the deferred gain of $3.4 million and reversal of other liabilities of $0.4 million, that had been recorded as of September 30, 2015, resulting in a credit of $3.8 million to deferred gain on sale of assets within discontinued operations of the Digital Products Business as the result of the favorable ruling from the Sumitomo Electric Industries, LTD ("SEI") arbitration. Also see Note 13- Commitments and Contingencies.

NOTE 6. Fair Value Accounting

ASC Topic 820 ("ASC 820"), Fair Value Measurements, establishes a valuation hierarchy for disclosure of the inputs to valuation techniques used to measure fair value. This standard describes a fair value hierarchy based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value:

- Level 1 inputs are unadjusted quoted prices in active markets for identical assets or liabilities.
- Level 2 inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the assets or liabilities, either directly or indirectly, through market corroboration, for substantially the full term of the financial instrument.
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Level 3 inputs are unobservable inputs based on our own assumptions used to measure assets or liabilities at fair value.

Classification of an asset or liability within this hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

Valuation techniques used to measure fair value under ASC 820 must maximize the use of observable inputs and minimize the use of unobservable inputs.

Table of Contents

Cash consists primarily of bank deposits or highly liquid short-term investments with a maturity of three months or less at the time of purchase. Restricted cash represents temporarily restricted deposits held as compensating balances against short-term borrowing arrangements. Cash, cash equivalents and restricted cash are based on Level 1 measurements.

The carrying amounts of cash and cash equivalents, restricted cash, accounts receivable, other current assets, and accounts payable approximate fair value because of the short maturity of these instruments.

NOTE 7. Accounts Receivable

The components of accounts receivable consisted of the following:

	As of September 30,	
(in thousands)	2018	2017
Accounts receivable, gross	$19,823	$22,287
Allowance for doubtful accounts	(548)	(22)
Accounts receivable, net	$19,275	$22,265

The allowance for doubtful accounts is based on the age of receivables and a specific identification of receivables considered at risk of collection.

The following table summarizes changes in the allowance for doubtful accounts for the fiscal years ended September 30, 2018, 2017 and 2016.

Allowance for Doubtful Accounts (in thousands)	For the Fiscal Years ended September 30,		
	2018	2017	2016
Balance at beginning of period	$22	$36	$462
Provision adjustment - expense, net of recoveries	599	23	23
Write-offs and other adjustments - deductions to receivable balances	(73)	(37)	(449)
Balance at end of period	$548	$22	$36

During the fiscal year ended September 30, 2018, we recorded a $0.5 million reserve on accounts receivable related to two customers account balances for which management had uncertainty with respect to its respective total collectability.

NOTE 8. Inventory

The components of inventory consisted of the following:

	As of September 30,	
(in thousands)	2018	2017
Raw materials	$11,857	$15,826
Work in-process	5,402	6,586
Finished goods	5,024	5,413
Inventory balance at end of period	$22,283	$27,825

Current portion	$20,850	$25,139
Non-Current portion	$1,433	$2,686

Table of Contents

The non-current inventory balance of $1.4 million and $2.7 million as of September 30, 2018 and 2017, respectively, is comprised entirely of raw materials which we acquired as part of a last time purchase as a result of the vendor announcing it would cease manufacturing a part. During the fiscal year ended September 30, 2018, we recorded a $1.0 million reserve on non-current inventory due to the decline in sales and future demand of the inventory.

NOTE 9. Property, Plant, and Equipment, net

The components of property, plant, and equipment, net consisted of the following:

	As of September 30,	
(in thousands)	2018	2017
Equipment	$36,625	$31,507
Furniture and fixtures	1,109	1,109
Computer hardware and software	2,928	2,974
Leasehold improvements	2,049	2,330
Construction in progress	3,648	4,539
Property, plant, and equipment, gross	$46,359	42,459
Accumulated depreciation	(28,143)	(25,824)
Property, plant, and equipment, net	$18,216	$16,635

Depreciation expense totaled $5.6 million, $3.7 million and $2.4 million during the fiscal years ended September 30, 2018, 2017 and 2016, respectively.

Impairment testing

As of September 30, 2018 and 2016, we determined no impairment triggers were present, and therefore, an impairment test was not performed.

In March 2017, in connection with our opening a new manufacturing facility in China, we identified equipment with a net book value of approximately $0.6 million that would no longer be utilized after the completion of the move later in fiscal year 2017. After taking into consideration the costs of disposal and estimated net funds from the sale of the equipment of approximately $0.1 million, we recorded a charge to impairments of approximately $0.5 million in the fiscal year ended September 30, 2017.

NOTE 10. Accrued Expenses and Other Current Liabilities

The components of accrued expenses and other current liabilities consisted of the following:

	As of September 30,	
(in thousands)	2018	2017
Compensation	$3,065	$3,904
Warranty	642	684
Professional fees	604	653
Customer deposits	22	20
Deferred revenue	368	—
Income and other taxes	7,593	2,920
Severance and restructuring accruals	82	628

Other	1,829	1,016
Accrued expenses and other current liabilities	$14,205	$9,825

Compensation: Compensation is primarily comprised of accrued employee salaries, taxes and benefits.

73

Severance and restructuring accruals: In connection with the abandonment of our Newark, California facility following the closing of the sale of the Digital Products Business, we accrued for the remaining lease costs through the lease termination in May 2016. In December 2015, we entered into an agreement to terminate this lease and related obligations, including AROs, as of February 2016 for a payment of $0.2 million. As a result of the agreement, we recorded a gain of $0.3 million on the lease termination. The resulting gain was recorded in the discontinued operations of the Digital Products Business for the fiscal year ended September 30, 2016. See Note 5 - Discontinued Operations.

On June 7, 2016, the Company's former Chief Financial Officer ("CFO") notified the Company that he would resign as the Company's CFO, effective as of June 20, 2016 (the "Separation Date"). The Company and the former CFO entered into a separation agreement and general release, dated June 7, 2016 (the "Separation Agreement"), which includes mutual releases by the former CFO and the Company of all claims related to his employment and service relationship with, and termination of employment and service from, the Company. The Separation Agreement provides for, among other things, the continuation of his base salary for 64 weeks, benefits for 16 months, outplacement services for a period of not more than 1 year and with a value not in excess of $15,000 and immediate vesting of all his outstanding non-vested equity awards, other than his most recent equity award. These payments are not contingent upon any future service by the former CFO. The Company recorded a charge of approximately $0.4 million in the fiscal year ended September 30, 2016 related to this Separation Agreement.

In an effort to better align our current and future business operations, in May 2016 the Company announced a reduction in its workforce by approximately 30 individuals and recorded a charge for severance for the affected employees in the amount of $0.3 million in the fiscal year ended September 30, 2016. In November 2016, the Company announced an additional reduction in the workforce of approximately 5 individuals and recorded a charge of $0.2 million in the fiscal year ended September 30, 2017 related to the outsourcing of our satellite communications assembly operations.

In March 2017, the Company announced an additional workforce reduction of approximately 14 individuals and recorded a charge of $0.1 million in the fiscal year ended September 30, 2017 related to the outsourcing of a portion of our wafer fabrication lab. During the fiscal year ended September 30, 2017, the Company recorded an additional charge of $0.4 million for six additional individuals related to the March 2017 workforce reduction. Also, in March 2017, in connection with our anticipated opening later in fiscal year 2017 of a new manufacturing facility in China to reduce costs and improve efficiency, we accrued for a workforce reduction of approximately 265 individuals and recorded a charge of $0.5 million in the fiscal year ended September 30, 2017. During the fiscal year ended September 30, 2017, the Company recorded an additional charge of $0.4 million for the workforce reduction of 72 additional individuals related to the opening of our new manufacturing facility in China.

In September 2017, the Company announced it would close its Ivyland, Pennsylvania location during fiscal year 2018 and reduce its workforce by approximately 11 individuals and recorded a charge for severance for the affected employees in the amount of $0.3 million in the fiscal year ended September 30, 2017.

In connection with the closing of the Ivyland, Pennsylvania location in January 2018, we accrued for the remaining lease costs of the facility through the lease termination of February 2019. Included in selling, general and administrative expense for the fiscal year ended September 30, 2018, was $0.2 million related to the remaining lease costs.

In March 2018, the Company announced an additional workforce reduction of approximately 21 individuals to better align our workforce towards our Chip Devices and Navigation Systems product lines and away from Broadbrand product lines and recorded a charge of $0.4 million in the fiscal year ended September 30, 2018.

Our severance and restructuring-related accruals specifically relate to the separation agreements and reductions in force discussed above and non-cancelable obligations associated with an abandoned leased facility. Expense related to severance and restructuring accruals is included in selling, general, and administrative expense on our statements of operations and comprehensive income. The following table summarizes the changes in the severance accrual account:

Table of Contents

(in thousands)	Severance-related accruals	Restructuring-related accruals	Total
Balance as of September 30, 2016	$ 642	$ —	$642
Expense - charged to accrual	1,994	—	1,994
Payments and accrual adjustments	(2,008)	—	(2,008)
Balance as of September 30, 2017	628	—	628
Expense - charged to accrual	512	186	698
Payments and accrual adjustments	(1,133)	(111)	(1,244)
Balance as of September 30, 2018	$ 7	$ 75	$82

Warranty: The following table summarizes the changes in our product warranty accrual accounts:

Product Warranty Accruals	For the Fiscal Years ended September 30,		
(in thousands)	2018	2017	2016
Balance at beginning of period	$684	$871	$1,664
Provision for product warranty - expense	431	573	376
Adjustments and utilization of warranty accrual	(473)	(760)	(1,169)
Balance at end of period	$642	$684	$871

NOTE 11. Credit Facilities

On November 11, 2010, we entered into a Credit and Security Agreement (the “Credit Facility”) with Wells Fargo Bank, N.A. The Credit Facility is secured by the Company's assets and is subject to a borrowing base formula based on the Company's eligible accounts receivable, inventory, and machinery and equipment accounts.

On July 27, 2017, we entered into a Ninth Amendment of the Credit Facility which adjusted the interest rate to LIBOR plus 1.75%. On November 7, 2018, we entered into a Tenth Amendment of the Credit Facility which extended the maturity date of the facility to November 2021. The Credit Facility currently provides us with a revolving credit line of up to $15.0 million, subject to a borrowing base formula, that can be used for working capital requirements, letters of credit, and other general corporate purpose subject to a limitation of the Company having liquidity of at least $25,000,000 million after such use.

As of September 30, 2018, there were no amounts outstanding under this Credit Facility and the Company was in compliance with all financial covenants. Also, as of September 30, 2018, the Credit Facility had approximately $0.5 million reserved for one outstanding stand-by letter of credit and $7.3 million available for borrowing. As of November 29, 2018, there was no outstanding balance under this Credit Facility and $0.5 million reserved for one outstanding stand-by letter of credit.

NOTE 12. Income and Other Taxes

The Company's income (loss) from continuing operations before income taxes consisted of the following:

Income (loss) from continuing operations before income taxes	For the Fiscal Years Ended September 30,		
(in thousands)	2018	2017	2016

Domestic	$(16,752)	$10,632	$1,735
Foreign	(1,150)	(2,248)	898
Income (loss) from continuing operations before income taxes	$(17,902)	$8,384	$2,633

Table of Contents

The Company's income tax (benefit) expense consisted of the following:

Income tax (benefit) expense	For the Fiscal Years Ended September 30,		
(in thousands)	2018	2017	2016
Federal:			
Current	$(502)	$135	$—
Deferred	—	—	—
	(502)	135	—
State:			
Current	53	28	(117)
Deferred	—	—	—
	53	28	(117)
Foreign:			
Current	—	—	131
Deferred	—	—	—
	—	—	131
Total income tax (benefit) expense	$(449)	$163	$14

EMCORE Corporation is incorporated in the state of New Jersey. A reconciliation of the provision for income taxes, with the amount computed by applying the statutory U.S. federal and state income tax rates to continuing operations income before provision for income taxes is as follows:

Provision for Income Taxes	For the Fiscal Years Ended September 30,		
(in thousands)	2018	2017	2016
Income tax benefit computed at U.S. federal statutory rate	$(4,346)	$2,841	$896
State tax expense benefit, net of U.S. federal effect	(168)	414	(41)
Foreign tax rate differential	36	229	(94)
Effect due to change in tax rate	57,988	2,528	626
Shortfall (windfall) from stock based compensation	681	(150)	—
Other	216	126	(57)
State net operating loss carryforward adjustment	(305)	933	685
Change in valuation allowance	(54,551)	(6,758)	(2,001)
Income tax (benefit) expense	$(449)	$163	$14
Effective tax rate	(2.5)%	1.9%	0.5%

Table of Contents

Significant components of our deferred tax assets are as follows:

Deferred Tax Assets	As of September 30	
(in thousands)	2018	2017
Deferred tax assets:		
Federal net operating loss carryforwards	$91,639	$144,455
Foreign net operating loss carryforwards	1,301	587
Income tax credit carryforwards	2,671	3,211
Inventory reserves	2,065	2,037
Accounts receivable reserves	123	8
Accrued warranty reserve	144	249
State net operating loss carryforwards	4,624	4,525
Stock compensation	728	2,367
Deferred compensation	200	349
Fixed assets and intangibles	(33)	136
Other	838	927
Total deferred tax assets	104,300	158,851
Valuation allowance	(104,300)	(158,851)
Net deferred tax assets	$—	$—

For the fiscal years ended September 30, 2018, 2017 and 2016, the Company recorded income tax benefit (expense) from continuing operations of approximately $0.4 million, $(0.2) million and $(14,000), respectively. For the fiscal years ended September 30, 2018, 2017 and 2016, the Company recorded income tax benefit from discontinued operations of $0, $0 and $24,000, respectively. Income tax benefit for fiscal year ended September 30, 2018 is primarily comprised of the effect of the Tax Act which eliminates AMT and will result in a refund to the Company of amounts paid in prior fiscal years, state minimum taxes, and foreign tax expense included within continuing operations.

For the fiscal years ended September 30, 2018, 2017 and 2016, the effective tax rate on continuing operations was (2.5)%, 1.9% and 0.5%, respectively. The higher beneficial tax rate for fiscal year 2018 was primarily due to the effect of the Tax Act, which resulted in a credit to the Company on future tax payments for past AMT amounts paid and the fiscal year 2018 operating loss. The higher tax rate for fiscal year 2017 was primarily due to higher alternative minimum tax as a result of the increase in net income. The lower tax rate for fiscal year 2016 was primarily due to permanent differences, state tax benefits, foreign tax rate differentials and changes in the Company's results in the current year. The Company uses some estimates to forecast permanent differences between book and tax accounting.

On December 22, 2017, the U.S. government enacted the Tax Cuts and Jobs Act (the “Tax Act”). The Tax Act includes significant changes to the U.S. corporate income tax system including: a federal corporate rate reduction from 34% to 21% effective January 1, 2018. Consequently, the Company recorded a decrease to the tax effected U.S. net deferred tax assets of $58.0 million, which was primarily offset by a change in the valuation allowance.

The Tax Act also includes other items such as limitations on the deductibility of executive compensation, immediate expensing of qualified property, the creation of new minimum taxes such as the base erosion anti-abuse tax (“BEAT”), global Intangible Low Taxed Income (“GILTI”) tax and the transition of U.S. international taxation from a worldwide tax system to a modified territorial tax system, which will result in a one time U.S. tax liability on those earnings which have not previously been repatriated to the U.S. (the “Transition Tax”). The Company evaluated the applicability of these items and appropriately reflected them in the tax provision as of September 30, 2018.
In the fourth quarter of fiscal 2018, we recorded an adjustment to the provisional amounts originally recorded in the first and second quarters of fiscal 2018 related to the re-measurement of net DTA. This adjustment was $58.0 million.

During fiscal 2018, we recorded a tax benefit of $0.5 million related to the Tax Act related to the credit on future tax payments for past AMT amounts paid.

In December 2017, the Securities and Exchange Commission staff issued Staff Accounting Bulletin No. 118, which addresses how a company recognizes provisional estimates when a company does not have the necessary information available, prepared or analyzed (including computations) in reasonable detail to complete its accounting for the effect of the changes in the Tax Act. The measurement period ends when a company has obtained, prepared, and analyzed the information necessary to finalize its accounting, but cannot extend beyond one year. The final impact of the Tax Act may differ from the above provisional estimates due to changes in interpretations of the Tax Act, any legislative action to address questions that arise because of the Tax Act, by changes in accounting standard for income taxes and related interpretations in response to the Tax Act, and any updates or changes to estimates used in the provisional amounts. We have determined that the $0.5 million of tax benefit for the credit on future tax payments for past AMT amounts paid and the $58.0 million of tax expense for DTA re-measurement were each provisional amounts and reasonable estimates for fiscal 2018. Estimates used in the provisional amounts include: the anticipated reversal pattern of the gross DTAs; and earnings and foreign taxes attributable to foreign subsidiaries.
All deferred tax assets have a full valuation allowance at September 30, 2018. However, on a quarterly basis, the Company will evaluate the positive and negative evidence to assess whether the more likely than not criteria, mandated by ASC 740, has been satisfied in determining whether there will be further adjustments to the valuation allowance.

During the fiscal year ended September 30, 2017, we increased previously unrecognized tax benefits by $0.1 million related to foreign taxes. During the fiscal year ended September 30, 2016, we decreased previously unrecognized tax benefits by $0.1 million. Of the fiscal year 2016 amount of unrecognized tax benefits, $112,800 was recognized in income tax expense from continuing operations and $12,000 was recognized in income tax expense from discontinued operations. As of September 30, 2018 and 2017, we had approximately $0.4 million and $0.3 million, respectively of interest and penalties accrued as tax liabilities on our balance sheet.

As of September 30, 2018, the Company had net operating loss carryforwards for U.S. federal income tax purposes of approximately $436.4 million which begin to expire in 2022. As of September 30, 2018, the Company had foreign net operating loss carryforwards of $5.2 million which begin to expire in 2021, as well as state net operating loss carryforwards of approximately $53.0 million which begin to expire in 2019. As of September 30, 2018, the Company also had tax credits (primarily foreign income and U.S. research and development tax credits) of approximately $2.7 million. The research credits will begin to expire in 2019. Utilization of net operating loss and tax credit carryforwards are subject to a substantial annual limitation due to the ownership change limitations set forth in Internal Revenue Code Section 382 and similar state provisions. The Company prepared an Internal Revenue Code 382 analysis to determine the annual limitations on the Company's consolidated net operating loss carryforwards. As a result of the $436.4 million of U.S. net operating loss carryforwards, approximately $219.5 million is subject to an annual limitation and $216.9 million of the net operating losses are not subject to an annual limitation. Such annual limitations could result in the expiration of the net operating loss and tax credit carryforwards before utilization.

A reconciliation of the beginning and ending amount of unrecognized gross tax benefits is as follows:

Unrecognized Gross Tax Benefit (in thousands)	
Balance as of September 30, 2016	$288
Adjustments based on tax positions related to the current year	131
Adjustments based on tax positions of prior years	—
Balance as of September 30, 2017	419
Adjustments based on tax positions related to the current year	—
Adjustments based on tax positions of prior years	—
Balance as of September 30, 2018	$419

As of September 30, 2018 and 2017, we had approximately $0.4 million and $0.3 million, respectively of interest and penalties accrued as tax liabilities on our balance sheet. We believe that it is reasonably possible that none of the uncertain tax position will be paid or settled within the next 12 months.

We file income tax returns in the U.S. federal, state, and local jurisdictions. In April 2015 the IRS completed its exam of the September 30, 2012 tax return and the Company was notified there were no changes to the originally filed return. There are no state income tax returns under examination. The following tax years remain open to assessment for each of the more significant jurisdictions where we are subject to income taxes: after fiscal year 2014 for the U.S. federal, after fiscal year 2013 for the State of New Mexico, and after fiscal year 2013 for the state of California.

Included in discontinued operations during the fiscal year ended September 30, 2016 was $0.4 million of New Mexico incentive tax credits received. The amount received was allocated to cost of goods sold, selling, general and administrative and research and development expense primarily based on the number of employees allocated to the related departments. These credits resulted in cash refunds and a reduction of future payroll and compensation taxes. There were no incentive tax credits received during the fiscal years ended September 30, 2018 and 2017.

NOTE 13. Commitments and Contingencies

Leases: Estimated future minimum lease payments under non-cancelable operating leases with an initial or remaining term of one year or more are $0.8 million, $0.8 million, $0.6 million, $0.6 million, and $0.7 million for the fiscal years ended September 30, 2019, 2020, 2021, 2022 and 2023 and thereafter, respectively.

Operating Lease Obligations: We lease certain facilities and equipment under non-cancelable operating leases. Operating lease amounts exclude renewal option periods, property taxes, insurance, and maintenance expenses on leased properties. Our facility leases typically provide for rental adjustments for increases in base rent (up to specific limits), property taxes, insurance, and general property maintenance that would be recorded as rent expense. Rent expense was approximately $1.2 million, $1.4 million and $1.4 million for the fiscal years ended September 30, 2018, 2017 and 2016, respectively. There are no off-balance sheet arrangements other than our operating leases.

Asset Retirement Obligation: We have known conditional Asset Retirement Obligations ("AROs") such as certain asset decommissioning and restoration of rented facilities to be performed in the future. Our ARO includes assumptions related to renewal option periods for those facilities where we expect to extend lease terms. The Company recognizes its estimate of the fair value of its ARO in the period incurred in long-term liabilities. The fair value of the ARO is also capitalized as property, plant and equipment.

In future periods, the ARO is accreted for the change in its present value and capitalized costs are depreciated over the useful life of the related assets. If the fair value of the estimated ARO changes, an adjustment will be recorded to both the ARO and the asset retirement capitalized cost. Revisions in estimated liabilities can result from revisions of estimated inflation rates, changes in estimated retirement costs, and changes in the estimated timing of settling the ARO. The fair value of our ARO was estimated by discounting projected cash flows over the estimated life of the related assets using credit adjusted risk-free rates which ranged from 1.20% to 4.20%. There was no ARO settled during the fiscal year ended September 30, 2018. Accretion expense of $0.1 million was recorded during fiscal years ended September 30, 2018, 2017 and 2016.

EMCORE leases its primary facility in Alhambra, California covering six buildings where manufacturing, research and development, and general and administrative work is performed. In September 2017, a new lease for four of the six buildings was signed, which was effective on October 1, 2017. The new lease extends the terms of the lease for three years plus a three year option to extend the lease through September 2023. In connection with the lease agreement, the Company has recorded an ARO liability at September 30, 2018 and September 30, 2017 of $1.8 million and $1.6 million, respectively. Leases related to the other two buildings expired in 2011, and these buildings are being occupied on a month-to-month basis.

The Company's ARO consists of legal requirements to return the existing leased facilities to their original state and certain environmental work to be performed due to the presence of a manufacturing fabrication operation and significant changes to the facilities over the past thirty years.

During the fiscal year ended September 30, 2018, in connection with the Company extending the lease term of the Alhambra facility, the lease and related obligations, including ARO, were revised, resulting in an increase of the estimated ARO obligation by the Company. As a result of the lease extension, the Company increased its ARO associated with the Alhambra facility by $0.1 million.

During the fiscal year ended September 30, 2017, in connection with the Company moving to a new manufacturing facility in China, the lease and related obligations, including ARO, at the former China facility was terminated, resulting in no payment by the Company. As a result of this agreement, the Company reduced its ARO associated with the former China facility by $45,000.

During the fiscal year ended September 30, 2016, the Company entered into an agreement to terminate the lease and related obligations, including ARO, in Newark, California for a one-time settlement payment of $0.2 million. As a result of this agreement and payment, the Company reduced its ARO associated with the Newark facility by $0.3 million.

In May 2016, which was retroactively effective on February 1, 2016, the Company entered into a five year lease agreement for facilities in Beijing, China where some manufacturing work is to be performed. In connection with the lease agreement, the Company has recorded an ARO liability in the amount of $0.1 million at September 30, 2018 and 2017.

The following table summarizes ARO activity:

Asset Retirement Obligations (in thousands)	September 30, 2018
Balance at September 30, 2017	$ 1,638
Accretion expense	66
Revision in estimated cash flows	105
Balance at September 30, 2018	$ 1,809

Indemnifications: We have agreed to indemnify certain customers against claims of infringement of intellectual property rights of others in our sales contracts with these customers. Historically, we have not paid any claims under these indemnification obligations. In March 2012, we entered into a Master Purchase Agreement with SEI, pursuant to which we agreed to sell certain assets and transfer certain obligations. Under the terms of the Master Purchase Agreement, we agreed to indemnify SEI for up to $3.4 million of potential claims and expenses for the two-year period following the sale and we recorded this amount as a deferred gain on our balance sheet as a result of these contingencies.

On September 23, 2014, SEI filed for arbitration against EMCORE, in accordance with the terms of the Master Purchase Agreement between the parties. SEI was seeking $47.5 million from EMCORE, relating to numerous claims. On April 12, 2016, the International Court of Arbitration tribunal rejected SEI's claims. The panel ruled that EMCORE owed SEI none of the amounts SEI sought in the arbitration and that the Company was entitled to collect the $1.9 million held in escrow, which was received in June 2016. The Company was also entitled to recover $2.6 million in fees and costs from SEI, which was received in June 2016. During the fiscal year ended September 30, 2016, we recognized a gain associated with the release of $3.4 million of previously recorded gain associated with the sale of assets and reversal of other liabilities of $0.4 million, resulting in a credit of $3.8 million to recognition of previously deferred gain on sale of assets within discontinued operations of the Digital Products Business. During the fiscal year ended September 30, 2016, we recognized the $2.6 million recovery of previously incurred litigation fees and costs incurred by EMCORE within operating income as such represented the recovery of previously incurred legal expenses. See Note 5 - Discontinued Operations.

We enter into indemnification agreements with each of our directors and executive officers pursuant to which we agree to indemnify them for certain potential expenses and liabilities arising from their status as a director or executive officer of the Company. We maintain director and officer insurance, which may cover certain liabilities arising from our obligation to indemnify our directors and executive officers in certain circumstances. It is not possible to determine the aggregate maximum potential loss under these indemnification agreements due to the limited history of prior indemnification claims and the unique facts and circumstances involved in each particular agreement.

Legal Proceedings: We are subject to various legal proceedings, claims, and litigation, either asserted or unasserted, that arise in the ordinary course of business. The outcome of these matters is currently not determinable and we are unable to estimate a range of loss, should a loss occur, from these proceedings. The ultimate outcome of legal proceedings involves judgments, estimates and inherent uncertainties and the results of these matters cannot be predicted with certainty. Professional legal fees are expensed when incurred. We accrue for contingent losses when such losses are probable and reasonably estimable. In the event that estimates or assumptions prove to differ from actual results, adjustments are made in subsequent periods to reflect more current information. Should we fail to prevail in any legal matter or should several legal matters be resolved against the Company in the same reporting period, then the financial results of that particular reporting period could be materially affected.

a) Intellectual Property Lawsuits

We protect our proprietary technology by applying for patents where appropriate and, in other cases, by preserving the technology, related know-how and information as trade secrets. The success and competitive position of our product lines are impacted by our ability to obtain intellectual property protection for our research and development efforts. We have, from time to time, exchanged correspondence with third parties regarding the assertion of patent or other intellectual property rights in connection with certain of our products and processes.

b) Mirasol Class Action

On December 15, 2015, Plaintiff Christina Mirasol (“Mirasol”), on her own behalf and on behalf of a putative class of similarly situated individuals composed of current and former non-exempt employees of the Company working in California since December 15, 2011, filed a complaint against the Company in the Superior Court of California, Los Angeles County (the “Court”). The complaint alleged seven causes of action related to: (1) failure to pay overtime; (2) failure to provide meal periods; (3) failure to pay minimum wages; (4) failure to timely pay wages upon termination; (5) failure to provide compliant wage statements; (6) unfair competition under the California Business and Professions Code § 17200 et seq.; and (7) penalties under the Private Attorneys General Act. The claims were premised primarily on the allegation that Mirasol and the putative class members were not provided with their legally required meal periods. Mirasol sought recovery on her own behalf and on behalf of the putative class in an unspecified amount for compensatory and liquidated damages as well as for declaratory relief, injunctive relief, statutory penalties, pre-judgment interest, costs and attorneys’ fees.

In exchange for a one-time cash payment offered by the Company, certain current and former employees previously agreed to release the Company from all potential claims related to the matters alleged in the Mirasol lawsuit. The Company had recorded an accrual for these amounts at September 30, 2016 that was not material to the Company's results of operations, financial condition or cash flows, which had been recorded within Operating Expenses for the fiscal year ended September 30, 2016. On January 6, 2017, the Company and Mirasol agreed to a class action settlement of $0.3 million with regards to all outstanding claims. On January 24, 2018, the Court granted final approval of the formal settlement agreement entered into between the parties and on February 26, 2018, the Court entered final judgment. The settlement amount of $0.3 million was paid in May 2018. There remains no outstanding liability related to the settlement as of September 30, 2018. During the fiscal year ended September 30, 2017, the Company recorded an accrual of $0.2 million within Operating Expenses related to the settlement.

c) Mirasol Wrongful Termination Lawsuit

In August 2016, EMCORE was served with a second lawsuit by former employee Mirsaol, in the Superior Court of Los Angeles alleging that the Company violated California’s employment laws in terminating her employment in November 2015. By her complaint, Mirasol asserted five causes of action: (1) wrongful termination in violation of public policy; (2) discrimination on the basis of disability and/or medical condition; (3) failure to accommodate; (4) failure to engage in the interactive process; and (5) intentional infliction of emotional distress. On September 26, 2016, Mirasol dismissed the fifth cause of action for intentional infliction of emotional distress. Mirasol alleged that EMCORE wrongfully terminated her at the conclusion of a Family and Medical Act leave, without engaging in the interactive process of offering to provide her with reasonable accommodations. The plaintiff sought general, special, and punitive damages. On January 6, 2017, the Company and Mirasol agreed to a settlement of $50,000 with regards to all outstanding claims. This amount was paid as of September 30, 2017.

d) Phoenix Navigation Components, LLC Legal Proceedings

On June 12, 2018, Phoenix Navigation Components, LLC (“Phoenix”) commenced an arbitration against EMCORE with the American Arbitration Association (“AAA”) in New York. On August 31, 2018, Phoenix filed a First Amended Demand for Arbitration, asserting the following claims: breach of contract, breach of the covenant of good faith and fair dealing, misappropriation of trade secrets (under the Defend Trade Secrets Act, 18 U.S.C. § 1836, and New York law), conversion, unjust enrichment, correction of inventorship relating to U.S. Patent No. 8,773,665, and declaratory relief, relating to EMCORE’s termination of certain agreements entered into between EMCORE and Phoenix related to the purported license of certain intellectual property related to fiber optic gyroscope technology and disputed royalty payments related thereto. On September 14, 2018, EMCORE filed an Answering Statement and Counterclaim, denying all of Phoenix’s claims and asserting counterclaims for breach of the implied covenant of good faith and fair dealing and declaratory relief. An arbitration hearing on all claims with the exception of the patent claims has been set for January 8, 2019. A second arbitration hearing on the patent claims has been set for May 20, 2019. We believe that the claims asserted by Phoenix are without merit and we intend to vigorously defend ourselves against them.

Table of Contents

On June 21, 2018, Phoenix Navigation Components, LLC commenced a special proceeding against EMCORE in the New York Supreme Court, Commercial Division, Index No. 653128/2018. As part of the special proceeding, Phoenix filed an application for a preliminary injunction in aid of arbitration pursuant to CLPR 7502(c), in connection with the AAA arbitration proceeding in New York. On August 6, 2018, Phoenix's application was resolved pursuant to a stipulation between EMCORE and Phoenix. This special proceeding remains open pending resolution of the AAA arbitration.

On September 18, 2018, EMCORE filed a complaint against Phoenix in the United States District Court for the Central District of California seeking a declaratory judgment with respect to U.S. Patent No. 8,773,665. On October 19, 2018, Phoenix filed a Motion to Stay Pending Arbitration or to Dismiss the Complaint.

NOTE 14. Equity

Equity Plans
We provide long-term incentives to eligible officers, directors, and employees in the form of equity-based awards. We maintain three equity incentive compensation plans, collectively described below as our "Equity Plans":

- the 2000 Stock Option Plan,
- the 2010 Equity Incentive Plan ("2010 Plan"), and
- the 2012 Equity Incentive Plan ("2012 Plan").

We issue new shares of common stock to satisfy awards issued under our Equity Plans.

Stock Options
Most of our stock options vest and become exercisable over a four to five year period and have a contractual life of 10 years. Certain stock options awarded are intended to qualify as incentive stock options pursuant to Section 422A of the Internal Revenue Code.

The following table summarizes stock option activity under the Equity Plans for the fiscal year ended September 30, 2018:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (*) (in thousands)
Outstanding as of September 30, 2017	326,798	$19.54		
Granted	—	—		
Exercised	(6,392)	$4.37		$ 15
Forfeited	(6,407)	$4.60		
Expired	(244,019)	$24.57		
Outstanding as of September 30, 2018	69,980	$4.74	5.11	$ 31
Exercisable as of September 30, 2018	46,886	$4.76	4.11	$ 23
Vested and expected to vest as of September 30, 2018	69,980	$4.74	5.11	$ 45

(*) Intrinsic value for stock options represents the "in-the-money" portion or the positive variance between a stock option's exercise price and the underlying stock price. For the fiscal years ended September 30, 2017 and 2016, the

intrinsic value of options exercised was $0.9 million and $87,000, respectively.

As of September 30, 2018, there was approximately $0.1 million of unrecognized stock-based compensation expense related to non-vested stock options granted under the Equity Plans which is expected to be recognized over an estimated weighted average life of 2.0 years.

Valuation Assumptions

There were no stock option grants for the fiscal years ended September 30, 2018 and 2017.

Time-Based Restricted Stock

Time-based restricted stock units ("RSUs") and restricted stock awards ("RSAs") granted to employees under the 2010 Plan and 2012 Plan typically vest over 3 to 4 years and are subject to forfeiture if employment terminates prior to the lapse of the restrictions. RSUs are not considered issued or outstanding common stock until they vest. RSAs are considered issued and outstanding on the grant date and are subject to forfeiture if specified vesting conditions are not satisfied.

The following table summarizes the activity related to RSUs and RSAs subject to time-based vesting requirements for fiscal year ended September 30, 2018:

	Restricted Stock Units		Restricted Stock Awards	
Restricted Stock Activity	Number of Shares	Weighted Average Grant Date Fair Value	Number of Shares	Weighted Average Grant Date Fair Value
Non-vested as of September 30, 2017	778,084	$5.91	8,154	$8.20
Granted	648,043	$5.80	—	$0.00
Vested	(374,969)	$5.40	—	$0.00
Forfeited	(39,537)	$5.23	—	$0.00
Non-vested as of September 30, 2018	1,011,621	$6.04	8,154	$8.20

As of September 30, 2018, there was approximately $5.0 million of remaining unamortized stock-based compensation expense associated with RSUs, which will be expensed over a weighted average remaining service period of approximately 2.9 years. The 1.0 million outstanding non-vested and expected to vest RSUs have an aggregate intrinsic value of approximately $4.8 million and a weighted average remaining contractual term of 1.7 years. For fiscal years ended September 30, 2018, 2017 and 2016, the intrinsic value of RSUs vested was approximately $2.3 million, $3.4 million and $1.6 million, respectively. For the fiscal years ended September 30, 2017 and 2016, the weighted average grant date fair value of RSUs granted was $8.20 and $5.53 per share, respectively.

As of September 30, 2018, there was approximately $45,000 of remaining unamortized stock-based compensation expense associated with RSAs, which will be expensed over a weighted average remaining service period of approximately 2.0 years.

On December 28, 2017, the Company granted our CEO, Jeffrey Rittichier, our Senior Vice President of Engineering, Albert Lu, and our Vice President of Sales (now co-VP, Broadband), David Wojciechowski, 40,000, 14,000 and 10,000 RSUs with a grant date fair value of $0.3 million, $0.1 million and $0.1 million, respectively, that will vest in 4 equal annual installments beginning on December 28, 2018.

Performance Stock

Performance based restricted stock units ("PSUs") and performance based shares of restricted stock ("PRSAs") granted to employees under the 2012 Plan typically vest over 1 to 3 years and are subject to forfeiture in whole, if employment terminates, or in whole or in part, if specified vesting conditions are not satisfied, in each case prior to vesting. PSUs are not considered issued or outstanding common stock until they vest. PRSAs are considered issued and outstanding on the grant date (at 200% of the target number of shares) and are subject to forfeiture if specified vesting conditions are not satisfied. PSUs and PRSAs that are granted to our executive officers and key employees are provided as

long-term incentive compensation that is based on relative total shareholder return, which measures our performance against that of our competitors.

Table of Contents

The following table summarizes the activity related to PSUs and PRSAs for the fiscal year ended September 30, 2018:

Performance Stock Activity	Performance Stock Units		Performance Stock Awards	
	Number of Shares (at Target)	Weighted Average Grant Date Fair Value	Number of Shares (at Target)	Weighted Average Grant Date Fair Value
Non-vested as of September 30, 2017	328,708	$8.36	33,333	$12.25
Granted	240,164	$7.62	—	$0.00
Vested	(166,058)	$6.86	—	$0.00
Forfeited	(5,037)	$13.36	—	$0.00
Non-vested as of September 30, 2018	397,777	$8.48	33,333	$12.25

As of September 30, 2018, there was approximately $1.5 million of remaining unamortized stock-based compensation expense associated with PSUs, which will be expensed over a weighted average remaining service period of approximately 1.3 years. The 0.4 million outstanding non-vested and expected to vest PSUs have an aggregate intrinsic value of approximately $1.9 million and a weighted average remaining contractual term of 1.3 years. For the fiscal year ended September 30, 2018, the intrinsic value of PSUs vested was approximately $1.4 million. There were no PSUs vested in the fiscal years ended September 30, 2017 and 2016. For the fiscal year ended September 30, 2017, the weighted average grant date fair value of PSUs granted was $8.34. There was no PSUs granted in the fiscal year ended September 30, 2016.

As of September 30, 2018, there was approximately $0.3 million of remaining unamortized stock-based compensation expense associated with PRSAs, which will be expensed over a weighted average remaining service period of approximately 1.0 year.

On December 28, 2017, the Company granted Messrs. Rittichier, Lu and Wojciechowski, 40,000, 14,000 and 10,000 PSUs with a grant date fair value of $0.3 million, $0.1 million and $0.1 million, respectively. The PSUs issued will vest based on a combination of the relative total shareholder return of EMCORE’s stock compared to the Russell Microcap Index and the executive's continued employment. The total number of shares to be issued to each individual ranges from zero (0) to 200% of the target PSUs granted. Between zero (0) and 200% of the target PSUs will vest, if at all, on December 28, 2020.

On December 28, 2017, in addition to the PSUs granted to Messrs. Rittichier, Lu and Wojciechowski, the Company granted 108,500 target PSUs with a grant date fair value of $0.9 million to certain key non-executive employees. The PSUs issued will vest based on a combination of the relative total shareholder return of EMCORE’s stock compared to the Russell Microcap Index and the employee's continued employment. The total number of shares to be issued to each individual may range from zero (0) to 200% of the target PSUs granted. Between zero (0) and 200% of the target PSUs granted will vest, if at all, on December 28, 2020.

Included in the 240,164 PSUs granted and 166,058 PSUs vested during the fiscal year ended September 30, 2018 are 67,664 PSUs that vested at more than 100% of the target PSUs upon vesting.

Stock-based compensation

The effect of recording stock-based compensation expense was as follows:

Stock-based Compensation Expense - by award type	For the Fiscal Years Ended September 30,		
(in thousands)	2018	2017	2016
Employee stock options	$32	$45	$38
Restricted stock units and awards	1,742	1,643	1,683
Performance stock units and awards	1,343	1,367	—
Employee stock purchase plan	276	300	223
Outside director equity awards and fees in common stock	255	247	218
Total stock-based compensation expense	$3,648	$3,602	$2,162

Table of Contents

Stock-based Compensation Expense - by expense type	For the Fiscal Years ended September 30,		
(in thousands)	2018	2017	2016
Cost of revenue	$450	$492	$345
Selling, general, and administrative	2,584	2,605	1,445
Research and development	614	505	372
Total stock-based compensation expense	$3,648	$3,602	$2,162

For the fiscal year ended September 30, 2017, total stock-based compensation expense did not agree with the amount listed on our statements of shareholders' equity due to the timing difference between the expense accrued and the issuance of common stock for the payment of outside directors' fees. For the fiscal year ended September 30, 2016, total stock-based compensation expense did not agree with the amount listed on our statements of shareholders' equity primarily due to the timing difference between the expense accrued and the issuance of common stock for the payment of outside directors' fees and due to reclassification of stock-based compensation expense related to discontinued operations.

The stock-based compensation expense above relates to continuing operations. Stock-based compensation within selling, general and administrative expense was higher for the fiscal year ended September 30, 2017 due to stock-based compensation expense associated with the grants of PSUs and PRSAs. Included within discontinued operations is $0, $0 and $(77,000) of stock-based compensation expense for the fiscal year ended September 30, 2018, 2017 and 2016, respectively.

Capital Stock

Our authorized capital stock consists of 50 million shares of common stock, no par value, and 5,882,000 shares of preferred stock, $0.0001 par value. As of September 30, 2018, we had 34.5 million and 27.6 million shares of common stock issued and outstanding, respectively. There were no shares of preferred stock issued or outstanding as of September 30, 2018 and 2017.

401(k) Plan

We have a savings plan that qualifies as a deferred salary arrangement under Section 401(k) of the Internal Revenue Code. Under this savings plan, participating employees may defer a portion of their pretax earnings, up to the Internal Revenue Service annual contribution limit. Since June 2015, all employer contributions are made in cash. Our matching contribution in cash for the fiscal years ended September 30, 2018, 2017 and 2016 was approximately $0.5 million, $0.5 million and $0.4 million, respectively.

Table of Contents

(Loss) Income Per Share

The following table sets forth the computation of basic and diluted net (loss) income per share:

Basic and Diluted Net (Loss) Income Per Share	For the Fiscal Years Ended September 30,		
(in thousands, except per share)	2018	2017	2016
Numerator:			
(Loss) income from continuing operations	$(17,453)	$8,221	$2,619
Loss from discontinued operations	—	14	5,647
Undistributed earnings allocated to common shareholders for basic and diluted net income per share	(17,453)	8,235	8,266
Denominator:			
Denominator for basic net income per share - weighted average shares outstanding	27,266	26,659	25,979
Dilutive options outstanding, unvested stock units, unvested stock awards and ESPP	—	885	539
Denominator for diluted net income per share - adjusted weighted average shares outstanding	27,266	27,544	26,518
Net (loss) income per basic share:			
Continuing operations	$(0.64)	$0.31	$0.10
Discontinued operations	—	0.00	0.22
Net (loss) income per basic share	$(0.64)	$0.31	$0.32
Net (loss) income per diluted share:			
Continuing operations	$(0.64)	$0.30	$0.10
Discontinued operations	—	0.00	0.21
Net (loss) income per diluted share	$(0.64)	$0.30	$0.31
Weighted average antidilutive options, unvested restricted stock units and awards, unvested performance stock units and ESPP shares excluded from the computation	949	398	508
Average market price of common stock	$5.87	$8.92	$5.88

For diluted (loss) income per share, the denominator includes all outstanding common shares and all potential dilutive common shares to be issued. The anti-dilutive stock options and unvested stock were excluded from the computation of diluted net loss per share for the fiscal year ended September 30, 2018 due to the Company incurring a net loss for the period. For the fiscal year ended September 30, 2017, we excluded 0.4 million of weighted average outstanding stock options, RSUs and PSUs from the calculation of diluted net income per share because their effect would have been anti-dilutive. For the fiscal year ended September 30, 2016 we excluded 0.5 million of weighted average outstanding stock options and RSUs from the calculation of diluted net income per share because their effect would have been anti-dilutive.

Employee Stock Purchase Plan

We maintain an Employee Stock Purchase Plan (“ESPP”) that provides employees an opportunity to purchase common stock through payroll deductions. The ESPP is a 6-month duration plan with new participation periods beginning on approximately February 25 and August 26 of each year. The purchase price is set at 85% of the average high and low market price of our common stock on either the first or last trading day of the participation period, whichever is lower, and annual contributions are limited to the lower of 10% of an employee's compensation or $25,000.

Per the amended ESPP, the total number of shares of common stock on which options may be granted under the ESPP are 3,250,000 shares. With the special dividend paid in July 2016, the total number of shares of common stock on which options may be granted under the ESPP were increased by 265,574 shares to a total of 3,515,574 shares. We issue new shares of common stock to satisfy the issuance of shares under this stock-based compensation plan. Common stock issued under the ESPP during the fiscal years ended September 30, 2018, 2017 and 2016 totaled 171,000, 133,000 and 193,000 shares, respectively. As of September 30, 2018, the total amount of common stock issued under the ESPP totaled 2,775,016 shares and the total shares remaining available for issuance under the ESPP totaled 740,558.

Future Issuances

As of September 30, 2018, we had common stock reserved for the following future issuances:

Future Issuances	Number of Common Stock Shares Available for Future Issuances
Exercise of outstanding stock options	69,980
Unvested restricted stock units	1,011,621
Unvested performance stock units and awards (at 200% maximum payout)	862,220
Purchases under the employee stock purchase plan	740,558
Issuance of stock-based awards under the Equity Plans	1,474,701
Purchases under the officer and director share purchase plan	88,741
Total reserved	4,247,821

NOTE 15. Geographical Information

We evaluate our reportable segment pursuant to ASC 280, Segment Reporting. The Company's Chief Executive Officer is the chief operating decision maker and he assesses the performance of the operating segment and allocates resources to the segment based on its business prospects, competitive factors, net revenue, operating results, and other non-U.S. GAAP financial ratios. Based on this evaluation, the Company operates as a single reportable segment, Fiber Optics.

Revenue: The following tables set forth revenue by geographic region with revenue assigned to geographic regions based on our customers' billing address.

Revenue by Geographic Region	For the Fiscal Years ended September 30,		
(in thousands)	2018	2017	2016
United States	$69,543	$98,520	$66,436
Asia	10,386	16,713	17,401
Europe	5,422	7,015	7,618
Other	266	647	543
Total revenue	$85,617	$122,895	$91,998

Significant Customers: Significant customers are defined as customers representing greater than 10% of our consolidated revenue. Revenue from two of our significant customers represented an aggregate of 60% of our

consolidated revenue for the fiscal year ended September 30, 2018. Revenue from three of our significant customers represented an aggregate of 71% and 61% of our consolidated revenue for the fiscal years ended September 30, 2017 and 2016, respectively.

Long-lived Assets: Long-lived assets consist of property, plant, and equipment. As of September 30, 2018 and 2017, approximately 49% and 46%,respectively, of our long-lived assets were located in the United States. The remaining long-lived assets are primarily located in China.

Table of Contents

NOTE 16. Selected Quarterly Financial Information (unaudited)

The following tables present our unaudited consolidated results of operations for the eight most recently ended quarters. We believe that all necessary adjustments, consisting only of normal recurring adjustments, have been included in the amounts below to present fairly the selected quarterly information when read in conjunction with the consolidated financial statements and notes included elsewhere in this Annual Report. Our results from operations vary substantially from quarter to quarter. Accordingly, the operating results for a quarter are not necessarily indicative of results for any subsequent quarter or for the full year. We have experienced and expect to continue to experience significant fluctuations in quarterly results.

EMCORE CORPORATION
Quarterly Consolidated Statements of Operations
For the Fiscal Year Ended September 30, 2018
(in thousands, except income per share)
(unaudited)

	For the Three Months Ended			
	December 31, 2017	March 31, 2018	June 30, 2018	September 30, 2018
Revenue	$24,036	$18,623	$17,717	$25,241
Cost of revenue	16,122	13,676	16,519	20,813
Gross profit	7,914	4,947	1,198	4,428
Operating expense (income):				
Selling, general, and administrative	4,819	5,644	5,237	5,532
Research and development	3,800	3,300	3,915	4,372
Loss from change in estimate on ARO obligation	—	—	—	145
Loss (gain) on sale of assets	107	(68)	—	(5)
Total operating expense	8,726	8,876	9,152	10,044
Operating loss	(812)	(3,929)	(7,954)	(5,616)
Other income (expense):				
Interest income, net	111	163	216	243
Foreign exchange gain (loss)	286	526	(676)	(570)
Other income	—	—	—	110
Total other income (expense)	397	689	(460)	(217)
Loss from continuing operations before income tax (expense) benefit	(415)	(3,240)	(8,414)	(5,833)
Income tax benefit (expense)	333	169	—	(53)
Loss from continuing operations	(82)	(3,071)	(8,414)	(5,886)
Loss from discontinued operations, net of tax	—	—	—	—
Net income	$(82)	$(3,071)	$(8,414)	$(5,886)
Per share data:				
Net income per basic share:				
Continuing operations	$(0.00)	$(0.11)	$(0.31)	$(0.21)
Discontinued operations	—	—	—	—
Net income per basic share	$(0.00)	$(0.11)	$(0.31)	$(0.21)
Net income per diluted share:				
Continuing operations	$(0.00)	$(0.11)	$(0.31)	$(0.21)
Discontinued operations	—	—	—	—

Net income per diluted share	$(0.00)	$(0.11)	$(0.31)	$(0.21)
Weighted-average number of basic and diluted shares outstanding	27,032	27,197	27,387	27,424

Table of Contents

EMCORE CORPORATION
Quarterly Consolidated Statements of Operations
For the Fiscal Year Ended September 30, 2017
(in thousands, except income per share)
(unaudited)

	For the Three Months Ended			
	December 31, 2016	March 31, 2017	June 30, 2017	September 30, 2017
Revenue	$30,176	$32,591	$30,952	$29,176
Cost of revenue	20,133	21,553	20,110	18,565
Gross profit	10,043	11,038	10,842	10,611
Operating expense (income):				
Selling, general, and administrative	5,578	5,672	5,815	5,181
Research and development	2,199	3,141	3,340	3,862
Impairments	—	468	—	38
Gain from change in estimate on ARO obligation	—	—	—	(45)
Gain on sale of assets	—	—	(322)	(134)
Total operating expense	7,777	9,281	8,833	8,902
Operating income	2,266	1,757	2,009	1,709
Other income (expense):				
Interest income, net	23	46	77	99
Foreign exchange (loss) gain	(403)	44	53	388
Other income	—	—	316	—
Total other (expense) income	(380)	90	446	487
Income from continuing operations before income tax (expense) benefit	1,886	1,847	2,455	2,196
Income tax (expense) benefit	(120)	8	(19)	(32)
Income from continuing operations	1,766	1,855	2,436	2,164
Loss from discontinued operations, net of tax	(9)	(7)	(11)	41
Net income	$1,757	$1,848	$2,425	$2,205
Per share data:				
Net income per basic share:				
Continuing operations	$0.07	$0.07	$0.09	$0.08
Discontinued operations	0.00	0.00	0.00	0.00
Net income per basic share	$0.07	$0.07	$0.09	$0.08
Net income per diluted share:				
Continuing operations	$0.07	$0.07	$0.09	$0.08
Discontinued operations	0.00	0.00	0.00	0.00
Net income per diluted share	$0.07	$0.07	$0.09	$0.08
Weighted-average number of basic shares outstanding	26,279	26,622	26,833	26,904
Weighted-average number of diluted shares outstanding	27,039	27,585	27,816	27,768

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
EMCORE Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of EMCORE Corporation and subsidiaries (the Company) as of September 30, 2018 and 2017, the related consolidated statements of operations and comprehensive (loss) income, shareholders' equity, and cash flows for each of the years in the three–year period ended September 30, 2018, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of September 30, 2018 and 2017, and the results of their operations and their cash flows for each of the years in the three–year period ended September 30, 2018, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of September 30, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated December 4, 2018 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 2010.

Irvine, California
December 4, 2018

Table of Contents

ITEM 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

ITEM 9A. Management's Annual Report on Internal Control over Financial Reporting

a. Evaluation of Disclosure Controls and Procedures

Our management, with the participation of its Chief Executive Officer (Principal Executive Officer) and Chief Financial Officer (Principal Financial Officer and Accounting Officer), evaluated the effectiveness of the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) promulgated under the Securities Exchange Act of 1934, as amended) (the “Exchange Act”) as of the end of the period covered by this Annual Report on Form 10-K. Based upon this evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report.

b. Management's Annual Report on Internal Controls over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act. Under the supervision of our Chief Executive Officer and Chief Financial Officer and with the participation of our management, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of September 30, 2018 based on the framework in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). Based on that evaluation, our management concluded that our internal control over financial reporting was effective as of September 30, 2018.

c. Changes in Internal Control over Financial Reporting

There were no changes in the Company's internal control over financial reporting (as defined in Rule 13a-15(f) and 15d-15(f) promulgated under the Securities Exchange Act of 1934, as amended) during the quarter ended September 30, 2018 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

d. Limitations on Effectiveness of Controls and Procedures

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls or our internal controls over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Controls can also be circumvented by individual acts, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based, in part, upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with associated policies or procedures. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

The effectiveness of our internal control over financial reporting as of September 30, 2018 has been audited by KPMG LLP, our independent registered public accounting firm, as stated in their report which is included as follows.

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
EMCORE Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited EMCORE Corporation and subsidiaries' (the Company) internal control over financial reporting as of September 30, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 30, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of September 30, 2018 and 2017, the related consolidated statements of operations and comprehensive (loss) income, shareholders' equity, and cash flows for each of the years in the three-year period ended September 30, 2018, and the related notes (collectively, the consolidated financial statements), and our report dated December 4, 2018 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

Irvine, California
December 4, 2018

92

PART III.

ITEM 10. Directors, Executive Officers and Corporate Governance

Information regarding our executive officers and directors required by this Item is incorporated by reference to the section entitled “Proposal I: Election of Directors - Directors and Executive Officers” that will be included in our Definitive Proxy Statement in connection with our Annual Meeting of Stockholders (Proxy Statement), which will be filed with the Securities and Exchange Commission within 120 days after the fiscal year ended September 30, 2018. Information required by Item 405 of Regulation S-K is incorporated by reference to the section entitled “Ownership of Securities - Section 16(a) Beneficial Ownership Reporting Compliance” in the Proxy Statement referenced above. Information required by Items 407(c)(3), (d)(4) and (d)(5) of Regulation S-K is incorporated by reference to the Section entitled “Proposal 1: Election of Directors - Governance of the Company - Board Committees” in the Proxy Statement.

We have adopted a code of ethics entitled the “EMCORE Corporation Code of Business Conduct and Ethics,” which is applicable to all employees, officers, and directors of the Company. The full text of our Code of Business Conduct and Ethics is included with the Corporate Governance information available on our website (www.emcore.com). We intend to disclose any changes in or waivers from our code of ethics for our directors and executive officers to the extent disclosure is required by the applicable rules of the SEC and Nasdaq Stock Market LLC by posting such information on our website or by filing a Current Report on Form 8-K.

ITEM 11. Executive Compensation

Information required by this Item is incorporated by reference to the sections entitled “Proposal I: Election of Directors - Director Compensation for Fiscal Year 2018,” “Compensation Discussion and Analysis,” “Executive Compensation,” “Executive Compensation - Compensation Committee Report” and “Executive Compensation - Compensation Committee Interlocks and Insider Participation” in the Proxy Statement.

ITEM 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information regarding security ownership of certain beneficial owners and management is incorporated by reference to the section entitled “Ownership of Securities - Security Ownership of Certain Beneficial Owners and Management” in the Proxy Statement.

Information regarding our equity compensation plans is incorporated by reference to the section entitled “Ownership of Securities - Equity Compensation Plan Information” in the Proxy Statement.

ITEM 13. Certain Relationships, Related Transactions and Director Independence

Information required by this Item is incorporated by reference to the sections entitled “Proposal I: Election of Directors - Governance of the Company - Related Person Transaction Approval Policy” and “Proposal I - Election of Directors - Governance of the Company - Director Independence” in the Proxy Statement.

ITEM 14. Principal Accounting Fees and Services

Information required by this Item is incorporated by reference to the section entitled “Proposal II: Ratification of the Appointment of Independent Registered Public Accounting Firm - Fiscal Years 2018 & 2017 Auditor Fees and Services” in the Proxy Statement.

Part IV.

ITEM 15. Exhibits and Financial Statement Schedules

(a)(1) Financial Statements

Included in Part II, Item 8 of this Annual Report on Form 10-K:

- Consolidated Statements of Operations and Comprehensive Income for the fiscal years ended September 30, 2018, 2017, and 2016
- Consolidated Balance Sheets as of September 30, 2018 and 2017
- Consolidated Statements of Shareholders' Equity for the fiscal years ended September 30, 2018, 2017, and 2016
- Consolidated Statements of Cash Flows for the fiscal years ended September 30, 2018, 2017, and 2016
- Notes to Consolidated Financial Statements
- Report of Independent Registered Public Accounting Firm

(a)(2) Financial Statement Schedules

The applicable financial statement schedules required under this Item 15(a)(2) are presented in our consolidated financial statements and notes thereto under Item 8 of this Annual Report on Form 10-K.

2.1	Asset Purchase Agreement, dated as of September 17, 2014, by and between EMCORE Corporation and SolAero Technologies Corp. (f/k/a Photon Acquisition Corporation) (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on September 18, 2014).
2.2	Amendment No. 1, dated as of November 26, 2014, to that certain Asset Purchase Agreement, dated as of September 17, 2014, by and between EMCORE Corporation and SolAero Technologies Corp. (f/k/a Photon Acquisition Corporation) (incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed by the Registrant on November 26, 2014).
2.3	Asset Purchase Agreement, dated October 22, 2014, by and between EMCORE Corporation and NeoPhotonics Corporation (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on October 24, 2014).
2.4	Amendment No. 1, dated January 2, 2015, to that certain Asset Purchase Agreement, dated as of October 22, 2014, by and between EMCORE Corporation and NeoPhotonics Corporation (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on January 5, 2015).
3.1	Restated Certificate of Incorporation, dated April 4, 2008, (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on April 4, 2008).
3.2	Certificate of Amendment of Restated Certificate of Incorporation, dated February 15, 2012 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on February 16, 2012).

3.3	Certificate of Amendment of Restated Certificate of Incorporation of EMCORE Corporation, dated September 18, 2014 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on September 18, 2014).
3.4	Certificate of Designation Establishing the Series A Junior Participating Preferred Stock and Fixing the Powers, Designations, Preferences and Relative, Participating, Optional and Other Special Rights, and the Qualifications, Limitations and Restrictions, of the Series A Junior Participating Preferred Stock, dated September 18, 2014 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on September 18, 2014).
3.5	Certificate of Amendment to the Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the SEC on March 20, 2018).
3.6	By-Laws of EMCORE Corporation, as amended through March 19, 2018 (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed with the SEC on March 20, 2018).
4.1	Specimen Certificate for Shares of Common Stock (incorporated by reference to Exhibit 4.1 to the Company's Annual Report on Form 10-K filed on December 6, 2017).
10.1	Stipulation of Compromise and Settlement, dated as of November 28, 2007, executed by the Company and the other defendants and the plaintiffs in the Federal Court Action and the State Court Actions (incorporated by reference to Exhibit 10.19 to the Company’s Annual Report on Form 10-K filed on December 31, 2007).
10.2†	Directors Compensation Policy (Effective March 17, 2017) (incorporated by reference to Exhibit 10.2 to the Company’s Quarterly Report on Form 10-Q filed on May 4, 2017).

10.3†	Officer and Director Share Purchase Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on January 27, 2011).
10.4†	2010 Equity Incentive Plan, as amended and restated on June 14, 2011 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 16, 2011).
10.5†	Form of award agreement under 2010 Equity Incentive Plan (Incorporated by reference to Exhibit 10.7 to the Company's Annual Report on Form 10-K filed on December 14, 2015).
10.6†	2012 Equity Incentive Plan, as amended and restated on January 19, 2017 (incorporated by reference to Exhibit 10.7 to the Company's Annual Report on Form 10-K filed on December 6, 2017).
10.7†	Form of Restricted Stock Unit Award Agreement under the 2012 Equity Incentive Plan (incorporated by reference to Exhibit 10.9 to the Company's Annual Report on Form 10-K filed on December 14, 2015).
10.8†	Form of time-based Restricted Stock Unit Award Agreement under the 2012 Equity Incentive Plan (as of October 2016) (incorporated by reference to Exhibit 10.9 to the Company's Annual Report on Form 10-K filed on December 7, 2016).
10.9†	Form of Performance-Based Restricted Stock Award Agreement under the 2012 Equity Incentive Plan (for executive officers) (as of December 2017) (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on February 6, 2018).
10.10†	Form of Performance-Based Restricted Stock Award Agreement under the 2012 Equity Incentive Plan (for non-executive officers) (as of October 2016) (incorporated by reference to Exhibit 10.11 to the Company's Annual Report on Form 10-K filed on December 6, 2017).
10.11†	Restricted Stock and Restricted Stock Unit Award Agreement under the 2012 Equity Incentive Plan entered into between the Company and Jeffrey Rittichier, with a grant date of October 18, 2016 (incorporated by reference to Exhibit 10.12 to the Company's Annual Report on Form 10-K filed on December 6, 2017).
10.12†	Performance-Based Restricted Stock and Restricted Stock Unit Award Agreement under the 2012 Equity Incentive Plan entered into between the Company and Jeffrey Rittichier, with a grant date of October 18, 2016 (incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K filed on December 6, 2017).
10.13†	EMCORE Corporation 2000 Employee Stock Purchase Plan, as amended March 5, 2014 (incorporated by reference to Exhibit B to the Company's Proxy Statement filed on January 28, 2014).
10.14†	Form of Indemnification Agreement entered into with directors and executive officers (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed on December 14, 2012).
10.15†	Employment Agreement, dated December 10, 2014, by and between EMCORE Corporation and Jeff Rittichier (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 11, 2014).
10.16†	Employment Agreement, dated June 6, 2016, by and between EMCORE Corporation and Jikun Kim (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 8,

	2016).
10.17†	EMCORE Corporation Fiscal 2018 Bonus Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on October 17, 2017).
21.1**	Subsidiaries of the Company.
23.1**	Consent of KPMG LLP, independent registered public accounting firm.
24.1	Power of Attorney (see the signature page of this Annual Report on Form 10-K).
31.1**	Certificate of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2**	Certificate of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1***	Certificate of Chief Executive Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2***	Certificate of Chief Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS**	XBRL Instance Document.
101.SCH**	XBRL Taxonomy Extension Schema Document.
101.CAL**	XBRL Taxonomy Extension Calculation Linkbase Document.
101.LAB**	XBRL Taxonomy Extension Label Linkbase Document.
101.PRE**	XBRL Taxonomy Extension Presentation Linkbase Document.

95

101.DEF** XBRL Taxonomy Extension Definition Linkbase Document.

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† Management contract or compensatory plan
** Filed herewith
*** Furnished herewith

ITEM 16. Form 10-K Summary

None.

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.

EMCORE CORPORATION

Date:	December 4, 2018	By:	/s/ Jeffrey Rittichier
			Jeffrey Rittichier
			Chief Executive Officer
			(Principal Executive Officer)

Date:	December 4, 2018	By:	/s/ Jikun Kim
			Jikun Kim
			Chief Financial Officer
			(Principal Financial and Accounting Officer)

Each person whose signature appears below constitutes and appoints and hereby authorizes Jeffrey Rittichier such person's true and lawful attorney-in-fact, with full power of substitution or resubstitution, for such person and in his name, place and stead, in any and all capacities, to sign on such person's behalf, individually and in each capacity stated below, any and all amendments to this Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission granting unto said attorney-in-fact, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant in the capacities indicated, on December 4, 2018.

Signature	Title
/s/ Jeffrey Rittichier Jeffrey Rittichier	Chief Executive Officer and Director (Principal Executive Officer)
/s/ Jikun Kim Jikun Kim	Chief Financial Officer (Principal Financial and Accounting Officer)
/s/ Stephen L. Domenik Stephen L. Domenik	Director
/s/ Gerald J. Fine, Ph.D. Gerald J. Fine, Ph.D.	Chairman of the Board
/s/ Rex S. Jackson Rex S. Jackson	Director