

CABOT MICROELECTRONICS CORP  
Form 10-K  
November 16, 2016

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549  
FORM 10K

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

FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 2016

or

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

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

COMMISSION FILE NUMBER 00030205

CABOT MICROELECTRONICS CORPORATION  
(Exact name of registrant as specified in its charter)

DELAWARE 364324765  
(State of Incorporation) (I.R.S. Employer Identification No.)

870 NORTH COMMONS DRIVE 60504  
AURORA, ILLINOIS (Zip Code)  
(Address of principal executive offices)

Registrant's telephone number, including area code: (630) 3756631

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

Title of each class	Name of each exchange on which registered
Common Stock, \$0.001 par value	The NASDAQ Stock Market LLC

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 No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes 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. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (Section 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Edgar Filing: CABOT MICROELECTRONICS CORP - Form 10-K

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 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.

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

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company

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

The aggregate market value of the registrant's Common Stock held beneficially or of record by stockholders who are not affiliates of the registrant, based upon the closing price of the Common Stock on March 31 2016, as reported by the NASDAQ Global Select Market, was approximately \$955,537,100. For the purposes hereof, "affiliates" include all executive officers and directors of the registrant.

As of October 31, 2016, the Company had 24,617,841 shares of Common Stock outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's definitive Proxy Statement for the Annual Meeting of Stockholders to be held on March 7, 2017, are incorporated by reference in Part III of this Form 10-K to the extent stated herein.

This Form 10-K includes statements that constitute "forward-looking statements" within the meaning of federal securities regulations. For more detail regarding "forward-looking statements" see Item 7 of Part II of this Form 10-K.

---

CABOT MICROELECTRONICS CORPORATION  
 FORM 10-K  
 FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 2016

PART I.	Page
Item 1. <u>Business</u>	3
Item 1A. <u>Risk Factors</u>	13
Item 1B. <u>Unresolved Staff Comments</u>	17
Item 2. <u>Properties</u>	18
Item 3. <u>Legal Proceedings</u>	19
Item 4. <u>Mine Safety Disclosures</u>	19
<u>Executive Officers of the Registrant</u>	20
PART II.	
Item 5. <u>Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	22
Item 6. <u>Selected Financial Data</u>	25
Item 7. <u>Management's Discussion and Analysis of Financial Condition and Results of Operations</u>	26
Item 7A. <u>Quantitative and Qualitative Disclosures about Market Risk</u>	40
Item 8. <u>Financial Statements and Supplementary Data</u>	42
Item 9. <u>Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u>	85
Item 9A. <u>Controls and Procedures</u>	85
Item 9B. <u>Other Information</u>	86
PART III.	
Item 10. <u>Directors, Executive Officers and Corporate Governance</u>	87
Item 11. <u>Executive Compensation</u>	87
Item 12. <u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	88
Item 13. <u>Certain Relationships and Related Transactions, and Director Independence</u>	88
Item 14. <u>Principal Accountant Fees and Services</u>	88
PART IV.	
Item 15. <u>Exhibits and Financial Statement Schedules</u>	89
<u>Exhibit Index</u>	89
<u>Signatures</u>	91

Index

PART I

ITEM 1. BUSINESS

OUR COMPANY

Cabot Microelectronics Corporation ("Cabot Microelectronics", "the Company", "us", "we", or "our"), which was incorporated in the state of Delaware in 1999, is the leading supplier of high-performance polishing slurries and a growing supplier of polishing pads used in the manufacture of advanced integrated circuit (IC) devices within the semiconductor industry, in a process called chemical mechanical planarization (CMP). CMP is a polishing process used by IC device manufacturers to planarize or flatten many of the multiple layers of material that are deposited upon silicon wafers in the production of advanced ICs. Our products play a critical role in the production of advanced IC devices, thereby helping to enable our customers to produce smaller, faster and more complex IC devices with fewer defects. Our mission is to create value by developing reliable and innovative solutions, through close customer collaboration, that solve today's challenges and help enable tomorrow's technology.

We currently operate predominantly in one industry segment – the development, manufacture and sale of CMP consumables products. We develop, produce and sell CMP slurries for polishing many of the conducting, insulating and isolating materials used in IC devices, and also for polishing the disk substrates and magnetic heads used in hard disk drives. We also develop, manufacture and sell CMP polishing pads, which are used in conjunction with slurries in the CMP process. In addition, we pursue demanding surface modification applications in other industries through our Engineered Surface Finishes (ESF) business.

On October 22, 2015, we completed the acquisition of NexPlanar Corporation ("NexPlanar"), a U.S. based company that had been privately held, which specialized in the development, manufacture and sale of advanced CMP pad solutions for the semiconductor industry. We believe the acquisition of NexPlanar provides an opportunity to expand our polishing pad product offerings with a complementary technology, and leverage our global infrastructure to better serve our customers on a global basis, including offering performance-advantaged slurry and pad consumable sets.

CMP PROCESS WITHIN IC DEVICE MANUFACTURING

IC devices, or "chips", are components in a wide range of electronic systems for computing, communications, manufacturing and transportation. Individual consumers most frequently encounter IC devices in mobile internet devices (MIDs) such as smart phones and tablets, microprocessors, application processors and memory chips in their desktop or laptop computers, and in automotive applications, gaming devices, and digital televisions. The multi-step manufacturing process for IC devices typically begins with a circular wafer of pure silicon, with the first manufacturing step referred to as a "wafer start". A large number of identical IC devices, or dies, are manufactured on each wafer at the same time. The initial steps in the manufacturing process build transistors and other electronic components on the silicon wafer. These are isolated from each other using a layer of insulating material, most often silicon dioxide, to prevent electrical signals from bridging from one transistor to another. These components are then wired together using conducting materials such as aluminum or copper in a particular sequence to produce a functional IC device with specific characteristics. When the conducting wiring on one layer of the IC device is completed, another layer of insulating material is added. The process of alternating insulating and conducting layers is repeated until the desired wiring within the IC device is achieved. At the end of the process, the wafer is cut into the individual dies, which are then packaged to form individual chips.

Demand for CMP consumables products, including slurries and pads, used in the production of IC devices is primarily based on the number of wafer starts by semiconductor manufacturers and the type and complexity of the IC devices they produce. To enhance the performance of IC devices, IC device manufacturers have progressively increased the number and density of electronic components and wiring layers in each IC device. This is typically done in

conjunction with shrinking the key dimensions on an IC device from one technology generation, or "node," to another. As a result, the number of transistors, wires and the number of discrete wiring layers have increased, increasing the complexity of the IC device and the related demand for CMP consumables products. As semiconductor technology has advanced and performance requirements of IC devices have increased, the percentage of IC devices that utilize CMP in the manufacturing process has increased steadily over time. We believe that CMP is used in the majority of all IC devices made today, and we expect that the use of CMP will continue to increase in the future.

3

---

In the CMP polishing process, CMP consumables are used to remove excess material that is deposited during the IC manufacturing process, and to level and smooth the surfaces of the layers of IC devices, via a combination of chemical reactions and mechanical abrasion, leaving minimal residue and defects on the surface, with only the material necessary for circuit integrity remaining. CMP slurries are liquid solutions generally composed of high-purity deionized water and a proprietary mix of chemical additives and engineered abrasives that chemically and mechanically interact at an atomic level with the surface material of the IC device. CMP pads are engineered polymeric materials designed to distribute and transport the slurry to the surface of the wafer and distribute it evenly across the wafer. Grooves are formed into the surface of the pad to facilitate distribution of the slurry. The CMP process is performed on a CMP polishing tool. During the CMP process, the wafer is held on a rotating carrier, which is pressed down against a CMP pad. The CMP pad is attached to a rotating polishing table that spins in a circular motion in the opposite direction from the rotating wafer carrier. A CMP slurry is continuously applied to the polishing pad to facilitate and enhance the polishing process. Hard disk drive and silicon wafer manufacturers use similar processes to smooth the surface of substrate disks.

An effective CMP process is achieved through technical optimization of the CMP consumables in conjunction with an appropriately designed CMP process. Prior to introducing new or different CMP slurries or pads into its manufacturing process, an IC device manufacturer generally requires the product to be qualified in its processes through an extensive series of tests and evaluations. These qualifications are intended to confirm that the CMP consumable product will function properly within the customer's overall manufacturing process. These tests and evaluations may require minor changes to the CMP process or the CMP slurry or pad. While this qualification process varies depending on numerous factors, it is generally quite costly and may take six months or longer to complete. IC device manufacturers usually take into account the cost, time required and impact on production when they consider implementing or switching to a new CMP slurry or pad.

CMP enables IC device manufacturers to produce smaller, faster and more complex IC devices with a greater density of transistors and other electronic components. With smaller IC devices, IC device manufacturers can increase the number of IC devices that fit on a wafer, which increases their throughput, or the number of IC devices that can be manufactured in a given time period. CMP also helps reduce the number of defective or substandard IC devices produced, which increases the device yield. Producing more complex and higher performing IC devices increases the value of the wafers processed. Improvements in throughput, yield, and value per wafer improve the return on an IC device manufacturer's significant investment in manufacturing capacity, which is a high priority. More broadly, sustained growth in the semiconductor industry traditionally has been fueled by enhanced performance and lower unit costs, making IC devices more affordable in an expanding range of applications. We believe CMP remains a critical process in leading-edge semiconductor technology, enabling IC device manufacturers to efficiently produce the complex chips, particularly where higher performance may now be accompanied by higher unit costs.

## PRECISION POLISHING

Through our ESF business, we are applying our technical expertise in polishing techniques to demanding applications in other industries where shaping, enabling and enhancing the performance of surfaces is critical to success, such as for precision optics and electronic substrates, including silicon and silicon-carbide wafers.

Many of the production processes currently used in precision machining and polishing have been based on traditional, labor-intensive techniques, which are being replaced by computer-controlled, deterministic processes. Our wholly-owned subsidiary, QED Technologies International, Inc. (QED), is a leading provider of deterministic finishing technology for the precision optics industry. We believe precision optics are pervasive, serving several large existing industries such as semiconductor equipment, aerospace, defense, biomedical, research and digital imaging.



Index

OUR PRODUCTS

CMP CONSUMABLES FOR IC DEVICES

We develop, produce and sell CMP slurries for polishing a wide range of materials that conduct electrical signals, including tungsten, copper, tantalum (commonly referred to as "barrier"), which is used in copper wiring applications, and aluminum. Slurries for polishing tungsten are used in the production of advanced memory and logic devices for a multitude of end use applications such as computers and servers, MIDs such as smart phones and tablets, gaming devices, and digital televisions, as well as in mature logic applications such as those used in automobiles and communication devices. Tungsten slurries are also used in some of the most advanced technologies, such as 3D memory and FinFET for advanced logic IC devices. Slurries for polishing copper and barrier materials are used in the production of advanced IC logic devices such as microprocessors for computers, and devices for graphic systems, gaming systems and communication devices, as well as in the production of advanced memory devices. These products include different slurries for polishing the copper film and the thin barrier layer used to separate copper from the adjacent insulating material. Slurries for polishing aluminum are used in certain advanced transistor gate structures. We offer multiple products for each technology node to enable different integration schemes depending on specific customer needs.

We also develop, manufacture and sell slurry products used to polish the dielectric insulating materials that separate conductive layers within logic and memory IC devices. Our slurry products for these materials are primarily used in mature, high volume polishing applications called Interlayer Dielectric, or ILD, in the production of both logic and memory devices. Our more advanced dielectrics products are designed to deliver higher performance and lower cost of ownership in traditional ILD applications, as well as to meet the more stringent and complex performance requirements of lower-volume, more specialized dielectrics polishing applications at advanced technology nodes. Some of the applications for advanced dielectrics slurries include shallow trench isolation (STI), "stop on poly" isolation, bulk oxide polishing, and polishing of various dielectrics in advanced transistor designs.

We develop, produce and sell CMP polishing pads, which are consumable materials that work in conjunction with CMP slurries in the CMP polishing process. We believe that CMP polishing pads represent a natural adjacency to our CMP slurry business, since both technologies are required by our customers to deliver their intended result and utilize the same technical, sales and support infrastructure. Our polishing pad product portfolio includes pads utilizing both thermoset and thermoplastic polyurethane pad material. We produce and sell pads that can be used on a variety of polishing tools, over a range of applications, including tungsten, copper, and dielectrics, over a range of technology nodes, and on both 300mm and 200mm wafers.

CMP CONSUMABLES FOR THE DATA STORAGE INDUSTRY

We develop, produce and sell CMP slurries for polishing certain materials that are used in the production of rigid disks and magnetic heads used in hard disk drives for computer and other data storage applications, which represent an extension of our core CMP slurry technology and manufacturing capabilities established for the semiconductor industry. We believe CMP significantly improves the surface finish of these rigid disk coatings, resulting in greater storage capacity of the hard disk drive systems, and also improves the production efficiency of manufacturers of hard disk drives.



Index

PRECISION OPTICS PRODUCTS

Through our QED subsidiary, we design and produce precision polishing and metrology systems for advanced optic applications that allow customers to attain near-perfect shape and surface finish on a range of optical components such as mirrors, lenses and prisms. Historically, advanced optics have been produced using labor-intensive artisanal processes, and variability has been common. QED has automated the polishing process for advanced optics to enable rapid, deterministic and repeatable surface correction to the most demanding levels of precision in dramatically less time than with traditional means. QED's polishing systems use Magneto-Rheological Finishing (MRF), a proprietary surface figuring and finishing technology that employs magnetic fluids and sophisticated computer technology to polish a variety of shapes and materials. QED's metrology systems use proprietary Subaperture Stitching Interferometry (SSI) technology, which captures precise metrology data for large and/or strongly curved optical parts. SSI technology includes proprietary Aspheric Stitching Interferometry (ASI), which is designed to measure increasingly complex shapes, including non-spherical surfaces, or aspheres. QED's products also include MRF polishing fluids and MRF polishing components, as well as optical polishing services and polishing support services.

STRATEGY

We collaborate closely with our customers to develop and manufacture products that offer innovative and reliable solutions to our customers' challenges, and we strive to consistently and reliably deliver and support these products around the world through what we believe is a robust global infrastructure and supply chain. We continue to focus on the execution of our primary strategies related to technology leadership, customer collaboration and supply chain excellence.

STRENGTHENING AND GROWING OUR CORE CMP CONSUMABLES BUSINESS

**Delivering Innovative and High-Performing Solutions:** We believe that technology and innovation are vital to success in our CMP consumables business, and we devote significant resources to research and development. We focus our research and development activity to deliver innovative CMP consumables products for advanced applications for our technology-leading customers. We have established facilities in Japan, Singapore, South Korea, Taiwan, and the United States, in order to meet our customers' technology needs on a global basis.

We believe an example of our ability to deliver innovative products for advanced applications is the growth we saw in revenues in fiscal 2016 from our tungsten and certain dielectrics slurry products used in 3D memory and FinFET for advanced logic. We believe our focused effort on advanced technologies with technology-leading customers will enable us to provide more compelling new products as technology continues to advance. In addition, we believe our polishing pads product area represents a promising opportunity for continued growth. We believe that combining pad technology and products from our NexPlanar acquisition with our organic pad technology and products will enable us to better serve the needs of our customers on a global basis, including the ability to offer performance-differentiated CMP slurry and pad consumable sets.

**Close Collaboration with Our Customers:** We believe that building close relationships with our customers is essential to achieving long-term success in our business. We collaborate with our customers to identify and deliver new and improved CMP solutions, to integrate our products into their manufacturing processes, and to assist them with supply, warehouse and inventory management. Our customers demand a highly reliable supply source, and we believe we have a competitive advantage because of our ability to timely deliver high-quality products and service from the early stages of product development through the high-volume commercial use of our products. We have strategically located our research and development and clean room facilities, manufacturing operations, and related technical and customer support teams to be responsive to our customers' needs. We believe our research and development facilities, in close proximity to our customers, provide a competitive advantage.



## Index

We believe the three supplier excellence awards we received from our customers in fiscal 2016 are evidence of our commitment to, and success in, delivering high-performing and high-quality products to our customers through close collaboration with them. These awards recognized our product quality and reliability, as well as our customer support capabilities. Our global business teams are focused on a range of projects with our customers to address specific business opportunities for advanced technologies.

**Robust Global Supply Chain:** We believe that product and supply chain quality is critical to success in our business. Our customers demand continuous improvement in the performance of our products, in terms of product quality and consistency. We strive to reduce variation in our products and processes in order to increase quality, productivity and efficiency, and improve the uniformity and consistency of performance of our CMP consumables products.

Variability reduction becomes more important to our customers as technology advances. Our global manufacturing sites are managed to provide the people, training and systems needed to support stringent industry demands for product quality. To support our quality initiative, we practice the concepts of Six Sigma across our Company, which we believe has contributed to lower variability in our products and sustained improvement in productivity in our operations. Six Sigma is a systematic, data-driven approach and methodology for improving quality by reducing variability.

We also believe that continuous improvement and variation reduction in our global supply chain are critical to our success and the success of our customers. We believe our capabilities in supply chain management and quality systems differentiate us from our competitors. We believe our worldwide CMP consumables manufacturing plants and global network of suppliers also provide supply chain flexibility if needed.

## ENGINEERED SURFACE FINISHES

Beyond our core CMP consumables business, through our ESF business, we develop and provide products for demanding polishing applications in other industries, such as in precision optics and electronic substrates. Our QED subsidiary continues to be the technology leader in deterministic finishing for the precision optics industry. QED's polishing and metrology technology enables customers to replace manual processes with automated solutions that provide more precise and repeatable results. Another aspect of our ESF business is the polishing of electronic substrates, including silicon and silicon-carbide wafers. CMP is utilized in the production of these wafers to ensure they meet the stringent specifications required by IC manufacturers.

## INDUSTRY TRENDS

### SEMICONDUCTOR INDUSTRY

We believe the semiconductor industry continues to exhibit a number of trends: demand within the semiconductor business is driven primarily by MIDs, and secondarily by personal computers (PCs) and a wide range of other electronic applications; overall industry growth fluctuates; our customer base consolidates; there is pressure to reduce costs; and, the pace of technology advancement has slowed.

We have discussed the significant shift in semiconductor industry demand over the past several years from IC devices for PCs to MIDs. Demand for MIDs is largely consumer-based, versus more enterprise-based demand for PCs, so semiconductor industry demand fluctuates. For example, the semiconductor industry experienced soft demand conditions during the second half of our fiscal 2015 through the first half of fiscal 2016. Semiconductor demand strengthened during the second half of fiscal 2016, apparently driven by inventory replenishment and preparation for new product launches. A factor that could spur future industry growth is semiconductor industry development in China; significant domestic and international investment in both logic and memory capacity is ongoing, and more is

expected in the future. We continue to believe that semiconductor industry demand will grow over the long term based on increased usage of IC devices in existing applications, as well as future applications.

7

---

## Index

Over a number of years, we have seen our customer base within the semiconductor industry consolidate as larger semiconductor manufacturers have generally grown faster than the smaller ones, through mergers and acquisitions as well as through alliances among and between different companies. Costs to achieve the required scale in manufacturing within the semiconductor industry continue to rise, along with the related costs of research and development, and larger manufacturers generally have greater access to the resources necessary to manage their businesses, than do smaller ones. This trend is particularly evident in capital spending within the industry, as the largest semiconductor companies account for an increasingly large portion of total capital spending in the industry compared to the past.

As demand for more advanced and lower cost electronic devices grows, there is continued pressure on IC device manufacturers to reduce their costs. Many manufacturers reduce costs by pursuing ever-increasing scale in their operations, while seeking to reduce their production costs by increasing their production yields, regardless of their scale. Thus, they look for CMP consumables products with quality and performance attributes that can help them reduce their overall cost of ownership, pursue ways to use smaller amounts of CMP materials, and also aggressively pursue price reductions for these materials. The pressure on IC device manufacturers to reduce costs has led to increased usage of foundries, which further drives increasing scale.

Manufacturers also have historically reduced cost, and simultaneously improved device performance, by migrating to smaller technology nodes. However, as the industry continues to shrink dimensions, leading edge technology node transitions are becoming more challenging due to technical and physical obstacles, and the pace of technology change has slowed. To achieve performance and cost improvements, semiconductor manufacturers are placing greater emphasis on new device architectures, including 3D memory and FinFET. 3D NAND for advanced memory is now more broadly ramping in high-volume manufacturing, and several manufacturers of logic applications are in high-volume manufacturing using FinFET. We believe semiconductor manufacturers will continue to depend upon highly engineered materials in these new architectures, requiring innovative CMP solutions.

## CMP CONSUMABLES INDUSTRY

Demand for CMP consumables is primarily driven by wafer starts, so the CMP consumables industry reflects semiconductor industry demand patterns in terms of cyclicity, seasonality and specific device types. Our revenue and net income for fiscal years 2012, 2013 and 2014 demonstrated seasonal swings in demand as we saw softer demand for our products in the first half of each of these fiscal years, followed by stronger demand during the second half. However, consistent with overall semiconductor industry demand, in fiscal 2015, we saw a departure from this trend as demand for our products was stronger during the first half of the fiscal year, but weaker in the second. In fiscal 2016, we saw a return to a more seasonal demand pattern as demand was softer during the first half of the fiscal year and stronger in the second half, which was consistent with the conditions experienced by a number of other participants in the semiconductor industry. Over the long term, we anticipate worldwide demand for CMP consumables used by IC device manufacturers will grow as a result of expected long-term growth in wafer starts, the trend to more advanced technologies and an associated increase in the number of CMP polishing steps required to produce these advanced devices, and the introduction of new materials that will require CMP.

We expect the anticipated long-term growth in demand will be partially mitigated by continued efficiency improvements in CMP consumable usage as customers seek to reduce their costs. As discussed above, semiconductor manufacturers look for ways to lower the cost of CMP consumables in their production operations, including improvements in technology, dilution of slurry, use of concentrated slurry products, or reduction of slurry flow rate, to reduce the total amount of slurry used, and to extend pad life. In addition, CMP demand also depends upon the specific mix of IC device demand, since the intensity of CMP usage varies by IC device type.



## Index

We believe that CMP technical solutions are becoming more complex, with advanced technologies generally requiring greater customization by customer, tool set and process integration approach. As a result, we generally see customers selecting suppliers earlier in their development processes and maintaining preferred supplier relationships through production. Therefore, we believe that close collaboration with our customers early in the development cycle offers the best opportunity for optimal CMP solutions. We also believe that research and development programs with customers and suppliers continue to be vital to our success as we develop and commercialize innovative, high-performing and more cost-effective CMP solutions.

## COMPETITION

We compete in the CMP consumables industry, which is characterized by rapid advances in technology and demanding product quality and consistency requirements. We face competition from other CMP consumables suppliers. We also may face competition in the future from significant changes in technology or emerging technologies. However, we believe we are well-positioned to continue our leadership in CMP slurries, and to continue to grow our business in CMP pads. We believe we have the experience, scale, capabilities and infrastructure that are required for success, and we work closely with technology-leading customers in the semiconductor industry to meet their growing expectations as a trusted business partner.

Our CMP slurry competitors range from small companies that compete with a single product or in a single geographic region, to divisions of global companies with multiple lines of CMP products. However, we believe we are the leader in CMP slurries. In our view, we are the only CMP slurry supplier today that serves a broad range of customers by offering and supporting a full line of CMP slurry solutions for all major applications, with a proven track record of supplying these products globally in high volumes with the requisite high level of technical support services.

With respect to CMP polishing pads, a division of Dow Chemical has held the leading position in this area for many years. Subsequent to our acquisition of NexPlanar, we believe we are the second largest supplier of CMP polishing pads to the industry. A number of other companies also participate in this area of the CMP consumables business. We believe that the combination of our organic pad technology and products with those we acquired with NexPlanar enable us to meet our customers' needs for lower defectivity, greater pad consistency, and longer pad life. In addition, we believe that this combination will enable us to better serve our customers on a global basis, including offering performance-differentiated slurry and pad consumable sets.

Our QED subsidiary operates in the precision optics industry. There are few direct competitors of QED and we believe its technology is unique and provides a competitive advantage to customers in the precision optics industry, which still relies heavily on traditional artisanal methods of fabrication.

## CUSTOMERS, SALES AND MARKETING

Within the semiconductor industry, our customers are generally producers of logic or memory IC devices, or providers of IC foundry services. Some logic customers, and so-called "fabless" companies, outsource some or all of the production of their devices to foundries, which provide contract manufacturing services, in order to avoid the high cost of process development, construction and operation of a fab, or to provide additional capacity when needed. In fiscal 2016, excluding revenue attributable to data storage and ESF customers, approximately 42% of our revenue was from memory customers, 40% from foundry customers and 18% from logic customers.

## Index

We believe the primary influences of our customers' CMP consumables buying decisions are: overall cost of ownership, which represents the cost to purchase, use and maintain a product; product quality and consistency; product performance and its impact on a customer's overall yield; engineering support; and, supply assurance. We believe that greater customer sophistication in the CMP process, more challenging integration schemes, additional and unique polishing materials, and cost pressures will continue to increase demands on CMP consumables suppliers like us.

We use a collaborative approach to build close relationships with our customers in a variety of areas, and we have customer-focused teams located in each major geographic region. Our sales process begins long before the actual sale of our products, and occurs on a number of levels. Due to the long lead times from research and development to product commercialization and sales, we have research teams that collaborate with technology-leading customers on emerging applications years before the products are required by the market. We also have development teams that interact closely with these customers, using our research and development facilities and capabilities to design CMP products tailored to their needs. Next, our applications engineers work with customers to integrate our products into their manufacturing processes. Finally, as part of our sales process, our logistics and sales personnel provide supply, warehouse and inventory management services for our customers.

We market our products primarily through direct sales to our customers, although we use distributors in certain areas. We believe this strategy of primarily direct sales provides us an additional means to collaborate with our customers, and provides our customers with the most efficient means by which to procure our products.

Our QED subsidiary supports customers in the semiconductor equipment, aerospace, defense, research, biomedical and digital imaging industries. QED counts among its worldwide customers leading precision optics manufacturers, major semiconductor original equipment manufacturers, research institutions, and contractors to the United States and other governments.

In fiscal 2016, our five largest customers accounted for approximately 54% of our revenue, with Taiwan Semiconductor Manufacturing Corporation and Samsung each accounting for approximately 15% of our revenue, respectively. For additional information on our customers, refer to Note 2 of "Notes to the Consolidated Financial Statements" included in Item 8 of Part II of this Form 10-K.

## RESEARCH, DEVELOPMENT AND TECHNICAL SUPPORT

We believe that technology is vital to success in our CMP and ESF businesses, and we plan to continue to devote significant resources to research, development and technical support (R&D), and balance our efforts between shorter-term market needs and longer-term investments required of us. We focus our R&D efforts on product innovation at leading-edge applications for our technology-leading customers. We develop new and enhanced CMP solutions tailored to these customers' requirements using our expertise in chemical formulation, materials science, product engineering and manufacturing technology. We work closely with these customers at their facilities to identify their specific technology and manufacturing challenges and to translate these challenges into viable CMP process solutions.

Our technology efforts are focused on five main areas that span the early stage of product development involving new materials, processes and designs several years in advance of commercialization, to continuous improvement of already commercialized products in daily use in our customers' manufacturing facilities:

Research related to fundamental CMP technology;



Development of new and enhanced CMP consumables products, including collaboration on joint development projects with technology-leading customers and suppliers;  
Process development to support rapid and effective commercialization of new products;  
Technical support of our CMP products in our customers' research, development and manufacturing facilities; and,  
Development of polishing and metrology applications outside of the semiconductor industry.

## Index

Our research in CMP slurries and pads addresses a breadth of complex and interrelated performance criteria that relate to the functional performance of the IC device, our customers' manufacturing yields, and their overall cost of ownership. We design slurries and pads that are capable of polishing one or more materials of differing hardness, sometimes at the same time, that comprise the semiconductor circuitry. In addition, our products must achieve the desired surface conditions at high polishing rates, high processing yields and low consumables costs in order to provide acceptable cost of ownership for our customers. As technology advances and materials and designs increase in complexity, these challenges require significant investments in R&D.

We also commit R&D resources to our ESF business. Products under development in this area include products used to polish silicon and silicon-carbide wafers to improve the surface quality of these wafers and reduce the customers' total cost of ownership.

We believe that technology provides us with a competitive advantage, and that our investments in R&D provide us with polishing and metrology capabilities that support the most advanced and challenging customer technology requirements. In fiscal years 2016, 2015 and 2014, we incurred approximately \$58.5 million, \$59.8 million and \$59.4 million, respectively, in R&D expenses. We believe our Six Sigma initiatives in our R&D efforts allow us to conduct more research at a lower cost than through other means. Investments in property, plant and equipment to support our R&D efforts are capitalized and depreciated over their useful lives.

Our global R&D team includes experts from the semiconductor industry and scientists from key disciplines required for the development of high-performance CMP consumable products. We operate an R&D facility in Aurora, Illinois, that features a Class 1 clean room and advanced equipment for product development, including 300mm polishing and metrology capabilities; a facility in Japan, which includes a Class 1 clean room with 300mm polishing, metrology and slurry development capabilities; a facility in Taiwan that includes a clean room with 300mm polishing capability; a facility in South Korea that provides slurry formulation capability and 300mm polishing capability; an R&D laboratory in Singapore that provides polishing, metrology and slurry development capabilities for the data storage industry; and, a research facility in Rochester, New York that supports our QED business. These facilities underscore our commitment to continuing to invest in our technology infrastructure to maintain our technology leadership and to be responsive to the needs of our customers.

## RAW MATERIALS SUPPLY

Engineered abrasive particles are significant raw materials we use in many of our CMP slurries. Our strategy is to secure various sources of different raw materials, as appropriate, to enable the desired performance of our products, and monitor those sources as necessary to provide supply assurance. Also, we have entered into multi-year supply agreements with a number of suppliers for the purchase of raw materials in the interest of supply assurance and to control costs. For additional information regarding these agreements, refer to "Tabular Disclosure of Contractual Obligations", included in "Management's Discussion and Analysis of Financial Condition and Results of Operations," in Item 7 of Part II of this Form 10-K.

## INTELLECTUAL PROPERTY

We believe our intellectual property is important to our success and ability to compete, and we also differentiate our products and technology by their high quality and reliability, and our quality systems, global supply chain and logistics. As of October 31, 2016, we had 1,285 active worldwide patents, of which 280 are U.S. patents, and 512 pending worldwide patent applications, of which 78 are in the U.S. Many of these patents are important to our continued development of new and innovative products for CMP and related processes, as well as for new businesses.

Our patents have a range of duration. We expect to lose worldwide patent coverage of a patent that has been material to some of our legacy business in approximately one year. However, we refresh our intellectual property on an ongoing basis through continued innovation, and have significant patents that protect this technology and other legacy and advanced technology with a range of duration. We attempt to protect our intellectual property rights through a combination of patent, trademark, copyright and trade secret laws, use of certain manufacturing technologies, exclusive contractual arrangements with suppliers, and with employee and third party nondisclosure and assignment agreements. We vigorously protect and defend our intellectual property, and have been successful in this regard.

11

---

## Index

Most of our intellectual property has been developed internally, but we also may acquire intellectual property from others to enhance our intellectual property portfolio. These enhancements may be via licenses or assignments or we may acquire certain proprietary technology and intellectual property when we make acquisitions. We believe these technology rights can enhance our competitive advantage by providing us with future product development opportunities and expanding our intellectual property portfolio.

## ENVIRONMENTAL MATTERS

Our facilities are subject to various environmental, safety and health laws and regulations, including those relating to air emissions, wastewater discharges, the handling and disposal of solid and hazardous wastes, and occupational safety and health. We believe that our facilities are in substantial compliance with applicable environmental laws and regulations. Our major operations in the United States, Japan, Singapore, South Korea and Taiwan are ISO 14001 Environmental and OHSAS 18001 Safety and Health certified, which requires that we implement and operate according to various procedures that demonstrate waste reduction, energy conservation, injury reduction and other environmental, health and safety objectives. We have incurred, and will continue to incur, capital and operating expenditures and other costs in complying with environmental, safety and health laws and regulations in the United States and other countries in which we do business, but we do not expect these costs will be material.

## EMPLOYEES

We believe our employees are the foundation of our success. As of October 31, 2016, we employed 1,145 individuals, including 650 in operations, 259 in research and development and technical, 101 in sales and marketing and 135 in administration. In general, our employees are not covered by collective bargaining agreements. We have not experienced any work stoppages and consider our relations with our employees to be good.

## FINANCIAL INFORMATION ABOUT GEOGRAPHIC AREAS

We sell our products worldwide. We believe our geographic coverage allows us to utilize our business and technical expertise from a diverse, global workforce, strategically located in close proximity to our customers. For more financial information about geographic areas, see Note 20 of "Notes to the Consolidated Financial Statements" included in Item 8 of Part II of this Form 10-K.

## AVAILABLE INFORMATION

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, definitive proxy statements on Form 14A, current reports on Form 8-K, and any amendments to those reports are made available free of charge on our Company website, [www.cabotcmp.com](http://www.cabotcmp.com), as soon as reasonably practicable after such reports are filed with the Securities and Exchange Commission (SEC). Any materials that the Company files with the SEC are also available to read and copy at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. Information on the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. Statements regarding beneficial ownership of our securities by our executive officers and directors are made available on our Company website following the filing of such with the SEC. In addition, the SEC's website (<http://www.sec.gov>) contains reports, proxy statements, and other information that we file electronically with the SEC.



Index

ITEM 1A. RISK FACTORS

We do not believe there have been any material changes in our risk factors since the filing of our Annual Report on Form 10-K for the fiscal year ended September 30, 2015. However, we may update our risk factors, including adding or deleting them, in our SEC filings from time to time for clarification purposes or to include additional information, at management's discretion, even when there have been no material changes.

RISKS RELATING TO OUR BUSINESS

DEMAND FOR OUR PRODUCTS FLUCTUATES AND OUR BUSINESS MAY BE ADVERSELY AFFECTED BY WORLDWIDE ECONOMIC AND INDUSTRY CONDITIONS

Our business is affected by economic and industry conditions and our revenue is primarily dependent upon semiconductor demand. Historically, semiconductor demand has fluctuated due to economic and industry cycles and seasonal shifts in demand, which can affect our business, causing demand for our products to fluctuate. For example, we experienced some strengthening of demand conditions in the semiconductor industry during the second half of fiscal 2016, following relatively soft demand conditions during the second half of fiscal 2015 and the first half of fiscal 2016. Furthermore, competitive dynamics within the semiconductor industry may impact our business. Our limited visibility to future customer orders makes it difficult for us to predict industry trends. If the global economy or the semiconductor industry weakens, whether in general or as a result of specific factors, such as macroeconomic factors, or unpredictable events such as natural disasters, we could experience material adverse impacts on our results of operations and financial condition.

Adverse global economic and industry conditions could have other negative effects on our Company. For instance, we could experience negative impacts on cash flows due to the inability of our customers to pay their obligations to us, as evidenced by a customer that was placed into receivership in the fourth quarter of fiscal 2016, or our production process could be harmed if our suppliers cannot fulfill their obligations to us. We also might have to reduce the carrying value of goodwill and other intangible assets, which could harm our financial position and results of operations.

Some additional factors that affect demand for our products include: the types of electronic devices that are in demand, such as mobile internet devices (MIDs) versus PCs; products that our customers may produce, such as logic versus memory IC devices, or digital versus analog IC devices; the various technology nodes at which those products are manufactured; customers' efficiencies in the use of CMP consumables; customers' device architectures and specific manufacturing processes; the short order to delivery time for our products; quarter-to-quarter changes in customer order patterns; market share and competitive gains and losses; and pricing changes by us and our competitors.

WE HAVE A NARROW PRODUCT RANGE AND OUR PRODUCTS MAY BECOME OBSOLETE, OR TECHNOLOGICAL CHANGES MAY REDUCE OR LIMIT INCREASES IN THE CONSUMPTION OF CMP SLURRIES AND PADS

Our business is substantially dependent on a single class of products, CMP slurries, which account for the majority of our revenue. We also continue to develop our business in CMP pads, and we acquired NexPlanar Corporation (NexPlanar), a supplier of advanced CMP pad solutions, in the first quarter of fiscal 2016. Our business would suffer if these products became obsolete or if consumption of these products decreased. Our success depends on our ability to keep pace with technological changes and advances in the semiconductor industry and to adapt, improve and customize our products for advanced IC applications in response to evolving customer needs and industry trends. Since its inception, the semiconductor industry has experienced technological changes and advances in the design,

manufacture, performance and application of IC devices. Our customers continually pursue lower cost of ownership and higher quality and performance of materials consumed in their manufacturing processes, including CMP slurries and pads, as a means to reduce costs, increase the yield in their manufacturing facilities, and achieve desired performance of the IC devices they produce. We expect these technological changes, and this drive toward lower costs, higher quality and performance and higher yields, will continue in the future. Potential technology developments in the semiconductor industry, as well as our customers' efforts to reduce consumption of CMP consumables, including through use of smaller quantities, could render our products less important to the IC device manufacturing process.

13

---

Index

**A SIGNIFICANT AMOUNT OF OUR BUSINESS COMES FROM A LIMITED NUMBER OF LARGE CUSTOMERS AND OUR REVENUE AND PROFITS COULD DECREASE SIGNIFICANTLY IF WE LOST ONE OR MORE OF THESE CUSTOMERS**

Our CMP consumables customer base is concentrated among a limited number of large customers. The semiconductor industry has been consolidating as the larger semiconductor manufacturers have generally grown faster than the smaller ones, through business gains, mergers and acquisitions, and strategic alliances. Industry analysts predict that this trend will continue, which means the semiconductor industry will be comprised of fewer and larger participants in the future if their prediction is correct. One or more of these principal customers could stop buying CMP consumables from us or could substantially reduce the quantity of CMP consumables purchased from us. Our principal customers also hold considerable purchasing power, which can impact the pricing and terms of sale of our products. Any deferral or significant reduction in the quantity or price of CMP consumables sold to these principal customers could seriously harm our business, financial condition and results of operations.

In fiscal 2016, our five largest customers accounted for approximately 54% of our revenue, with Taiwan Semiconductor Manufacturing Company (TSMC) and Samsung each accounting for approximately 15% of our revenue. In fiscal year 2015, our five largest customers accounted for approximately 58% of our revenue, with TSMC and Samsung accounting for approximately 18% and 15%, respectively.

**OUR BUSINESS COULD BE SERIOUSLY HARMED IF OUR COMPETITORS DEVELOP COMPETITIVE CMP CONSUMABLES PRODUCTS, OFFER BETTER PRICING, SERVICE OR OTHER TERMS, OR OBTAIN CERTAIN INTELLECTUAL PROPERTY RIGHTS**

Competition from other CMP consumables manufacturers or any new entrants could seriously harm our business and results of operations, and this competition could continue to increase. Competition has and will likely continue to impact the prices we are able to charge for our CMP consumables products, as well as our overall business. In addition, our competitors could have or obtain intellectual property rights that could restrict our ability to market our existing products and/or to innovate and develop new products, could attempt to introduce products similar to ours following the expiration of our patents, as referenced above with respect to certain intellectual property material to some of our legacy business, or could attempt to introduce products that do not fall within the scope of our intellectual property rights.

**ANY PROBLEM OR DISRUPTION IN OUR SUPPLY CHAIN, INCLUDING SUPPLY OF OUR MOST IMPORTANT RAW MATERIALS, OR IN OUR ABILITY TO MANUFACTURE AND DELIVER OUR PRODUCTS TO OUR CUSTOMERS, COULD ADVERSELY AFFECT OUR RESULTS OF OPERATIONS**

We depend on our supply chain to enable us to meet the demands of our customers. Our supply chain includes the raw materials we use to manufacture our products, our production operations and the means by which we deliver our products to our customers. Our business could be adversely affected by any problem or interruption in our supply of the key raw materials we use in our CMP slurries and pads, including raw materials that do not meet the stringent quality and consistency requirements of our customers, any problem or interruption that may occur during production or delivery of our products, such as weather-related problems, natural disasters, or labor-related issues, or any difficulty in producing sufficient quantities of our products to meet growing demand from our customers. For example, in our third quarter of fiscal 2015, we incurred significant costs associated with raw material that did not meet our material quality requirements. Our supply chain may also be negatively impacted by unanticipated price



increases due to supply restrictions beyond the control of our Company or our raw materials suppliers.

14

---

## Index

We believe it would be difficult to promptly secure alternative sources of key raw materials in the event one of our suppliers becomes unable to supply us with sufficient quantities of raw materials that meet the quality and technical specifications required by us and our customers. In addition, new contract terms, contractual amendments to existing agreements with, or non-performance by, our suppliers, including any significant financial distress our suppliers may suffer, could adversely affect us. Also, if we change the supplier or type of key raw materials we use to make our CMP slurries or pads, or are required to purchase them from a different manufacturer or manufacturing facility or otherwise modify our products, in certain circumstances our customers might have to requalify our CMP slurries and pads for their manufacturing processes and products. The requalification process could take a significant amount of time and expense to complete and could occupy technical resources of our customers that might otherwise be used to evaluate our new products, thus delaying potential revenue growth, or motivate our customers to consider purchasing products from our competitors, possibly interrupting or reducing our sales of CMP consumables to these customers.

## WE ARE SUBJECT TO RISKS ASSOCIATED WITH OUR FOREIGN OPERATIONS

We currently have operations and a large customer base outside of the United States. Approximately 86%, 86% and 88% of our revenue was generated by sales to customers outside of the United States for fiscal 2016, 2015 and 2014, respectively. We may encounter risks in doing business in certain foreign countries, including, but not limited to, adverse changes in economic and political conditions, fluctuation in exchange rates, compliance with a variety of foreign laws and regulations, as well as difficulty in enforcing business and customer contracts and agreements, including protection of intellectual property rights. We also may encounter risks that we may not be able to repatriate earnings from our foreign operations, derive anticipated tax benefits of our foreign operations or recover the investments made in our foreign operations.

## WE MAY PURSUE ACQUISITIONS OF, INVESTMENTS IN, AND MERGERS OR STRATEGIC ALLIANCES WITH OTHER ENTITIES, WHICH COULD DISRUPT OUR OPERATIONS AND HARM OUR OPERATING RESULTS IF THEY ARE UNSUCCESSFUL

We expect to continue to make investments in technologies, assets and companies, either through acquisitions, mergers, investments or alliances, in order to supplement our internal growth and development efforts. Acquisitions, mergers, and investments, including our acquisition of NexPlanar, which we completed on October 22, 2015, involve numerous risks, including the following: difficulties and risks in integrating the operations, technologies, products and personnel of acquired companies; diversion of management's attention from normal daily operations of the business; increased risk associated with foreign operations; potential difficulties and risks in entering markets in which we have limited or no direct prior experience and where competitors in such markets have stronger market positions; potential difficulties in operating new businesses with different business models; potential difficulties with regulatory or contract compliance in areas in which we have limited experience; initial dependence on unfamiliar supply chains or relatively small supply partners; insufficient revenues to offset increased expenses associated with acquisitions; potential loss of key employees of the acquired companies; or inability to effectively cooperate and collaborate with our alliance partners.

Further, we may never realize the perceived or anticipated benefits of a business combination or merger with, or asset or other acquisition of, or investments in, other entities. Transactions such as these could have negative effects on our results of operations, in areas such as contingent liabilities, gross profit margins, amortization charges related to intangible assets and other effects of accounting for the purchases of other business entities. Investments in and acquisitions of technology-related companies or assets are inherently risky because these businesses or assets may never develop, and we may incur losses related to these investments. For example, in fiscal 2016, we recorded \$1.0 million of impairment expense related to certain in-process technology, related to the NexPlanar acquisition. In

addition, we may be required to impair the carrying value of these acquisitions or investments to reflect other than temporary declines in their value, which could harm our business and results of operations.

Index

**BECAUSE WE RELY HEAVILY ON OUR INTELLECTUAL PROPERTY, OUR FAILURE TO ADEQUATELY OBTAIN OR PROTECT IT COULD SERIOUSLY HARM OUR BUSINESS**

Protection of intellectual property is particularly important in our industry because we develop complex technical formulas and processes for CMP products that are proprietary in nature and differentiate our products from those of our competitors. Our intellectual property is important to our success and ability to compete. We attempt to protect our intellectual property rights through a combination of patent, trademark, copyright and trade secret laws, as well as employee and third-party nondisclosure and assignment agreements. In addition, we protect our product differentiation through various other means, such as proprietary supply arrangements for the raw materials that are part of our formulations, and use of certain manufacturing technologies. Due to our international operations, we pursue protection in different jurisdictions, which may provide varying degrees of protection, and we cannot provide assurance that we can obtain adequate protection in each such jurisdiction. Our failure to obtain or maintain adequate protection of our intellectual property rights for any reason, including through the patent prosecution process or in the event of litigation related to such intellectual property, could seriously harm our business. In addition, certain types of intellectual property, such as patents, expire after a certain period of time, and products protected by our patents then lose such protection, so we refresh our intellectual property portfolio on an ongoing basis through continued innovation, and failure to do so could adversely affect our business. Also, the costs of obtaining or protecting our intellectual property could negatively affect our operating results.

**BECAUSE WE HAVE LIMITED EXPERIENCE IN BUSINESS AREAS OUTSIDE OF CMP CONSUMABLES, EXPANSION OF OUR BUSINESS INTO OTHER PRODUCTS AND APPLICATIONS MAY NOT BE SUCCESSFUL**

An element of our strategy has been to leverage our current customer relationships, technological expertise and other capabilities to expand our business beyond CMP consumables into other areas, such as other electronic materials. Additionally, in our Engineered Surface Finishes business, we are pursuing other surface modification applications. Expanding our business into new product areas could involve technologies, production processes and business models in which we have limited experience, and we may not be able to develop and produce products or provide services that satisfy customers' needs, or we may be unable to keep pace with technological or other developments. Also, our competitors may have or obtain intellectual property rights that could restrict our ability to market our existing products and/or to innovate and develop new products.

**OUR INABILITY TO ATTRACT AND RETAIN KEY PERSONNEL COULD CAUSE OUR BUSINESS TO SUFFER**

If we fail to attract and retain the necessary managerial, technical and customer support personnel, our business and our ability to maintain existing and obtain new customers, develop new products and provide acceptable levels of customer service could suffer. We compete with other industry participants for qualified personnel, particularly those with significant experience in the semiconductor industry. The loss of services of key employees could harm our business and results of operations.

Index

RISKS RELATING TO THE MARKET FOR OUR COMMON STOCK

THE MARKET PRICE MAY FLUCTUATE SIGNIFICANTLY AND RAPIDLY

The market price of our common stock has fluctuated and could continue to fluctuate significantly as a result of factors such as: economic and stock market conditions generally and specifically as they may impact participants in the semiconductor and related industries; changes in financial estimates and recommendations by securities analysts who follow our stock; earnings and other announcements by, and changes in market evaluations by securities analysts of, us or participants in the semiconductor and related industries; changes in business or regulatory conditions affecting us or participants in the semiconductor and related industries; announcements or implementation by us, our competitors, or our customers of technological innovations, new products or different business strategies; changes in our capital deployment strategy, or entering into a business combination; and trading volume of our common stock.

ANTI-TAKEOVER PROVISIONS UNDER OUR CERTIFICATE OF INCORPORATION AND BYLAWS MAY DISCOURAGE THIRD PARTIES FROM MAKING AN UNSOLICITED BID FOR OUR COMPANY

Our certificate of incorporation, our bylaws, and various provisions of the Delaware General Corporation Law may make it more difficult or expensive to effect a change in control of our Company. For instance, our amended and restated certificate of incorporation provides for the division of our Board of Directors into three classes as nearly equal in size as possible with staggered three-year terms.

We have adopted change in control arrangements covering our executive officers and other key employees. These arrangements provide for a cash severance payment, continued medical benefits and other ancillary payments and benefits upon termination of service of a covered employee's employment following a change in control, which may make it more expensive to acquire our Company.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

Index

ITEM 2. PROPERTIES

Our principal U.S. facilities that we own consist of:

- a global headquarters and research and development facility in Aurora, Illinois, comprising approximately 200,000 square feet;
- a commercial slurry manufacturing plant and distribution center in Aurora, Illinois, comprising approximately 175,000 square feet;
- a commercial polishing pad manufacturing plant and offices in Aurora, Illinois, comprising approximately 48,000 square feet;
- an additional 13.2 acres of vacant land in Aurora, Illinois; and,
- a facility in Addison, Illinois, comprising approximately 15,000 square feet.

Our principal U.S. facilities that we lease consist of:

- \* two commercial pad manufacturing plants and offices in Hillsboro, Oregon, comprising approximately 73,000 square feet; and,
- \* a development and technical support facility and business office in Rochester, New York, comprising approximately 23,000 square feet.

Our principal foreign facilities that we own consist of:

- \* a commercial slurry and pad manufacturing plant, automated warehouse, research and development facility and offices in Kaohsiung County, Taiwan, comprising approximately 170,000 square feet;
- \* a commercial slurry manufacturing plant and distribution center, and a development and technical support facility in Geino, Japan, comprising approximately 144,000 square feet; and,
- \* a commercial slurry manufacturing plant, development facility and offices in Oseong, South Korea, comprising approximately 56,000 square feet.

Our principal foreign facilities that we lease consist of:

- \* an office, laboratory and commercial polishing pad manufacturing plant in Hsin-Chu, Taiwan, comprising approximately 31,000 square feet; and,
- \* a commercial slurry manufacturing plant, research and development facility and business office in Singapore, comprising approximately 24,000 square feet.

We believe that our facilities are suitable and adequate for their intended purpose and provide us with sufficient capacity and capacity expansion opportunities and technological capability to meet our current and expected demand in the foreseeable future. For example, we are expanding our facilities in Oseong, South Korea to support future growth.

Index

ITEM 3. LEGAL PROCEEDINGS

While we are not involved in any legal proceedings that we believe will have a material impact on our consolidated financial position, results of operations or cash flows, we periodically become a party to legal proceedings in the ordinary course of business.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

19

---

Index

## EXECUTIVE OFFICERS OF THE REGISTRANT

Set forth below is information concerning our executive officers and their ages as of October 31, 2016.

NAME	AGE	POSITION
David H. Li	43	President and Chief Executive Officer
H. Carol Bernstein	56	Vice President, Secretary and General Counsel
Yumiko Damashek	60	Vice President, Operations and Quality
Richard Hui	41	Vice President, Global Sales
William S. Johnson	59	Executive Vice President and Chief Financial Officer
Thomas F. Kelly	51	Vice President, Corporate Development
Ananth Naman	46	Vice President and Chief Technology Officer
Lisa A. Polezoes	52	Vice President, Human Resources
Daniel D. Woodland	46	Vice President, Marketing
Thomas S. Roman	55	Principal Accounting Officer and Corporate Controller

DAVID H. LI has served as our President and Chief Executive Officer, and as a director of our Company, since January 2015. From June, 2008 through December 2014, Mr. Li served as our Vice President of the Asia Pacific Region. Prior to that role, Mr. Li held various leadership roles, including our Managing Director of China and Korea, and our Global Business Director for Tungsten and Advanced Dielectrics. Prior to that, he held a variety of leadership positions in operations, sourcing and investor relations since joining us in 1998. Mr. Li received a B.S. in Chemical Engineering from Purdue University and an M.B.A. from Northwestern University.

H. CAROL BERNSTEIN has served as our Vice President, Secretary and General Counsel since August 2000. From January 1998 until joining us, Ms. Bernstein served as the General Counsel and Director of Industrial Technology Development of Argonne National Laboratory, which is operated by the University of Chicago for the United States Department of Energy. From May 1985 until December 1997, she served in various positions with the IBM Corporation, culminating in serving as an Associate General Counsel, and was the Vice President, Secretary and General Counsel of Advantis Corporation, an IBM joint venture. Ms. Bernstein received her B.A. from Colgate University and her J.D. from Northwestern University; she is a member of the Bar of the States of Illinois and New York.

YUMIKO DAMASHEK has served as our Vice President of Operations and Quality since January 2015. From November 2005 through June 2008, Ms. Damashek served as our Vice President, Japan, and subsequently as Vice President, Japan and Asia Operations through December 2014. Prior to that, Ms. Damashek served as Managing Director of Japan since November 2005. Prior to joining us, Ms. Damashek served as President for Celerity Japan, Inc. Before that, she held various leadership positions at Global Partnership Creation, Inc. and Millipore Corporation. Ms. Damashek received her B.A. from the University of Arizona and her M.B.A. from San Diego State University.

RICHARD HUI has served as our Vice President of Global Sales since January 2015. From October 2013 through December 2014, Mr. Hui served as our Managing Director of Korea. Prior to that, Mr. Hui served as our Regional Sales Director of China from January 2011. Previously, Mr. Hui served as a Product Line Manager and held other sales leadership positions for us in Asia from March 2003 to January 2011. Before joining Cabot Microelectronics, Mr. Hui held management roles at Advanced Semiconductor Manufacturing Corp. and HHNEC. Mr. Hui received a B.S. in Electronics Engineering and an M.B.A. from JiaoTong University.

WILLIAM S. JOHNSON has served as our Vice President and Chief Financial Officer since April 2003, and was named Executive Vice President in April 2013. Prior to joining us, Mr. Johnson served as Executive Vice President and Chief Financial Officer for Budget Group, Inc. from August 2000 to March 2003. Before that, Mr. Johnson



worked for BP Amoco for 16 years in various senior finance and management positions, culminating in serving as President of Amoco Fabrics and Fibers Company. Mr. Johnson received his B.S. in Mechanical Engineering from the University of Oklahoma and his M.B.A. from the Harvard Business School. Mr. Johnson is also a director of CTS Corporation.

20

---

Index

THOMAS F. KELLY has served as our Vice President of Corporate Development since September 2016. From 2012 until joining us, Mr. Kelly served as the Director of Global Raw Materials Procurement for Celanese Corporation. Prior to that, he held various roles at Chemtura Corporation, culminating in serving as Vice President of New Business Development and the Program Management Organization from 2010 to 2012, and was Vice President of Product Management, Operations and Integration Planning from 2008 to 2010. Before that, Mr. Kelly held various senior business operations, product management, and supply chain assurance positions with us from 1999 through 2008. Mr. Kelly received his B.S. and M.S. degrees in Chemical Engineering from Villanova University, and his M.B.A. from Drexel University.

ANANTH NAMAN has served as our Vice President and Chief Technology Officer since January 2015. Previously, Dr. Naman was our Vice President of Research and Development since January 2011. Prior to that, Dr. Naman was our Director of Product Development starting in April 2009 and Director of Pads Technology from January 2006 through March 2009. Prior to joining us, Dr. Naman managed research and development efforts at Honeywell International from July 2000 to December 2005, and from 1997 to 2000 he held positions in research and development at Seagate Technology. Dr. Naman earned B.S., M.S. and Ph.D. degrees in Materials Science and Engineering from the University of Florida.

LISA A. POLEZOES has served as our Vice President of Human Resources since October 2012. Prior to that, Ms. Polezoes was our Global Director of Human Resources from August 2006, and previously had been our Director of Global Compensation and Benefits from 2005. Prior to joining us, Ms. Polezoes had various human resources and management positions at Praxair, Montgomery Ward and Hyatt Corporation. Ms. Polezoes received her B.S. in Institutional Management from Purdue University and her M.B.A. from Benedictine University.

DANIEL D. WOODLAND has served as our Vice President of Marketing since January 2015. From June 2009 through December 2014, Dr. Woodland served as our Global Business Director for Dielectrics, after having served as our Marketing Director since December 2006. Prior to that, Dr. Woodland served as Product Line Manager, and held various research and development positions after joining us in September 2003. Before joining Cabot Microelectronics, Dr. Woodland held management roles at OMNOVA Solutions. Dr. Woodland received a B.A. in Physics from the University of California – Berkeley, and a Ph.D. in Physics from the University of Maine.

THOMAS S. ROMAN has served as our Corporate Controller and Principal Accounting Officer since February 2004 and previously served as our North American Controller. Prior to joining us in April 2000, Mr. Roman was employed by FMC Corporation in various financial reporting, tax and audit positions. Before that, Mr. Roman worked for Gould Electronics and Arthur Andersen LLP. Mr. Roman is a C.P.A. and earned a B.S. in Accounting from the University of Illinois and an M.B.A. from DePaul University.

Index

## PART II

## ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock has traded publicly under the symbol "CCMP" since our initial public offering in April 2000, currently on the NASDAQ Global Select Market, and formerly the NASDAQ National Market. The following table sets forth the range of quarterly high and low closing sales prices for our common stock.

	HIGH	LOW
Fiscal 2015		
First Quarter	49.38	39.52
Second Quarter	53.37	44.24
Third Quarter	51.40	44.19
Fourth Quarter	47.60	37.84
Fiscal 2016		
First Quarter	45.77	38.31
Second Quarter	44.00	34.53
Third Quarter	44.26	38.37
Fourth Quarter	53.45	41.12
Fiscal 2017 First Quarter (through October 31, 2016)	56.81	38.70

As of October 31, 2016, there were approximately 727 holders of record of our common stock. On January 7, 2016, we announced the initiation of a quarterly cash dividend program. In conjunction with this program, our Board of Directors declared cash dividends of \$0.18 per share, or approximately \$4.4 million, for each of the last three quarters of fiscal 2016. The declaration and payment of future dividends is subject to the discretion and determination of the Company's Board of Directors and management, based on a variety of factors, and the program may be suspended, terminated or modified at any time for any reason.

## ISSUER PURCHASES OF EQUITY SECURITIES

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (in thousands)
Jul. 1 through Jul. 31, 2016	-	\$ -	-	\$ 134,989
Aug. 1 through Aug. 31, 2016	8,538	50.12	8,500	\$ 134,563
Sep. 1 through Sep. 30, 2016	10,517	50.94	10,500	\$ 134,028
Total	19,055	\$ 50.57	19,000	\$ 134,028

In January 2016, our Board of Directors authorized an increase in the amount available under our share repurchase program from the previously remaining \$75.0 million to \$150.0 million. Under this program, we repurchased 636,839 shares for \$26.0 million in fiscal 2016. As of September 30, 2016, \$134.0 million remains available under our share repurchase program. The manner in which the Company repurchases its shares is discussed in Part II, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations, under the heading "Liquidity and Capital Resources", of this Form 10-K. To date, we have funded share purchases under our share repurchase program from our available cash balance, and anticipate we will continue to do so.

22

---

Index

Separate from this share repurchase program, we purchased a total of 66,125 shares during fiscal 2016 pursuant to the terms of our Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan (EIP) and our 2012 Omnibus Incentive Plan (OIP) as shares withheld from award recipients to cover payroll taxes on the vesting of shares of restricted stock awarded under the EIP and OIP.

EQUITY COMPENSATION PLAN INFORMATION

See Part II, Item 12 of this Form 10-K for information regarding shares of common stock that may be issued under the Company's existing equity compensation plans.

23

---

Index

## STOCK PERFORMANCE GRAPH

The following graph illustrates the cumulative total stockholder return on our common stock during the period from September 30, 2011 through September 30, 2016 and compares it with the cumulative total return on the NASDAQ Composite Index and the Philadelphia Semiconductor Index. The comparison assumes \$100 was invested on September 30, 2011 in our common stock and in each of the foregoing indices and assumes reinvestment of the special cash dividend we paid to our stockholders in fiscal 2012 and the quarterly cash dividends declared in fiscal 2016. The performance shown is not necessarily indicative of future performance. See "Risk Factors" in Part I, Item 1A above.

	9/11	12/11	3/12	6/12	9/12	12/12	3/13	6/13	9/13	12/13	3/14
Cabot Microelectronics Corporation	100.00	137.39	161.29	121.17	145.77	147.31	144.16	136.94	159.75	189.58	182.53
NASDAQ Composite	100.00	109.59	129.51	123.62	131.89	127.75	139.35	145.87	163.47	181.85	183.27
Philadelphia Semiconductor	100.00	111.93	134.13	120.24	120.50	123.59	134.66	140.75	149.30	162.10	175.06
	6/14	9/14	12/14	3/15	6/15	9/15	12/15	3/16	6/16	9/16	
Cabot Microelectronics Corporation	185.22	171.95	196.30	207.29	195.43	160.71	181.62	170.48	177.17	222.16	
NASDAQ Composite	192.60	195.96	207.22	214.28	218.81	202.60	219.78	214.53	213.65	234.66	
Philadelphia Semiconductor	190.23	194.40	208.35	205.66	197.98	179.69	195.23	202.73	210.75	250.97	

Index

## ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data for each year of the five-year period ended September 30, 2016, has been derived from the audited consolidated financial statements.

The information set forth below is not necessarily indicative of results of future operations and should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and the consolidated financial statements and notes to those statements included in Items 7 and 8 of Part II of this Form 10-K, as well as Risk Factors included in Item 1A of Part I of this Form 10-K.

CABOT MICROELECTRONICS CORPORATION  
 SELECTED FINANCIAL DATA - FIVE YEAR SUMMARY  
 (Amounts in thousands, except per share amounts)

	Year Ended September 30,				
	2016	2015	2014	2013	2012 (1)
Consolidated Statement of Income Data:					
Revenue	\$430,449	\$414,097	\$424,666	\$433,131	\$427,657
Cost of goods sold	220,247	201,866	221,573	221,015	223,630
Gross profit	210,202	212,231	203,093	212,116	204,027
Operating expenses:					
Research, development and technical	58,532	59,778	59,354	61,373	58,642
Selling and marketing	27,717	24,983	26,513	27,985	29,516
General and administrative	49,445	52,430	45,418	46,287	49,345
Total operating expenses	135,694	137,191	131,285	135,645	137,503
Operating income	74,508	75,040	71,808	76,471	66,524
Interest expense	4,723	4,524	3,354	3,643	2,309
Other income (expense), net	653	681	140	1,392	(1,011 )
Income before income taxes	70,438	71,197	68,594	74,220	63,204
Provision for income taxes	10,589	15,051	17,843	21,642	23,110
Net income	\$59,849	\$56,146	\$50,751	\$52,578	\$40,094
Basic earnings per share	\$2.47	\$2.32	\$2.12	\$2.27	\$1.76
Weighted average basic shares outstanding	24,077	24,040	23,704	22,924	22,506
Diluted earnings per share	\$2.43	\$2.26	\$2.04	\$2.19	\$1.71
Weighted average diluted shares outstanding	24,477	24,632	24,611	23,760	23,244
Cash dividends per share	\$0.54	\$-	\$-	\$-	\$15.00
As of September 30,					
	2016	2015	2014	2013	2012 (1)
Consolidated Balance Sheet Data:					
Cash and cash equivalents	\$287,479	\$354,190	\$284,155	\$226,029	\$178,459

Edgar Filing: CABOT MICROELECTRONICS CORP - Form 10-K

Other current assets	149,612	140,318	143,838	136,769	135,906
Property, plant and equipment, net	106,496	93,743	100,821	111,985	125,020
Other assets	184,339	72,223	72,353	76,809	74,006
Total assets	\$727,926	\$660,474	\$601,167	\$551,592	\$513,391
Current liabilities	\$65,885	\$60,644	\$55,448	\$68,221	\$62,920
Long-term debt	147,657	155,313	164,063	150,937	161,875
Other long-term liabilities	16,736	15,553	9,654	8,992	9,058
Total liabilities	230,278	231,510	229,165	228,150	233,853
Stockholders' equity	497,648	428,964	372,002	323,442	279,538
Total liabilities and stockholders' equity	\$727,926	\$660,474	\$601,167	\$551,592	\$513,391

(1) In fiscal 2012, we completed a leveraged recapitalization and paid a special cash dividend of \$15.00 per share, or \$347,140 in the aggregate. The dividend was funded with a \$175,000 term loan and \$172,140 of existing Company cash balances.



Index

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following "Management's Discussion and Analysis of Financial Condition and Results of Operations" (MD&A), as well as disclosures included elsewhere in this Form 10-K, include "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. This Act provides a safe harbor for forward-looking statements to encourage companies to provide prospective information about themselves so long as they identify these statements as forward-looking and provide meaningful cautionary statements identifying important factors that could cause actual results to differ from the projected results. All statements other than statements of historical fact we make in this Form 10-K are forward-looking. In particular, the statements herein regarding future sales and operating results; growth or contraction of, and trends in, the industry and markets in which the Company participates; the Company's management; various economic factors and international events; regulatory or legislative activity; product performance; the generation, protection and acquisition of intellectual property, and litigation related to such intellectual property; new product introductions; development of new products, technologies and markets; natural disasters; the Company's supply chain; natural disasters; the acquisition of or investment in other entities, including NexPlanar Corporation ("NexPlanar"); uses and investment of the Company's cash balance, including dividends and share repurchases, which may be suspended, terminated or modified at any time for any reason, based on a variety of factors; financing facilities and related debt, payment of principal and interest, and compliance with covenants and other terms; the Company's capital structure; the Company's current or future tax rate; the operation of facilities by the Company; and statements preceded by, followed by or that include the words "intends", "estimates", "plans", "believes", "expects", "anticipates", "should", "could" or similar expressions, are forward-looking statements. Forward-looking statements reflect our current expectations and are inherently uncertain. Our actual results may differ significantly from our expectations. We assume no obligation to update this forward-looking information. The section entitled "Risk Factors" describes some, but not all, of the factors that could cause these differences.

The following discussion and analysis should be read in conjunction with our historical financial statements and the notes to those financial statements which are included in Item 8 of Part II of this Form 10-K.

OVERVIEW

Cabot Microelectronics Corporation ("Cabot Microelectronics", "the Company", "us", "we", or "our") supplies high-performance polishing slurries and pads used in the manufacture of advanced integrated circuit (IC) devices within the semiconductor industry, in a process called chemical mechanical planarization (CMP). CMP polishes surfaces at an atomic level, thereby helping to enable IC device manufacturers to produce smaller, faster and more complex IC devices with fewer defects. We operate predominantly in one industry segment – the development, manufacture and sale of CMP consumables. We develop, produce and sell CMP slurries for polishing many of the conducting and insulating materials used in IC devices, and also for polishing the disk substrates and magnetic heads used in hard disk drives. We develop, manufacture and sell CMP polishing pads, which are used in conjunction with slurries in the CMP process. We also pursue other demanding surface modification applications through our Engineered Surface Finishes (ESF) business where we develop and provide products for demanding polishing applications in other industries.

On October 22, 2015, we completed our acquisition of 100% of the outstanding stock of NexPlanar, which was a privately held, U.S. based company that specialized in the development, manufacture and sale of advanced CMP pad solutions for the semiconductor industry. We acquired NexPlanar to expand our polishing pad portfolio and add a complementary pad technology for which we believe we can leverage our global infrastructure to better serve our customers, including offering performance-advantaged slurry and pad consumable sets. We paid a total of \$127.0 million, including total purchase consideration of \$142.3 million, less cash acquired of \$15.3 million. The purchase

consideration includes \$142.2 million paid at the date of acquisition and \$0.1 million for a post-closing adjustment. In addition, we paid \$0.1 million in compensation expense related to certain unvested NexPlanar stock options settled in cash at the acquisition date pursuant to the acquisition agreement. See Note 3 of the Notes to the Consolidated Financial Statements of this Form 10-K for more information regarding the acquisition.

Index

On January 7, 2016, we announced that our Board of Directors had authorized the initiation of a dividend program under which the Company intends to pay quarterly cash dividends on its common stock. Our Board of Directors declared quarterly cash dividends of \$0.18 per share during each of the last three quarters of fiscal 2016, or approximately \$4.4 million each quarter. On January 7, 2016, we also announced that our Board of Directors authorized an increase in the Company's existing share repurchase program to \$150.0 million, from the approximately \$75.0 million that was available as of December 31, 2015. The dividend and share repurchase programs, which can be suspended, modified or terminated at any time for any reason, are part of our balanced capital allocation strategy, including funding organic investments, dividends, share repurchases and acquisitions.

In fiscal 2016, demand patterns for our products reflected conditions within the overall semiconductor industry as demand was relatively soft during the first half of the fiscal year, followed by stronger demand during the second half. The demand patterns that we experienced appear to be consistent with those experienced by other participants in the semiconductor industry. Industry reports and some of our customers have indicated that inventories currently appear to be below normal levels in a number of areas, which appears to be driven by new product launches and stronger than normal seasonal demand. Based on this, industry analysts and some of our customers are forecasting continued solid demand in the first quarter of our fiscal 2017. Over the long-term, we continue to believe that semiconductor demand will grow, fueled by demand for mobile internet devices (MIDs), as well as a range of other electronic applications, including automotive and industrial, accompanied by the continued advancement of semiconductor technology, including growth of more complex device architectures such as 3D NAND and FinFET. However, there are many factors that make it difficult for us to predict future revenue trends for our business, including those discussed in Part I, Item 1A entitled "Risk Factors" in this Form 10-K.

Revenue for fiscal 2016 was \$430.4 million, which represented an increase of 3.9% from \$414.1 million reported for fiscal 2015. The increase in revenue from fiscal 2015 reflects \$23.5 million in revenue from NexPlanar pad products, partially offset by the impact of soft industry demand conditions in the first half of the fiscal year, and competitive dynamics in certain dielectrics and data storage applications, which we have disclosed previously. We achieved record annual revenue in our tungsten slurry and polishing pad product areas.

Gross profit for fiscal 2016 expressed as a percentage of revenue was 48.8%, including a 120 basis point adverse impact of acquisition-related costs and NexPlanar amortization expense, compared to 51.3% reported for fiscal 2015. The decrease in gross profit percentage from fiscal 2015 was primarily due to higher fixed manufacturing costs, including NexPlanar amortization expense and other NexPlanar-related costs, and higher material costs, partially offset by a higher-valued product mix, and lower costs associated with our annual cash incentive program (Short Term Incentive Program, or STIP, and previously, our Annual Incentive Program, or AIP). Our gross profit percentage was consistent with our revised fiscal 2016 guidance of around 49.0% of revenue. We expect our gross profit percentage for full fiscal year 2017 to be between 48.0% and 50.0% of revenue. We may experience fluctuations in our gross profit due to a number of factors, including the level of our revenue, the extent to which we utilize our manufacturing capacity, and changes in our product mix, which may cause our quarterly gross profit to be above or below this annual guidance range.

Operating expenses of \$135.7 million, which include research, development and technical, selling and marketing, and general and administrative expenses, decreased 1.1%, or \$1.5 million, from the \$137.2 million reported for fiscal 2015. The decrease in operating expenses was primarily due to lower costs associated with our STIP, lower clean room material costs, and the absence of costs associated with our CEO transition in fiscal 2015, partially offset by NexPlanar costs, including \$1.8 million of NexPlanar amortization expense, \$1.6 million of acquisition-related costs, and a \$1.0 million impairment charge on certain NexPlanar in-process technology. We expect total operating expenses for our full fiscal year 2017 to be in the range of \$137.0 million to \$142.0 million.

Diluted earnings per share in fiscal 2016 were \$2.43, including a \$0.25 adverse impact of NexPlanar amortization expense, acquisition-related costs and the impairment charge, and represented an increase of 7.5%, or \$0.17, from \$2.26 in fiscal 2015. The increase was primarily due to higher revenue and a lower effective tax rate, partially offset by a lower gross profit margin.

Index

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

This MD&A, as well as disclosures included elsewhere in this Form 10-K, are based upon our audited consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingencies. On an ongoing basis, we evaluate the estimates used, including those related to bad debt expense, inventory valuation, valuation and classification of auction rate securities, impairment of long-lived assets and investments, business combinations, goodwill, other intangible assets, interest rate swaps, share-based compensation, income taxes and contingencies. We base our estimates on historical experience, current conditions and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources, as well as for identifying and assessing our accounting treatment with respect to commitments and contingencies. Actual results may differ from these estimates under different assumptions or conditions. We believe the following critical accounting policies involve significant judgments and estimates used in the preparation of our consolidated financial statements.

ALLOWANCE FOR DOUBTFUL ACCOUNTS

We maintain an allowance for doubtful accounts for estimated losses resulting from the potential inability of our customers to make required payments. Our allowance for doubtful accounts is based on historical collection experience, adjusted for any specific known conditions or circumstances. While historical experience may provide a reasonable estimate of uncollectible accounts, actual results may differ from what was recorded. We will continue to monitor the financial solvency of our customers and, if global economic, or individual customer, conditions weaken, we may have to record additional increases to our allowance for doubtful accounts. As of September 30, 2016, our allowance for doubtful accounts represented 2.8% of gross accounts receivable, including \$0.5 million recorded in the fourth quarter of fiscal 2016 for a customer that was placed into receivership. If we had increased our estimate of bad debts by 100 basis points to 3.8% of gross accounts receivable, our general and administrative expenses would have increased by \$0.6 million.

INVENTORY VALUATION

We value inventory at the lower of cost or market and write down the value of inventory for estimated obsolescence or if inventory is deemed unmarketable. An inventory reserve is maintained based upon a historical percentage of actual inventories written off applied against the inventory value at the end of the period, adjusted for known conditions and circumstances. We exercise judgment in estimating the amount of inventory that is obsolete. For instance, we wrote off approximately \$1.4 million of inventory during the third quarter of fiscal 2015 related to raw material that did not meet our quality requirements. Should actual product marketability be affected by conditions that are different from those projected by management, revisions to the estimated inventory reserve may be required. If we had increased our reserve for obsolete inventory at September 30, 2016 by 10%, our cost of goods sold would have increased by \$0.2 million.

Index

VALUATION AND CLASSIFICATION OF AUCTION RATE SECURITIES

As of September 30, 2016, we owned two auction rate securities (ARS) recorded at cost with a par value of \$5.5 million and an estimated fair value of \$5.1 million, which are classified as other long-term assets on our Consolidated Balance Sheet and are considered held-to-maturity investments. In general, ARS investments are securities with long-term nominal maturities for which interest rates are intended to be reset through a Dutch auction every seven to 35 days. Historically, these periodic auctions provided a liquid market for these securities; however, beginning in 2008, general uncertainties in the global credit markets significantly reduced liquidity in the ARS market, and this illiquidity continues. Despite this lack of liquidity, there have been no defaults in payment of the underlying securities and interest income on these holdings continues to be received on scheduled interest payment dates. Our ARS, when purchased, were issued by A-rated municipalities. Although the credit ratings of both municipalities have been downgraded since our original investment, one of the ARS is credit enhanced with bond insurance, and the other has become an obligation of the bond insurer. Both ARS currently carry a credit rating of AA- by Standard & Poor's.

We classify these investments as held-to-maturity based on our intention and ability to hold the securities until maturity. Although there has been occasional trading activity on these securities, the ARS market is not considered active. Consequently, we determine the fair value of these securities using level 2 fair value inputs, including trading activity. The calculation of fair value and the balance sheet classification for our ARS requires critical judgments and estimates by management, including the probabilities that a security may be monetized through a future successful auction, of a refinancing of the underlying debt, or of a default in payment by the issuer or the bond insurance carrier.

An other-than-temporary impairment must be recorded when a credit loss exists; that is when the present value of the expected cash flows from a debt security is less than the amortized cost basis of the security. However, we believe the gross \$0.4 million unrecognized loss on these securities is due to illiquidity in the ARS market rather than credit loss. If illiquidity in the ARS market continues, if issuers of our ARS are unable to refinance the underlying securities, if the issuing municipalities are unable to pay their debt obligations and the bond insurance fails, or if credit ratings decline or other adverse developments occur in the credit markets, we may not be able to monetize our securities in the near term and may be required to adjust the carrying value of these instruments through an impairment charge that may be deemed other-than-temporary.

IMPAIRMENT OF LONG-LIVED ASSETS AND INVESTMENTS

We assess the recoverability of the carrying value of long-lived assets, including finite-lived intangible assets, whenever events or changes in circumstances indicate that the assets may be impaired. We perform a periodic review of our long-lived assets to determine if such impairment indicators exist. We must exercise judgment in assessing whether an event of impairment has occurred. For purposes of recognition and measurement of an impairment loss, long-lived assets are either individually identified or grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. We must exercise judgment in this grouping. If the sum of the undiscounted future cash flows expected to result from the identified asset group is less than the carrying value of the asset group, an impairment provision may be required. The amount of the impairment to be recognized is calculated by subtracting the fair value of the asset group from the net book value of the asset group. Determining future cash flows and estimating fair values require significant judgment and are highly susceptible to change from period to period because they require management to make assumptions about future sales and cost of sales generally over a long-term period. We recorded impairment expense on long-lived assets of \$2.3 million in fiscal 2014. We did not record any impairment expense in fiscal 2016 or 2015.

We evaluate the estimated fair value of investments annually, or more frequently if indicators of potential impairment exist, to determine if an other-than-temporary impairment in the value of the investment has taken place.



Index

BUSINESS COMBINATIONS

Our acquisition of NexPlanar, which we completed on October 22, 2015, was our first acquisition under the current standards of accounting for business combinations. These standards require assets and liabilities of an acquired business to be recognized at their estimated fair value. We engage independent third-party appraisal firms to assist us in determining the fair values of assets and liabilities acquired. This valuation requires management to make significant estimates and assumptions, especially with respect to long-lived and intangible assets. Goodwill represents the residual value of the purchase price over the fair value of net assets acquired, including identifiable intangible assets.

Critical estimates in valuing certain of the intangible assets include but are not limited to: future expected cash flows related to acquired developed technologies and patents and assumptions about the period of time the technologies will continue to be used in the Company's product portfolio; expected costs to develop the in-process technology into commercially viable products and estimated cash flows from the products when completed; and discount rates. Management's estimates of value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable. Assumptions may be incomplete or inaccurate, and unanticipated events and circumstances may occur which may cause actual realized values to be different from management's estimates.

We recorded \$58.4 million of goodwill and \$55.0 million of intangible assets related to our acquisition of NexPlanar. The intangible assets included \$50.0 million with finite lives established and \$5.0 million of in-process technology. In the fourth quarter of fiscal 2016, we determined that one of the products under development was unlikely to meet our original cash flow projections based on information received subsequent to the date of acquisition. Consequently, we recorded a \$1.0 million impairment of this intangible asset.

GOODWILL AND INTANGIBLE ASSETS

Purchased intangible assets with finite lives are amortized over their estimated useful lives and are evaluated for impairment using a process similar to that used to evaluate other long-lived assets. Goodwill and indefinite lived intangible assets are not amortized and are tested annually in our fourth fiscal quarter or more frequently if indicators of potential impairment exist, using a fair-value-based approach.

The recoverability of goodwill is measured at the reporting unit level, which is defined as either an operating segment or one level below an operating segment. A component is a reporting unit when the component constitutes a business for which discreet financial information is available and segment management regularly reviews the operating results of the component. Components may be combined into one reporting unit when they have similar economic characteristics. We have four reporting units, all of which had goodwill and intangible assets as of September 30, 2016, the date of our annual impairment test. Two of the reporting units, CMP Slurries and CMP Pads, represent 94% of the goodwill balance on our Consolidated Balance Sheet as of September 30, 2016. The goodwill related to CMP Pads resulted from our acquisition of NexPlanar.

Accounting guidance provides an entity the option to assess the fair value of a reporting unit either using a qualitative analysis ("step zero") or a quantitative ("step one"). In fiscal 2014, 2015 and 2016, we chose to use a step one analysis for goodwill impairment.

Similarly, an entity has the option to use a step zero or step one approach to determine the recoverability of indefinite-lived intangible assets. In fiscal 2014, 2015 and 2016, we used a step one analysis to determine the recoverability of indefinite-lived intangible assets.



Factors requiring significant judgment include assumptions related to future growth rates, discount factors, royalty rates and tax rates, among others. Changes in economic and operating conditions that occur after the annual impairment analysis or an interim impairment analysis that impact these assumptions may result in future impairment charges. Our reporting units had a calculated fair value that was in excess of the carrying value between 41% and 390%. If the fair value of each of the reporting units decreased by 10%, the fair value would still exceed the carrying value by more than 25%. As a result of the review performed in the fourth quarter of fiscal 2016, and the related sensitivity analysis, we determined that there was no impairment of our goodwill and intangible assets as of September 30, 2016, other than the \$1.0 million impairment of certain NexPlanar in-process technology noted above.

## Index

### INTEREST RATE SWAPS

In the first quarter of fiscal 2015, we entered into floating-to-fixed interest rate swap agreements to hedge the variability in LIBOR-based interest payments on a portion of our outstanding variable rate debt. The fair value of our interest rate swaps is estimated using standard valuation models and market-based observable inputs over the contractual term, including one-month LIBOR-based yield curves, among others. We consider the risk of nonperformance, including counterparty credit risk, in the calculation of the fair value. We have designated these swap agreements as cash flow hedges pursuant to ASC 815, "Derivatives and Hedging". As cash flow hedges, unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Unrealized gains and losses are designated as effective or ineffective based on a comparison of the changes in fair value of the interest rate swaps and changes in fair value of the underlying exposures being hedged. The effective portion is recorded as a component of accumulated other comprehensive income or loss, while the ineffective portion is recorded as a component of interest expense. Changes in the method by which we pay interest from one-month LIBOR to another rate of interest could create ineffectiveness in the swaps, and result in amounts being reclassified from other comprehensive income into net income. Hedge effectiveness is tested quarterly to determine if hedge treatment continues to be appropriate.

### SHARE-BASED COMPENSATION

We record share-based compensation expense for all share-based awards, including stock option grants, restricted stock and restricted stock unit awards and employee stock purchase plan purchases. We calculate share-based compensation expense using the straight-line approach based on awards ultimately expected to vest, which requires the use of an estimated forfeiture rate. Our estimated forfeiture rate is primarily based on historical experience, but may be revised in future periods if actual forfeitures differ from the estimate. We use the Black-Scholes option-pricing model to estimate the grant date fair value of our stock options and employee stock purchase plan purchases. This model requires the input of highly subjective assumptions, including the price volatility of the underlying stock, the expected term of our stock options, expected dividend yield, and the risk-free interest rate. We estimate the expected volatility of our stock options based on a combination of our stock's historical volatility and the implied volatilities from actively-traded options on our stock. We calculate the expected term of our stock options using historical stock option exercise data, and we add a slight premium to this expected term for employees who meet the definition of retirement eligible pursuant to their grants during the contractual term of the grant. The expected dividend yield represents our annualized dividend in dollars divided by the stock price on the date of grant. The risk-free rate is derived from the U.S. Treasury yield curve in effect at the time of grant.

The fair value of our restricted stock and restricted stock unit awards represents the closing price of our common stock on the date of award.

In fiscal 2016, pursuant to the Merger Agreement for our acquisition of NexPlanar, we granted incentive stock options (ISOs), as allowed under our current Omnibus Incentive Plan, to certain NexPlanar employees in substitution for unvested ISOs they had held in NexPlanar at the time of the closing of the acquisition. We used the Black-Scholes option-pricing model to estimate the grant date fair value of these ISOs to calculate share-based compensation expense in fiscal 2016 and for future periods.

### ACCOUNTING FOR INCOME TAXES

Current income taxes are determined based on estimated taxes payable or refundable on tax returns for the current year. Deferred income taxes are determined using enacted tax rates for the effect of temporary differences between the book and tax bases of recorded assets and liabilities. The effect on deferred tax assets and liabilities of changes in tax rates is recognized in income in the period that includes the enactment date. Provisions are made for both U.S.

and any foreign deferred income tax liability or benefit. We assess whether or not our deferred tax assets will ultimately be realized and record an estimated valuation allowance on those deferred tax assets that may not be realized. We recognize the tax benefit of an uncertain tax position only if it is more likely than not that the tax position will be sustained by the taxing authorities, based on the technical merits of the position. In fiscal 2014, 2015 and 2016, we elected to permanently reinvest the earnings of all of our foreign subsidiaries. See the section titled "Liquidity and Capital Resources" in this MD&A and Note 17 of the Notes to the Consolidated Financial Statements of this Form 10-K for additional information on income taxes and permanent reinvestment.

Index

## COMMITMENTS AND CONTINGENCIES

We have entered into certain unconditional purchase obligations, which include noncancelable purchase commitments and take-or-pay arrangements with suppliers. We review our agreements on a quarterly basis and make an assessment of the likelihood of a shortfall in purchases and determine if it is necessary to record a liability. In addition, we are subject to the possibility of various loss contingencies arising in the ordinary course of business, such as a legal proceeding or claim. An estimated loss contingency is accrued when it is probable that an asset has been impaired or a liability has been incurred and the amount of the loss can be reasonably estimated. We regularly evaluate information available to us to determine whether such accruals should be adjusted and whether new accruals are required.

## EFFECTS OF RECENT ACCOUNTING PRONOUNCEMENTS

See Note 2 to the Consolidated Financial Statements of this Form 10-K for a description of recent accounting pronouncements including the expected dates of adoption and effects on our results of operations, financial position and cash flows.

The following table sets forth, for the periods indicated, the percentage of revenue of certain line items included in our historical statements of income:

	Year Ended September 30,		
	2016	2015	2014
Revenue	100.0%	100.0%	100.0%
Cost of goods sold	51.2	48.7	52.2
Gross profit	48.8	51.3	47.8
Research, development and technical	13.6	14.5	14.0
Selling and marketing	6.4	6.0	6.2
General and administrative	11.5	12.7	10.7
Operating income	17.3	18.1	16.9
Interest expense	1.1	1.1	0.8
Other income, net	0.2	0.2	0.1
Income before income taxes	16.4	17.2	16.2
Provision for income taxes	2.5	3.6	4.2
Net income	13.9%	13.6%	12.0%

Index

YEAR ENDED SEPTEMBER 30, 2016, VERSUS YEAR ENDED SEPTEMBER 30, 2015

REVENUE

Revenue was \$430.4 million in fiscal 2016, which represented an increase of 3.9%, or \$16.4 million, from fiscal 2015. The increase in revenue was driven by a \$26.6 million increase due to favorable product mix, partially offset by a \$5.6 million decrease due to lower overall sales volume and a \$4.1 million decrease due to price changes. Revenue from polishing pads increased 62.5% from fiscal 2015, and included \$23.5 million from our NexPlanar acquisition. Revenue from tungsten slurries increased 3.7%, and revenue from dielectrics slurries increased 2.9% from last year. The decrease in overall sales volume was consistent with soft demand conditions seen in the global semiconductor industry during the first half of our fiscal year and competitive dynamics within dielectrics and data storage applications.

COST OF GOODS SOLD

Total cost of goods sold was \$220.2 million in fiscal 2016, which represented an increase of 9.1%, or \$18.4 million, from fiscal 2015, which reflects the addition of NexPlanar. The increase in cost of goods sold was primarily due to a \$13.5 million increase due to higher fixed manufacturing costs, including \$4.5 million of NexPlanar amortization expense, a \$10.1 million increase due to higher variable manufacturing costs, including higher material costs, and a \$3.0 million increase due to product mix. These increases were partially offset by a \$5.0 million decrease due to lower costs related to material quality, a \$2.0 million decrease due to lower logistics costs, and a \$1.6 million decrease due to lower sales volume.

Engineered abrasive particles are significant raw materials that we use in many of our CMP slurries. In an effort to mitigate our risk to rising raw material costs and to increase supply assurance and quality performance requirements, we have entered into multi-year supply agreements with a number of suppliers. For more information about our supply contracts, see "Tabular Disclosure of Contractual Obligations" included in Item 7 of Part II of this Form 10-K.

GROSS PROFIT

Our gross profit as a percentage of revenue was 48.8% in fiscal 2016 compared to 51.3% for fiscal 2015, and was consistent with our revised full year guidance of around 49.0%. The decrease in gross profit percentage from fiscal 2015 was primarily due to higher fixed manufacturing costs, including NexPlanar amortization expense and other NexPlanar costs, and higher material costs, partially offset by a higher-valued product mix, and lower STIP costs discussed above.

RESEARCH, DEVELOPMENT AND TECHNICAL

Total research, development and technical expenses were \$58.5 million in fiscal 2016, which represented a decrease of 2.1%, or \$1.2 million, from fiscal 2015. The decrease was primarily due to \$3.0 million in lower clean room material costs and \$0.8 million in lower staffing-related costs, including costs associated with our STIP, partially offset by \$1.1 million in higher professional and service fees, including costs of joint development arrangements, and a \$1.0 million impairment of a NexPlanar intangible asset for certain in-process technology under development at the acquisition date.

Our research, development and technical efforts are focused on the following main areas:

Research related to fundamental CMP technology;

Development of new and enhanced CMP consumable products, including collaboration on joint development projects with technology-leading customers and suppliers;

Process development to support rapid and effective commercialization of new products;

Technical support of CMP products in our customers' research, development and manufacturing facilities; and,

Development of polishing and metrology applications outside of the semiconductor industry.

33

---

Index

SELLING AND MARKETING

Selling and marketing expenses were \$27.7 million in fiscal 2016, which represented an increase of 10.9%, or \$2.7 million, from fiscal 2015. The increase was primarily due to \$1.8 million of NexPlanar amortization expense and \$0.9 million in higher product sample costs.

GENERAL AND ADMINISTRATIVE

General and administrative expenses were \$49.4 million in fiscal 2016, which represented a decrease of 5.7%, or \$3.0 million, from fiscal 2015. The decrease was primarily due to \$6.1 million in lower staffing-related costs, including costs associated with our STIP and the absence of costs associated with the fiscal 2015 executive officer transition. This decrease was partially offset by \$0.8 million in higher professional fees, \$0.7 million in higher bad debt expense, including \$0.5 million for a customer placed into receivership in the fourth quarter of fiscal 2016, the absence of \$0.6 million of certain foreign goods and services tax credits recorded in fiscal 2015, and \$0.5 million in higher information technology costs. General and administrative expenses in fiscal 2016 include \$1.3 million of acquisition-related costs.

INTEREST EXPENSE

Interest expense was \$4.7 million in fiscal 2016, and increased \$0.2 million from fiscal 2015. The increase was primarily due to higher variable interest rates on the portion of our outstanding debt on which we have not fixed the interest rate via interest rate swaps.

OTHER INCOME, NET

Other income was \$0.7 million in both fiscal 2016 and fiscal 2015.

PROVISION FOR INCOME TAXES

Our effective income tax rate was 15.0% in fiscal 2016 compared to 21.1% in fiscal 2015. The decrease in the effective tax rate during fiscal 2016 was primarily due to the absence of income taxes incurred in the first quarter of fiscal 2015 related to the restructuring of our operations in Taiwan, the reinstatement of the research and experimentation tax credit in December 2015, and the benefit of \$0.9 million related to domestic production deductions. This was partially offset by a change in the mix of earnings among various jurisdictions in which we operate, including a scheduled reduction in the benefit available under our tax holiday in South Korea from 100% to 50% of the statutory tax rate in effect in South Korea. See Note 17 of the Notes to the Consolidated Financial Statements for more information on our income tax provision. We expect our effective tax rate for full fiscal 2017 to be in the range of 17.0% to 20.0%.

NET INCOME

Net income was \$59.8 million in fiscal 2016, which represented an increase of 6.6%, or \$3.7 million, from fiscal 2015. The increase was primarily due to higher revenue and a lower effective tax rate, partially offset by higher production costs.



Index

YEAR ENDED SEPTEMBER 30, 2015, VERSUS YEAR ENDED SEPTEMBER 30, 2014

REVENUE

Revenue was \$414.1 million in fiscal 2015, which represented a decrease of 2.5%, or \$10.6 million, from fiscal 2014. The decrease in revenue was primarily due to a \$12.0 million decrease in sales volume, a \$7.5 million decrease due to the effect of foreign exchange rate changes, primarily due to the weakening of the Japanese yen and the Korean won versus the U.S. dollar, and \$1.9 million due to changes in average selling prices. These decreases were partially offset by a \$10.8 million increase due to product mix. The decrease in revenue from fiscal 2014 reflected softness of demand in the global semiconductor industry and the loss of approximately \$20.0 million in annualized legacy dielectrics slurry business for lower-performing applications for 200 millimeter wafers, discussed in our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2015 and June 30, 2015. We also generated lower revenue from our slurries for polishing aluminum and data storage applications, as well as from our polishing pads. These decreases were partially offset by increased revenue from our slurries for polishing tungsten, which generated record annual revenue, and increased revenue from our ESF products.

COST OF GOODS SOLD

Total cost of goods sold was \$201.9 million in fiscal 2015, which represented a decrease of 8.9%, or \$19.7 million, from fiscal 2014. The decrease in cost of goods sold was primarily due to a \$12.3 million decrease due to product mix, an \$8.9 million decrease due to foreign exchange fluctuations, primarily due to the weakening of the yen, and a \$3.7 million decrease due to lower sales volume. These decreases in cost of goods sold were partially offset by a \$4.7 million increase due to lower manufacturing yields, including \$1.4 million in costs related to raw material that did not meet our quality requirements that we recorded in the third quarter of fiscal 2015, and a \$1.2 million increase in sample costs.

GROSS PROFIT

Our gross profit as a percentage of revenue was 51.3% in fiscal 2015 as compared to 47.8% for fiscal 2014, and was slightly above our revised full year guidance range of 50.0% to 51.0%. The increase in gross profit percentage from fiscal 2014 was primarily due to product mix and foreign exchange benefits, partially offset by lower sales volume and lower manufacturing yields.

RESEARCH, DEVELOPMENT AND TECHNICAL

Total research, development and technical expenses were \$59.8 million in fiscal 2015, which represented an increase of 0.7%, or \$0.4 million, from fiscal 2014. The increase was primarily due to \$1.5 million in higher clean room material costs and \$0.4 million in higher staffing-related costs, partially offset by \$0.6 million in lower facility-related costs and \$0.5 million in lower depreciation expense.

SELLING AND MARKETING

Selling and marketing expenses were \$25.0 million in fiscal 2015, which represented a decrease of 5.8%, or \$1.5 million, from fiscal 2014. The decrease was primarily due to \$1.6 million in lower staffing-related costs, \$0.4 million in lower travel-related costs, and \$0.3 million in lower marketing costs, partially offset by \$1.2 million in separation

costs associated with the departure of three executive officers.

35

---

## Index

### GENERAL AND ADMINISTRATIVE

General and administrative expenses were \$52.4 million in fiscal 2015, which represented an increase of 15.4%, or \$7.0 million, from fiscal 2014. The increase was primarily due to \$8.0 million in higher staffing-related costs, including costs associated with our STIP and executive officer transitions, partially offset by a \$0.7 million decrease in certain foreign goods and services tax.

### INTEREST EXPENSE

Interest expense was \$4.5 million in fiscal 2015, which represented an increase of \$1.2 million from fiscal 2014. The increase was primarily due to the higher fixed interest rate on the portion of our outstanding debt on which we have fixed the interest rate via interest rate swaps versus the variable interest rate on the rest of our outstanding debt.

### OTHER INCOME, NET

Other income was \$0.7 million in fiscal 2015 compared to \$0.1 million in fiscal 2014. The increase in other income was primarily due to the reimbursement of overfunding of a foreign benefit plan, and higher interest income earned on higher cash and investment balances, partially offset by the negative impact of foreign currency fluctuations on monetary assets and liabilities denominated in currencies other than the functional currency.

### PROVISION FOR INCOME TAXES

Our effective income tax rate was 21.1% in fiscal 2015 compared to 26.0% in fiscal 2014. The decrease in the effective tax rate was primarily due to higher taxable income in foreign jurisdictions with lower income tax rates and the reinstatement of the U.S. research and experimentation tax credit, retroactive to January 1, 2014, partially offset by income taxes incurred related to the restructuring of our operations in Taiwan.

### NET INCOME

Net income was \$56.1 million in fiscal 2015, which represented an increase of 10.6%, or \$5.4 million, from fiscal 2014. The increase was primarily due to a higher gross profit percentage, and a lower effective income tax rate, partially offset by lower revenue and higher operating expenses.

### LIQUIDITY AND CAPITAL RESOURCES

We had cash flows from operating activities of \$95.2 million in fiscal 2016, \$98.2 million in fiscal 2015 and \$67.5 million in fiscal 2014. Our cash provided by operating activities in fiscal 2016 represented \$99.4 million in net income and non-cash items and a \$4.2 million decrease in cash flow due to a net increase in working capital. The increase in working capital included higher accounts receivable due to higher sales in the fourth quarter of fiscal 2016 compared to the same period of fiscal 2015, and lower accrued liabilities, including payments related to our annual cash incentive bonus program. The cash payment made in the first quarter of fiscal 2016 pursuant to our AIP, related to our performance in fiscal 2015, was \$6.4 million higher than the cash incentive payment made in the first quarter of fiscal 2015, related to our performance in fiscal 2014. The decrease in cash flow from operations in fiscal 2016 from fiscal 2015 was primarily due to the increased working capital, partially offset by higher net income and non-cash

items. The increase in cash flow from operations in fiscal 2015 from fiscal 2014 was primarily due to higher net income, a decrease in accounts receivable due to lower revenue in the fourth quarter of fiscal 2015 compared to the same quarter of fiscal 2014, and changes in the timing and amount of payments for accrued expenses, including payments related to our AIP, partially offset by a larger increase in inventories, primarily due to higher raw material costs.

Index

In fiscal 2016, cash flows used in investing activities were \$144.4 million, representing \$127.0 million for the NexPlanar acquisition, which is net of \$15.3 million in cash acquired, and \$17.6 million for purchases of property, plant and equipment. We received \$0.2 million from other investing activities. In fiscal 2015, we used \$13.4 million in investing activities representing \$13.8 million in purchases of property plant and equipment, partially offset by \$0.4 million received from other investing activities. We used \$9.0 million in investing activities in fiscal 2014 representing \$12.6 million in purchases of property plant and equipment, partially offset by \$2.3 million received from the liquidation of a portion of our auction rate securities and \$1.3 million received from other investing activities. We estimate that our total capital expenditures in fiscal 2017 will be in the range of \$20.0 to \$25.0 million, primarily due to our ongoing facility expansion in South Korea.

In fiscal 2016, cash flows used in financing activities were \$24.4 million. We used \$26.0 million to repurchase common stock under our share repurchase program, and \$2.8 million to repurchase common stock pursuant to the terms of our Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan (EIP) and our 2012 Omnibus Incentive Plan (OIP) for shares withheld from award recipients to cover payroll taxes on the vesting of restricted stock awarded under these plans. We also used \$8.8 million to repay long-term debt, and we paid \$8.6 million in dividends on our common stock. We received \$19.5 million from the issuance of common stock related to the exercise of stock options granted under our EIP and our OIP and for the sale of shares to employees under our 2007 Employee Stock Purchase Plan, as amended and restated September 23, 2013 (ESPP), and we received \$2.3 million in tax benefits related to exercises of stock options and vesting of restricted stock awarded under the EIP and OIP. In fiscal 2015, cash flows used in financing activities were \$9.0 million. We used \$40.0 million to repurchase common stock under our share repurchase program, and \$2.2 million to repurchase common stock pursuant to the terms of our EIP and OIP for shares withheld from award recipients to cover payroll taxes on the vesting of restricted stock awarded under these plans. We also used \$8.8 million to repay long-term debt. We received \$35.8 million from the issuance of common stock related to the exercise of stock options granted under our EIP and our OIP and for the sale of shares to employees under our ESPP, and we received \$6.2 million in tax benefits related to exercises of stock options and vesting of restricted stock awarded under these plans. In fiscal 2014, cash flows provided by financing activities were \$1.2 million. We received \$43.1 million from the issuance of common stock related to the exercise of stock options granted under our EIP, our OIP and from the sale of shares to employees under our ESPP, \$17.5 million from the issuance of long-term debt under our amended credit agreement, and \$2.8 million in tax benefits related to exercises of stock options and vesting of restricted stock awarded under the EIP and OIP. We used \$53.0 million to repurchase common stock under our share repurchase program and \$2.1 million to repurchase common stock pursuant to the terms of our EIP and OIP for shares withheld from award recipients to cover payroll taxes on the vesting of restricted stock awarded under these plans. We also used \$6.6 million to repay long-term debt and paid \$0.6 million in debt issuance costs.

In January 2016, our Board of Directors authorized an increase in the amount available under our share repurchase program from the previously remaining \$75.0 million to \$150.0 million. Under this program, we repurchased 636,839 shares for \$26.0 million in fiscal 2016, 851,245 shares for \$40.0 million in fiscal 2015, and 1,229,494 shares for \$53.0 million in fiscal 2014. As of September 30, 2016, \$134.0 million remains available under our share repurchase program. Share repurchases are made from time to time, depending on market conditions. The timing, manner, price and amounts of repurchases are determined at the Company's discretion, and the share repurchase program may be suspended, terminated or modified at any time for any reason. The repurchase program does not obligate the Company to acquire any specific number of shares. To date, we have funded share purchases under our share repurchase program from our available cash balance, and anticipate we will continue to do so. In fiscal years 2015 and 2016, we entered into "10b5-1" stock purchase plan agreements with independent brokers to repurchase shares of our common stock in accordance with guidelines pursuant to Rule 10b5-1 of the Securities Exchange Act of 1934, as amended. A plan under Rule 10b5-1 allows a company to repurchase its shares at times when it otherwise might be prevented from doing so under insider trading laws or because of self-imposed trading blackout periods. Repurchases are subject to SEC regulations as well as certain conditions specified in the plan.

On January 7, 2016, we announced that our Board of Directors authorized the initiation of a regular dividend program under which the Company intends to pay quarterly cash dividends on our common stock. Pursuant to this announcement, our Board of Directors declared quarterly cash dividends of \$0.18 per share, or approximately \$4.4 million, during each of the last three quarters of fiscal 2016, the latest of which we paid on or about October 28, 2016 to shareholders of record as of October 3, 2016. The declaration and payment of future dividends is subject to the discretion and determination of the Company's Board of Directors and management, based on a variety of factors, and the program may be suspended, terminated or modified at any time for any reason.

37

---

Index

We entered into a Credit Agreement in February 2012, which provided us with a \$175.0 million Term Loan and a \$100.0 million Revolving Credit Facility, with sub-limits for multicurrency borrowings, letters of credit and swing-line loans. The Term Loan and Revolving Credit Facility are referred to as the "Credit Facilities". In June 2014, we entered into an amendment to the Credit Agreement (the "Amendment"), which provided for an additional \$17.5 million in Term Loan commitments to bring the total commitments to the same level as the original amount under the Credit Agreement at its inception in 2012, an extension of the maturity date of the Credit Facilities to June 27, 2019, and changes to certain pricing and other terms of the agreement, including a relaxed consolidated leverage ratio financial covenant. The Amendment also increased the uncommitted accordion feature that allows us to request the existing lenders or, if necessary, third-party financial institutions to provide additional capacity in the Revolving Credit Facility, from \$75.0 million to \$100.0 million. The Term Loan has periodic scheduled principal repayments; however, we may prepay the loan without penalty. The additional Term Loan commitments were drawn on June 27, 2014, and the Revolving Credit Facility remains undrawn. The Term Loan had \$155.3 million outstanding as of September 30, 2016. The Credit Agreement contains covenants that restrict the ability of the Company and its subsidiaries to take certain actions, including, among other things and subject to certain significant exceptions and according to certain terms: creating liens, incurring indebtedness, making investments, engaging in mergers, selling property, paying dividends or amending organizational documents. The Credit Agreement requires us to comply with certain financial ratio maintenance covenants. These include a maximum consolidated leverage ratio of 2.75 to 1.00 and a minimum consolidated fixed charge coverage ratio of 1.25 to 1.00 through the expiration of the Credit Agreement. As of September 30, 2016, our consolidated leverage ratio was 1.31 to 1.00 and our consolidated fixed charge coverage ratio was 3.76 to 1.00. The Credit Agreement also contains customary affirmative covenants and events of default. We believe we are in compliance with these covenants. See Note 10 of the Notes to the Consolidated Financial Statements of this Form 10-K for additional information regarding the Credit Agreement.

As of September 30, 2016, we had \$287.5 million of cash and cash equivalents, \$171.5 million of which was held in foreign subsidiaries in Japan, the Netherlands, Singapore, South Korea and Taiwan where we have elected to permanently reinvest the earnings rather than repatriate the earnings to the U.S. If we choose to repatriate these earnings in the future through dividends or loans to the U.S. parent company, the earnings could become subject to additional income tax expense.

We believe that our current balance of cash and long-term investments, cash generated by our operations and available borrowing capacity under our Credit Facilities will be sufficient to fund our operations, expected capital expenditures, merger and acquisition activities, dividend payments, and share repurchases for at least the next twelve months. However, in pursuit of corporate development initiatives, we may need to raise additional funds in the future through equity or debt financing, strategic relationships or other arrangements. Depending on future conditions in the capital and credit markets, we could encounter difficulty securing additional financing in the type or amount necessary to pursue these objectives.

**OFF-BALANCE SHEET ARRANGEMENTS**

At September 30, 2016 and 2015, we did not have any unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which might have been established for the purpose of facilitating off-balance sheet arrangements.

Index

## TABULAR DISCLOSURE OF CONTRACTUAL OBLIGATIONS

The following summarizes our contractual obligations at September 30, 2016, and the effect such obligations are expected to have on our liquidity and cash flow in future periods.

CONTRACTUAL OBLIGATIONS (In millions)	Total	Less Than			
		1 Year	1-3 Years	3-5 Years	After 5 Years
Long-term debt	\$155.3	\$7.7	\$147.6	\$-	\$-
Interest expense and fees on long-term debt	10.2	3.8	6.4	-	-
Purchase obligations	30.6	26.7	3.5	0.4	-
Operating leases	10.1	2.4	3.1	1.7	2.9
Severance agreements	1.9	1.7	0.2	-	-
Other long-term liabilities *	16.1	1.4	3.0	-	11.7
Total contractual obligations	\$224.2	\$43.7	\$163.8	\$2.1	\$14.6

\* We have excluded deferred tax liabilities from the other long-term liability amounts presented, as the deferred taxes that will be settled in cash are not known and the timing of any such payments is uncertain. We have also excluded \$0.7 million related to the fair value of the long-term portion of our interest rate swaps as the expected interest payments are included in the table above under the caption "Interest expense and fees on long-term debt".

## INTEREST EXPENSE AND FEES ON LONG-TERM DEBT

Interest payments on long-term debt reflect interest rates in effect at September 30, 2016. The interest payments reflect LIBOR rates currently in effect on \$77.7 million of our outstanding debt, and reflect fixed interest rates on \$77.7 million of outstanding debt for which we have executed interest rate swaps. Commitment fees are based on our estimated consolidated leverage ratio in future periods. See Note 10 of the Notes to the Consolidated Financial Statements of this Form 10-K for additional information regarding our long-term debt.

## PURCHASE OBLIGATIONS

We have been operating under a multi-year supply agreement with Cabot Corporation, our former parent company which is not a related party, for the purchase of fumed silica, the current term of which runs through December 31, 2019. This agreement required us to purchase certain minimum quantities of fumed silica each year of the agreement, and to pay a shortfall if we purchased less than the minimum, and provides us the option to purchase fumed silica for the remaining term of the agreement beyond calendar year 2016, for which we will pay a fee of \$1.5 million in each of calendar years 2017, 2018 and 2019. The purchase obligations in the table above reflect management's expectation that we will meet the minimum purchase quantities in calendar 2016. Purchase obligations include an aggregate amount of \$7.9 million of contractual commitments related to our Cabot Corporation supply agreement for fumed silica. The \$1.5 million payment due in calendar year 2017 is included in accrued liabilities on our Consolidated Balance Sheet as of September 30, 2016, and the calendar 2018 and 2019 payments are included in other long-term liabilities in the table above.

## OPERATING LEASES

We lease certain vehicles, warehouse facilities, office space, machinery and equipment under cancelable and noncancelable operating leases, most of which expire within ten years of their respective commencement dates and



may be renewed by us.

#### SEVERANCE AGREEMENTS

Liabilities for severance agreements at September 30, 2016 represent payments to be made to former or to be former employees in accordance with individual agreements.

39

---

Index

OTHER LONG-TERM LIABILITIES

Other long-term liabilities at September 30, 2016 primarily consist of liabilities related to our foreign benefit plans in Japan and Korea, which represents approximately \$8.7 million, the \$4.5 million total contract fees noted above under "Purchase Obligations", our liability for future payments to be made under our Cabot Microelectronics Supplemental Employee Retirement Plan, and our liability for uncertain tax positions.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

EFFECT OF CURRENCY EXCHANGE RATES AND EXCHANGE RATE RISK MANAGEMENT

We conduct business operations outside of the United States through our foreign operations. Some of our foreign operations maintain their accounting records in their local currencies. Consequently, period to period comparability of results of operations is affected by fluctuations in exchange rates. The primary currencies to which we have exposure are the Japanese yen, the Korean won, and the New Taiwan dollar. Approximately 19% of our revenue is transacted in currencies other than the U.S. dollar. However, we also incur expenses in foreign countries that are transacted in currencies other than the U.S. dollar, which mitigates the exposure on the Consolidated Statement of Income. We periodically enter into forward contracts in an effort to manage foreign currency exchange exposure on our Consolidated Balance Sheet. However, we are unlikely to be able to hedge these exposures completely. We do not enter into forward exchange contracts or other derivative instruments for speculative or trading purposes.

The significant weakening of the Japanese yen against the U.S. dollar in fiscal years 2014 and 2015 adversely affected our revenue. The weakening of the yen had a net favorable impact on our gross profit percentage in fiscal years 2014 and 2015, as our yen-denominated cost of goods sold was greater than our yen-denominated revenue. To a lesser extent, we also saw a favorable foreign exchange impact on our yen-denominated operating expenses in fiscal years 2014 and 2015. Additionally, the fluctuations of the yen, won and New Taiwan dollar have had a significant impact on other comprehensive income on our Consolidated Balance Sheet. During fiscal 2016, we recorded \$16.0 million in currency translation gains, net of tax, that are included in other comprehensive income. During fiscal 2015, we recorded \$14.1 million in currency translation losses, net of tax, that are included in other comprehensive income. These gains and losses primarily relate to changes in the U.S. dollar value of assets and liabilities denominated in local currencies when these asset and liability amounts are translated at month-end exchange rates.

MARKET RISK AND SENSITIVITY ANALYSIS RELATED TO FOREIGN EXCHANGE RATE RISK

We have performed a sensitivity analysis assuming a hypothetical 10% additional adverse movement in foreign exchange rates. As of September 30, 2016, the analysis demonstrated that such market movements would not have a material adverse effect on our consolidated financial position, results of operations or cash flows over a one-year period. Actual gains and losses in the future may differ materially from this analysis based on changes in the timing and amount of foreign currency rate movements and our actual exposures.

INTEREST RATE RISK

At September 30, 2016, we had \$155.3 million in long-term debt outstanding on our Term Loan. In the first quarter of fiscal 2015, we entered into interest rate swap agreements to hedge the variability in LIBOR-based interest rate payments on half of our outstanding debt. The notional amount of the swaps decreases each quarter by an amount in

proportion to our scheduled quarterly principal payment to maintain a fixed rate of interest on half of our outstanding debt. As of September 30, 2016, the fair value of this cash flow hedge is a liability of \$1.3 million. At September 30, 2016, we had \$77.7 million of outstanding debt at a variable rate of interest. Assuming a hypothetical 100 basis point increase in our current variable interest rate, our interest expense would increase by approximately \$0.2 million per quarter.

Index

MARKET RISK RELATED TO INVESTMENTS IN AUCTION RATE SECURITIES

At September 30, 2016, we owned two auction rate securities (ARS) with a total estimated fair value of \$5.1 million and par value of \$5.5 million which were classified as other long-term assets on our Consolidated Balance Sheet. Beginning in 2008, general uncertainties in the global credit markets significantly reduced liquidity in the ARS market, and this illiquidity continues. For more information on our ARS, see "Critical Accounting Policies and Estimates" in MD&A in Part II, Item 7, and Notes 4 and 8 of the Notes to the Consolidated Financial Statements in Part II, Item 8 of this Form 10-K.

Index

ITEM 8. FINANCIAL STATEMENTS AND  
SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND FINANCIAL STATEMENT SCHEDULE

	Page
Consolidated Financial Statements:	
<u>Report of Independent Registered Public Accounting Firm</u>	43
<u>Consolidated Statements of Income for the years ended September 30, 2016, 2015 and 2014</u>	44
<u>Consolidated Statements of Comprehensive Income for the years ended September 30, 2016, 2015 and 2014</u>	45
<u>Consolidated Balance Sheets at September 30, 2016 and 2015</u>	46
<u>Consolidated Statements of Cash Flows for the years ended September 30, 2016, 2015 and 2014</u>	47
<u>Consolidated Statements of Changes in Stockholders' Equity for the years ended September 30, 2016, 2015 and 2014</u>	48
<u>Notes to the Consolidated Financial Statements</u>	49
<u>Selected Quarterly Operating Results</u>	82
Financial Statement Schedule:	
<u>Schedule II – Valuation and Qualifying Accounts</u>	83

All other schedules are omitted, because they are not required, are not applicable, or the information is included in the consolidated financial statements and notes thereto.

Index

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors of  
Cabot Microelectronics Corporation:

In our opinion, the consolidated financial statements listed in the accompanying index present fairly, in all material respects, the financial position of Cabot Microelectronics Corporation and its subsidiaries at September 30, 2016 and 2015, and the results of their operations and their cash flows for each of the three years in the period ended September 30, 2016 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the accompanying index presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 30, 2016, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements and financial statement schedule, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements, on the financial statement schedule, and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. 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 audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

As discussed in Note 17 to the consolidated financial statements, the Company changed the manner in which it presents deferred taxes on the balance sheet in fiscal 2016.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

As described in Management's Report on Internal Control over Financial Reporting appearing under Item 9A, management has excluded NexPlanar Corporation from its assessment of internal control over financial reporting as of September 30, 2016 because they were acquired by the Company in a purchase business combination during fiscal 2016. We have also excluded NexPlanar Corporation from our audit of internal control over financial reporting. NexPlanar Corporation is a wholly-owned subsidiary whose total assets and total revenues represent 3.1% and 4.9%, respectively, of the related consolidated financial statement amounts as of and for the year ended September 30, 2016.

PricewaterhouseCoopers LLP  
Chicago, IL  
November 16, 2016  
43

---

Index

## CABOT MICROELECTRONICS CORPORATION

## CONSOLIDATED STATEMENTS OF INCOME

(In thousands, except per share amounts)

	Year Ended September 30,		
	2016	2015	2014
Revenue	\$430,449	\$414,097	\$424,666
Cost of goods sold	220,247	201,866	221,573
Gross profit	210,202	212,231	203,093
Operating expenses:			
Research, development and technical	58,532	59,778	59,354
Selling and marketing	27,717	24,983	26,513
General and administrative	49,445	52,430	45,418
Total operating expenses	135,694	137,191	131,285
Operating income	74,508	75,040	71,808
Interest expense	4,723	4,524	3,354
Other income, net	653	681	140
Income before income taxes	70,438	71,197	68,594
Provision for income taxes	10,589	15,051	17,843
Net income	\$59,849	\$56,146	\$50,751
Basic earnings per share	\$2.47	\$2.32	\$2.12
Weighted-average basic shares outstanding	24,077	24,040	23,704
Diluted earnings per share	\$2.43	\$2.26	\$2.04
Weighted-average diluted shares outstanding	24,477	24,632	24,611
Dividends per share	\$0.54	\$-	\$-

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



IndexCABOT MICROELECTRONICS CORPORATION  
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In thousands, except per share amounts)

	Year Ended September 30,		
	2016	2015	2014
Net income	\$59,849	\$56,146	\$50,751
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	15,996	(14,126)	(8,136)
Minimum pension liability adjustment	(434)	(318)	(196)
Net unrealized gain (loss) on cash flow hedges	84	(901)	-
Unrealized gain on investments	-	-	151
Other comprehensive income (loss), net of tax	15,646	(15,345)	(8,181)
Comprehensive income	\$75,495	\$40,801	\$42,570

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

Index

## CABOT MICROELECTRONICS CORPORATION

## CONSOLIDATED BALANCE SHEETS

(In thousands, except share and per share amounts)

	September 30,	
	2016	2015
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$287,479	\$354,190
Accounts receivable, less allowance for doubtful accounts of \$1,828 at September 30, 2016, and \$1,224 at September 30, 2015	62,830	49,405
Inventories	72,123	70,678
Prepaid expenses and other current assets	14,659	12,840
Deferred income taxes	-	7,395
Total current assets	437,091	494,508
Property, plant and equipment, net	106,496	93,743
Goodwill	100,639	40,442
Other intangible assets, net	50,476	4,565
Deferred income taxes	20,747	12,212
Other long-term assets	12,477	15,004
Total assets	\$727,926	\$660,474
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable	\$16,834	\$15,448
Current portion of long-term debt	7,656	8,750
Accrued expenses, income taxes payable and other current liabilities	41,395	36,446
Total current liabilities	65,885	60,644
Long-term debt, net of current portion	147,657	155,313
Deferred income taxes	75	76
Other long-term liabilities	16,661	15,477
Total liabilities	230,278	231,510
Commitments and contingencies (Note 18)		
Stockholders' equity:		
Common Stock: Authorized: 200,000,000 shares, \$0.001 par value; Issued: 34,261,304 shares at September 30, 2016, and 33,489,181 shares at September 30, 2015	34	33
Capital in excess of par value of common stock	530,840	495,673
Retained earnings	330,776	284,088
Accumulated other comprehensive income (loss)	9,556	(6,090 )
Treasury stock at cost, 9,744,642 shares at September 30, 2016, and 9,041,678 shares at September 30, 2015	(373,558)	(344,740)
Total stockholders' equity	497,648	428,964
Total liabilities and stockholders' equity	\$727,926	\$660,474

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



IndexCABOT MICROELECTRONICS CORPORATION  
CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	Year Ended September 30,		
	2016	2015	2014
Cash flows from operating activities:			
Net income	\$59,849	\$56,146	\$50,751
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	26,031	18,719	19,941
Provision for doubtful accounts	588	(84 )	(170 )
Share-based compensation expense	13,787	16,445	14,042
Deferred income tax expense (benefit)	(1,757 )	869	(700 )
Non-cash foreign exchange (gain)/ loss	(1,144 )	1,391	943
(Gain)/Loss on disposal of property, plant and equipment	103	(28 )	(51 )
Impairment of assets	1,079	-	2,320
Other	815	(524 )	(724 )
Changes in operating assets and liabilities, excluding amounts related to acquisition:			
Accounts receivable	(8,017 )	9,013	(8,181 )
Inventories	3,351	(8,290 )	(3,794 )
Prepaid expenses and other assets	3,935	(3,662 )	576
Accounts payable	(478 )	801	(850 )
Accrued expenses, income taxes payable and other liabilities	(2,931 )	7,390	(6,625 )
Net cash provided by operating activities	95,211	98,186	67,478
Cash flows from investing activities:			
Additions to property, plant and equipment	(17,670 )	(13,812 )	(12,551 )
Proceeds from the sale of property, plant and equipment	17	201	202
Acquisition of business, net of cash acquired	(126,976)	-	-
Proceeds from the sale of investments	200	202	2,305
Other investing activities	-	-	1,062
Net cash used in investing activities	(144,429)	(13,409 )	(8,982 )
Cash flows from financing activities:			
Issuance of long-term debt	-	-	17,500
Repayment of long-term debt	(8,750 )	(8,750 )	(6,562 )
Dividends paid	(8,658 )	-	-
Repurchases of common stock	(28,818 )	(42,247 )	(55,072 )
Net proceeds from issuance of stock	19,512	35,782	43,070
Debt issuance costs	-	-	(550 )
Tax benefits associated with share-based compensation expense	2,305	6,207	2,806
Net cash provided by (used in) financing activities	(24,409 )	(9,008 )	1,192
Effect of exchange rate changes on cash	6,916	(5,734 )	(1,562 )
Increase (decrease) in cash	(66,711 )	70,035	58,126
Cash and cash equivalents at beginning of year	354,190	284,155	226,029
Cash and cash equivalents at end of year	\$287,479	\$354,190	\$284,155
Supplemental disclosure of cash flow information:			
Cash paid for income taxes	\$7,246	\$8,543	\$18,041

Edgar Filing: CABOT MICROELECTRONICS CORP - Form 10-K

Cash paid for interest	\$4,307	\$4,107	\$3,355
Supplemental disclosure of non-cash investing and financing activities:			
Purchases of property, plant and equipment in accrued liabilities and accounts payable at the end of period	\$1,005	\$1,503	\$1,267

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

---

IndexCABOT MICROELECTRONICS CORPORATION  
CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDERS' EQUITY

(In thousands)

	Common Stock	Capital In Excess Of Par	Retained Earnings	Accumulated Other Comprehensive Income	Treasury Stock	Total
Balance at September 30, 2013	\$ 30	\$376,206	\$177,191	\$ 17,436	\$(247,421)	\$323,442
Share-based compensation expense		14,042				14,042
Repurchases of common stock under share repurchase plans, at cost					(53,000 )	(53,000 )
Repurchases of common stock - other, at cost					(2,072 )	(2,072 )
Exercise of stock options	2	40,246				40,248
Issuance of Cabot Microelectronics restricted stock under Deposit Share Plan		210				210
Issuance of Cabot Microelectronics stock under Employee Stock Purchase Plan		2,612				2,612
Tax benefits from share-based compensation plans		3,950				3,950
Net income			50,751			50,751
Net unrealized gain on marketable securities				151		151
Foreign currency translation adjustment				(8,136 )		(8,136 )
Minimum pension liability adjustment				(196 )		(196 )
Balance at September 30, 2014	\$ 32	\$437,266	\$227,942	\$ 9,255	\$(302,493)	\$372,002
Share-based compensation expense		16,445				16,445
Repurchases of common stock under share repurchase plans, at cost					(40,026 )	(40,026 )
Repurchases of common stock - other, at cost					(2,221 )	(2,221 )
Exercise of stock options	1	33,175				33,176
Issuance of Cabot Microelectronics restricted stock under Deposit Share Plan		23				23
Issuance of Cabot Microelectronics stock under Employee Stock Purchase Plan		2,583				2,583
Tax benefits from share-based compensation plans		6,181				6,181
Net income			56,146			56,146
Foreign currency translation adjustment				(14,126 )		(14,126 )
Interest rate swaps				(901 )		(901 )
Minimum pension liability adjustment				(318 )		(318 )
Balance at September 30, 2015	\$ 33	\$495,673	\$284,088	\$ (6,090)	\$(344,740)	\$428,964
Share-based compensation expense		13,787				13,787
					(25,980 )	(25,980 )

Repurchases of common stock under share repurchase plans, at cost							
Repurchases of common stock - other, at cost						(2,838 )	(2,838 )
Exercise of stock options	1	16,623					16,624
Issuance of Cabot Microelectronics restricted stock under Deposit Share Plan		52					52
Issuance of Cabot Microelectronics stock under Employee Stock Purchase Plan		2,837					2,837
Tax benefits from share-based compensation plans		1,868					1,868
Net income			59,849				59,849
Dividends			(13,161 )				(13,161 )
Foreign currency translation adjustment				15,996			15,996
Interest rate swaps				84			84
Minimum pension liability adjustment				(434 )			(434 )
Balance at September 30, 2016	\$ 34	\$530,840	\$330,776	\$ 9,556		\$(373,558)	\$497,648

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

Index

CABOT MICROELECTRONICS CORPORATION  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(In thousands, except share and per share amounts)

1. BACKGROUND AND BASIS OF PRESENTATION

Cabot Microelectronics Corporation ("Cabot Microelectronics", "the Company", "us", "we", or "our") supplies high-performance polishing slurries and pads used in the manufacture of advanced integrated circuit (IC) devices within the semiconductor industry, in a process called chemical mechanical planarization (CMP). CMP polishes surfaces at an atomic level, thereby helping to enable IC device manufacturers to produce smaller, faster and more complex IC devices with fewer defects. We develop, produce and sell CMP slurries for polishing many of the conducting and insulating materials used in IC devices, and also for polishing the disk substrates and magnetic heads used in hard disk drives. We develop, manufacture and sell CMP polishing pads, which are used in conjunction with slurries in the CMP process. We also develop and provide products for demanding surface modification applications in other industries through our Engineered Surface Finishes (ESF) business.

The audited consolidated financial statements have been prepared by us pursuant to the rules of the Securities and Exchange Commission (SEC) and accounting principles generally accepted in the United States of America. We operate predominantly in one reportable segment - the development, manufacture, and sale of CMP consumables.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of Cabot Microelectronics and its subsidiaries. All intercompany transactions and balances between the companies have been eliminated as of September 30, 2016.

USE OF ESTIMATES

The preparation of financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America requires management to make judgments, assumptions and estimates that affect the amounts reported in the consolidated financial statements and accompanying notes. The accounting estimates that require management's most difficult and subjective judgments include, but are not limited to, those estimates related to bad debt expense, inventory valuation, valuation and classification of auction rate securities, impairment of long-lived assets and investments, business combinations, goodwill, other intangible assets, interest rate swaps, share-based compensation, income taxes and contingencies. We base our estimates on historical experience, current conditions and on various other assumptions that we believe are reasonable under the circumstances. However, future events are subject to change and estimates and judgments routinely require adjustment. Actual results may differ from these estimates under different assumptions or conditions.

CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS

We consider investments in all highly liquid financial instruments with original maturities of three months or less to be cash equivalents. Short-term investments include securities generally having maturities of 90 days to one year. We did not own any securities that were considered short-term as of September 30, 2016 or 2015. . See Note 4 for a more detailed discussion of other financial instruments.





Index

## ACCOUNTS RECEIVABLE AND ALLOWANCE FOR DOUBTFUL ACCOUNTS

Trade accounts receivable are recorded at the invoiced amount and do not bear interest. We maintain an allowance for doubtful accounts for estimated losses resulting from the potential inability of our customers to make required payments. Our allowance for doubtful accounts is based on historical collection experience, adjusted for any specific known conditions or circumstances such as customer bankruptcies and increased risk due to economic conditions. Uncollectible account balances are charged against the allowance when we believe that it is probable that the receivable will not be recovered. In the fourth quarter of fiscal 2016, we recorded \$514 in bad debt expense for a customer in Europe that was placed into receivership.

Accounts receivable, net of allowances for doubtful accounts, were \$62,830 as of September 30, 2016 and \$49,405 as of September 30, 2015. The increase in accounts receivable was primarily due to the 22.5% increase in revenue in the fourth quarter of fiscal 2016 compared to the same period in fiscal 2015. Amounts charged to bad debt expense are recorded in general and administrative expenses. A portion of our receivables and the related allowance for doubtful accounts is denominated in foreign currencies, so they are subject to foreign exchange fluctuations which are included in the table below under deductions and adjustments. Our allowance for doubtful accounts changed during the fiscal year ended September 30, 2016 as follows:

Balance as of September 30, 2015	\$1,224
Amounts charged to expense	588
Deductions and adjustments	16
Balance as of September 30, 2016	\$1,828

## CONCENTRATION OF CREDIT RISK

Financial instruments that subject us to concentrations of credit risk consist principally of accounts receivable. We perform ongoing credit evaluations of our customers' financial conditions and generally do not require collateral to secure accounts receivable. Our exposure to credit risk associated with nonpayment is affected principally by conditions or occurrences within the semiconductor industry and global economy. With the exception of one customer bankruptcy in fiscal 2012 and the customer placed into receivership in fiscal 2016, we have not experienced significant losses relating to accounts receivable from individual customers or groups of customers.

Customers who represented more than 10% of revenue are as follows:

	Year Ended September 30, 2016 2015 2014		
Taiwan Semiconductor Manufacturing Co. (TSMC)	15%	18%	22%
Samsung Group (Samsung)	15%	15%	14%

TSMC accounted for 12.9% and 12.6% of net accounts receivable at September 30, 2016 and 2015, respectively. Samsung accounted for 8.3% and 9.7% of net accounts receivable at September 30, 2016 and 2015, respectively.

Index

FAIR VALUES OF FINANCIAL INSTRUMENTS

The recorded amounts of cash, accounts receivable, and accounts payable approximate their fair values due to their short-term, highly liquid characteristics. See Note 4 for a more detailed discussion of the fair value of financial instruments.

INVENTORIES

Inventories are stated at the lower of cost, determined on the first-in, first-out (FIFO) basis, or market. Finished goods and work in process inventories include material, labor and manufacturing overhead costs. We regularly review and write down the value of inventory as required for estimated obsolescence or lack of marketability. An inventory reserve is maintained based upon a historical percentage of actual inventories written off and applied against inventory value at the end of the period, adjusted for known conditions and circumstances.

PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment are recorded at cost. Depreciation is based on the following estimated useful lives of the assets using the straight-line method:

Buildings	15-25 years
Machinery and equipment	3-10 years
Furniture and fixtures	5-10 years
Information systems	3-5 years

Expenditures for repairs and maintenance are charged to expense as incurred. Expenditures for major renewals and betterments are capitalized and depreciated over the remaining useful lives. As assets are retired or sold, the related cost and accumulated depreciation are removed from the accounts and any resulting gain or loss is included in the results of operations. We capitalize the costs related to the design and development of software used for internal purposes; however, these costs are not material.

IMPAIRMENT OF LONG-LIVED ASSETS

Reviews are regularly performed to determine whether facts and circumstances exist that indicate the carrying amount of assets may not be recoverable or the useful life is shorter than originally estimated. Asset recoverability assessment begins by comparing the projected undiscounted cash flows associated with the related asset or group of assets over their remaining lives against their respective carrying amounts. Impairment, if any, is based on the excess of the carrying amount over the fair value of those assets. If assets are determined to be recoverable, but their useful lives are shorter than originally estimated, the net book value of the asset is depreciated over the newly determined remaining useful life. See Note 6 for more information regarding impairment expense recorded in fiscal years 2016, 2015 and 2014.

WARRANTY RESERVE

We maintain a warranty reserve that reflects management's best estimate of the cost to replace product that does not meet our specifications and customers' performance requirements. The warranty reserve is based upon a historical product return rate, adjusted for any specific known conditions or circumstances. Adjustments to the warranty reserve are recorded in cost of goods sold.



Index

GOODWILL AND INTANGIBLE ASSETS

We amortize intangible assets with finite lives over their estimated useful lives, which range from one to eleven years. Intangible assets with finite lives are reviewed for impairment using a process similar to that used to evaluate other long-lived assets. Goodwill and indefinite-lived intangible assets are not amortized and are tested annually in the fourth fiscal quarter, or more frequently if indicators of potential impairment exist, using a fair-value-based approach. The recoverability of goodwill is measured at the reporting unit level, which is defined as either an operating segment or one level below an operating segment, referred to as a component. A component is a reporting unit when the component constitutes a business for which discrete financial information is available and segment management regularly reviews the operating results of the component. Components may be combined into one reporting unit when they have similar economic characteristics. We have four reporting units, all of which have goodwill and intangible assets as of September 30, 2016. Goodwill impairment testing requires a comparison of the fair value of each reporting unit to the carrying value. If the carrying value exceeds fair value, then the fair value of the assets and liabilities for the reporting unit is used to determine the "implied" fair value of goodwill. The amount of the impairment is the difference between the carrying value and the implied fair value of goodwill. Accounting guidance provides an entity the option to assess the fair value of a reporting unit either using a qualitative analysis ("step zero") or a quantitative analysis ("step one"). In fiscal 2014, 2015 and 2016, we chose to use a step one analysis for goodwill impairment. Similarly, an entity has the option to use a step zero or step one approach to determine the recoverability of indefinite-lived intangible assets. In fiscal 2014, 2015 and 2016, we used a step one analysis to determine the recoverability of indefinite-lived intangible assets. As discussed in more detail in Note 3, we recorded \$1,000 in impairment expense on an in-process technology asset during the fourth quarter of fiscal 2016. We determined that goodwill and the other intangible assets were not impaired as of September 30, 2016.

FOREIGN CURRENCY TRANSLATION

Certain operating activities in Asia and Europe are denominated in local currency, considered to be the functional currency. Assets and liabilities of these operations are translated using exchange rates in effect at the end of the year, and revenue and costs are translated using average exchange rates for the year. The related translation adjustments are reported in comprehensive income in stockholders' equity.

FOREIGN EXCHANGE MANAGEMENT

We transact business in various foreign currencies, primarily the Japanese yen, New Taiwan dollar and Korean won. Our exposure to foreign currency exchange risks has not been significant because a large portion of our business is denominated in U.S. dollars. However, there was a weakening of the Japanese yen against the U.S. dollar during fiscal years 2014 and 2015, which had some net positive impact on our gross margin percentage and our net income. Periodically, we enter into forward foreign exchange contracts in an effort to mitigate the risks associated with currency fluctuations on certain foreign currency balance sheet exposures. Our foreign exchange contracts do not qualify for hedge accounting under the accounting rules for derivative instruments. See Note 11 for a discussion of derivative financial instruments.

INTERCOMPANY LOAN ACCOUNTING

We maintain an intercompany loan agreement with our wholly-owned subsidiary, Nihon Cabot Microelectronics K.K. ("Nihon"), under which we provided funds to Nihon to finance the purchase of certain assets from our former Japanese branch at the time of the establishment of this subsidiary, for the purchase of land adjacent to our Geino, Japan, facility, for the construction of our Asia Pacific technology center, and for the purchase of a 300 millimeter polishing tool and related metrology equipment, all of which are part of Nihon, as well as for general business

purposes. Since settlement of the note is expected in the foreseeable future, and our subsidiary has made timely payments on the loan, the loan is considered a foreign-currency transaction. Therefore the associated foreign exchange gains and losses are recognized as other income or expense rather than being deferred in the cumulative translation account in other comprehensive income.

## Index

We also maintain an intercompany loan between two of our wholly-owned foreign subsidiaries, from Cabot Microelectronics Singapore Pte. Ltd. to Hanguk Cabot Microelectronics, LLC in South Korea. This loan provided funds for the construction and operation of our research, development and manufacturing facility in South Korea. This loan is also considered a foreign currency transaction and is accounted for in the same manner as our intercompany loan to Nihon.

These intercompany loans are eliminated from our Consolidated Balance Sheet in consolidation.

## PURCHASE COMMITMENTS

We have entered into unconditional purchase obligations, which include noncancelable purchase commitments and take-or-pay arrangements with suppliers. On an ongoing basis, we review our agreements and assess the likelihood of a shortfall in purchases and determine if it is necessary to record a liability. See Note 18 for additional discussion of purchase commitments. To date, we have not recorded such a liability.

## REVENUE RECOGNITION

Revenue from CMP consumables products is recognized when title is transferred to the customer, assuming all revenue recognition criteria are met. Title transfer generally occurs upon shipment to the customer or when inventory held on consignment is consumed by the customer, subject to the terms and conditions of the particular customer arrangement. We have consignment agreements with a number of our customers that require, at a minimum, monthly consumption reports that enable us to record revenue and inventory usage in the appropriate period.

Although the majority of our products are sold directly, we market some of our products through distributors in certain areas of the world. We recognize revenue upon shipment and when title is transferred to the distributor. We do not have any arrangements with distributors that include payment terms, rights of return, or rights of exchange outside the ordinary course of business, or any other significant matters that we believe would impact the timing of revenue recognition.

Within our Engineered Surface Finishes (ESF) business, sales of equipment are recorded as revenue upon delivery and customer acceptance. Amounts allocated to installation and training are deferred until those services are provided and are not material.

Revenues are reported net of any value-added tax or other such tax assessed by a governmental authority on our revenue-producing activities.

## SHIPPING AND HANDLING

Costs related to shipping and handling are included in cost of goods sold.

## RESEARCH, DEVELOPMENT AND TECHNICAL

Research, development and technical costs are expensed as incurred and consist primarily of staffing costs, materials and supplies, depreciation, utilities and other facilities costs.

## INCOME TAXES

Current income taxes are determined based on estimated taxes payable or refundable on tax returns for the current year. Deferred income taxes are determined using enacted tax rates for the effect of temporary differences between the book and tax bases of recorded assets and liabilities. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Provisions are made for both U.S. and any foreign deferred income tax liability or benefit. We assess whether our deferred tax assets will ultimately be realized and record an estimated valuation allowance on those deferred tax assets that may not be realized. We recognize the tax benefit of an uncertain tax position only if it is more likely than not that the tax position will be sustained by the taxing authorities, based on the technical merits of the position. In fiscal years 2014, 2015 and 2016 we elected to permanently reinvest the earnings of all of our foreign subsidiaries rather than repatriate the earnings to the U.S. See Note 17 for additional information on income taxes.



## Index

### INTEREST RATE SWAPS

In fiscal 2015, we entered into floating-to-fixed interest rate swap agreements to hedge the variability in LIBOR-based interest payments on a portion of our outstanding variable rate debt. The fair value of our interest rate swaps is estimated using standard valuation models using market-based observable inputs over the contractual term, including one-month LIBOR-based yield curves, among others. We consider the risk of nonperformance, including counterparty credit risk, in the calculation of the fair value. We have designated these swap agreements as cash flow hedges pursuant to ASC 815, "Derivatives and Hedging". As cash flow hedges, unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Unrealized gains and losses are designated as effective or ineffective based on a comparison of the changes in fair value of the interest rate swaps and changes in fair value of the underlying exposures being hedged. The effective portion is recorded as a component of accumulated other comprehensive income or loss, while the ineffective portion is recorded as a component of interest expense. Changes in the method by which we pay interest from one-month LIBOR to another rate of interest could create ineffectiveness in the swaps, and result in amounts being reclassified from other comprehensive income into net income. Hedge effectiveness is tested quarterly to determine if hedge treatment is appropriate.

### SHARE-BASED COMPENSATION

We record share-based compensation expense for all share-based awards, including stock option grants, restricted stock and restricted stock unit awards and employee stock purchase plan purchases. We calculate share-based compensation expense using the straight-line approach based on awards ultimately expected to vest, which requires the use of an estimated forfeiture rate. Our estimated forfeiture rate is primarily based on historical experience, but may be revised in future periods if actual forfeitures differ from the estimate. We use the Black-Scholes option-pricing model to estimate the grant date fair value of our stock options and employee stock purchase plan purchases. This model requires the input of highly subjective assumptions, including the price volatility of the underlying stock, the expected term of our stock options, expected dividend yield, and the risk-free interest rate. We estimate the expected volatility of our stock options based on a combination of our stock's historical volatility and the implied volatilities from actively-traded options on our stock. We calculate the expected term of our stock options using historical stock option exercise data, and we add a slight premium to this expected term for employees who meet the definition of retirement eligible pursuant to their grants during the contractual term of the grant. The expected dividend yield represents our annualized dividend in dollars divided by the stock price on the date of grant. The risk-free rate is derived from the U.S. Treasury yield curve in effect at the time of grant.

The fair value of our restricted stock and restricted stock unit awards represents the closing price of our common stock on the date of award.

For additional information regarding our share-based compensation plans, refer to Note 13.

### EARNINGS PER SHARE

Basic earnings per share (EPS) is calculated by dividing net income available to common stockholders by the weighted-average number of common shares outstanding during the period, excluding the effects of unvested restricted stock awards with a right to receive non-forfeitable dividends, which are considered participating securities as prescribed by the two class method under ASC Topic 260, Earnings Per Share (ASC 260). Diluted EPS is calculated in a similar manner, but the weighted-average number of common shares outstanding during the period is increased to include the weighted-average dilutive effect of "in-the-money" stock options and unvested restricted stock shares using the treasury stock method.

COMPREHENSIVE INCOME

Comprehensive income primarily differs from net income due to foreign currency translation adjustments.

54

---

Index

## EFFECTS OF RECENT ACCOUNTING PRONOUNCEMENTS

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers" (Topic 606), an updated standard on revenue recognition. ASU 2014-09 provides enhancements to how revenue is reported and improves comparability in the financial statements of companies reporting using IFRS and US GAAP. The core principle of the new standard is for companies to recognize revenue for goods or services in amounts that reflect the consideration to which the company expects to be entitled in exchange for those goods or services. The new standard is intended to enhance disclosures about revenue, provide guidance for transactions that were not previously addressed comprehensively, such as service revenue and contract modifications, and improve guidance for multiple-element arrangements. In August 2015, the FASB issued ASU No. 2015-14, "Deferral of Effective Date" (Topic 606). This standard officially defers the effective date of ASU 2014-09 by one year. ASU 2014-09 will be effective for us beginning October 1, 2018, and may be applied on a full retrospective or modified retrospective approach. Adoption is not permitted prior to the original effective date of the ASU, which for us is October 1, 2017. In March 2016, the FASB issued ASU No. 2016-08, "Principal versus Agent Considerations (Reporting Revenue Gross versus Net)" (Topic 606). ASU 2016-08 provides clarification for the implementation guidance on principal versus agent considerations. In April 2016, the FASB issued ASU No. 2016-10, ASU No. 2016-11, and ASU 2016-12, all of which provide additional clarification of the original revenue standard. We are currently evaluating the impact of implementation of these standards on our financial statements.

In June 2014, the FASB issued ASU No. 2014-12, "Accounting for Share-Based Payments When the Terms of an Award Provide that a Performance Target Could be Achieved after the Requisite Service Period" (Topic 718). ASU 2014-12 requires that a performance target that affects vesting and that could be achieved after the requisite service period be treated as a performance condition. As such, the performance target should not be reflected in estimating the grant date fair value of an award, and compensation cost should be recognized in the period in which it becomes probable that the performance target will be achieved. The compensation cost should represent the amount attributable to the periods for which the requisite service has been rendered. ASU 2014-12 will be effective for us beginning October 1, 2016 and may be applied on a prospective or retrospective basis. We do not expect the implementation of this standard to have a material effect on our financial statements as we have not granted any awards with a performance condition.

In January 2015, the FASB issued ASU No. 2015-01, "Simplifying Income Statement Presentation by Eliminating the Concept of Extraordinary Items" (Subtopic 225-20). ASU 2015-01 eliminates the concept of extraordinary items from U.S. GAAP, so an entity no longer needs to consider whether an underlying event or transaction is extraordinary. ASU 2015-01 retains the prior presentation and disclosure guidance for items that are unusual in nature or occur infrequently and will expand the guidance to include items that are both unusual in nature and infrequently occurring. ASU 2015-01 will be effective for us beginning October 1, 2016. We do not expect the implementation of this standard to have a material effect on our financial statements as we have not had any events or transactions that were considered to be extraordinary.

In February 2015, the FASB issued ASU No. 2015-02, "Amendments to the Consolidation Analysis" (Topic 810). ASU 2015-02 amends the criteria for determining which entities are considered variable interest entities (VIEs), amends the criteria for determining if a service provider possesses a variable interest in a VIE and ends the deferral granted to investment companies for application of the VIE consolidation model. ASU 2015-02 will be effective for us beginning October 1, 2016. We do not expect the implementation of this standard to have a material effect on our financial statements as we have no interests in any entities that may be considered VIEs.

In April 2015, the FASB issued ASU No. 2015-03, "Simplifying the Presentation of Debt Issuance Costs" (Subtopic 835-30). The provisions of ASU 2015-03 require an entity to present the debt issuance costs related to a recognized debt liability in the balance sheet as a direct deduction to the carry amount of that debt liability. ASU 2015-03 will be

effective for us beginning October 1, 2016. The implementation of this standard will require us to reclassify our debt issuance costs related to our term loan from their asset position on our balance sheet to a liability position as an offset to the carrying amount of our outstanding debt. We do not expect the implementation of this standard to have a material effect on our financial statements.

Index

In April 2015, the FASB issued ASU No. 2015-05, "Customer Accounting for Fees Paid in a Cloud Computing Arrangement" (Subtopic 350-40). ASU 2015-05 provides guidance to entities on accounting for entering into a cloud computing arrangement with and without a software license. If an arrangement includes a software license, then the purchaser should account for the software license element of the arrangement consistent with the treatment of other software licenses. If an arrangement does not include a software license, it should be treated as a service contract. ASU 2015-05 will be effective for us beginning October 1, 2016. We do not expect the implementation of this standard to have a material effect on our financial statements.

In July 2015, the FASB issued ASU No. 2015-11, "Simplifying the Measurement of Inventory" (Topic 330). The provisions of ASU 2015-11 require an entity to measure inventory at the lower of cost and net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. ASU 2015-11 will be effective for us beginning October 1, 2017, but early adoption is permitted. We do not believe the adoption of this standard will have a material effect on our financial statements.

In August 2015, the FASB issued ASU No. 2015-15, "Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements" (Subtopic 835-30). ASU 2015-15 provides guidance on the treatment of debt issuance cost related to line-of-credit arrangements based on comments provided by the SEC staff. The SEC staff stated that it would not object to an entity deferring and presenting debt issuance costs as an asset and subsequently amortizing the deferred debt issuance cost ratably over the term of the line-of-credit arrangement, regardless of whether there are any outstanding borrowings on the line-of-credit arrangement. ASU 2015-15 will be effective for us beginning October 1, 2016. We do not expect the implementation of this standard to have a material effect on our financial statements.

In January 2016, the FASB issued ASU No. 2016-01, "Recognition and Measurement of Financial Assets and Financial Liabilities" (Subtopic 825-10). The provision of ASU 2016-01 requires equity investments, other than those accounted for under the equity method of accounting or those that result in consolidation, to be measured at fair value with changes in fair value recognized in net income. ASU 2016-01 simplifies the impairment assessment of equity securities by permitting a qualitative assessment each reporting period, and makes changes to presentation and disclosure of certain classes of financial assets and liabilities. ASU 2016-01 will be effective for us beginning October 1, 2018, but early adoption is permitted. We are currently evaluating the impact of implementation of this standard on our financial statements.

In February 2016, the FASB issued ASU No. 2016-02, "Leases" (Topic 842). The provisions of ASU 2016-02 require a dual approach for lessee accounting under which a lessee would recognize a right-of-use asset and a corresponding lease liability. Leases will be classified as either finance or operating leases. For finance leases, a lessee will recognize interest expense and amortization of the right-of-use asset, and for operating leases, the lessee will recognize a straight-line total lease expense. The guidance also requires qualitative and specific quantitative disclosures to supplement the amounts recorded in the financial statements, to afford better understanding of an entity's leasing activities, including any significant judgments and estimates. ASU 2016-02 will be effective for us beginning October 1, 2019, but early adoption is permitted. We are currently evaluating the impact of implementation of this standard on our financial statements.

In March 2016, the FASB issued ASU No. 2016-05, "Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships" (Topic 815). The provisions of ASU 2016-05 provide clarification that a change in a counterparty of a derivative instrument that has been designated as a hedging instrument does not require dedesignation of that hedging relationship, provided that all other hedge accounting criteria is met. ASU 2016-05 will be effective for us beginning October 1, 2018, but early adoption is permitted. We do not believe the adoption of this standard will have a material effect on our financial statements.



## Index

In March 2016, the FASB issued ASU No. 2016-07, "Simplifying the Transition to the Equity Method of Accounting" (Topic 323). The provisions of ASU 2016-07 require equity method investors to add the cost of acquiring additional interest in the investee to the current basis of the investor's previously held interest and adopt the equity method prospectively as of the date the investment qualifies for the equity method of accounting. ASU 2016-07 will be effective for us beginning October 1, 2018, but early adoption is permitted. We do not believe the adoption of this standard will have a material effect on our financial statements as we currently have no equity method investments.

In March 2016, the FASB issued ASU No. 2016-09, "Improvements to Employee Share Based Payment Accounting" (Topic 718). The provisions of this standard involve several aspects of the accounting for share-based payments transactions, including income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. ASU 2016-09 will be effective for us beginning October 1, 2017, but early adoption is permitted. We are currently evaluating the impact of implementation of this standard on our financial statements.

In June 2016, the FASB issued ASU No. 2016-13, "Measurement of Credit Losses on Financial Instruments" (Topic 326). The provisions of this standard require financial assets measured at amortized cost to be presented at the net amount expected to be collected. An allowance account would be established to present the net carrying value at the amount expect to be collected. ASU 2016-13 also provides that credit losses relating to available-for-sale debt securities should be recorded through an allowance for credit losses. ASU 2016-13 will be effective for us beginning October 1, 2020, but early adoption is permitted as of October 1, 2019. We are currently evaluating the impact of implementation of this standard on our financial statements.

In August 2016, the FASB issued ASU No. 2016-15 "Classification of Certain Cash Receipts and Cash Payments" (Topic 230). The provisions of this standard provide guidance on the classification within the statement of cash flows of certain types of cash receipts and cash payments in an effort to eliminate diversity in practice. ASU 2016-15 will be effective for us beginning October 1, 2018, but early adoption is permitted. We do not believe the adoption of this standard will have a material effect on our financial statements as we currently do not have any of the cash receipts or payments discussed in this standard.

### 3. BUSINESS COMBINATION

On October 22, 2015, the Company completed the acquisition of 100% of the outstanding stock of NexPlanar Corporation (NexPlanar), which was a privately held, U.S. based company that specialized in the development, manufacture and sale of advanced CMP pad solutions for the semiconductor industry. We acquired NexPlanar to expand our polishing pad portfolio by adding a complementary pad technology for which we believe we can leverage our global infrastructure to better serve customers on a global basis, including offering performance-advantaged slurry and pad consumable sets. We paid a total of \$126,976, including total purchase consideration of \$142,237, less cash acquired of \$15,261. The purchase consideration includes \$142,167 paid at the date of acquisition and \$70 for a post-closing adjustment. In addition, we paid \$154 in compensation expense related to certain unvested NexPlanar stock options settled in cash at the acquisition date. See Note 13 for additional discussion of share-based compensation. We have included 100% of the NexPlanar revenue and earnings since October 22, 2015 in our Consolidated Statement of Income. The net revenue in our Consolidated Statement of Income for the year ended September 30, 2016, attributable to NexPlanar, was \$23,492. The net loss included in our Consolidated Statement of Income for the year ended September 30, 2016, attributable to NexPlanar, was \$7,795.

Index

The following table summarizes the fair values of assets acquired and liabilities assumed as of the date of acquisition:

Total purchase consideration	\$ 142,237
Cash	\$ 15,261
Accounts receivable	3,052
Inventories	2,768
Prepaid expenses and other current assets	1,712
Property, plant and equipment	6,901
Intangible assets	55,000
Deferred tax assets	20,509
Other long-term assets	1,458
Accounts payable	(1,057 )
Accrued expenses and other current liabilities	(1,472 )
Deferred tax liabilities	(20,313 )
Total identifiable net assets	83,819
Goodwill	58,418
	\$ 142,237

The acquisition was accounted for using the acquisition method of accounting. Tangible and identifiable intangible assets acquired and liabilities assumed are recorded at fair value as of the acquisition date. We finalized the purchase price allocation during the fourth quarter of fiscal 2016. We believe that the information we used provides a reasonable basis for estimating the fair values of assets acquired and liabilities assumed.

In September 2015, the FASB issued Accounting Standards Update No. 2015-16, "Simplifying the Accounting for Measurement Period Adjustments" (Topic 805) (ASU 2015-16). The provisions of ASU 2015-16 require an acquirer to recognize adjustments to provisional amounts identified during the measurement period in the reporting period in which the adjustments are determined. We elected the early adoption provision of this standard in the quarter ended March 31, 2016. During the quarter ended September 30, 2016, we reduced the total fair value of intangible assets acquired from \$61,000 to \$55,000 based on an improved understanding of the allocation of future expected cash flows amongst the various NexPlanar products at the date of acquisition. We recorded an additional \$210 in amortization expense in the fourth quarter of fiscal 2016 related to the changes in fair value of intangible assets. We also reduced our deferred tax liability balance related to the intangible assets by \$2,140, which decreased goodwill by the same amount.

The fair values of identifiable assets and liabilities acquired were developed with the assistance of third party valuation firms. The fair value of acquired property, plant and equipment is valued at its "value-in-use" as there are no known plans to dispose of any assets. The fair value of acquired identifiable intangible assets was determined using the "income approach" on an individual asset basis. The key assumptions used in the calculation of the discounted cash flows include projected revenues, gross margin, operating expenses, and discount rate. The valuations and the underlying assumptions have been deemed reasonable by Company management. There are inherent uncertainties and management judgment required in these determinations.



Index

The following table sets forth the components of identifiable intangible assets acquired and their estimated useful lives as of the date of acquisition:

	Preliminary Fair Value	Useful Life
Trade name	\$ 8,000	7 years
Customer relationships	8,000	11 years
Developed technology - product family A	32,000	7 years
Developed technology - product family B	2,000	9 years
In-process technology	5,000	
Total intangible assets	\$ 55,000	

The trade name represents the estimated fair value of the brand and name recognition associated with the marketing of NexPlanar's product offerings. Customer relationships represent the estimated fair value of the underlying relationships and agreements with NexPlanar customers. Developed technology represents the estimated fair value of NexPlanar's technology, processes and knowledge regarding its product offerings. In-process technology represents the fair value assigned to technology projects under development as of the acquisition date. The in-process technology assets are capitalized and accounted for as indefinite-lived intangible assets and will be subject to impairment testing until completion or abandonment of the projects. Upon successful completion of each project, we will make a determination of the appropriate useful life and the related amortization will be recorded as an expense over the estimated useful life based on the future expected cash flow stream. In the fourth quarter of fiscal 2016, we recorded impairment expense of \$1,000 representing the entire fair value of one of the in-process technology assets as management determined revised expected future cash flows were insufficient to support the value of the asset. The intangible assets subject to amortization have a weighted average useful life of 7.7 years and are being amortized on a straight-line basis.

The excess of purchase consideration over the preliminary fair value of net assets acquired was recorded as goodwill, and is not deductible for income tax purposes. The goodwill is primarily attributable to anticipated revenue growth from the combination of our and NexPlanar pad technologies, expected synergies from the combined operations, and the assembled workforce of NexPlanar.

NexPlanar's results of operations have been included in our unaudited consolidated statements of income and comprehensive income from the date of acquisition. We incurred \$816 in professional fees related to the acquisition, \$526 of which were recorded as general and administrative expense during fiscal 2015, and \$290 of which were recorded as general and administrative expense during fiscal 2016. As previously discussed, we recorded \$154 in compensation expense, related to the cash settlement of certain unvested NexPlanar stock options.

The following supplemental pro forma information summarizes the combined results of operations for Cabot Microelectronics and NexPlanar as if the acquisition had occurred on October 1, 2014.

	Year Ended	
	September 30,	
	2016	2015
Revenues	\$431,856	\$437,326
Net income	60,620	46,928
Earnings per share - basic	2.50	1.93
Earnings per share - diluted	\$2.46	\$1.89



Index

The historical financial information has been adjusted to give effect to pro forma adjustments, which consist of amortization expense associated with intangible assets, and the elimination of interest expense on NexPlanar debt repaid prior to the acquisition. The proforma amounts for the year ended September 30, 2016 exclude the impact of \$154 in compensation expense related to unvested NexPlanar stock options settled in cash, and \$403 for the step-up of inventory as these items are assumed to have occurred during the quarter ended December 31, 2014 had the acquisition been completed on October 1, 2014. The pro forma adjustments are based on information currently available. Therefore, the pro forma consolidated results are not necessarily indicative of what the consolidated results actually would have been had the acquisition been completed on October 1, 2014. The pro forma consolidated results do not purport to project future results of combined operations, nor do they reflect the expected realization of any revenue or cost synergies associated with the acquisition.

## 4. FAIR VALUE OF FINANCIAL INSTRUMENTS

Fair value is defined as the price that would be received from the sale of an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The FASB established a three-level hierarchy for disclosure based on the extent and level of judgment used to estimate fair value. Level 1 inputs consist of valuations based on quoted market prices in active markets for identical assets or liabilities. Level 2 inputs consist of valuations based on quoted prices for similar assets or liabilities, quoted prices for identical assets or liabilities in an inactive market, or other observable inputs. Level 3 inputs consist of valuations based on unobservable inputs that are supported by little or no market activity.

The following table presents financial instruments, other than long-term debt, that we measured at fair value on a recurring basis at September 30, 2016 and 2015. See Note 10 for a detailed discussion of our long-term debt. We have classified the following assets in accordance with the fair value hierarchy set forth in the applicable standards. In instances where the inputs used to measure the fair value of an asset fall into more than one level of the hierarchy, we have classified them based on the lowest level input that is significant to the determination of the fair value.

		Level	Level	Total
	Level 1	2	3	Fair Value
September 30, 2016				
Assets:				
Cash and cash equivalents	\$287,479	\$-	\$ -	\$287,479
Other long-term investments	1,028	-	-	1,028
Derivative financial instruments	-	28	-	28
Total assets	\$288,507	\$28	\$ -	\$288,535
Liabilities:				
Derivative financial instruments	-	1,469	-	1,469
Total liabilities	\$-	\$1,469	\$ -	\$1,469

		Level	Level	Total
	Level 1	2	3	Fair Value
September 30, 2015				
Assets:				
Cash and cash equivalents	\$354,190	\$-	\$ -	\$354,190
Other long-term investments	1,720	-	-	1,720

Edgar Filing: CABOT MICROELECTRONICS CORP - Form 10-K

Derivative financial instruments	-	14	-	14
Total assets	\$355,910	\$14	\$ -	\$355,924

Liabilities:

Derivative financial instruments	-	1,406	-	1,406
Total liabilities	\$-	\$1,406	\$ -	\$1,406

60

---

Index

Our cash and cash equivalents consist of various bank accounts used to support our operations and investments in institutional money-market funds that are traded in active markets. We invest exclusively in AAA-rated, prime institutional money market funds, comprised of high quality, short-term fixed income securities. Our other long-term investments represent the fair value of investments under the Cabot Microelectronics Supplemental Employee Retirement Plan (SERP), which is a nonqualified supplemental savings plan. The fair value of the investments is determined through quoted market prices within actively traded markets. Although the investments are allocated to individual participants and investment decisions are made solely by those participants, the SERP is a nonqualified plan. Consequently, the Company owns the assets and the related offsetting liability for disbursement until such time as a participant makes a qualifying withdrawal. The long-term asset was adjusted to \$1,028 in the fourth quarter of fiscal 2016 to reflect its fair value as of September 30, 2016.

Our derivative financial instruments include forward foreign exchange contracts and interest rate swaps. In fiscal 2015, we entered into floating-to-fixed interest rate swap agreements to hedge the variability in LIBOR-based interest payments on a portion of our outstanding variable rate debt. These interest rate swaps represent our primary use of derivative financial instruments. The fair value of our derivative instruments is estimated using standard valuation models using market-based observable inputs over the contractual term, including one-month LIBOR-based yield curves, among others. We consider the risk of nonperformance, including counterparty credit risk, in the calculation of the fair value of derivative financial instruments. See Note 11 for more information on our use of derivative financial instruments.

## 5. INVENTORIES

Inventories consisted of the following:

	September 30,	
	2016	2015
Raw materials	\$45,109	\$42,603
Work in process	4,668	5,487
Finished goods	22,346	22,588
Total	\$72,123	\$70,678

## 6. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consisted of the following:

	September 30,	
	2016	2015
Land	\$18,636	\$17,076
Buildings	100,084	92,720
Machinery and equipment	198,870	167,448
Furniture and fixtures	6,642	6,172
Information systems	29,573	28,528
Construction in progress	6,358	7,553
Total property, plant and equipment	360,163	319,497
Less: accumulated depreciation	(253,667)	(225,754)

Net property, plant and equipment    \$106,496    \$93,743

Depreciation expense was \$16,915, \$16,060 and \$17,467 for the years ended September 30, 2016, 2015 and 2014, respectively.

We did not record any impairment expense on property, plant and equipment in fiscal 2016 and 2015. In fiscal 2014, we recorded \$2,320 in impairment expense primarily related to the decision to write-off certain manufacturing assets in foreign locations. Of this amount, \$2,236 and \$84 was included in cost of goods sold and selling and marketing expense, respectively.

61

---

Index

## 7. GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill was \$100,639 and \$40,442 as of September 30, 2016 and 2015, respectively. The increase in goodwill was due to \$58,418 in goodwill related to the acquisition of NexPlanar and \$1,779 in foreign exchange fluctuations of the New Taiwan dollar.

The components of other intangible assets are as follows:

	September 30, 2016		September 30, 2015	
	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Other intangible assets subject to amortization:				
Product technology	\$42,194	\$ 12,718	\$8,053	\$ 7,490
Acquired patents and licenses	8,270	8,155	8,270	7,845
Trade secrets and know-how	2,550	2,550	2,550	2,550
Customer relationships, distribution rights and other	27,900	12,205	11,392	9,005
Total other intangible assets subject to amortization	80,914	35,628	30,265	26,890
In-process technology	4,000		-	
Other indefinite-lived intangibles*	1,190		1,190	
Total other intangible assets not subject to amortization	5,190		1,190	
Total other intangible assets	\$86,104	\$ 35,628	\$31,455	\$ 26,890

\*Total other intangible assets not subject to amortization primarily consist of trade names.

Amortization expense was \$8,176, \$2,346 and \$2,474 for fiscal 2016, 2015 and 2014, respectively. Estimated future amortization expense of intangible assets as of September 30, 2016 for the five succeeding fiscal years is as follows:

Fiscal Year	Estimated Amortization Expense
2017	\$ 7,780
2018	7,104
2019	6,675
2020	6,670
2021	6,664

Goodwill and indefinite-lived intangible assets are tested for impairment annually in the fourth quarter of our fiscal year or more frequently if indicators of potential impairment exist, using a fair-value-based approach. The recoverability of goodwill is measured at the reporting unit level, which is defined as either an operating segment or one level below an operating segment. An entity has the option to assess the fair value of a reporting unit either using a qualitative analysis ("step zero") or a quantitative analysis ("step one"). Similarly, an entity has the option to use a step zero or a step one approach to determine the recoverability of indefinite-lived intangible assets. In fiscal 2015

and 2016, we chose to use a step one analysis for both goodwill impairment and for indefinite-lived intangible asset impairment.

62

---



Index

We completed our annual impairment test during our fourth quarter of fiscal 2016. As discussed in Note 3, we recorded \$1,000 of impairment expense on one of the in-process technology assets acquired in the NexPlanar acquisition during the fourth quarter of 2016 based on management's revised expected future cash flows for this asset. The impairment charge was included in research, development and technical expenses on our Consolidated Statement of Income. We concluded that no other impairment of goodwill or intangible assets was necessary. There have been no cumulative impairment charges recorded on the goodwill for any of our reporting units.

## 8. OTHER LONG-TERM ASSETS

Other long-term assets consisted of the following:

	September 30,	
	2016	2015
Auction rate securities (ARS)	\$5,494	\$5,694
Long-term contract asset	3,055	3,995
Other long-term assets	2,900	3,595
Other long-term investments	1,028	1,720
Total	\$12,477	\$15,004

We classify our ARS investments as held-to-maturity and have recorded them at cost. Our ARS investments at September 30, 2016 consisted of two tax exempt municipal debt securities with a total par value of \$5,494, both of which have maturities greater than ten years. The ARS market began to experience illiquidity in early 2008, and this illiquidity continues. Despite this lack of liquidity, there have been no defaults in payment of the underlying securities and interest income on these holdings continues to be received on scheduled interest payment dates. Our ARS, when purchased, were issued by A-rated municipalities. Although the credit ratings of both municipalities have been downgraded since our original investment, one of the ARS is credit enhanced with bond insurance, and the other has become an obligation of the bond insurer. Both ARS currently carry a credit rating of AA- by Standard & Poor's.

The fair value of our ARS, determined using level 2 fair value inputs, was \$5,066 as of September 30, 2016. We have classified our ARS as held-to-maturity based on our intention and ability to hold the securities until maturity. We believe the gross unrecognized loss of \$428 is due to the illiquidity in the ARS market, rather than to credit loss. Although we believe these securities will ultimately be collected in full, we believe that it is not likely that we will be able to monetize the securities in our next business cycle (which for us is generally one year). We will continue to monitor our ARS for impairment indicators, which may require us to record an impairment charge that is deemed other-than-temporary.

In the third quarter of fiscal 2015, we amended a supply contract with an existing supplier. The amended agreement includes a fee of \$4,500, which provides us the option to purchase certain raw materials beyond calendar 2016. This fee was recorded as a long-term asset at its present value and is being amortized into cost of goods sold on a straight-line basis through December 31, 2019, the expiration date of the agreement. See Note 18 for more information regarding this contract.

Other long-term assets are comprised of the long-term portion of prepaid unamortized debt costs as well as miscellaneous deposits and prepayments on contracts extending beyond the next 12 months. As discussed in Note 4, we recorded a long-term asset and a corresponding long-term liability of \$1,028 representing the fair value of our SERP investments as of September 30, 2016.



Index

## 9. ACCRUED EXPENSES, INCOME TAXES PAYABLE AND OTHER CURRENT LIABILITIES

Accrued expenses, income taxes payable and other current liabilities consisted of the following:

	September 30,	
	2016	2015
Accrued compensation	\$17,856	\$23,793
Dividends payable	4,502	-
Goods and services received, not yet invoiced	2,648	1,830
Deferred revenue and customer advances	782	538
Warranty accrual	243	209
Income taxes payable	7,878	4,276
Taxes, other than income taxes	775	975
Current portion of long-term contract liability	1,500	-
Other	5,211	4,825
Total	\$41,395	\$36,446

The dividends payable reflected in the table are excluded from the financing activities in the Consolidated Statement of Cash Flows as they were not paid as of September 30, 2016.

## 10. DEBT

On February 13, 2012, we entered into a credit agreement (the "Credit Agreement") among the Company, as Borrower, Bank of America, N.A., as administrative agent, swing line lender and an L/C issuer, Bank of America Merrill Lynch and J.P. Morgan Securities LLC, as joint lead arrangers and joint book managers, JPMorgan Chase Bank, N.A., as syndication agent, and Wells Fargo Bank, N.A. as documentation agent. The Credit Agreement provided us with a \$175,000 term loan (the "Term Loan"), which we drew on February 27, 2012 to fund approximately half of the special cash dividend we paid to our stockholders on March 1, 2012, and a \$100,000 revolving credit facility (the "Revolving Credit Facility"), which has never been drawn, with sub-limits for multicurrency borrowings, letters of credit and swing-line loans. The Term Loan and the Revolving Credit Facility are referred to as the "Credit Facilities." On June 27, 2014, we entered into an amendment (the "Amendment") to the Credit Agreement, which (i) increased term loan commitments by \$17,500, from \$157,500 to \$175,000, the same level as the original amount under the Credit Agreement at its inception in 2012; (ii) increased the uncommitted accordion feature on the Revolving Credit Facility from \$75,000 to \$100,000; (iii) extended the expiration date of the Credit Facilities from February 13, 2017 to June 27, 2019; (iv) relaxed the consolidated leverage ratio financial covenant; and (v) revised certain pricing terms and other terms within the Credit Agreement. On June 27, 2014, we drew the \$17,500 of increased term loan commitments, bringing the total outstanding commitments under the Term Loan to \$175,000.

Index

Borrowings under the amended Credit Facilities (other than in respect of swing-line loans) bear interest at a rate per annum equal to the "Applicable Rate" (as defined below) plus, at our option, either (1) a LIBOR rate determined by reference to the cost of funds for deposits in the relevant currency for the interest period relevant to such borrowing or (2) the "Base Rate", which is the highest of (x) the prime rate of Bank of America, N.A., (y) the federal funds rate plus 1/2 of 1.00% and (z) the one-month LIBOR rate plus 1.00%. The current Applicable Rate for borrowings under the Credit Facilities is 1.50%, as amended, with respect to LIBOR borrowings and 0.25% with respect to Base Rate borrowings, with such Applicable Rate subject to adjustment based on our consolidated leverage ratio. Swing-line loans bear interest at the Base Rate plus the Applicable Rate for Base Rate loans under the Revolving Credit Facility. In addition to paying interest on outstanding principal under the Credit Agreement, we pay a commitment fee to the lenders under the Revolving Credit Facility in respect of the unutilized commitments thereunder. As amended, the fee ranges from 0.20% to 0.30%, based on our consolidated leverage ratio. Interest expense and commitment fees are paid according to the relevant interest period and no less frequently than at the end of each calendar quarter. We paid \$2,658 in arrangement fees, upfront fees and administration fees in February 2012 and we paid an additional \$550 in upfront fees and arrangement fees in June 2014, of which \$410 remains in prepaid expenses and other current assets and \$684 remains in other long-term assets on our Consolidated Balance Sheet as of September 30, 2016. We also pay letter of credit fees as necessary. The Term Loan has periodic scheduled repayments; however, we may voluntarily prepay the Credit Facilities without premium or penalty, subject to customary "breakage" fees and reemployment costs in the case of LIBOR borrowings. All obligations under the Credit Agreement are guaranteed by certain of our existing and future direct and indirect domestic subsidiaries. The obligations under the Credit Agreement and guarantees of those obligations are secured, subject to certain exceptions, by first priority liens and security interests in the assets of the Company and certain of its domestic subsidiaries.

In fiscal 2015, we entered into interest rate swap agreements that have the economic effect of converting fifty percent of our variable rate debt into fixed rate debt at a weighted average fixed rate of 1.50% plus the Applicable Rate defined above. See Notes 4 and 11 for additional information on the interest rate swap agreements.

The Credit Agreement contains covenants that restrict the ability of the Company and its subsidiaries to take certain actions, including, among other things and subject to certain significant exceptions: creating liens, incurring indebtedness, making investments, engaging in mergers, selling property, paying dividends or amending organizational documents. The Credit Agreement requires us to comply with certain financial ratio maintenance covenants. These include a maximum consolidated leverage ratio of 2.75 to 1.00 and a minimum consolidated fixed charge coverage ratio of 1.25 to 1.00 for the period January 1, 2016 through the expiration of the Credit Agreement. As of September 30, 2016, our consolidated leverage ratio was 1.31 to 1.00 and our consolidated fixed charge coverage ratio was 3.76 to 1.00. The Credit Agreement also contains customary affirmative covenants and events of default. We believe we are in compliance with these covenants.

At September 30, 2016, the fair value of the Term Loan, using level 2 inputs, approximates its carrying value of \$155,313 as the loan bears a floating market rate of interest. As of September 30, 2016, \$7,656 of the debt outstanding is classified as short-term.

Principal repayments of the Term Loan are generally made on the last calendar day of each quarter if that day is considered to be a business day. As of September 30, 2016, scheduled principal repayments of the Term Loan were as follows:

Fiscal Year	Principal Repayments
2017	\$ 7,656
2018	14,219

2019	133,438
Total	\$ 155,313

65

---

Index

## 11. DERIVATIVE FINANCIAL INSTRUMENTS

We are exposed to various market risks, including risks associated with interest rates and foreign currency exchange rates. We enter into certain derivative transactions to mitigate the volatility associated with these exposures. We have policies in place that define acceptable instrument types we may enter into and we have established controls to limit our market risk exposure. We do not use derivative financial instruments for trading or speculative purposes. In addition, all derivatives, whether designated in hedging relationships or not, are required to be recorded on the balance sheet at fair value on a gross basis.

Cash Flow Hedges – Interest Rate Swap Agreements

In fiscal 2015, we entered into floating-to-fixed interest rate swap agreements to hedge the variability in LIBOR-based interest payments on \$86,406 of our outstanding variable rate debt. The notional amount of the swaps decreases each quarter by an amount in proportion to our scheduled quarterly principal payment of debt. The notional value of the swaps was \$77,656 as of September 30, 2016, and the swaps are scheduled to expire on June 27, 2019.

We have designated these swap agreements as cash flow hedges pursuant to ASC 815, "Derivatives and Hedging". As cash flow hedges, unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Unrealized gains and losses are designated as effective or ineffective based on a comparison of the changes in fair value of the interest rate swaps and changes in fair value of the underlying exposures being hedged. The effective portion is recorded as a component of accumulated other comprehensive income or loss, while the ineffective portion is recorded as a component of interest expense. Changes in the method by which we pay interest from one-month LIBOR to another rate of interest could create ineffectiveness in the swaps, and result in amounts being reclassified from other comprehensive income into net income. Hedge effectiveness is tested quarterly to determine if hedge treatment continues to be appropriate.

Foreign Currency Contracts Not Designated as Hedges

Periodically we enter into forward foreign exchange contracts in an effort to mitigate the risks associated with currency fluctuations on certain foreign currency balance sheet exposures. Our foreign exchange contracts do not qualify for hedge accounting; therefore, the gains and losses resulting from the impact of currency exchange rate movements on our forward foreign exchange contracts are recognized as other income or expense in the accompanying consolidated income statements in the period in which the exchange rates change. As of September 30, 2016 and September 30, 2015, respectively, the notional amounts of the forward contracts we held to purchase U.S. dollars in exchange for other international currencies were \$8,858 and \$1,034, respectively, and the notional amounts of forward contracts we held to sell U.S. dollars in exchange for other international currencies were \$15,635 and \$18,690, respectively.

The fair value of our derivative instruments included in the Consolidated Balance Sheet, which was determined using level 2 inputs, was as follows:

Balance Sheet Location	Asset Derivatives		Liability Derivatives	
	Fair value at September 30,	Fair Value at September 30,	Fair Value at September 30,	Fair Value at September 30,
	2016	2015	2016	2015

Derivatives  
designated  
as hedging  
instruments  
Interest rate  
swap

contracts	Other noncurrent assets	\$ -	\$ -	\$-	\$ -
	Accrued expenses and other current liabilities	\$ -	\$ -	\$612	\$ 885
	Other long-term liabilities	\$ -	\$ -	\$655	\$ 513

Derivatives  
not  
designated  
as hedging  
instruments

Foreign  
exchange

contracts	Prepaid expenses and other current assets	\$ 28	\$ 14	\$-	\$ -
	Accrued expenses and other current liabilities	\$ -	\$ -	\$202	\$ 8

Index

The following table summarizes the effect of our derivative instrument on our Consolidated Statement of Income for the fiscal years ended September 30, 2016, 2015 and 2014:

	Statement of Income Location	Gain (Loss) Recognized in Statement of Income Fiscal Year Ended September		
		2016 30,	September 30, 2015	September 30, 2014
Derivatives not designated as hedging instruments	Other income (expense), net	\$ 676	\$ (1,674 )	\$ (1,289 )
Foreign exchange contracts				

The interest rate swap agreements have been deemed to be effective since inception, so there has been no impact on our Consolidated Statement of Income. We recorded a \$84 unrealized gain, net of tax, in accumulated comprehensive income during the year ended September 30, 2016 for these interest rate swaps. During the next 12 months, we expect approximately \$626 to be reclassified from accumulated other comprehensive income into interest expense related to our interest rate swaps based on projected rates of the LIBOR forward curve as of September 30, 2016.

## 12. ACCUMULATED OTHER COMPREHENSIVE INCOME

The table below summarizes the components of accumulated other comprehensive income (loss) (AOCI), net of tax provision/(benefit), for the years ended September 30, 2016, 2015, and 2014.

	Foreign Currency Translation	Cash Flow Hedges	Pension and Other Postretirement Liabilities	Marketable Securities	Total
Balance at September 30, 2013	\$ 18,251	\$-	\$ (664 )	\$ (151 )	\$ 17,436
Foreign currency translation adjustment, net of tax of \$(1,597)	(8,136 )	-	-	-	(8,136 )
Unrealized gain (loss) on marketable securities, net of tax of \$0	-	-	-	151	151
Change in pension and other postretirement, net of tax of \$0	-	-	(196 )	-	(196 )
Balance at September 30, 2014	10,115	-	(860 )	-	9,255
Foreign currency translation adjustment, net of tax of \$(1,731)	(14,126 )	-	-	-	(14,126)
Unrealized gain (loss) on cash flow hedges:					
Change in fair value, net of tax of tax of \$(833)	-	(1,511)	-	-	(1,511 )
Reclassification adjustment into earnings, net of tax of \$336	-	610	-	-	610
Change in pension and other postretirement, net of tax of \$0	-	-	(318 )	-	(318 )
Balance at September 30, 2015	(4,011 )	(901 )	(1,178 )	-	(6,090 )
Foreign currency translation adjustment, net of tax of \$1,854	15,996	0	-	-	15,996
Unrealized gain (loss) on cash flow hedges:					
Change in fair value, net of tax of tax of \$(274)	-	(499 )	-	-	(499 )
	-	583	-	-	583



Reclassification adjustment into earnings, net of tax of  
\$321

Change in pension and other postretirement, net of tax  
of \$(584)

	-	-	(434	)	-	(434	)
Balance at September 30, 2016	\$ 11,985	\$(817	)	\$ (1,612	)	\$ -	\$9,556

67

---

Index

The before tax amount reclassified from OCI to net income in fiscal 2016, related to our cash flow hedges, was recorded as interest expense on our Consolidated Statement of Income. Amounts reclassified from OCI to net income, related to pension liabilities, were not material in fiscal years 2016, 2015 and 2014.

### 13. SHARE-BASED COMPENSATION PLANS

#### EQUITY INCENTIVE PLAN AND OMNIBUS INCENTIVE PLAN

In March 2004, our stockholders approved our Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan (the "EIP"), as amended and restated September 23, 2008. On March 6, 2012, our stockholders approved the 2012 Omnibus Incentive Plan (the "OIP"), which is the successor plan to the EIP. As of such time, all share-based awards have been made from the OIP, and the EIP is no longer available for any awards. The OIP is administered by the Compensation Committee of the Board of Directors and is intended to provide management with the flexibility to attract, retain and reward our employees, directors, consultants and advisors. The OIP allows for the granting of six types of equity incentive awards: stock options, restricted stock, restricted stock units, stock appreciation rights (SARs), performance-based awards and substitute awards. The OIP also provides for cash incentive awards to be made. Substitute awards under the OIP are those awards that, in connection with an acquisition, may be granted to employees, directors, consultants or advisors of the acquired company, in substitution for equity incentives held by them in the seller or the acquired company. In fiscal 2016, pursuant to the Merger Agreement for our acquisition of NexPlanar, we granted incentive stock options (ISOs), as allowed under our current Omnibus Incentive Plan, to certain NexPlanar employees in substitution for unvested ISOs they had held in NexPlanar at the time of the closing of the acquisition. As of September 30, 2016, no SARs or performance awards had been granted to date under either plan. No awards of any type have been granted to date to consultants or advisors under either plan. The OIP authorizes up to 4,934,444 shares of stock to be granted thereunder, including up to 2,030,952 shares of stock in the aggregate of awards other than options or SARs, and up to 2,538,690 incentive stock options. The 4,934,444 shares of stock represents 2,901,360 shares of newly authorized shares and 2,033,084 shares previously available under the EIP. In addition, shares that become available from awards under the EIP and the OIP because of events such as forfeitures, cancellations or expirations, or because shares subject to an award are withheld to satisfy tax withholding obligations, will also be available for issuance under the OIP. Shares issued under our share-based compensation plans are issued from new shares rather than from treasury shares.

Non-qualified stock options issued under the OIP, as they were under the EIP, are generally time-based and provide for a ten-year term, with options generally vesting equally over a four-year period, with first vesting on the first anniversary of the award date. Non-qualified stock options granted to non-employee directors on an annual basis vest 100% on the first anniversary of the award date. Under the OIP, as under the EIP, employees may also be granted ISOs to purchase common stock at not less than the fair value on the date of the grant. Prior to fiscal 2016, no ISOs had been granted under either plan. In the first quarter of fiscal 2016, we substituted certain NexPlanar ISOs with Cabot Microelectronics Corporation ISOs, preserving the intrinsic value, including the original vesting periods, of the original awards. Compensation expense related to our stock option awards was \$6,767, \$7,173 and \$6,947 in fiscal 2016, 2015 and 2014, respectively. For additional information on our accounting for share-based compensation, see Note 2.

Under the OIP, as under the EIP, employees and non-employees may be awarded shares of restricted stock or restricted stock units, which generally vest over a four-year period, with first vesting on the anniversary of the grant date. Restricted stock units granted to non-employee directors on an annual basis vest 100% on the first anniversary of the award date. In general, shares of restricted stock and restricted stock units may not be sold, assigned, transferred, pledged, disposed of or otherwise encumbered. Holders of restricted stock, and restricted stock units, if

specified in the award agreements, have all the rights of stockholders, including voting and dividend rights, subject to the above restrictions, although the holders of restricted stock units awarded prior to fiscal 2016 do not have such rights. Holders of restricted stock units awarded in fiscal 2016 have dividend equivalent rights pursuant to the terms of the OIP and respective award agreements. Restricted shares under the OIP, as under the EIP, also may be purchased and placed "on deposit" by executive officers pursuant to the 2001 Deposit Share Program. Shares purchased under this Deposit Share Program receive a 50% match in restricted shares ("Award Shares"). These Award Shares vest at the end of a three-year period, and are subject to forfeiture upon early withdrawal of the deposit shares. Compensation expense related to our restricted stock and restricted stock unit awards and restricted shares matched at 50% pursuant to the Deposit Share Program was \$6,369, \$8,491 and \$6,320 for fiscal 2016, 2015 and 2014, respectively.

Index

## EMPLOYEE STOCK PURCHASE PLAN

In March 2008, our stockholders approved our 2007 Cabot Microelectronics Employee Stock Purchase Plan (the "ESPP"), which amended the ESPP for the primary purpose of increasing the authorized shares of common stock to be purchased under the ESPP from 475,000 designated shares to 975,000 shares. As of September 30, 2016, a total of 505,151 shares are available for purchase under the ESPP. The ESPP allows all full-time, and certain part-time, employees of our Company and its subsidiaries to purchase shares of our common stock through payroll deductions. Employees can elect to have up to 10% of their annual earnings withheld to purchase our stock, subject to a maximum number of shares that a participant may purchase and a maximum dollar expenditure in any six-month offering period, and certain other criteria. The provisions of the ESPP allow shares to be purchased at a price no less than the lower of 85% of the closing price at the beginning or end of each semi-annual stock purchase period. A total of 77,437, 65,735, and 81,700 shares were issued under the ESPP during fiscal 2016, 2015 and 2014, respectively. Compensation expense related to the ESPP was \$763, \$686 and \$680 in fiscal 2016, 2015 and 2014, respectively.

## DIRECTORS' DEFERRED COMPENSATION PLAN

The Directors' Deferred Compensation Plan (DDCP), as amended and restated September 23, 2008, became effective in March 2001 and applies only to our non-employee directors. The cumulative number of shares deferred under the plan was 16,641 and 63,979 as of September 30, 2016 and 2015, respectively. Compensation expense related to the DDCP was \$42, \$95, and \$95 for each of fiscal 2016, 2015 and 2014, respectively.

## ACCOUNTING FOR SHARE-BASED COMPENSATION

We record share-based compensation expense for all share-based awards, including stock option grants, restricted stock and restricted stock unit awards and employee stock purchase plan purchases. We calculate share-based compensation expense using the straight-line approach based on awards ultimately expected to vest, which requires the use of an estimated forfeiture rate. Our estimated forfeiture rate is primarily based on historical experience, but may be revised in future periods if actual forfeitures differ from the estimate. We use the Black-Scholes option-pricing model to estimate the grant date fair value of our stock options and employee stock purchase plan purchases. This model requires the input of highly subjective assumptions, including the price volatility of the underlying stock, the expected term of our stock options, expected dividend yield and the risk-free interest rate. We estimate the expected volatility of our stock options based on a combination of our stock's historical volatility and the implied volatilities from actively-traded options on our stock. We calculate the expected term of our stock options using historical stock option exercise data, and we add a slight premium to this expected term for employees who meet the definition of retirement-eligible pursuant to their grants during the contractual term of the grant. The expected dividend yield represents our annualized dividend in dollars divided by the stock price on the date of grant. The risk-free interest rate is derived from the U.S. Treasury yield curve in effect at the time of grant.

The fair value of our share-based awards, as shown below, was estimated using the Black-Scholes model with the following weighted-average assumptions, excluding the effect of our leveraged recapitalization:

	Year Ended September 30,					
	2016		2015		2014	
Stock Options						
Weighted-average grant date fair value	\$14.47		\$16.99		\$15.78	
Expected term (in years)	6.56		6.30		6.40	
Expected volatility	26	%	33	%	32	%
Risk-free rate of return	1.9	%	1.9	%	1.9	%
Dividend yield	0.3	%	-		-	



Index

	Year Ended September		
	2016	2015	2014
ESPP			
Weighted-average grant date fair value	\$9.57	\$10.17	\$9.11
Expected term (in years)	0.50	0.50	0.50
Expected volatility	24 %	24 %	25 %
Risk-free rate of return	0.4 %	0.1 %	0.1 %
Dividend yield	0.5 %	-	-

The Black-Scholes model is primarily used in estimating the fair value of short-lived exchange traded options that have no vesting restrictions and are fully transferable. Because employee stock options and ESPP purchases have certain characteristics that are significantly different from traded options, and because changes in the subjective assumptions can materially affect the estimated value, our use of the Black-Scholes model for estimating the fair value of stock options and ESPP purchases may not provide an accurate measure. Although the value of our stock options and ESPP purchases are determined in accordance with applicable accounting standards using an option-pricing model, those values may not be indicative of the fair values observed in a willing buyer/willing seller market transaction.

The fair value of our restricted stock and restricted stock unit awards represents the closing price of our common stock on the date of award. Share-based compensation expense related to restricted stock and restricted stock unit awards is recorded net of expected forfeitures.

## SHARE-BASED COMPENSATION EXPENSE

Total share-based compensation expense for the years ended September 30, 2016, 2015 and 2014, is as follows:

Income statement classifications:	Year Ended September 30,		
	2016	2015	2014
Cost of goods sold	\$2,105	\$1,912	\$1,866
Research, development and technical	1,633	1,596	1,475
Selling and marketing	1,618	1,075	1,298
General and administrative	8,585	11,862	9,403
Tax benefit	(4,341)	(5,511)	(4,722)
Total share-based compensation expense, net of tax	\$9,600	\$10,934	\$9,320

As discussed in Note 3, we recorded \$154 in share-based compensation expense related to certain unvested NexPlanar ISOs settled in cash at the acquisition date. The \$154 represents the portion of the fair value of the original awards related to the post-acquisition period had these awards not been settled in cash at the acquisition date. U.S. GAAP prescribes that the portion of fair value of equity awards related to pre-acquisition service periods represents purchase consideration, including equity awards vesting immediately upon a change-in-control, and the portion of fair value related to post-acquisition service periods represents compensation expense. Since the post-acquisition service requirement was eliminated through the cash settlement, the \$154 in compensation expense was recorded immediately following the acquisition date. We accelerated the vesting on the substitute ISO awards made to certain individuals based on the terms of their employment agreements and recorded \$492 of share-based compensation expense related to this acceleration. The total \$646 of acquisition-related compensation is included in the table above as general and administrative expense.



Index

Our non-employee directors received annual equity awards in March 2016, pursuant to the OIP. The award agreements provide for immediate vesting of the award at the time of termination of service for any reason other than by reason of Cause, Death, Disability or a Change in Control, as defined in the OIP, if at such time the non-employee director has completed an equivalent of at least two full terms as a director of the Company, as defined in the Company's bylaws. Five of the Company's non-employee directors had completed at least two full terms of service as of the date of the March 2016 award. Consequently, the requisite service period for the award has already been satisfied and we recorded the fair value of \$879 of the awards to these five directors to share-based compensation expense in the fiscal quarter ended March 31, 2016 rather than recording that expense over the one-year vesting period stated in the award agreement, as is done for the other non-employee directors who received an annual equity award in March 2016.

As discussed in our Annual Report on Form 10-K for the fiscal year ended September 30, 2015, in conjunction with an executive officer transition, all unvested stock options and restricted stock held by our former President and Chief Executive Officer, who remains the Chairman of our Board of Directors in a non-executive capacity, vested in full on December 31, 2015, in accordance with the terms of his employment letter with the Company dated December 12, 2014. We applied the accounting guidance under Accounting Standards Codification (ASC) Topic 718 "Stock Compensation" to determine the additional share-based compensation expense to be recorded as part of the modification of the outstanding equity. The original fair value of his unvested equity totaling \$5,033 was recorded ratably between the date of modification and December 31, 2015, rather than recording the expense over the original vesting period.

## STOCK OPTION ACTIVITY

A summary of stock option activity under the EIP and OIP as of September 30, 2016, and changes during fiscal 2016 are presented below:

	Stock Options	Weighted Average Exercise Price	Weighted Average Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at September 30, 2015	2,159,793	\$ 33.90		
Granted	540,469	38.56		
Exercised	(606,562 )	27.41		
Forfeited or canceled	(41,148 )	37.49		
Outstanding at September 30, 2016	2,052,552	\$ 36.97	6.8	\$ 32,711
Exercisable at September 30, 2016	1,156,454	\$ 33.17	5.5	\$ 22,826
Expected to vest after September 30, 2016	884,474	\$ 41.86	8.4	\$ 9,772

The aggregate intrinsic value in the table above represents the total pretax intrinsic value (i.e., for all in-the-money stock options, the difference between our closing stock price of \$52.91 per share on the last trading day of fiscal 2016 and the exercise price, multiplied by the number of shares) that would have been received by the option holders had all option holders exercised their options on the last trading day of fiscal 2016. The total intrinsic value of options exercised was \$12,317, \$31,546 and 21,647 for fiscal 2016, 2015 and 2014, respectively.



The total cash received from options exercised was \$16,623, \$33,177 and \$40,248 for fiscal 2016, 2015 and 2014, respectively. The actual tax benefit realized for the tax deductions from options exercised was \$4,076, \$10,569 and \$7,611 for fiscal 2016, 2015 and 2014, respectively. The total fair value of stock options vested during fiscal years 2016, 2015 and 2014 was \$7,880, \$7,005 and \$6,645, respectively. As of September 30, 2016, there was \$10,039 of total unrecognized share-based compensation expense related to unvested stock options granted under the EIP and OIP. That cost is expected to be recognized over a weighted-average period of 2.1 years.

Index

## RESTRICTED STOCK AND RESTRICTED STOCK UNITS

A summary of the status of the restricted stock awards and restricted stock unit awards outstanding that were granted under the EIP and OIP as of September 30, 2016, and changes during fiscal 2016, are presented below:

	Restricted Stock Awards and Units	Weighted Average Grant Date Fair Value
Nonvested at September 30, 2015	382,496	\$ 43.05
Granted	225,244	41.81
Vested	(256,550 )	41.86
Forfeited	(10,730 )	42.98
Nonvested at September 30, 2016	340,460	\$ 43.13

The total fair value of restricted stock awards and restricted stock units vested during fiscal years 2016, 2015 and 2014 was \$10,740, \$7,222 and \$5,916, respectively. As of September 30, 2016, there was \$11,175 of total unrecognized share-based compensation expense related to unvested restricted stock awards and restricted stock units under the EIP and OIP. That cost is expected to be recognized over a weighted-average period of 2.4 years.

## 14. SAVINGS PLAN

Effective in May 2000, we adopted the Cabot Microelectronics Corporation 401(k) Plan (the "401(k) Plan"), which is a qualified defined contribution plan, covering all eligible U.S. employees meeting certain minimum age and eligibility requirements, as defined by the 401(k) Plan. Participants may make elective contributions of up to 60% of their eligible compensation. All amounts contributed by participants and earnings on these contributions are fully vested at all times. The 401(k) Plan provides for matching and fixed non-elective contributions by the Company. Under the 401(k) Plan, the Company will match 100% of the first four percent of the participant's eligible compensation and 50% of the next two percent of the participant's eligible compensation that is contributed, subject to limitations required by government regulations. Under the 401(k) Plan, all U.S. employees, even those who do not contribute to the 401(k) Plan, receive a contribution by the Company in an amount equal to four percent of eligible compensation, and thus are participants in the 401(k) Plan. Participants are 100% vested in all Company contributions at all times. The Company's expense for the 401(k) Plan totaled \$4,624, \$4,111 and \$4,547 for the fiscal years ended September 30, 2016, 2015 and 2014, respectively.

## 15. OTHER INCOME, NET

Other income, net, consisted of the following:

	Year Ended September 30,		
	2016	2015	2014
Interest income	\$949	\$365	\$194

Other income (expense)	(296)	316	(54)
Total other income, net	\$653	\$681	\$140

72

---

Index

## 16. STOCKHOLDERS' EQUITY

The following is a summary of our capital stock activity over the past three years:

	Number of Shares	
	Common Stock	Treasury Stock
September 30, 2013	30,213,577	6,866,675
Exercise of stock options	1,449,002	
Restricted stock under EIP and OIP, net of forfeitures	176,026	
Restricted stock under Deposit Share Plan, net of forfeitures	7,296	
Common stock under ESPP	81,700	
Repurchases of common stock under share repurchase plans		1,229,494
Repurchases of common stock – other		46,518
September 30, 2014	31,927,601	8,142,687
Exercise of stock options	1,324,646	
Restricted stock under EIP and OIP, net of forfeitures	172,010	
Restricted stock under Deposit Share Plan, net of forfeitures	(811)	
Common stock under ESPP	65,735	
Repurchases of common stock under share repurchase plans		851,245
Repurchases of common stock – other		47,746
September 30, 2015	33,489,181	9,041,678
Exercise of stock options	606,562	
Restricted stock under EIP and OIP, net of forfeitures	86,277	
Restricted stock under Deposit Share Plan, net of forfeitures	1,847	
Common stock under ESPP	77,437	
Repurchases of common stock under share repurchase plans		636,839
Repurchases of common stock – other		66,125
September 30, 2016	34,261,304	9,744,642

## COMMON STOCK

Each share of common stock, including those awarded as restricted stock, but not restricted stock units, entitles the holder to one vote on all matters submitted to a vote of Cabot Microelectronics' stockholders. Common stockholders are entitled to receive ratably the dividends, if any, as may be declared by the Board of Directors. Holders of restricted stock units awarded in fiscal 2016 are entitled to dividend equivalents, which are paid to the holder upon the vesting of the restricted stock units. The number of authorized shares of common stock is 200,000,000 shares.

Index

## SHARE REPURCHASES

In January 2016, our Board of Directors authorized an increase in the amount available under our share repurchase program from \$75,000 to \$150,000. Under this program, we repurchased 636,839 shares for \$25,980 during fiscal 2016, 851,245 shares for \$40,026 during fiscal 2015, and 1,229,494 shares for \$53,000 during fiscal 2014. As of September 30, 2016, \$134,028 remains available under our share repurchase program. To date, we have funded share repurchases under our share repurchase program from our existing cash balance, and anticipate we will continue to do so. The program, which became effective on the authorization date, may be suspended or terminated at any time, at the Company's discretion. For additional information on share repurchases, see Part II, Item 5, "Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities" and the section titled "Liquidity and Capital Resources" in Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Form 10-K.

Separate from this share repurchase program, a total of 66,125, 47,746 and 46,518 shares were purchased during fiscal 2016, 2015 and 2014, respectively, pursuant to the terms of our EIP and OIP as shares withheld from award recipients to cover payroll taxes on the vesting of shares of restricted stock granted under the EIP and OIP.

## 17. INCOME TAXES

Income before income taxes was as follows:

	Year Ended September 30,		
	2016	2015	2014
Domestic	\$7,130	\$15,305	\$14,358
Foreign	63,308	55,892	54,236
Total	\$70,438	\$71,197	\$68,594

Taxes on income consisted of the following:

	Year Ended September 30,		
	2016	2015	2014
U.S. federal and state:			
Current	\$609	\$6,496	\$8,978
Deferred	(1,465 )	1,791	488
Total	\$(856 )	\$8,287	\$9,466
Foreign:			
Current	\$11,737	\$7,686	\$9,565
Deferred	(292 )	(922 )	(1,188 )
Total	11,445	6,764	8,377
Total U.S. and foreign	\$10,589	\$15,051	\$17,843

Index

The provision for income taxes at our effective tax rate differed from the statutory rate as follows:

	Year Ended September 30,		
	2016	2015	2014
Federal statutory rate	35.0%	35.0%	35.0%
U.S. benefits from research and experimentation activities	(3.5)	(2.2)	(0.6)
State taxes, net of federal effect	(0.1)	0.6	0.8
Foreign income at other than U.S. rates	(16.9)	(21.4)	(9.4)
Executive compensation	0.0	0.6	0.4
Share-based compensation	0.7	0.1	0.1
Adjustment of prior amounts	0.0	1.4	0.1
Taiwan Restructuring	0.0	7.2	0.0
Domestic production deduction	(1.3)	(1.3)	(0.3)
Other, net	1.1	1.1	(0.1)
Provision for income taxes	15.0%	21.1%	26.0%

In fiscal years 2014, 2015, and 2016, we elected to permanently reinvest the historical earnings of all of our foreign subsidiaries. We have not provided for deferred taxes on approximately \$188,899 of undistributed earnings of such subsidiaries. These earnings could become subject to additional income tax if they are remitted as dividends to the U.S. parent company, loaned to the U.S. parent company, or upon sale of subsidiary stock. Should we decided to repatriate these undistributed foreign earnings, we would need to record a deferred tax liability of approximately \$37,000 related to earnings.

The decrease in the effective tax rate during fiscal 2016 was primarily due to the absence of income taxes incurred in fiscal 2015 related to the restructuring of our operations in Taiwan, the reinstatement of the research and experimentation tax credit in December 2015, and the benefit of \$928 related to domestic production deductions. This was partially offset by a change in the mix of earnings among various jurisdictions in which we operate, including a scheduled reduction in the benefit available under our tax holiday in South Korea from 100% to 50% of the statutory tax rate in effect in South Korea.

The results of operations for the fiscal year ended September 30, 2015 included tax adjustments to correct prior period amounts, which we determined to be immaterial to the prior periods to which they related. These adjustments, relating to the tax treatment of intercompany activities between certain of our foreign and U.S. operations, were recorded in fiscal 2015 and reduced full year net income by \$868 and diluted earnings per share by approximately \$0.04.

The Company is currently operating under a tax holiday in South Korea in conjunction with our investment in research, development and manufacturing facilities there. This arrangement allows for a tax at 50% of the statutory rate in effect in South Korea for fiscal years 2016 and 2017, following a 0% tax rate in fiscal years 2013, 2014, and 2015, and. This tax holiday reduced our fiscal 2016, 2015, and 2014 income tax provision by approximately \$3,771, \$5,446 and \$3,770, respectively. This tax holiday increased our fiscal 2016, 2015, and 2014 diluted earnings per share by approximately \$0.15, \$0.22, and \$0.15, respectively.

In November 2015, the FASB issued ASU No. 2015-17, "Balance Sheet Classification of Deferred Taxes" (Topic 740). The provisions of ASU 2015-17 require that deferred tax assets and liabilities be classified as noncurrent in a classified statement of financial position. We elected the early adoption provision of this standard in the quarter ended December 31, 2015, and have prospectively classified all deferred tax assets and liabilities as noncurrent on our

consolidated balance sheet in accordance with this standard. We have not retrospectively adjusted the deferred tax balances as of September 30, 2015.

75

---

Index

The accounting guidance regarding uncertainty in income taxes prescribes a threshold for the financial statement recognition and measurement of tax positions taken or expected to be taken on a tax return. Under these standards, we may recognize the tax benefit of an uncertain tax position only if it is more likely than not that the tax position will be sustained by the taxing authorities, based on the technical merits of the position.

The following table presents the changes in the balance of gross unrecognized tax benefits during the last three fiscal years:

Balance September 30, 2013	\$758
Additions for tax positions relating to the current fiscal year	59
Additions for tax positions relating to prior fiscal years	125
Settlements with taxing authorities	(207 )
Lapse of statute of limitations	(34 )
Balance September 30, 2014	701
Additions for tax positions relating to the current fiscal year	194
Additions for tax positions relating to prior fiscal years	1,400
Settlements with taxing authorities	(522 )
Lapse of statute of limitations	-
Balance September 30, 2015	1,773
Additions for tax positions relating to the current fiscal year	364
Additions for tax positions relating to prior fiscal years	200
Settlements with taxing authorities	(248 )
Lapse of statute of limitations	-
Balance September 30, 2016	\$2,089

The entire balance of unrecognized tax benefits shown above as of September 30, 2016 and 2015, would affect our effective tax rate if recognized. We recognize interest and penalties related to uncertain tax positions as income tax expense in our financial statements. Interest accrued on our Consolidated Balance Sheet was \$65 and \$47 at September 30, 2016 and 2015, respectively, and any interest and penalties charged to expense in fiscal years 2016, 2015 and 2014 was not material.

At September 30, 2016, the tax periods open to examination by the U.S. federal government included fiscal years 2013 through 2016. We believe the tax periods open to examination by U.S. state and local governments include fiscal years 2012 through 2016 and the tax periods open to examination by foreign jurisdictions include fiscal years 2012 through 2016. We do not anticipate a significant change to the total amount of unrecognized tax benefits within the next 12 months.

Significant components of net deferred tax assets and liabilities were as follows:

	September 30,	
	2016	2015
Deferred tax assets:		
Employee benefits	\$4,612	\$4,061
Inventory	3,117	3,271
Bad debt reserve	615	391
Share-based compensation expense	8,262	9,863
Credit and other carryforwards	25,596	556
Depreciation and amortization	-	1,263



Other	1,487	3,599
Valuation allowance	(3,022)	(3,079)
Total deferred tax assets	\$40,667	\$19,925

Deferred tax liabilities:

Depreciation and amortization	\$17,374	\$-
Translation adjustment	2,079	55
Other	542	339
Total deferred tax liabilities	\$19,995	\$394

76

---

Index

As of September 30, 2016, the Company had foreign, federal and state net operating loss carryforwards (NOLs) of \$4,736, \$43,913 and \$35,910, respectively, which will expire over the period between in fiscal year 2017 and fiscal year 2036, for which we have recorded a \$2,014 gross valuation allowance, all of which was attributable to foreign NOLs. . The majority of the federal and state NOLs are attributable to the NexPlanar acquisition. As of September 30, 2016, the Company had \$2,151 in state tax credit carryforwards, for which we have recorded a \$2,084 gross valuation allowance. As of September 30, 2016, the Company had a capital loss carryforward of \$2,795, for which we have recorded a full valuation allowance. As of September 30, 2016, the Company had foreign and federal tax credit carryforwards of \$2,442 and 2,471, respectively, which will expire beginning in fiscal years 2027 through 2037.

## 18. COMMITMENTS AND CONTINGENCIES

## LEGAL PROCEEDINGS

While we are not involved in any legal proceedings that we believe will have a material impact on our consolidated financial position, results of operations or cash flows, we periodically become a party to legal proceedings in the ordinary course of business.

## PRODUCT WARRANTIES

We maintain a warranty reserve that reflects management's best estimate of the cost to replace product that does not meet our specifications and customers' performance requirements, and costs related to such replacement. The warranty reserve is based upon a historical product replacement rate, adjusted for any specific known conditions or circumstances. Additions and deductions to the warranty reserve are recorded in cost of goods sold. Our warranty reserve requirements changed during fiscal 2016 as follows:

Balance as of September 30, 2015	\$209
Reserve for product warranty during the reporting period	595
Settlement of warranty	(561)
Balance as of September 30, 2016	\$243

## INDEMNIFICATION

In the normal course of business, we are a party to a variety of agreements pursuant to which we may be obligated to indemnify the other party with respect to certain matters. Generally, these obligations arise in the context of agreements entered into by us, under which we customarily agree to hold the other party harmless against losses arising from items such as a breach of certain representations and covenants including title to assets sold, certain intellectual property rights and certain environmental matters. These terms are common in the industries in which we conduct business. In each of these circumstances, payment by us is subject to certain monetary and other limitations and is conditioned on the other party making an adverse claim pursuant to the procedures specified in the particular agreement, which typically allow us to challenge the other party's claims.

We evaluate estimated losses for such indemnifications under the accounting standards related to contingencies and guarantees. We consider such factors as the degree of probability of an unfavorable outcome and the ability to make a reasonable estimate of the amount of loss. To date, we have not experienced material costs as a result of such obligations and, as of September 30, 2016, have not recorded any liabilities related to such indemnifications in our financial statements as we do not believe the likelihood of such obligations is probable.



Index

## LEASE COMMITMENTS

We lease certain vehicles, warehouse facilities, office space, machinery and equipment under cancelable and noncancelable leases, all of which expire within five years from September 30, 2016, and may be renewed by us. Rent expense under such arrangements during fiscal 2016, 2015 and 2014 totaled \$2,765, \$2,195 and \$2,425, respectively.

Future minimum rental commitments under noncancelable leases as of September 30, 2016 are as follows:

## Fiscal Year Operating

2017	\$ 2,441
2018	1,637
2019	1,440
2020	1,006
2021	719
Thereafter	2,845
	\$ 10,088

## PURCHASE OBLIGATIONS

Purchase obligations include our take-or-pay arrangements with suppliers, and purchase orders and other obligations entered into in the normal course of business regarding the purchase of goods and services. We have been operating under a fumed silica supply agreement with Cabot Corporation, our former parent company which is not a related party, the current term of which runs through December 31, 2019. This agreement required us to purchase certain minimum quantities of fumed silica each year of the agreement, and to pay a shortfall if we purchased less than the minimum, and provides us the option to purchase fumed silica for the remaining term of the agreement beyond calendar year 2016, for which we will pay a fee of \$1,500 in each of calendar years 2017, 2018, 2019. The present value of this fee is was \$4,380 as of September 30, 2016. The first payment of \$1,500 is included in accrued expenses and the remaining \$2,880 is included in other long-term liabilities on our Consolidated Balance Sheet. As of September 30, 2016, purchase obligations include \$7,933 of contractual commitments related to our Cabot Corporation supply agreement for fumed silica.

## POSTRETIREMENT OBLIGATIONS IN FOREIGN JURISDICTIONS

We have unfunded defined benefit plans covering employees in certain foreign jurisdictions as required by local law. Our plans in Japan, which represent the majority of our pension liability for such plans, had projected benefit obligations of \$7,091 and \$5,197 as of September 30, 2016 and 2015, respectively, and an accumulated benefit obligation of \$5,827 and \$3,941 as of September 30, 2016 and 2015, respectively. Key assumptions used in the actuarial measurement of the Japan pension liability include weighted average discount rates of 0.25% and 1.25% at September 30, 2016 and 2015, respectively, and an expected rate of compensation increase of 2.00% at both September 30, 2016 and 2015. Total future Japan pension costs included in accumulated other comprehensive income are \$1,667 and \$1,076 at September 30, 2016 and 2015, respectively.

Our plans in Korea had defined benefit obligations of \$1,822 and \$1,155 as of September 30, 2016 and 2015. Key assumptions used in the actuarial measurement of the Korea pension liability include weighted average discount rates of 3.00% and 4.00% at September 30, 2016 and 2015, respectively, and an expected rate of compensation increase of 5.00% and 4.50% at September 30, 2016 and 2015. Total future Korea pension costs included in accumulated other comprehensive income are \$530 and \$102 at September 30, 2016 and 2015, respectively.



Index

Benefit costs for the combined plans were \$1,024, \$962 and \$652 in fiscal years 2016, 2015 and 2014, respectively, consisting primarily of service costs, are recorded as fringe benefit expense under cost of goods sold and operating expenses in our Consolidated Statement of Income. Estimated future benefit payments are as follows:

Fiscal Year	Amount
2017	\$ 407
2018	335
2019	373
2020	628
2021	459
2022 to 2026	\$ 3,888

## 19. EARNINGS PER SHARE

Basic earnings per share (EPS) is calculated by dividing net income available to common stockholders by the weighted-average number of common shares outstanding during the period, excluding the effects of unvested restricted stock awards with a right to receive non-forfeitable dividends, which are considered participating securities as prescribed by the two-class method under ASC 260. Diluted EPS is calculated in a similar manner, but the weighted-average number of common shares outstanding during the period is increased to include the weighted-average dilutive effect of "in-the-money" stock options and unvested restricted stock shares using the treasury stock method.

The standards of accounting for earnings per share require companies to provide a reconciliation of the numerator and denominator of the basic and diluted earnings per share computations. Basic and diluted earnings per share were calculated as follows:

	Year Ended September 30,		
	2016	2015	2014
Numerator:			
Net income	\$59,849	\$56,146	\$50,751
Less: income attributable to participating securities	(361)	(483)	(442)
Net income available to common shareholders	\$59,488	\$55,663	\$50,309
Denominator:			
Weighted-average common shares (Denominator for basic calculation)	24,076,549	24,039,692	23,704,024
Weighted-average effect of dilutive securities:			
Share-based compensation	400,444	592,123	906,884
Diluted weighted-average common shares (Denominator for diluted calculation)	24,476,993	24,631,815	24,610,908
Earnings per share:			
Basic	\$2.47	\$2.32	\$2.12
Diluted	\$2.43	\$2.26	\$2.04

For the twelve months ended September 30, 2016, 2015, and 2014, approximately 1.1 million, 0.7 million and 0.5 million shares, respectively, attributable to outstanding stock options were excluded from the calculation of diluted earnings per share because the exercise price of the options was greater than the average market price of our common stock and, therefore, their inclusion would have been anti-dilutive.

Index

## 20. FINANCIAL INFORMATION BY INDUSTRY SEGMENT, GEOGRAPHIC AREA AND PRODUCT LINE

We operate predominantly in one industry segment – the development, manufacture, and sale of CMP consumables. Revenues are attributed to the United States and foreign regions based upon the customer location and not the geographic location from which our products were shipped. Financial information by geographic area was as follows:

	Year Ended September 30,		
	2016	2015	2014
Revenue:			
United States	\$62,400	\$55,989	\$51,036
Asia	336,312	328,669	347,669
Europe	31,737	29,439	25,961
Total	\$430,449	\$414,097	\$424,666
Property, plant and equipment, net:			
United States	\$50,595	\$43,239	\$44,585
Asia	55,893	50,504	56,236
Europe	8	-	-
Total	\$106,496	\$93,743	\$100,821

The following table shows revenue from sales to customers in foreign countries that accounted for more than ten percent of our total revenue in fiscal 2016, 2015 and 2014:

	Year Ended September 30,		
	2016	2015	2014
Revenue:			
Taiwan	\$122,671	\$124,460	\$138,049
South Korea	76,082	70,608	71,420
China	59,239	49,350	45,200

The following table shows net property, plant and equipment in foreign countries that accounted for more than ten percent of our total net property, plant and equipment in fiscal 2016, 2015 and 2014:

	Year Ended September 30,		
	2016	2015	2014
Property, plant and equipment, net:			
Japan	\$26,268	\$22,572	\$27,110
Taiwan	17,949	17,419	16,675
South Korea	11,135	9,658	11,564



Index

The following table shows revenue generated by product area in fiscal 2016, 2015 and 2014:

	Year Ended September 30,		
	2016	2015	2014
Revenue:			
Tungsten slurries	\$185,365	\$178,770	\$162,148
Dielectric slurries	99,141	96,386	118,079
Other Metals slurries	63,960	71,640	76,605
Polishing pads	52,067	32,048	33,824
Engineered Surface Finishes	22,369	21,534	16,160
Data storage slurries	7,547	13,719	17,850
Total	\$430,449	\$414,097	\$424,666

Index

## SELECTED QUARTERLY OPERATING RESULTS

The following table presents our unaudited financial information for the eight quarterly periods ended September 30, 2016. This unaudited financial information has been prepared in accordance with accounting principles generally accepted in the United States of America, applied on a basis consistent with the annual audited financial statements and in the opinion of management, include all necessary adjustments, which consist only of normal recurring adjustments necessary to present fairly the financial results for the periods. The results for any quarter are not necessarily indicative of results for any future period.

CABOT MICROELECTRONICS CORPORATION  
 SELECTED QUARTERLY OPERATING RESULTS  
 (Unaudited and in thousands, except per share amounts)

	Sept. 30, 2016	June 30, 2016	March 31, 2016	Dec. 31, 2015	Sept. 30, 2015	June 30, 2015	March 31, 2015	Dec. 31, 2014
Revenue	\$122,684	\$108,152	\$99,244	\$100,369	\$100,137	\$97,168	\$104,858	\$111,934
Cost of goods sold	61,598	56,127	52,348	50,174	48,115	48,609	50,182	54,960
Gross profit	61,086	52,025	46,896	50,195	52,022	48,559	54,676	56,974
Operating expenses:								
Research, development and technical	15,842	12,928	14,934	14,828	14,856	14,773	15,131	15,018
Selling and marketing	8,057	6,243	6,668	6,749	5,763	5,804	5,777	7,639
General and administrative	11,454	10,738	12,990	14,263	13,553	12,830	14,296	11,751
Total operating expenses	35,353	29,909	34,592	35,840	34,172	33,407	35,204	34,408
Operating income	25,733	22,116	12,304	14,355	17,850	15,152	19,472	22,566
Interest expense	1,187	1,178	1,191	1,167	1,494	1,065	1,059	906
Other income (expense), net	257	(246 )	452	190	116	(160 )	(332 )	1,057
Income before income taxes	24,803	20,692	11,565	13,378	16,472	13,927	18,081	22,717
Provision for income taxes	4,096	1,990	2,434	2,069	3,939	4,041	4,270	2,801
Net income	\$20,707	\$18,702	\$9,131	\$11,309	\$12,533	\$9,886	\$13,811	\$19,916
Basic earnings per share	\$0.85	\$0.78	\$0.38	\$0.46	\$0.51	\$0.40	\$0.57	\$0.83
Weighted average basic shares outstanding	24,234	23,929	24,061	24,142	24,144	24,333	24,057	23,651
Diluted earnings per share	\$0.83	\$0.76	\$0.37	\$0.46	\$0.50	\$0.39	\$0.55	\$0.80
Weighted average diluted shares outstanding	24,678	24,325	24,408	24,549	24,583	24,813	24,693	24,486
Dividends per share	\$0.18	\$0.18	\$0.18	\$-	\$-	\$-	\$-	\$-



Index

## SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS

The following table sets forth activities in our allowance for doubtful accounts:

	Balance At Beginning of Year	Amounts Charged To Expenses	Deductions and Adjustments	Balance At End Of Year
Allowance For Doubtful Accounts				
Year ended:				
September 30, 2016	\$ 1,224	\$ 588	\$ 16	\$ 1,828
September 30, 2015	1,392	(84 )	(84 )	1,224
September 30, 2014	1,532	(170 )	30	1,392

We maintain a warranty reserve that reflects management's best estimate of the cost to replace product that does not meet our specifications and customers' performance requirements, and costs related to such replacement. The warranty reserve is based upon a historical product replacement rate, adjusted for any specific known conditions or circumstances. Additions and deductions to the warranty reserve are recorded in cost of goods sold. Charges to expenses and deductions, shown below, represent the net change required to maintain an appropriate reserve.

	Balance At Beginning of Year	Reserve For Product Warranty During the Reporting Period	Adjustments To Pre-existing Warranty Reserve	Settlement of Warranty	Balance At End Of Year
Warranty Reserves					
Year ended:					
September 30, 2016	\$ 209	\$ 595	\$ -	\$ (561 )	\$ 243
September 30, 2015	246	608	-	(645 )	209
September 30, 2014	324	760	-	(838 )	246

We have provided a valuation allowance on certain deferred tax assets. The following table sets forth activities in our valuation allowance:

	Balance At Beginning of Year	Amounts Charged To Expenses	Deductions and Adjustments	Balance At End Of Year
Valuation Allowance				
Year ended:				
September 30, 2016	\$ 3,079	\$ -	\$ (57 )	\$ 3,022
September 30, 2015	2,912	167	-	3,079
September 30, 2014	2,288	624	-	2,912



Index

MANAGEMENT RESPONSIBILITY

The accompanying consolidated financial statements were prepared by the Company in conformity with accounting principles generally accepted in the United States of America. The Company's management is responsible for the integrity of these statements and of the underlying data, estimates and judgments.

The Company's management establishes and maintains a system of internal accounting controls designed to provide reasonable assurance that its assets are safeguarded from loss or unauthorized use, transactions are properly authorized and recorded, and that financial records can be relied upon for the preparation of the consolidated financial statements. This system includes written policies and procedures, a code of business conduct and an organizational structure that provides for appropriate division of responsibility and the training of personnel. This system is monitored and evaluated on an ongoing basis by management in conjunction with its internal audit function.

The Company's management assesses the effectiveness of its internal control over financial reporting on an annual basis. In making this assessment, management uses the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control – Integrated Framework (2013). Management acknowledges, however, that all internal control systems, no matter how well designed, have inherent limitations and can provide only reasonable assurance with respect to financial statement preparation and presentation. In addition, the Company's independent registered public accounting firm evaluates the Company's internal control over financial reporting and performs such tests and other procedures as it deems necessary to reach and express an opinion on the fairness of the financial statements.

In addition, the Audit Committee of the Board of Directors provides general oversight responsibility for the financial statements. Composed entirely of Directors who are independent and not employees of the Company, the Committee meets periodically with the Company's management, internal auditors and the independent registered public accounting firm to review the quality of financial reporting and internal controls, as well as results of auditing efforts. The internal auditors and independent registered public accounting firm have full and direct access to the Audit Committee, with and without management present.

/s/ David H. Li

David H. Li  
Chief Executive Officer

/s/ William S. Johnson

William S. Johnson  
Chief Financial Officer

/s/ Thomas S. Roman

Thomas S. Roman  
Principal Accounting Officer

Index

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

EVALUATION OF DISCLOSURE CONTROLS AND PROCEDURES

Our management, with the participation of our Chief Executive Officer (CEO) and Chief Financial Officer (CFO), has evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended ("the Exchange Act")), as of September 30, 2016. Based on that evaluation, our CEO and CFO have concluded that our disclosure controls and procedures were effective to ensure that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and to ensure that such information is accumulated and communicated to management, including the CEO and CFO, as appropriate to allow timely decisions regarding required disclosure.

While we believe the present design of our disclosure controls and procedures is effective enough to make known to our senior management in a timely fashion all material information concerning our business, we intend to continue to improve the design and effectiveness of our disclosure controls and procedures to the extent necessary in the future to provide our senior management with timely access to such material information, and to correct any deficiencies that we may discover in the future, as appropriate.

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Internal control over financial reporting is defined in Rule 13a-15(f) or Rule 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, the Company's CEO and CFO to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America. Internal control over financial reporting includes policies and procedures that: pertain to the maintenance of records that in reasonable detail accurately and fairly reflect our transactions and dispositions of the Company's assets; provide reasonable assurance that transactions are recorded as necessary for preparation of our financial statements in accordance with generally accepted accounting principles; provide reasonable assurance that receipts and expenditures of Company assets are made in accordance with management authorization; and provide reasonable assurance that unauthorized acquisition, use or disposition of Company assets that could have a material effect on our financial statements would be prevented or detected on a timely basis. 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.

Our management evaluated the effectiveness of our internal control over financial reporting based on the framework in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this evaluation, our management concluded that the Company's internal control over financial reporting was effective as of September 30, 2016. The effectiveness of the Company's internal control over financial reporting as of September 30, 2016 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their attestation report which appears under Item 8 of this

Annual Report on Form 10-K.

85

---



Index

Management excluded NexPlanar Corporation (NexPlanar) from its assessment of internal control over financial reporting as of September 30, 2016 because it was acquired by the Company in a purchase business combination during fiscal 2016. The total assets and total revenues of NexPlanar, a wholly-owned subsidiary, represent 3.1% and 4.9%, respectively, of the Company's consolidated total assets and total revenues, respectively, as reported in our consolidated financial statements as of and for the year ended September 30, 2016.

CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING

There were no changes in our internal control over financial reporting that occurred during our most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

INHERENT LIMITATIONS ON EFFECTIVENESS OF CONTROLS

Because of inherent limitations, our disclosure controls or our internal control over financial reporting may not prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are 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 a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls also 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 the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

ITEM 9B. OTHER INFORMATION

None.

Index

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by Item 10 of Form 10-K with respect to identification of directors, the existence of a separately-designated standing audit committee, identification of members of such committee, and identification of an audit committee financial expert, is incorporated by reference from the information contained in the sections captioned "Election of Directors" and "Board Structure and Compensation" in our definitive Proxy Statement for the Annual Meeting of Stockholders to be held March 7, 2017 (the "Proxy Statement"). In addition, for information with respect to the executive officers of our Company, see "Executive Officers" in Part I of this Form 10-K and the section captioned "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement. Information required by Item 405 of Regulation S-K is incorporated by reference from the information contained in the section captioned "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement.

We have adopted a code of business conduct for all of our employees and directors, including our principal executive officer, other executive officers, principal financial officer and senior financial personnel. A copy of our code of business conduct is available free of charge on our Company website at [www.cabotcmp.com](http://www.cabotcmp.com). We intend to post on our website any material changes to, or waivers from, our code of business conduct, if any, within two days of any such event.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 11 of Form 10-K is incorporated by reference from the information contained in the section captioned "Executive Compensation" in the Proxy Statement.

Index

## ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

## EQUITY COMPENSATION PLAN INFORMATION

Shown below is information as of September 30, 2016, with respect to the shares of common stock that may be issued under Cabot Microelectronics' existing equity compensation plans.

Plan category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders (1)	2,271,307 (2)	\$ 36,97	(2) 3,341,220 (3)
Equity compensation plans not approved by security holders	-	-	-
Total	2,271,307 (2)	\$ 36.97	(2) 3,341,200 (3)

Equity Compensation plans consist of our Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan (EIP), as amended and restated September 23, 2008, our 2012 Omnibus Incentive Plan (OIP), and our Employee Stock Purchase Plan (ESPP). As of March 6, 2012, all securities available for future (1)issuance under the EIP were transferred to the OIP and the EIP is no longer available for any future awards. All share amounts in the above table reflect the effect of the leveraged recapitalization with a special cash dividend. See Note 13 of the Notes to the Consolidated Financial Statements for more information regarding our equity compensation plans.

Column (a) includes 16,641 shares that non-employee directors, who defer their compensation under our Directors' Deferred Compensation Plan, have the right to acquire pursuant thereto, and 202,114 shares that employees and (2)non-employee directors have the right to acquire upon the vesting of the equivalent restricted stock units that they have been awarded under our equity incentive plans. Column (b) excludes both of these from the weighted-average exercise price.

(3)Column (c) includes 505,151 shares available for future issuance under the ESPP.

The other information required by Item 12 of Form 10-K is incorporated by reference from the information contained in the section captioned "Stock Ownership" in the Proxy Statement.

## ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by Item 13 of Form 10-K is incorporated by reference from the information contained in the section captioned "Certain Relationships and Related Transactions" in the Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 14 of Form 10-K is incorporated by reference from the information contained in the section captioned "Fees of Independent Auditors and Audit Committee Report" in the Proxy Statement.

Index

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following Financial Statements and Financial Statement Schedule are included in Item 8 herein:

1. Financial Statements:

Report of Independent Registered Public Accounting Firm

Consolidated Statements of Income for the years ended September 30, 2016, 2015 and 2014

Consolidated Statements of Comprehensive Income for the years ended September 30, 2016, 2015 and 2014

Consolidated Balance Sheets at September 30, 2016 and 2015

Consolidated Statements of Cash Flows for the years ended September 30, 2016, 2015 and 2014

Consolidated Statements of Changes in Stockholders' Equity for the years ended September 30, 2016, 2015 and 2014

Notes to the Consolidated Financial Statements

2. Financial Statement Schedule: Schedule II – Valuation and Qualifying Accounts

3. Exhibits - The following exhibits are filed as part of, or incorporated by reference into, this Report on Form 10-K:

Exhibit Number	Description
2.1 (16)	Agreement and Plan of Merger, dated as of September 27, 2015, by and among NexPlanar Corporation, Cabot Microelectronics Corporation, Matrix Merger Co., and Shareholder Representative Services LLC solely in its capacity as representative.
3.2 (5)	Amended and Restated By-Laws of Cabot Microelectronics Corporation.
3.3 (1)	Form of Amended and Restated Certificate of Incorporation of Cabot Microelectronics Corporation.
4.1 (2)	Form of Cabot Microelectronics Corporation Common Stock Certificate.
10.1 (6)	Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan, as amended and restated September 23, 2008.*
10.2 (9)	Form of Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan Non-Qualified Stock Option Grant Agreement (non-employee directors).*
10.4 (8)	Form of Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan Non-Qualified Stock Option Grant Agreement (employees (including executive officers)).*
10.5 (8)	Form of Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan Restricted Stock Award Agreement (employees (including executive officers)).*
10.6 (9)	Form of Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan Restricted Stock Units Award Agreement (non-employee directors).*
10.15 (13)	Cabot Microelectronics Corporation 2007 Employee Stock Purchase Plan, as Amended and Restated September 23, 2013.*
10.22 (7)	Cabot Microelectronics Corporation 401(k) Plan, as amended.*
10.23 (6)	Form of Amended and Restated Change in Control Severance Protection Agreement.**
10.28 (6)	Directors' Deferred Compensation Plan, as amended September 23, 2008.*
10.30 (12)	Form of Deposit Share Agreement.***
10.33 (6)	Adoption Agreement, as amended September 23, 2008, of Cabot Microelectronics Corporation Supplemental Employee Retirement Plan.*

- 10.34  
(8) Code of Business Conduct.
- 10.36  
(3) Directors' Cash Compensation Umbrella Program.\*
- 10.38  
(4) Employment Offer Letter dated November 2, 2003.\*
- 10.46  
(8) Non-Employee Directors' Compensation Summary effective March 2011.\*
- 10.51  
(6) First Amendment to the Employment Offer Letter dated November 2, 2003.\*
- 10.53  
(6) Cabot Microelectronics Corporation Supplemental Employee Retirement Plan, as amended.\*
- 10.54  
(8) Cabot Microelectronics Corporation Annual Incentive and Sales Incentive Programs.\*
- 10.57  
(7) Adoption Agreement, as amended January 1, 2010, of Cabot Microelectronics Corporation 401(k) Plan.\*
- 10.58  
(8) Employee Stock Purchase Plan Prospectus as of November 24, 2010.\*
- 10.60  
(14) Conformed Credit Agreement dated February 13, 2012 among Cabot Microelectronics Corporation, as Borrower, Bank of America, N.A., as Administrative Agent, Bank of America Merrill Lynch and J.P. Morgan Securities LLC, as Joint Lead Arrangers and Joint Book Managers, JPMorgan Chase Bank, N.A., as Syndication Agent, and Wells Fargo Bank, National Association, as Documentation Agent.
- 10.61  
(10) Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan.\*
- 10.62  
(12) Form of Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan Non-Qualified Stock Option Grant Agreement (employees (including executive officers)).\*
- 10.63  
(12) Form of Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan Restricted Stock Award Agreement (employees (including executive officers)).\*
- 10.64  
(11) Form of Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan Non-Qualified Stock Option Grant Agreement (non-employee directors).\*
- 10.65  
(11) Form of Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan Restricted Stock Units Award Agreement (non-employee directors).\*
- 10.66  
(14) Amendment No. 1 to Credit Agreement dated as of June 27, 2014 among Cabot Microelectronics Corporation, as Borrower, each lender party, Bank of America, N.A., as Administrative Agent, and each of the Guarantors.
- 10.67  
(15) Employment Offer Letter dated December 12, 2014 (William P. Noglows).
- 10.68  
(15) Employment Offer Letter dated December 12, 2014 (David H. Li).
- 10.69  
(17) Form of Cabot Microelectronics Corporation Short Term Incentive Program
- 10.70  
(17) Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan Fiscal Year 20[\_\_\_] Restricted Unit Award Agreement for United States Employees
- 21.1 Subsidiaries of Cabot Microelectronics Corporation.
- 23.1 Consent of Independent Registered Public Accounting Firm.
- 24.1 Power of Attorney.
- 31.1 Certification of Chief Executive Officer as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 31.2 Certification of Chief Financial Officer as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 32.1

Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

Index

- (1) Filed as an exhibit to, and incorporated by reference from the Registrant's Registration Statement on Form S-1 (No. 333-95093) filed with the Commission on March 27, 2000.
- (2) Filed as an exhibit to, and incorporated by reference from the Registrant's Registration Statement on Form S-1 (No. 333-95093) filed with the Commission on April 3, 2000.
- (3) Filed as an exhibit to, and incorporated by reference from the Registrant's Annual Report on Form 10-K (No. 000-30205) filed with the Commission on December 10, 2003.
- (4) Filed as an exhibit to, and incorporated by reference from the Registrant's Quarterly Report on Form 10-Q (No. 000-30205) filed with the Commission on February 12, 2004.
- (5) Filed as an exhibit to, and incorporated by reference from the Registrant's Current Report on Form 8-K (No. 000-30205) filed with the Commission on September 24, 2008.
- (6) Filed as an exhibit to, and incorporated by reference from the Registrant's Annual Report on Form 10-K (No. 000-30205) filed with the Commission on November 25, 2008.
- (7) Filed as an exhibit to, and incorporated by reference from the Registrant's Quarterly Report on Form 10-Q (No. 000-30205) filed with the Commission on February 8, 2010.
- (8) Filed as an exhibit to, and incorporated by reference from the Registrant's Quarterly Report on Form 10-Q (No. 000-30205) filed with the Commission on February 8, 2011.
- (9) Filed as an exhibit to, and incorporated by reference from the Registrant's Quarterly Report on Form 10-Q (No. 000-30205) filed with the Commission on May 9, 2011.
- (10) Filed as an exhibit to, and incorporated by reference from the Registrant's Quarterly Report on Form 10-Q (No. 000-30205) filed with the Commission on May 9, 2012.
- (11) Filed as an exhibit to, and incorporated by reference from the Registrant's Quarterly Report on Form 10-Q (No. 000-30205) filed with the Commission on August 8, 2012.
- (12) Filed as an exhibit to, and incorporated by reference from the Registrant's Quarterly Report on Form 10-Q (No. 000-30205) filed with the Commission on February 8, 2013.
- (13) Filed as an exhibit to, and incorporated by reference from the Registrant's Annual Report on Form 10-K (No. 000-30205) filed with the Commission on November 20, 2013.
- (14) Filed as an exhibit to, and incorporated by reference from the Registrant's Quarterly Report on Form 10-Q (No. 000-30205) filed with the Commission on August 8, 2014.
- (15) Filed as an exhibit to, and incorporated by reference from the Registrant's Quarterly Report on Form 10-Q (No. 000-30205) filed with the Commission on February 6, 2015.
- (16) Filed as an exhibit to, and incorporated by reference from the Registrant's Current Report on Form 8-K (No. 000-30205) filed with the Commission on September 28, 2015.
- (17)



Filed as an exhibit to, and incorporated by reference from the Registrant's Current Report on Form 10-Q (No. 000-30205) filed with the Commission on February 8, 2016.

\* Management contract, or compensatory plan or arrangement.

\*\* Substantially similar change in control severance protection agreements have been entered into with H. Carol Bernstein, Yumiko Damashek, Richard Hui, William S. Johnson, Thomas F. Kelly, David H. Li, Ananth Naman, Lisa A. Polezoes, Thomas S. Roman, and Daniel D. Woodland, with differences only in the amount of payments and benefits to be received by such persons.

\*\*\* Substantially similar deposit share agreements have been entered into with H. Carol Bernstein, William S. Johnson, David H. Li, Lisa A. Polezoes, and Thomas S. Roman with differences only in the amount of initial deposit made and deposit shares purchased by such persons.

Index

SIGNATURES

Pursuant to the requirements of section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized:

CABOT MICROELECTRONICS CORPORATION

Date: November 16, 2016 /s/ DAVID H. Li  
David H. Li  
President and Chief Executive Officer  
[Principal Executive Officer]

Date: November 16, 2016 /s/ WILLIAM S. JOHNSON  
William S. Johnson  
Executive Vice President and Chief Financial Officer  
[Principal Financial Officer]

Date: November 16, 2016 /s/ THOMAS S. ROMAN  
Thomas S. Roman  
Corporate Controller  
[Principal Accounting Officer]

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Date: November 16, 2016 /s/ WILLIAM P. NOGLOWS\*  
William P. Noglows  
Chairman of the Board  
[Director]

Date: November 16, 2016 /s/ DAVID H. Li  
David H. Li  
President and Chief Executive Officer  
[Director]

Date: November 16, 2016 /s/ ROBERT J. BIRGENEAU\*  
Robert J. Birgeneau  
[Director]

Date: November 16, 2016 /s/ RICHARD S. HILL\*  
Richard S. Hill  
[Director]

Date: November 16, 2016 /s/ BARBARA A. KLEIN\*  
Barbara A. Klein  
[Director]

Date: November 16, 2016 /s/ SUSAN M. WHITNEY\*  
Susan M. Whitney  
[Director]

Date: November 16, 2016 /s/ GEOFFREY WILD\*  
Geoffrey Wild  
[Director]

Date: November 16, 2016 /s/ STEVEN V. WILKINSON\*  
Steven V. Wilkinson  
[Director]

Date: November 16, 2016 /s/ BAILING XIA\*  
Bailing Xia  
[Director]

\* by H. Carol Bernstein as Attorney-in-fact pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended.