VARIAN MEDICAL SYSTEMS INC
Form 10-K
November 26, 2018

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K
ýANNUAL REPORT PURSUANT TO SECTION 13 or 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended September 28, 2018
OR
¨TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to
Commission File Number: 1-7598
VARIAN MEDICAL SYSTEMS, INC.
(Exact name of Registrant as specified in its charter)

Delaware	94-2359345
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)
3100 Hansen Way, Palo Alto, California	94304-1038
(Address of principal executive offices)	(Zip Code)

(650) 493-4000
(Registrant's telephone number, including area code)
Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, $1 par value	New York Stock Exchange

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 ý 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 ý
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 ý No ¨
Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ý No ¨
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of 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 ý
Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer x	Accelerated filer o
Non-accelerated filer o	Smaller reporting company o
	Emerging growth company o

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

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

As of March 30, 2018, the last business day of Registrant's most recently completed second fiscal quarter, the aggregate market value of shares of Registrant's common stock held by non-affiliates of Registrant (based upon the closing sale price of such shares on the New York Stock Exchange on March 30, 2018) was $10,080,869,160. Shares of Registrant's common stock held by the Registrant's executive officers and directors and by each entity that owned 10% or more of Registrant's outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

At November 16, 2018, the number of shares of the Registrant's common stock outstanding was 91,116,439.

DOCUMENTS INCORPORATED BY REFERENCE

Definitive Proxy Statement for the Company's 2019 Annual Meeting of Stockholders—Part III of this Form 10 K

VARIAN MEDICAL SYSTEMS, INC.
INDEX

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K (this "Annual Report"), including the Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A"), contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, which provides a "safe harbor" for statements about future events, products and future financial performance that are based on the beliefs of, estimates made by and information currently available to the management of Varian Medical Systems, Inc. ("VMS") and its subsidiaries (collectively "we," "our," "Varian" or the "Company"). The outcome of the events described in these forward-looking statements is subject to risks and uncertainties. Actual results and the outcome or timing of certain events may differ significantly from those projected in these forward-looking statements due to the factors listed under Item 1A, "Risk Factors," MD&A and disclosed from time to time in our other filings with the Securities and Exchange Commission ("SEC"). For this purpose, statements concerning: growth strategies; industry or market segment outlook; market acceptance of or transition to new products or technology such as fixed field intensity-modulated radiation therapy, image-guided radiation therapy, stereotactic radiosurgery, volumetric modulated arc therapy, brachytherapy, software, treatment techniques, and proton therapy; growth drivers; future orders, revenues, operating expenses, tax rate, cash flows, backlog, earnings growth or other financial results; new and potential future tariffs or cross-border trade restrictions; and any statements using the terms "believe," "expect," "anticipate," "can," "should," "would," "could," "estimate," "may," "in "potential," and "possible" or similar statements are forward-looking statements that involve risks and uncertainties that could cause our actual results and the outcome and timing of certain events to differ materially from those projected or management's current expectations. By making forward-looking statements, we have not assumed any obligation to, and you should not expect us to, update or revise those statements because of new information, future events or otherwise.

PART I

Item 1. Business

Overview

We, Varian Medical Systems, Inc., are a Delaware corporation originally incorporated in 1948 as Varian Associates, Inc. We are the world's leading manufacturer of medical devices and software for treating cancer and other medical conditions with radiotherapy, stereotactic radiosurgery, stereotactic body radiotherapy, brachytherapy and proton therapy. Our vision is a world without fear of cancer. Our mission is to combine the ingenuity of people with the power of data and technology to achieve new victories against cancer. To meet this challenge, we offer comprehensive solutions for fighting cancer.

We have two reportable operating segments: Oncology Systems and Proton Solutions (formerly known as Varian Particle Therapy). The operating segments were determined based on how our Chief Executive Officer, who is our Chief Operating Decision Maker ("CODM"), views and evaluates our operations. The CODM allocates resources to and evaluates the financial performance of each operating segment primarily based on operating earnings.

The Americas region includes North America (primarily United States and Canada) and Latin America. The EMEA region includes Europe, Russia, the Middle East, India and Africa. The APAC region primarily includes East and Southeast Asia and Australia.

Our business is subject to various risks and uncertainties. You should carefully consider the factors described in Item 1A, "Risk Factors" in conjunction with the description of our business set forth below and the other information included in this Annual Report on Form 10-K.

Long-term growth and value creation strategy

We are focused on cancer care solutions and well-positioned to positively influence more and more patients globally every day by bringing smarter and simpler solutions to healthcare providers. Our long-term growth and value creation strategy is to transform our company from the global leader in radiation therapy (also referred to as radiotherapy) to be the global leader in multi-disciplinary, integrated cancer care solutions. We intend to leverage our deep customer relationships, human-centered design, scale and financial strength to selectively broaden our capabilities to help cancer patients. To achieve these long-term objectives, we are focused on driving growth through strengthening our

leadership in radiation therapy, extending our global footprint and expanding into other addressable markets.

Distribution

On January 28, 2017 (the "Distribution Date"), we completed the separation and distribution (the "Distribution") of Varex Imaging Corporation ("Varex"), our former Imaging Components business segment. On the Distribution Date, each of our

stockholders of record as of the close of business on January 20, 2017 (the "Record Date") received 0.4 of a share of Varex common stock for every one share of our common stock owned as of the Record Date. Varex is now an independent publicly traded company and is listed on The NASDAQ Global Select Market under the ticker symbol "VREX." Varian continues to trade on the New York Stock Exchange under the ticker symbol "VAR." See Note 2, "Discontinued Operations" of the Notes to the Consolidated Financial Statements.

Oncology Systems

Our Oncology Systems business designs, manufactures, sells and services hardware and software products for treating cancer with conventional radiotherapy, and advanced treatments such as fixed field intensity-modulated radiation therapy (“IMRT”), image-guided radiation therapy (“IGRT”), volumetric modulated arc therapy (“VMAT”), stereotactic radiosurgery (“SRS”), stereotactic body radiotherapy (“SBRT”) and brachytherapy as well as associated quality assurance equipment. Our software solutions also include informatics software for information management, clinical knowledge exchange, patient care management, practice management and decision-making support for comprehensive cancer clinics, radiotherapy centers and medical oncology practices.

Our hardware products include linear accelerators, brachytherapy afterloaders, treatment accessories, and quality assurance software; and our software products include information management, treatment planning, image processing, clinical knowledge exchange, patient care management, decision-making support and practice management software. Our products enable radiation oncology departments in hospitals and clinics to perform conventional radiotherapy treatments and advanced treatments such as IMRT, IGRT, VMAT, SRS and SBRT, as well as the treatment of patients using brachytherapy techniques, which involves the implementation or temporary insertion of radioactive sources. Our products are also used by surgeons and radiation oncologists to perform stereotactic radiosurgery. Our software products are also used in medical oncology departments to manage chemotherapy treatments. Our software products help improve physician engagement and clinical knowledge-sharing, patient care management and clinical practice management. Our worldwide customers include university research and community hospitals, private and government institutions, healthcare agencies, physicians’ offices, medical oncology practices, radiotherapy centers and cancer care clinics.

Proton Solutions

Our Proton Solutions business develops, designs, manufactures, sells and services products and systems for delivering proton therapy, another form of external beam therapy using proton beams, for the treatment of cancer. Although proton therapy has been in clinical use for more than four decades, it has not been widely deployed due to high capital cost. Our current focus is bringing our expertise in X-ray beam radiation therapy to proton therapy to improve its clinical utility and to reduce its cost of treatment per patient, so that it is more widely accepted and deployed.

Radiation Therapy and the Cancer Care Market

Radiotherapy is the use of certain types of focused energy to kill cancer cells, shrink tumors, and provide palliative treatment for symptoms such as pain. Occasionally, radiation can also be used to treat non-cancerous conditions such as arterio- venous malformations, keloids, or trigeminal neuralgia. Radiotherapy is commonly used either alone or in combination with surgery, chemotherapy or targeted drugs. One important advantage is that radiation has its greatest effect on replicating cells. Simply stated, radiation damages cellular genetic material (chromosomes), which interrupts cell replication and results in eventual cellular death. Since the need for replication is particularly critical to the survival of a cancer and since normal tissues are better able to repair such damage, radiation tends to disproportionately kill cancer cells. The clinical goal in radiation oncology is to deliver the highest possible radiation dose directly to the tumor to kill the cancerous cells while minimizing radiation exposure to surrounding healthy tissue in order to limit or avoid complications, side effects and secondary effects caused by the treatment. This goal has been the driving force in clinical care advancements in radiation oncology over the past two decades, from conventional radiotherapy to advanced forms of treatment such as IMRT, IGRT, VMAT, SRS, SBRT and proton therapy. With the advent of radiosurgery and stereotactic body radiotherapy, other mechanism of killing cells are also being explored, including how radiation may stimulate the immune response to fight cancer growth.

The process for delivering radiotherapy typically consists of examining the patient, planning the treatment, simulating and verifying the treatment plan, providing quality assurance for the equipment and software, carefully positioning the patient, delivering the treatment, verifying that the treatment was delivered correctly and recording the history and

results of the treatment. The team responsible for delivering the radiotherapy treatment generally is comprised of a physician specializing in radiation oncology, a medical physicist or dosimetrist for planning patient treatments, a medical physicist for conducting appropriate quality assurance procedures and a radiation therapist for positioning the patients for treatment and operating the machines.

The most common form of radiation oncology involves delivering X-ray beams from outside of the patient's body, a process sometimes referred to as external beam radiotherapy. A device called a medical linear accelerator generates the high-energy X-ray beams and delivers the radiation to the patient lying on a treatment couch. The linear accelerator rotates around a patient delivering the radiation beam that is conformed to the tumor shape from different angles. This concentrates radiation at the tumor while at the same time minimizing the dose delivered to the surrounding healthy tissue. Conventional radiotherapy typically involves multiple, or fractionated, treatments of a tumor in up to 50 treatment sessions. The linear accelerator may also deliver electron beams for the treatment of diseases closer to the body surface.

IMRT is an advanced form of external beam radiotherapy in which the shape and intensity of the radiation beams are varied optimally (modulated) across the target region. IMRT allows the radiation dose to be more precisely conformed to the volume of the tumor, allowing physicians to deliver higher doses of radiation to the tumor than conventional radiation treatments, while limiting radiation dose to nearby healthy tissue. In this way, clinicians can design and administer an individualized treatment plan for each patient, targeting the tumor within millimeters. IMRT can be used to treat head and neck, breast, prostate, pancreatic, lung, liver, gynecological and central nervous system cancers. IMRT has become a well-accepted standard of treatment for cancer, and every year additional treatment centers, from university hospitals to local community clinics, adopt IMRT for their treatments. We are a leading global provider of products that enable IMRT for the treatment of cancer.

VMAT is a significant further advancement in IMRT that allows physicians to control three parameters simultaneously: (i) the rate at which the linear accelerator gantry rotates around the patient, (ii) the beam-shaping aperture and (iii) the rate at which the radiation dose is delivered to the patient. This creates a finely-shaped IMRT dose distribution that more closely matches the size and shape of the tumor, with faster treatment times. Our RapidArc® radiotherapy products plan and deliver VMAT treatments.

Physicians, hospitals and clinics place additional value on radiotherapy equipment and treatments, such as VMAT, that enable shorter treatment times and greater patient throughput. From the patient's standpoint, reduced treatment times means that the patient is immobilized on the treatment couch for a shorter time period. Shorter treatment sessions decrease waiting times and, since treatments are delivered in fractions over the course of many days, can mean fewer disruptions to a patient's daily routine. From the physicians' and hospitals' standpoint, shorter treatment times can lessen the chance of tumors moving during treatment and can increase patient throughput. Shorter treatment times and increased patient throughput can increase the number of treatments per day (which is a particular concern in countries with lower numbers of treatment machines per capita), and, as a result, can decrease the cost per treatment which in turn can mean greater access to advanced care for more patients.

IGRT is another advanced form of external beam radiotherapy complementing IMRT to enhance treatments. While IMRT helps physicians more precisely conform the beam to the tumor, IGRT allows physicians to see how a tumor and normal tissue move or change during a course of treatment, thereby improving treatment accuracy. This allows clinicians to tighten the margin of certainty around the tumor and spare more of the surrounding healthy tissue, potentially improving outcomes. We believe IGRT has become an accepted standard for treatment in the radiation oncology community. Varian's latest state-of-the-art linear accelerator mandates that all fractions of radiation delivered have IGRT before the treatment is delivered.

SRS and SBRT, often collectively referred to as radiosurgery, are advanced ablative radiation treatment procedures performed in a small number of treatment sessions with high doses of radiation. Radiosurgery typically incorporates advanced image-guidance to focus many small beams of radiation from many orientations precisely on the target and to minimize the dose to surrounding normal tissues. Radiation oncologists, surgeons and other oncology specialists increasingly recognize radiosurgery as a useful tool to treat cancerous and non-cancerous lesions anywhere in the body.

An alternative to external beam radiotherapy, brachytherapy involves the insertion of radioactive seeds, wires or ribbons directly into a tumor or body cavity near the tumor. These techniques tend to irradiate much less surrounding healthy tissue so that physicians can prescribe a higher total dose of radiation, typically over a shorter period of time. Brachytherapy is often used for cancers of the head and neck, breast, uterus, cervix, soft tissue, skin and prostate.

Proton therapy is another form of external beam radiotherapy that uses proton particles beams generated with a cyclotron rather than X-ray beams from a linear accelerator. A proton beam's signature energy distribution curve, known as the "Bragg peak," allows for greater precision in targeting tumor cells with an even lower dose to nearby healthy tissue than may be delivered with X-ray beams from a linear accelerator. This makes proton therapy a preferred option for treating certain cancers, particularly cancers in children and tumors near critical structures such as the optic nerve. Pencil-beam scanning capability, which is an advanced way of delivering the proton beam, allows for greater sparing of healthy tissue compared to fan-beam scanning of the proton beam. Although proton therapy has been in clinical use for more than four decades, it has not been widely deployed due to its high capital cost and the market is still developing. We believe we can apply our experience in X-ray beam radiotherapy to proton therapy, reducing the cost of treatment per patient for existing clinical applications and expanding

the use of proton therapy into a broader array of cancer types. We believe that proton therapy will over time become a more widely accepted method of treatment.

The radiation oncology market is growing globally due to a number of factors. According to the American Institute of Cancer Research, there will be an estimated 18 million cancer cases diagnosed globally. Worldwide, the number of new cancer cases diagnosed annually is projected to increase from approximately 14 million in 2012 to almost 25 million by 2030, with most of the increase coming from low- and middle-income countries such as China and India, according to the September 2015 Lancet Oncology report compiled by the Global Task Force on Radiotherapy for Cancer Control. In addition, technological advancements have helped to improve the precision and applicability of radiotherapy and radiosurgery, potentially expanding the use of radiotherapy and radiosurgery equipment to treat a broader range of cases. Technological advances in hardware and software are also creating a market for replacing an aging installed base of machines that are unable to deliver new, higher standards of care.

The rise in cancer cases, together with the increase in sophistication of new treatment protocols, have created demand for more automated products that can be integrated into clinically practical systems to make treatments more rapid and cost effective. Technology advances leading to improvements in patient care, the availability of more advanced, automated and efficient clinical tools in radiation therapy, the advent of more precise forms of radiotherapy treatment (such as IMRT, IGRT, VMAT, SRS, SBRT, brachytherapy and proton therapy), and innovative new technology and equipment (such as EDGE™ and TrueBeam™) that enable treatments that reduce treatment times and increase patient throughput should drive the demand for our radiation therapy products and services.

International markets, in particular, are under-equipped to address the growing cancer incidence. Patients in many foreign countries must frequently endure long waits for radiotherapy. According to a peer-reviewed publication in the International Journal of Radiation Oncology Biology and Physics in 2014, radiotherapy is required in more than half of new cancer patients, particularly in low- and middle-income countries, and according to an article published in Seminars in Radiation Oncology in 2017, it is estimated that more than 12,000 additional treatment machines will be required by 2035 in these countries alone. For example, China, India and Brazil are estimated to require over 3,800, 1,200 and 400 additional machines, respectively, by 2035. The ever-increasing incidences of cancer and the demand for additional treatment machines in these regions represent additional drivers for our continued growth in international markets.

Products

Oncology Systems

Our Oncology Systems business is the leading provider of advanced hardware and software products for treatment of cancer with conventional radiation therapy, and advanced treatments such as IMRT, IGRT, VMAT, SRS, SBRT and brachytherapy. Oncology Systems products address each major aspect of the radiotherapy process, including linear accelerators and accessory products for positioning the patient and delivering the X-ray beam; brachytherapy afterloaders for delivering radioactive implantable seeds; treatment planning software for planning treatment sessions and dose delivery; treatment accessories and quality assurance software for simulating and verifying treatment plans before treatment as well as verification of correct treatment delivery; and information management software for recording the history and results of treatments and other patient treatment information and data, including patient images.

The focus of our Oncology Systems business is addressing the key concerns of the market for advanced cancer care systems; improving efficiency, precision, cost-effectiveness and ease of delivery of these treatments; and providing greater access to advanced treatments. A core element of our business strategy is to provide our customers with highly versatile, proven products that are interoperable and can be configured and integrated into automated systems that combine greater precision, shorter treatment times and greater cost effectiveness and that improve the entire process of treating a patient. Our products and accessories for IMRT and IGRT allow clinicians to track and treat tumors using very precisely shaped beams, targeting the tumor as closely as currently possible and allowing the delivery of higher doses of radiation to the tumor while limiting exposure of nearby healthy tissue. Additionally, the precision and versatility of our products and technology make it possible to use radiotherapy to treat metastatic cancers. With our treatment planning, verification and information management software products, a patient’s treatment plans, treatment data and images are recorded and stored in a single database shared by each of our products, which enables better

communication among products. Our products also allow multiple medical specialties - radiation oncology, neurosurgery, diagnostic radiology and medical oncology, as well as clinicians in multiple locations - to share equipment, resources and information in a more efficient, cost-effective manner. Furthermore, the ability of our products and technology to interoperate with each other and to interconnect into automated systems allows physicians to schedule and treat more patients within a set time period, which adds to the cost-effectiveness of our equipment.

Medical linear accelerators are the core device for delivering conventional external beam radiotherapy, IMRT, IGRT, VMAT, SRS and SBRT, and we produce versions of these devices to suit various clinical requirements. In May 2017, we introduced our Halcyon™ treatment system, our newest device for cancer treatment. We received a CE mark for the Halcyon system in May 2017 and FDA 510(k) clearance in June 2017. The Halcyon system has been designed on a platform of next generation technology including a full field ring gantry design that rotates at four times per minute, an innovative stacked and staggered multi-leaf collimator design, virtually silent magnetic drive motors and solid-state modulators. This new platform is the smallest footprint linear accelerator in our portfolio, uses less energy, and has been designed with a human centered user experience concept that benefits the patient and the health care practitioner for simplicity of treatment and use. At the high end of our accelerator product line portfolio, the TrueBeam and EDGE systems for image-guided radiotherapy and radiosurgery are fully-integrated high-energy systems designed from the ground up to treat a moving target with higher speed and accuracy. The Clinac® iX linear accelerators deliver high-energy X-ray beams and are designed for more streamlined and advanced treatment processes, including IMRT and IGRT. We also produce the Trilogy™ linear accelerator, designed to be a versatile, cost-effective, precise high-energy device with a faster dose delivery rate and more precise isocenter compared to the Clinac iX. Our UNIQUE™ medical linear accelerator is a low-energy linear accelerator for the more price sensitive emerging markets, designed to meet the evolving needs of our IMRT and IGRT customers in these markets.

Our Millennium™ series of multi-leaf collimators and High Definition 120 (“HD 120”) multi-leaf collimators are used with a linear accelerator to define the size, shape and intensity of the generated beams. PortalVision™, our electronic portal-imager, is used to verify a patient’s position while on the treatment couch, which is critical for accurate treatments and simplifies quality assurance of individual treatment plans. We also offer an innovative real-time patient position monitoring product, the RPM™ respiratory gating system, which allows the linear accelerator to be synchronized with patient breathing to help compensate for tumor motion during treatment. In addition, we manufacture the Calypso® system (some features not approved for use in all markets), which can continuously track and monitor the position of implanted or surface-attached Beacon® transponders. This technology allows the clinician to easily locate the position of the tumor and aim the treatment beam precisely to deliver the full, prescribed dose to the tumor, and minimize exposure of surrounding healthy tissues.

We also offer the EDGE radiosurgery suite, a combination of products for performing advanced radiosurgery using new real-time tumor tracking technology and motion management capabilities. The EDGE radiosurgery suite includes the EDGE radiosurgery accelerator and the Calypso System with Dynamic Edge™ Gating, and the PerfectPitch™ Couch with six degrees of freedom to accurately and precisely align the patient position. Our IGRT accessories include the On-Board Imager® (“OBI”) hardware accessory affixed to the linear accelerator that allows dynamic, real-time imaging of tumors while the patient is on the treatment couch and offers cone-beam computerized tomography (“CBCT”) imaging software capability to allow patient positioning based on soft-tissue anatomy. Using sophisticated image analysis tools, the CBCT scan can be compared with a reference CT scan taken previously to determine how the treatment couch should be adjusted to fine-tune and verify the patient’s treatment setup and positioning prior to delivery of the radiation. To deliver the most advanced forms of IGRT, our accelerators would typically have an OBI, CBCT, PortalVision and other IGRT-related hardware and software as accessories.

Our RapidArc radiotherapy products are a proprietary implementation of VMAT that coordinate beam shaping, dose rate and gantry speed to deliver a highly conformal dose distribution to the target tumor. RapidArc products enable the planning and delivery of image-guided IMRT in a single continuous rotation of up to 360 degrees rather than as a series of fixed fields. Our RapidArc products enable faster delivery of radiation treatment with the possibility of reduced opportunity for tumor movement during treatment, as well as greater patient throughput and lower cost per patient for the hospital or clinic. We believe RapidArc represents a significant advancement in IMRT cancer treatment.

Our HyperArc™ High-Definition Radiotherapy product is designed to simplify, automate and improve the quality of intracranial SRS, making SRS accessible to more clinics and patients around the world. HyperArc received a CE mark in August 2017 and FDA 510(k) clearance in September 2017 and is currently available for sale in the United States and other global markets where a CE mark is applicable. We expect that HyperArc will significantly improve the quality and efficiency of sophisticated SRS procedures. HyperArc is available only on the TrueBeam and Edge

platforms.

During fiscal year 2018, we further expanded our product offerings through business acquisitions. We purchased Mobius Medical Systems ("Mobius") in February 2018. Mobius markets and sells quality assurance products to radiation oncology departments around the globe. We will continue to sell those products while expanding and integrating the technology for current and future applications. In July 2018, we acquired humediQ GmbH, which markets and sells the IDENTIFY ™ products that enable patient and accessory verification, patient setup position, and motion monitoring for radiation oncology treatments. We will continue to market and sell these product as we expand the regulatory clearance footprint around the globe and enhance and integrate the technology for current and future applications.

Our software products enhance and enable the delivery of advanced radiotherapy treatments, from the initial treatment planning and plan quality assurance verification to the post-treatment recording of data and storing of patient information, as well as help improve physician engagement and clinical knowledge-sharing, patient care management and clinical practice management of cancer clinics, radiotherapy centers and oncology practices for better performance. Prior to any treatment, physicians must prescribe, or plan, the course of radiation delivery for the patient. We offer a range of treatment planning products that assist physicians in designing this treatment plan. Our Eclipse™ treatment planning system provides physicians with 3D image viewing, treatment simulation, radiation dosage calculation and verification and other tools for generating treatment delivery plans for the patient. The Eclipse software utilizes a sophisticated technique known as inverse planning to enable physicians to rapidly develop optimal treatment plans based on a desired radiation dose outcome to the tumor and surrounding tissue. Our RapidPlan™ Knowledge-based Planning tool creates a new category for artificial intelligence applied to treatment planning systems in which machine learned statistical models can be used to predict the achievable quality of an IMRT treatment from a patient's anatomy. RapidPlan is designed to streamline the planning process by using shared clinical knowledge embedded in its statistical plan models. Clinics may use plan models included with Eclipse or can create models based on their own treatment methods and protocols.

We continue to enhance our treatment planning software products and have integrated multi-criteria optimization radiotherapy treatment planning algorithms licensed from the Fraunhofer Institute that enable clinicians to quickly navigate solution space to find the ideal treatment plan for each patient. We have incorporated this technology along with other treatment planning software tools to enhance both treatment planning efficiency and quality.

Our software product offerings also include Varian Treatment™, which connects ARIA® Oncology Information Management System ("ARIA") to third party linear accelerators and expands our software support of third party manufacturers. The ARIA information system is a comprehensive real-time information management system and database that records and verifies radiotherapy treatments carried out on the linear accelerator, records and stores patient data relating to radiation therapy treatments (as well as chemotherapy treatment which may be also prescribed by a physician), performs patient charting and manages patient information and patient image data. This gives clinics and hospitals the ability to manage treatment and patient information across radiation oncology and medical oncology procedures. Also, because ARIA is an electronic medical record, it can enable users to operate filmless and paperless oncology departments and cancer clinics. ARIA is a (ONC-Health IT) 2015 Edition Health IT Module and supports the ICD-10 billing codes. Our FullScale™ oncology-specific information technology solutions take advantage of virtualization or cloud technologies to deploy our ARIA oncology information and Eclipse treatment planning systems in a way that enables treatment centers to take advantage of economies of scale. We have from time to time entered into agreements with a variety of companies to increase the capabilities of our ARIA Information Systems software.

Our Insightive™ analytics software solution aggregates clinical and operational data and allows for improved decision making and practice management. Insightive enables oncology administrators and clinicians to use real-time information to discover patterns and trends through interactive dashboards and visualizations. We also created an interactive online group on the OncoPeer™ platform for clinicians to share knowledge-based cancer treatment models that can improve the efficiency and quality of cancer care across multiple institutions. The OncoPeer cloud community is a platform where oncologists, clinicians and other oncology professionals can publish knowledge, share data, exchange treatment techniques and discuss best practices within a professional oncology network.

Our Velocity™ software provides solutions at the clinical process level to aggregate unstructured treatment and imaging data from diverse systems. It allows for a more comprehensive view of a patient's diagnostic imaging and treatment history and helps clinicians make more informed treatment decisions.

360 Oncology™ is a care management platform designed to integrate and coordinate key elements of cancer care, so patients and their cancer teams can collaborate on achieving the best outcomes. In a single platform, 360 Oncology brings together radiation, medical and surgical oncology, social services, primary care physicians, as well as the patient, to facilitate true collaborative and coordinated care. It enables tumor boards to more effectively coordinate patient care among the numerous specialists involved in cancer treatment. With Varian 360 Oncology care management, a clinic's data, records and patient information are connected through a single platform, enabling the entire cancer-fighting team to coordinate care.

Qumulate™ is our cloud-based software technology that collects and analyzes machine performance data in a radiation therapy department and allows users to compare their machine performance data and trends against a community of users' data.

In addition to offering our own suite of equipment and software products for planning and delivering radiotherapy treatments, we have partnered with selected leaders in certain segments of the radiation therapy and radiosurgery market. In October 2016, we established a three-year strategic agreement with McKesson to supply its US Oncology Network and Vantage Oncology

affiliated sites of care with treatment delivery systems and planning, service and radiotherapy information system solutions. Under the agreement, we are collaborating with McKesson to establish interoperability between our Aria product and McKesson IT solutions which we anticipate will facilitate access to Aria, Eclipse and Velocity at its sites that do not currently utilize these solutions. We have a partnership agreement with Siemens AG ("Siemens") through which, among other things, we represent Siemens diagnostic imaging products to radiation oncology clinics in the US and agreed upon countries, and Siemens, represents our equipment and software products for radiotherapy and radiosurgery to its healthcare customers in agreed upon countries. Furthermore, we and Siemens have developed interfaces to enable ARIA and Eclipse to connect with Siemens linear accelerators and imaging systems, and are exploring opportunities to co-develop new imaging and treatment solutions. We have equity investments which include Grail, Inc., a life sciences company developing blood tests for early-stage cancer detection and Fusion Pharmaceuticals Inc., a clinical stage company focused on developing targeted alpha-particle radiotherapeutics for the treatment of cancer.

Our brachytherapy operations design, manufacture, sell and service advanced brachytherapy products, including VariSource™ HDR afterloaders and GammaMed™ HDR/PDR afterloaders, BrachyVision™ brachytherapy treatment planning system, applicators and accessories. Brachytherapy also develops and markets the VariSeed™ LDR prostate treatment planning system and the Vitesse™ software for real-time treatment planning for HDR prostate brachytherapy. In October 2018, we introduced a new brachytherapy afterloader system, Bravos™. We received CE mark for Bravos in July 2018 and FDA 510(k) clearance in October 2018, and Bravos is currently available for shipment in 86 CE mark countries. Varian has filed for the Sealed Source Device registration required in the United States before shipment may ensue. Bravos is an integrated system designed to improve the patient and clinic experience by simplifying brachytherapy treatment and providing greater workflow efficiency. It is compatible with our full range of applicators and integrates with our Brachyvision for treatment planning. The ARIA oncology information system coordinates care from end to end, scheduling appointments, orchestrating the clinical workflow, delivering the plan to the afterloader, updating the patient's electronic record, and capturing clinical data for analytics.

For a discussion of Oncology Systems business segment financial information, see Note 17, "Segment Information" of the Notes to the Consolidated Financial Statements.

Proton Solutions

Our Proton Solutions business develops, designs, manufactures, sells and services products and systems for delivering proton therapy, another form of external beam therapy using proton beams, for the treatment of cancer. Our ProBeam® system is capable of delivering precise intensity modulated proton therapy ("IMPT") using pencil beam scanning technology. ProBeam Compact is our lower cost, single room proton therapy product launched in fiscal year 2014. During fiscal year 2016, we booked our first ProBeam Compact order. In October 2018, we introduced ProBeam 360°, our new single-room proton therapy system, with 30 percent smaller footprint and 25 percent lower vault construction costs as compared to ProBeam Compact. The new system has a 360-degree rotating gantry, iterative cone-beam CT imaging and high-definition pencil-beam scanning technology. The system can also provide a viable path to potential next generation treatments. Proton therapy is a preferred option for treating certain cancers, particularly tumors near critical structures such as the optic nerve and pediatric cancers. Although proton therapy has been in clinical use for more than four decades, it has not been widely deployed due to high capital cost. Proton therapy facilities are large-scale construction projects that are time consuming, involve significant customer investment and often complex project financing. Our proton therapy systems are currently in operation in ten sites worldwide.

During fiscal years 2018, 2017 and 2016, we recorded two, six and two proton therapy orders, respectively.

In limited cases, we participate, along with other investors and at market terms, in the financing of proton therapy centers. See Note 16, "Proton Solutions Loans and Investment" of the Notes to the Consolidated Financial Statements for further discussion on our Proton Solutions financing arrangements.

For a discussion of segment financial information, see Note 17, "Segment Information" of the Notes to the Consolidated Financial Statements.

Marketing and Sales

We employ a combination of direct sales forces and independent distributors or resellers for the marketing and sales of our products worldwide. Our gross orders and revenues reflect a growing percentage coming from international regions and particularly emerging markets. As a U.S.-based company, the competitiveness of our product pricing is influenced by the fluctuation of the U.S. Dollar against other currencies. A stronger U.S. Dollar against foreign currencies would make our

product pricing more expensive and less competitive compared to products sold in non-U.S. Dollar currencies. A stronger U.S. Dollar against foreign currencies would also lower our international revenues and gross orders when measured in U.S. Dollars. These conditions affected our business and demand for our products in the first half of fiscal year 2016. In fiscal years 2018, 2017 and 2016, we did not have a single customer that represented 10% or more of our total revenues.

Oncology Systems

Our Oncology Systems business sells direct in the United States and Canada and uses a combination of direct sales and independent distributors in international regions.

Through our strategic global partnership with Siemens, we represent Siemens diagnostic imaging products to radiation oncology clinics in most global markets. Siemens represents our equipment and software products for radiotherapy and radiosurgery to its healthcare customers in agreed upon countries. We sell our Oncology Systems products primarily to university research and community hospitals, private and governmental institutions, healthcare agencies, physicians' offices and cancer care clinics worldwide. These hospitals, institutes, agencies, physicians' offices and clinics replace equipment and upgrade treatment capability as technology evolves. Sales cycles for our external beam radiotherapy products typically can be quite lengthy since many of them are considered capital equipment and are affected by budgeting cycles. Our customers frequently fix capital budgets one or more years in advance. In recent years, we have seen the purchasing cycle lengthen as a result of the more complex decision-making process associated with larger dollar value transactions for more sophisticated IGRT and surgical equipment, and other technical advances.

During an economic downturn, we would expect to see customers' decision-making process further complicated and lengthened, which may cause hospitals, clinics and research institutions to more closely scrutinize and prioritize their capital spending in light of tightened capital budgets, tougher credit requirements, the general constriction in credit availability, and consolidation of providers. In addition, the last economic downturn caused customers to delay requested delivery dates, increasing the average order to revenue conversion cycle. Historically, this conversion cycle has been longer when new products are introduced or when we sell more products internationally. The lengthening of our order to revenue conversion cycle could reduce our revenues and margins. In addition, the same factors impacting the order to revenue conversion cycle may extend the receivables collection cycle and potentially increase bad debts.

Over the last few years, we have seen a greater percentage of Oncology Systems gross orders and revenues come from international markets, within which certain emerging markets often have lower gross margins and longer installation cycles since many of these purchases are for new sites where treatment vaults need to be constructed. We have also seen an increased portion of gross orders and revenues coming from services and software licenses, both of which have higher gross margin percentages than our hardware products. We have also been investing a higher portion of our Oncology Systems research and development expenses in software and software-related products.

The radiation oncology market in North America is largely characterized by replacements of older machines, with periodic increases in demand driven by the introduction of new technologies. Reimbursement rates in the United States have generally supported a favorable return on investment for the purchase of new radiotherapy equipment and technologies. While we believe that improved product functionality, greater cost-effectiveness and prospects for better clinical outcomes with new capabilities such as IMRT, IGRT and VMAT tend to drive demand for radiotherapy products, large changes in reimbursement rates or reimbursement structure can affect customer demand and cause market shifts. We believe that growth of the radiation oncology market in the United States could be impacted as customers' decision-making processes are complicated by the uncertainties surrounding the medical device excise tax, as defined below under "Medicare and Medicaid Reimbursement," and reimbursement rates for radiotherapy and radiosurgery, and that this uncertainty will likely continue in future fiscal years. We believe this uncertainty could impact transaction size, timing and purchasing processes, and also contribute to increased quarterly business variability.

For a discussion of financial information about geographic areas, see Note 17, "Segment Information" of the Notes to the Consolidated Financial Statements and MD&A.

Proton Solutions

Our Proton Solutions business primarily uses direct sales specialists who collaborate with our Oncology Systems sales group globally on customer projects. Potential customers are government-sponsored hospitals and research institutions and research universities, which typically purchase products through public tenders, as well as private hospitals, clinics and private developers. While this market is still developing and can be highly variable, there has been significant growth in this market over the last several years and we believe that growth in this business will continue in the major metropolitan areas in the

United States and abroad, driven by institutions that wish to expand their clinical offerings and increase their profile in their respective communities. We are investing substantial resources to grow this business. Proton therapy facilities are large-scale construction projects that are time consuming and involve significant customer investment and often complex project financing. Consequently, this business is vulnerable to general economic and market conditions, as well as reimbursement rates. Customer decision-making cycles tend to be very long, and orders generally involve many contingencies. While credit markets have improved in recent years, the funding environment for large capital projects, such as proton therapy projects, remains constrained.

Backlog

Backlog is the accumulation of all gross orders for which revenues have not been recognized but are still considered valid. Backlog is stated at historical foreign currency exchange rates and revenue is released from backlog at current exchange rates, with any difference recorded as a backlog adjustment. Orders may be revised or canceled, as customers' needs change and as our new products become available; consequently, it is difficult to predict with certainty the amount and timing of when backlog will result in revenues. Our backlog at the end of fiscal year 2018 was $3.2 billion, of which we expect to recognize approximately 45% as revenues in fiscal year 2019. Our backlog at the end of fiscal year 2017, was $3.1 billion, of which approximately $1.5 billion was recognized as revenues in fiscal year 2018. Our Oncology Systems backlog represented 93% and 90% of the total backlog at the end of fiscal years 2018 and 2017, respectively.

Gross orders are defined as new orders recorded during the period and revisions to previously recorded orders. New orders are recorded for the total contractual amount, excluding certain pass-through items and service items which are recognized as the revenue is recognized, once a written agreement for the delivery of goods or provision of services is in place and, other than Proton Solutions, when shipment of the product is expected to occur within two years, so long as any contingencies are deemed perfunctory. For our Proton Solutions business, we record orders when construction of the related proton therapy treatment center is reasonably expected to start within two years, but only if any contingencies are deemed perfunctory. We will not record Proton Solutions orders if there are major financing contingencies, if a substantial portion of the financing for the project is not reasonably assured or if customer board approval contingencies are pending. We perform a quarterly review to verify that outstanding orders remain valid. Aged orders that are not expected to ultimately convert to revenues are deemed dormant and are reflected as a reduction in the backlog amounts in the period identified. If an order is no longer expected to be converted to revenue, we record a backlog adjustment which reduces backlog but does not impact gross orders for the period.

Backlog adjustments are comprised of dormancies, cancellations, foreign currency exchange rate adjustments, backlog acquired from our acquisitions, and other adjustments. Gross orders do not include backlog adjustments. In fiscal years 2018, 2017 and 2016, our backlog adjustments were a reduction of $152.8 million, $154.5 million and $189.8 million, respectively.

Competition

The markets for cancer treatment are characterized by rapidly evolving technology, intense competition and pricing pressure. We compete with companies worldwide, some of whom may have greater financial, marketing and other resources. Large amounts of resources are being invested in the research and development of new therapies for cancer. The successful development of alternative therapies for cancer, for example, immunotherapy, increased efficacy of new therapies or existing products, pricing decisions by competitors and the rate of market penetration by competitive products may render our products obsolete or noncompetitive.

Our smaller competitors could be acquired by companies with greater financial strength, which could enable them to compete more aggressively. Some of our suppliers or distributors could also be acquired by competitors, which could disrupt these supply or distribution arrangements and result in less predictable and reduced revenues. New competitors and new technologies, such as radiosurgery, VMAT, MR-Linac and proton therapy, will compete directly with our products or will compete for customer budget allocation. We have directed substantial product development efforts into (i) increasing the interconnectivity of our products for more seamless operation within a system, (ii) enhancing the ease of use of our software products and (iii) reducing setup and treatment times and increasing patient throughput. We have also maintained an "open systems" approach that allows customers to "mix and match" our various individual products, incorporate products from other manufacturers, share information with other systems or products and use the

equipment for offering various methods of radiation therapy treatment. We have done this based on our belief that such interconnectivity will increase the acceptance and adoption of IMRT, IGRT and VMAT and will stimulate demand for our products. There are competitive “closed-ended” dedicated-use systems, however, that place simplicity of use ahead of flexibility. If we have misjudged the importance to our customers of maintaining an “open systems” approach, or if we are unsuccessful in our efforts to sustain interconnectivity, enhance ease-of-use and reduce setup and treatment times, our revenues could suffer.

Our Oncology Systems customers' equipment purchase considerations typically include: reliability, servicing, patient throughput, precision, price, payment terms, connectivity, clinical features, the ability to track patient referral patterns, long-term relationship and capabilities of customers' existing equipment. We believe we compete favorably with our competitors based upon our strategy of providing a complete package solution of products and services in the field of radiation oncology and our continued commitment to global distribution and customer services, value-added manufacturing, technological leadership and new product innovation. To compete successfully, we must provide technically superior, clinically proven products that deliver more precise, cost effective, high quality clinical outcomes, together in a complete package of products and services, and do so ahead of our competitors. Since our Oncology Systems products are generally sold on a basis of total value to the customer, our business may suffer when purchase decisions are based solely upon price, which can happen if hospitals and clinics give purchasing decision authority to group purchasing organizations. Further, competitors may delay customer purchasing decisions as customers evaluate competitive product offerings, potentially extending our sales cycle and adversely affecting our gross orders.

We are the leading provider of medical linear accelerators and related accessories. In radiotherapy and radiosurgery markets, we compete primarily with Elekta AB and Accuray Incorporated. Additionally, Elekta AB and ViewRay Incorporated have announced the introduction of MR-Linac devices that also compete with us for hospital budget allocations. Sun Nuclear Corporation and Standard Imaging have QA products that compete with our Mobius and Qumulate offerings. Vision RT, Brainlab and C-RAD have competing products with our humediQ product line in the areas of patient monitoring and tracking during therapy. With our information and image management, simulation, treatment planning and radiosurgery products, we also compete with a variety of companies, such as Philips Medical Systems, RaySearch Laboratories AB, Brainlab AG and Best Theratronics, Ltd. We also encounter some competition from providers of enterprise hospital information systems. With respect to our brachytherapy solutions, our competitors are Elekta AB, MIM Software Inc. and Eckert & Ziegler BEBIG GmbH. In our Oncology Systems service and maintenance business, we compete with independent service organizations and our customers' internal service organizations.

In addition, as a radiotherapy and radiosurgery equipment provider, we also face competition from other cancer treatment alternatives, such as traditional surgery, chemotherapy, robotic surgery and drug therapies, among others. To compete successfully, we need to demonstrate and convince our customers and cancer patients of the advantages of radiation therapy over or in addition to other cancer treatment alternatives. This may involve funding and, in some instances, sponsoring clinical research and studies relating to the efficacy, comparative effectiveness and safety of radiation therapy as compared to such other alternative treatments.

In our 360 Oncology business for Oncology Systems segment, we compete with Elekta AB and large EMR companies such as EPIC and CERNER, as well as multiple new competing products from established companies such as Roche (Navify and Flatiron), Philips etc., and emerging competitors such as Carevive and Syapse.

The market for proton therapy products is still developing and is characterized by rapidly evolving technology, high competition and pricing pressure. Our ability to compete successfully depends, in part, on our ability to lower our product costs, and develop and provide technically superior, clinically proven products that deliver more precise, cost-effective, high quality clinical outcomes, including integration of IGRT technologies such as integrated volumetric imaging. In the proton therapy market, we compete principally with Hitachi Heavy Industries, Ion Beam Applications S.A., and Mevion Medical Systems, Inc. There are a number of smaller competitors that are also developing proton therapy products. We are the only established company in the field of radiation therapy to enter the particle therapy market directly.

Customer Services and Support

We warrant most of our Oncology Systems products for parts and labor for 12 months, and we offer a variety of post-warranty equipment service contracts and software support contracts to suit customers' requirements. Our domestic service centers are in Atlanta, Georgia; Las Vegas, Nevada; and Milpitas, California. Our international service centers are in Australia, Austria, Belgium, Brazil, Canada, China, Denmark, Finland, France, Germany, Hungary, India, Italy, Japan, Malaysia, the Netherlands, Russia, Saudi Arabia, Singapore, South Korea, Spain, Switzerland, Thailand, United Arab Emirates, and the United Kingdom. We also have field service personnel

throughout the world for Oncology Systems customer support services. Key Oncology Systems education operations are located in Beijing, China; Cham, Switzerland; Las Vegas, Nevada; Mumbai, India; and Tokyo, Japan; Montreal, Canada. Our network of service engineers and customer support specialists provide installation, warranty, repair, training and support services, project management, site planning, and professional services. We also have a distributed service parts network of regional hubs and forward-stocking locations across all major geographic areas. We generate service revenues by providing our customers with time-and-materials services, replacement part sales, post-warranty equipment service contracts and software support contracts. Most of the field service engineers are our employees, but our

products are serviced by employees of distributors and/or agents in a few foreign countries. Customers can access our extensive service network by calling any of our service centers.

We believe customer service and support are an integral part of our Oncology Systems competitive strategy. Growth in our service revenues has resulted from the increasing customer adoption of service contracts as the sophistication and installed base of our products increase. We also believe superior service plays an important role in marketing and selling medical products and systems, particularly as the products become more complex. Nevertheless, some of our customers use their own internal biomedical engineering organizations and/or independent service organizations to service equipment after the warranty period expires and therefore do not enter into agreements with us for extended service.

In the Proton Solutions business, we sell our proton therapy equipment generally with a 12-month warranty. Upon transfer of a treatment room to a customer, we generally begin generating service revenues by providing on-site proton therapy system technical operation and maintenance support services, which typically are for relatively long-term periods (e.g., a five-year term or longer). We believe customer service and support are an integral part of our Proton Solutions competitive strategy.

Manufacturing and Supplies

We manufacture our medical linear accelerators in Palo Alto, California, and Beijing, China. We manufacture some of our accessory products in Crawley, United Kingdom; Baden, Switzerland; Helsinki, Finland; Toulouse, France; and Winnipeg, Canada. We manufacture our high dose rate brachytherapy systems in Haan, Germany and our brachytherapy treatment planning products in Charlottesville, Virginia. We manufacture IDENTIFY in Germany. We manufacture Calypso components in Seattle, Washington. We manufacture components and sub-systems for our proton therapy products and systems in Troisdorf, Germany. These facilities employ state-of-the-art manufacturing techniques, and several have been honored by the press, governments and trade organizations for their commitment to quality improvement. These manufacturing facilities are certified by International Standards Organization (“ISO”) under ISO 13485 (for medical devices).

Manufacturing processes at our various facilities include machining, fabrication, subassembly, system assembly and final testing. We have invested in various automated and semi-automated equipment for the fabrication and machining of the parts and assemblies that we incorporate into our products. We may, from time to time, invest further in such equipment. Our quality assurance program includes various quality control measures from inspection of raw materials, purchased parts and assemblies through online inspection. We outsource the manufacturing of many major subassemblies and perform system design, assembly and testing in house. We believe outsourcing enables us to reduce or maintain fixed costs and capital expenditures, while also providing us with the flexibility to increase production capacity. We purchase material and components from various suppliers that are either standard products or customized to our specifications. We obtain some of the components included in our products from a limited group of suppliers or from a single source supplier, such as: the radioactive sources for high dose afterloaders; klystrons for linear accelerators; and radiofrequency components, magnets, patient positioning systems and gantry hardware for proton therapy systems. We require certain raw materials such as tungsten, lead and copper for Oncology Systems; and high-grade steel, high-grade copper and iron for the Proton Solutions business. Worldwide demand, availability and pricing of these raw materials have been volatile, and we expect that availability and pricing will continue to fluctuate in the future.

Research and Development

Developing products, systems and services based on advanced technology is essential to our ability to compete effectively in the marketplace. We maintain a research and development and engineering staff responsible for product design and engineering.

Within Oncology Systems, our development efforts focus on enhancing the reliability and performance of existing products and developing new products. This development is conducted primarily in the United States, Switzerland, Canada, England, Finland, Germany, India and China. In addition, we support research and development programs at selected hospitals and clinics. Current areas for development within Oncology Systems include linear accelerator systems and accessories for medical applications, information systems, radiation treatment planning software, image processing software, imaging devices, patient positioning and equipment diagnosis and maintenance tools.

Development for our high-energy linear accelerators is focused on improvements in accelerator technology, size, and mobility to address the needs of our customers in the market. Within Oncology Systems, we also have an Applied Research group, which focuses on disruptive technologies and new capability incubation.

Within Proton Solutions, our development efforts focus on integrating patient set-up, motion management and clinical workflow solutions originally developed in Oncology Systems as well as reducing the size of our proton therapy system. We

expect that, in order to realize the full potential of the Proton Solutions business, we will need to continue to invest substantial resources to continue to develop proton therapy technology.

Product and Other Liabilities

Our business exposes us to potential product liability claims that are inherent in the manufacture, sale, installation, servicing and support of medical devices and other devices that deliver radiation. Because our products are involved in the intentional delivery of radiation to the human body and other situations where people may come in contact with radiation, the collection and storage of patient treatment data for medical analysis and treatment delivery, the planning of radiation treatment and diagnostic imaging of the human body, and the diagnosis of medical problems, the possibility for significant injury and/or death exists.

Our medical products operate within our customers' facilities and network systems, and under quality assurance procedures established by the facilities that ultimately deliver radiation to patients. Human and other errors or accidents may arise from the operation of our products in complex environments, particularly with products from other vendors, where interoperability or data sharing protocol may not be optimized even though the equipment or system operates according to specifications. As a result, we may face substantial liability to patients, our customers and others for damages resulting from the faulty, or allegedly faulty, design, manufacture, installation, servicing, support, testing or interoperability of our products with other products, or their misuse or failure, as well as liability related to the loss or misuse of private patient data, including resulting from unauthorized intrusion into our products. We may also be subject to claims for property damages or economic loss related to or resulting from any errors or defects in our products, or the installation, servicing and support of our products. Any accident or mistreatment could subject us to legal costs, litigation, adverse publicity and damage to our reputation, whether or not our products or services were a factor. In addition, if a product we design or manufacture were defective (whether due to design, labeling or manufacturing defects, improper use of the product or other reasons), or found to be so by a competent regulatory authority, we may be required to correct or recall the product and notify other regulatory authorities. We maintain limited product liability insurance coverage and currently do not maintain professional liability/errors and omissions insurance.

Government Regulation

U.S. Regulations

Laws governing marketing a medical device. In the United States, our products and operations are subject to extensive regulation by federal governmental authorities, such as the FDA, Nuclear Regulatory Commission ("NRC"), and state and local regulatory agencies, such as the State of California, to ensure the devices are safe and effective and comply with laws governing products which emit, produce or control radiation. Similar international regulations apply overseas. These regulations, which include the U.S. Food, Drug and Cosmetic Act (the "FDC Act") and regulations promulgated by the FDA, govern, among other things, the design, development, testing, manufacturing, packaging, labeling, distribution, import/export, sale and marketing and disposal of medical devices, post market surveillance and reporting of serious injuries and death, repairs, replacements, recalls and other matters relating to medical devices, radiation emitting devices and devices utilizing radioactive by-product material. State regulations are extensive and vary from state to state. Our Oncology Systems equipment and software, as well as proton therapy systems offered by our Proton Solutions business, constitute medical devices subject to these regulations. Under the FDC Act, each medical device manufacturer must comply with quality system regulations that are strictly enforced by the FDA. Unless an exception applies, the FDA requires that the manufacturer of a new medical device or a new indication for use of, or other significant change in, existing currently marketed medical device obtain either 510(k) pre-market notification clearance or pre-market approval ("PMA") before it can market or sell those products in the United States. We do not manufacture any Class III medical devices, which require PMA. Certain of our products, like our radiation delivery systems manufactured by our Oncology Systems business and proton therapy systems manufactured by our Proton Solutions business, are Class II medical devices that require 510(k) clearance, while our other products are exempt from 510(k) clearance. Modifications or enhancements to a product that could significantly affect its safety or effectiveness, or that would constitute a major change in the intended use of the device, technology, materials, labeling, packaging, or manufacturing process may also require a new 510(k) clearance. Manufacturers make the initial determination whether a change to a cleared device requires a new 510(k) clearance, but the FDA can review

any such decision. If the FDA disagrees with the manufacturer's decision not to seek a new 510(k) clearance or PMA approval for a change, it may retroactively require the manufacturer to seek 510(k) clearance or PMA approval. The FDA can also require the manufacturer to cease marketing and selling the product in the United States and/or recall the product until 510(k) clearance or PMA approval is obtained.

The FDA has issued draft guidance that, if finalized and implemented, will result in manufacturers needing to seek a significant number of new clearances for changes made to legally marketed devices. If we cannot establish that, as a result of proposed

changes to a current product, the modified product is substantially equivalent to a legally marketed device, we must seek pre-market approval through a PMA application. Under the PMA process, the applicant submits extensive supporting data, including, in most cases, data from clinical studies, in the PMA application to establish reasonable evidence of the safety and effectiveness of the product. This process typically takes at least one to two years from the date the PMA is accepted for filing, but can take significantly longer for the FDA to review.

Quality systems. Our manufacturing operations for medical devices, and those of our third-party suppliers, are required to comply with the FDA's Quality System Regulation ("QSR"), as well as other federal and state regulations for medical devices and radiation emitting products. The QSR requires that each manufacturer establish a quality systems program by which the manufacturer monitors the manufacturing process and maintains records that show compliance with FDA regulations and the manufacturer's written specifications and procedures relating to the devices. QSR compliance is necessary to receive and maintain FDA clearance or approval to market new and existing products. The FDA makes announced and unannounced periodic and on-going inspections of medical device manufacturers to determine compliance with the QSR. If in connection with these inspections, the FDA believes the manufacturer has failed to comply with applicable regulations and/or procedures, it may issue observations that would necessitate prompt corrective action. If FDA inspection observations are not addressed and/or corrective action taken in a timely manner and to the FDA's satisfaction, the FDA may issue a Warning Letter (which would similarly necessitate prompt corrective action) and/or proceed directly to other forms of enforcement action. Failure to respond timely to FDA inspection observations, a Warning Letter or other notice of noncompliance and to promptly come into compliance could result in the FDA bringing enforcement action against us, which could include the total shutdown of our production facilities, denial of importation rights to the United States for products manufactured in overseas locations and denial of export rights for U.S. products and criminal and civil fines.

Regulations on Advertising and Promotions; Interactions with Healthcare Providers. The FDA and the Federal Trade Commission also regulate advertising and promotion of our products to ensure that the claims we make are consistent with our regulatory clearances, that there are adequate and reasonable scientific data to substantiate the claims and that our promotional labeling and advertising is neither false nor misleading. We may not promote or advertise our products for uses not within the scope of our intended use statement in our clearances or approvals or make unsupported safety and effectiveness claims.

Additionally, we are members of AdvaMed, a global trade association of companies that develop, produce, manufacture and market Medical Technologies. Varian subscribes to the AdvaMed Code of Ethics on Interactions with U.S. Health Care Professionals. The Advamed Code provides companies with guidance on ethical interactions and relationships with Health Care Professionals. Also, we are subject to the Physician Payments Sunshine Act which requires medical product manufacturers to disclose annually any payments or other transfers of value made to U.S. physicians or teaching hospitals.

Electrical Safety and Environmental Regulations. It is also important that our products comply with electrical safety and environmental standards, such as those of Underwriters Laboratories, the Canadian Standards Association, and the International Electrotechnical Commission. In addition, the manufacture and distribution of medical devices utilizing radioactive material requires a specific radioactive material license. For the United States, manufacture and distribution of these radioactive sources and devices also must be in accordance with a model specific certificate issued by either the NRC or by a state regulatory authority. In essentially every country and state, installation and service of these products must be in accordance with a specific radioactive materials license issued by the applicable radiation control agency. We are also subject to a variety of additional environmental laws regulating our manufacturing operations and the handling, storage, transport and disposal of hazardous materials, and which impose liability for the cleanup of any contamination from these materials. For a further discussion of these laws and regulations, see "Critical Accounting Estimates" in MD&A, and Note 10, "Commitments and Contingencies" of the Notes to the Consolidated Financial Statements."

Data Privacy Laws. As a participant in the healthcare industry, we are subject to extensive laws and regulations protecting the privacy and integrity of patient medical information that we receive, including the Health Insurance Portability and Accountability Act of 1996, "fraud and abuse" laws and regulations, including, physician self-referral

prohibitions, and false claims laws. From time to time, these laws and regulations may be revised or interpreted in ways that could make it more difficult for our customers to conduct their businesses, such as recent proposed revisions to the laws prohibiting physician self-referrals, and such revisions could have an adverse effect on the demand for our products, and therefore our business and results of operations.

Federal and state governments also continue to adopt new, or modify existing laws and regulations addressing data privacy generally and the collection, processing, storage, transfer and use of personal data and we cannot predict what effect, if any, changes to these laws and regulations may have on our business.

Medicare and Medicaid Reimbursement

The federal and state governments of the United States establish guidelines and pay reimbursements to hospitals and free-standing clinics for diagnostic examinations and therapeutic procedures under Medicare at the federal level and Medicaid at the state level. Private insurers often establish payment levels and policies based on reimbursement rates and guidelines established by the government.

The federal government and the Congress review and adjust rates annually, and from time to time consider various Medicare and other healthcare reform proposals that could significantly affect both private and public reimbursement for healthcare services, including radiotherapy and radiosurgery, in hospitals and free-standing clinics. State government reimbursement for services is determined pursuant to each state's Medicaid plan, which is established by state law and regulations, subject to requirements of federal law and regulations. In the past, we have seen our customers' decision-making process complicated by the uncertainties surrounding reimbursement rates for radiotherapy and radiosurgery in the United States.

The provisions of the Affordable Care Act went into effect in 2012. Specifically, one of the components of the law is a 2.3% excise tax on sales of most medical devices, which include our Oncology Systems products, which started on January 1, 2013. In January 2018, President Trump signed into law a spending package that included a two-year moratorium on the medical device excise tax starting January 1, 2018 and ending December 31, 2019. This tax has had, and may continue to have, a negative impact on our gross margin when the moratorium expires.

In April 2015, MACRA was signed into law, which made numerous changes to Medicare, Medicaid, and other healthcare related programs. These changes include new systems for establishing the annual updates to payment rates for physicians' services in Medicare as well as certain electronic health record reporting requirements for providers. MACRA was effective beginning January 1, 2017. Our business may be significantly and negatively affected by MACRA and any changes in reimbursement policies and other legislative initiatives aimed at or having the effect of reducing healthcare costs associated with Medicare and other government healthcare programs.

Various healthcare reform proposals have also emerged at the state level, and we are unable to predict which, if any of these proposals will be enacted. We believe that the uncertainty created by healthcare reform in the United States has complicated our customers' decision-making process and impacted our Oncology Systems and Proton Solutions businesses, and may continue to do so.

The sale of medical devices including radiotherapy products, the referral of patients for diagnostic examinations and treatments utilizing such devices, and the submission of claims to third-party payors (including Medicare and Medicaid) seeking reimbursement for such services, are subject to various federal and state laws pertaining to healthcare "fraud and abuse." These laws include physician self-referral prohibitions, anti-kickback laws and false claims laws. Subject to enumerated exceptions, the federal physician self-referral law, also known as Stark II, prohibits a physician from referring Medicare or Medicaid patients to an entity with which the physician (or a family member) has a financial relationship, if the referral is for a "designated health service," which is defined explicitly to include radiology and radiation therapy services. Anti-kickback laws make it illegal to solicit, induce, offer, receive or pay any remuneration in exchange for the referral of business, including the purchase of medical devices from a particular manufacturer or the referral of patients to a particular supplier of diagnostic services utilizing such devices. False claims laws prohibit anyone from knowingly and willfully presenting, or causing to be presented, claims for payment to third-party payors (including Medicare and Medicaid) that are false or fraudulent, for services not provided as claimed, or for medically unnecessary services. The Office of the Inspector General prosecutes violations of fraud and abuse laws and any violation may result in criminal and/or civil sanctions including, in some instances, imprisonment and exclusion from participation in federal healthcare programs such as Medicare and Medicaid. Varian needs to comply with all applicable laws related to federal healthcare programs in transactions with health care professionals.

Foreign Regulations

Our operations, sales and service of our products outside the United States are subject to regulatory requirements that vary from country to country and may differ significantly from those in the United States. In general, our products are regulated outside the United States as medical devices by foreign governmental agencies similar to the FDA.

Marketing a medical device internationally. In order for us to market our products internationally, we must obtain clearances or approvals for products and product modifications. We are required to affix the CE mark to our products in order to sell them in member countries of the European Economic Area ("EEA"). The CE mark is an international symbol of adherence to certain essential principles of safety and effectiveness, which once affixed enables a product to be sold in member countries of the EEA. The CE mark is also recognized in many countries outside the EEA, such as Switzerland and Australia, and can assist in the clearance process. In order to receive permission to affix the CE mark to our products, we must obtain Quality System

certification, e.g., ISO 13485, and must otherwise have a quality management system that complies with the EU Medical Device Directive. The ISO promulgates standards for certification of quality assurance operations. We are certified as complying with the ISO 9001 for our security and inspection products and ISO 13485 for our medical devices. Several Asian countries, including Japan and China, have adopted regulatory schemes that are comparable, and in some cases more stringent, than the EU scheme. To import medical devices into Japan, the requirements of Japan's New Medical Device Regulation must be met and a "shonin," the approval to sell medical products in Japan, must be obtained. Similarly, in China a registration certification issued by the State Food and Drug Administration and a China Compulsory Certification mark for certain products are required to sell medical devices in that country. Obtaining such certifications on our products can be time-consuming and burdensome and can cause us to delay marketing or sales of certain products in such countries. Similarly, prior to selling a device in Canada, manufacturers of Class II, III and IV devices must obtain a medical device license. We sell Class II and Class III devices in Canada. Additionally, many countries have laws and regulations relating to radiation and radiation safety that also apply to our products. In most countries, radiological regulatory agencies require some form of licensing or registration by the facility prior to acquisition and operation of an X-ray generating device or a radiation source. The handling, transportation and the recycling of radioactive metals and source materials are also highly regulated.

A number of countries, including the members of the EU, have implemented or are implementing regulations that would require manufacturers to dispose, or bear certain disposal costs, of products at the end of a product's useful life and restrict the use of some hazardous substances in certain products sold in those countries.

Manufacturing and selling a device internationally. We are also subject to laws and regulations outside the United States applicable to manufacturers of radiation-producing devices and products utilizing radioactive materials, and laws and regulations of general applicability relating to matters such as environmental protection, safe working conditions, manufacturing practices and other matters, in each case that are often comparable to, if not more stringent than, regulations in the United States. In addition, our sales of products in foreign countries are also subject to regulation of matters such as product standards, packaging requirements, labeling requirements, import restrictions, environmental and product recycling requirements, trade regulations, duties and tax requirements. In some countries, we rely on our foreign distributors and agents to assist us in complying with foreign regulatory requirements.

Data Privacy Laws. The EU General Data Protection Regulation ("GDPR") took effect in May 2018. The compliance and other burdens imposed by GDPR and similar privacy laws and regulations may be substantial since they are subject to differing interpretations and implementation among jurisdictions. The restrictions imposed by such laws and regulations may limit the use and adoption of our services, reduce overall demand for our services, require us to modify our data handling practices and impose additional costs and burdens. In addition, non-compliance could result in proceedings against us by governmental entities or others, significant fines, and may otherwise adversely impact our business, financial condition and operating results. Particularly within Europe, data protection legislation is comprehensive and complex and there has been a recent trend toward more stringent enforcement of requirements regarding protection and confidentiality of personal data.

Other applicable international regulations. We are also subject to international "fraud and abuse" laws and regulations, as well as false claims and misleading advertisement laws.

Anti-Corruption Laws and Regulations

We are subject to the U.S. Foreign Corrupt Practices Act and anti-corruption laws, and similar laws in foreign countries, such as the U.K. Bribery Act of 2010 and the Law "On the Fundamentals of Health Protection in the Russian Federation." In general, there is a worldwide trend to strengthen anticorruption laws and their enforcement, and the healthcare industry and medical equipment manufacturers have been particular targets of these investigation and enforcement efforts. Any violation of these laws by us or our agents or distributors could create a substantial liability for us, subject our officers and directors to personal liability and also cause a loss of reputation in the market. Transparency International's 2016 Corruption Perceptions Index measured the degree to which public sector corruption is perceived to exist in 176 countries/territories around the world, and found that approximately sixty-nine percent of the countries in the index, including many that we consider to be high growth areas for our products, such as China, India, Russia and Brazil, scored below 50, on a scale from 100 (very clean) to 0 (highly corrupt). We currently operate

in many countries where the public sector is perceived as being more or highly corrupt and our strategic business plans include expanding our business in regions and countries that are rated as higher risk for corruption activity by Transparency International.

Increased business in higher risk countries could subject us and our officers and directors to increased scrutiny and increased liability. In addition, becoming familiar with and implementing the infrastructure necessary to comply with laws, rules and regulations applicable to new business activities and mitigating and protecting against corruption risks could be quite costly.

Failure by us or our agents or distributors to comply with these laws, rules and regulations could delay our expansion into high-growth markets and could adversely affect our business.

Patent and Other Proprietary Rights

We place considerable importance on obtaining and maintaining patent, copyright and trade secret protection for significant new technologies, products and processes, because of the length of time and expense associated with bringing new products through the development process and to the marketplace.

We generally rely upon a combination of patents, copyrights, trademarks, trade secret and other laws, and contractual restrictions on disclosure, copying and transferring title, including confidentiality agreements with vendors, strategic partners, co-developers, employees, consultants and other third parties, to protect our proprietary rights in the developments, improvements and inventions that we have originated and which are incorporated in our products or that fall within our fields of interest. As of September 28, 2018, we owned 423 patents issued in the United States and 325 patents issued throughout the rest of the world and had 448 patent applications on file with various patent agencies worldwide. We intend to file additional patent applications as appropriate. We have trademarks, both registered and unregistered, that are maintained and enforced to provide customer recognition for our products in the marketplace. We also have agreements with third parties that provide for licensing of patented or proprietary technology, including royalty bearing licenses and technology cross licenses.

Environmental Matters

For a discussion of environmental matters, see “Critical Accounting Estimates” in MD&A and Note 10, "Commitments and Contingencies" of the Notes to the Consolidated Financial Statements, which discussions are incorporated herein by reference.

Financial Information about Geographic Areas

We do business globally with manufacturing, engineering, and development in the United States, Europe, China, India and Canada with sales and service operations and customers throughout the world. More than half of our revenues are generated from our international regions. In addition to the potentially adverse impact of foreign regulations, see “Government Regulation—Foreign Regulations,” we also may be affected by other factors related to our international sales such as: trade barriers, tariffs, restraints and other restrictions, foreign currency exchange controls, lower average selling prices and profit margins; longer time periods from shipment to revenue recognition (which increases revenue recognition deferrals and time in backlog); and longer time periods from shipment to cash collection (which increases days sales outstanding (“DSO”)). To the extent that the geographic distribution of our sales continues to shift more towards international regions, our overall revenues and margins may suffer. We sell our products internationally predominantly in local currencies, but our cost structure is weighted towards the U.S. Dollar. Accordingly, there may be adverse consequences from strengthening of the U.S. Dollar against foreign currencies, which may affect both the affordability and competitiveness of our products and our profit margins. We engage in currency hedging strategies to offset the effect of fluctuations in foreign currency exchange rates, but the protection offered by these hedges depends upon the timing of transactions, the effectiveness of the hedges, the number of transactions that are hedged and forecast volatility.

We are also exposed to other economic, political and other risks inherent in doing business globally. For an additional discussion of these risks, see Item 1A, “Risk Factors.”

For a discussion of financial information about geographic areas, see Note 17, "Segment Information" of the Notes to the Consolidated Financial Statements and MD&A, which discussions are incorporated herein by reference.

Tariff Measures

On July 6, 2018, the Trump Administration imposed 25% tariffs on a variety of imports from China, including Varian’s radiotherapy systems manufactured in China and certain components imported into the U.S. for our manufacturing and service activities. The Administration subsequently imposed tariffs on two additional lists of products from China; the first of these additional lists involves 25% tariffs and the second list imposes 10% tariffs increasing to 25% on January 1, 2019. We expect our imports into the U.S. to be impacted less by these two tariff lists than by the initial tariff list.

China responded to the multiple U.S. tariffs lists by announcing several lists of products from the U.S. that are subject to additional tariffs upon import to China. The first round of Chinese retaliatory tariffs went into effect on July 6,

2018. Our products are not impacted by these tariffs. Our exports of U.S. manufactured radiotherapy systems to China are impacted by the second Chinese list, implemented on August 23, 2018, which is subject to a 25% tariff. A third group of items, including certain

of our manufacturing inputs and services, is subject to 5 to 10% tariffs, which went into effect on September 24, 2018. Any tariffs imposed by the United States and China that include Varian technology could increase the cost of our products and adversely impact the competitiveness of our products and/or our operational results in the future.
We are participating in the Office of the U.S. Trade Representative process to consider product-specific exclusions from these tariffs. While we are uncertain of the outcome of these exclusion discussions, if we are successful, certain Varian products could be provided relief from these tariffs retroactive to the date of their enactment. In addition, we continue to engage in ongoing planning in and optimization of our global manufacturing and supply chain operations both in light of the long-term uncertainty of these tariff measures and to have a more flexible business disruption and continuity plan.

Employees

As of September 28, 2018, we had approximately 7,174 full-time and part-time employees worldwide, including approximately 3,076 in the United States and approximately 4,098 in international locations. . None of our employees based in the United States are unionized or subject to collective bargaining agreements. Employees based in some other countries may, from time to time, be represented by works councils or unions or subject to collective bargaining agreements. We consider our relations with our employees to be good.

Executive Officers of the Registrant

The biographical summaries of our executive officers, as of November 1, 2018, are as follows:

Name	Age	Position
Dow R. Wilson	59	President and Chief Executive Officer
Kolleen T. Kennedy	59	President, Proton Solutions and Chief Growth Officer
Christopher A. Toth	39	President, Oncology Systems
Gary E. Bischoping, Jr.	50	Senior Vice President and Chief Financial Officer
John W. Kuo	55	Senior Vice President, General Counsel and Corporate Secretary

Dow R. Wilson was appointed President and Chief Executive Officer effective September 29, 2012. Mr. Wilson served as Corporate Executive Vice President and Chief Operating Officer from October 2011 through September 2012 and as Corporate Executive Vice President and President, Oncology Systems from August 2005 through September 2011. Mr. Wilson served as Corporate Vice President and President, Oncology Systems from January 2005 to August 2005. Prior to joining the Company in January 2005, Mr. Wilson was Chief Executive Officer of the Healthcare-Information Technologies business in General Electric (a diversified technology and services company), from 2003 to 2005. During the previous 18 years, Mr. Wilson held various management positions within General Electric. Mr. Wilson holds a B.A. degree in English from Brigham Young University and an M.B.A. degree from Dartmouth’s Amos Tuck School of Business. Mr. Wilson serves on the board of directors at Agilent, Inc. Mr. Wilson also serves on the board of directors of industry associations AdvaMed and the US-India Strategic Partner Forum. In 2015, Mr. Wilson was appointed by President Obama to serve on a Presidential Advisory Council ("Council") for doing business in Africa; he recently completed a second term on the Council. Mr. Wilson served on the board of directors of Varex Imaging Corporation, our former Imaging Components business segment, from January 2017 to January 2018. He also served on the board of directors of Saba Software, Inc. (an e-learning software provider) from August 2006 to March 2015 and as the lead independent director of that board from August 2011 to March 2013. Mr. Wilson was appointed to our Board of Directors in September 2012.

Kolleen T. Kennedy was appointed President of Proton Solutions and Chief Growth Officer effective October 2018. Ms. Kennedy served as Executive Vice President and President, Oncology Systems from September 2014 to September 2018, and was Senior Vice President and President, Oncology Systems from October 2011 to September 2014. From January 2006 through September 2011, Ms. Kennedy served as Vice President, Oncology Systems Customer Service and Support. Prior to that, Ms. Kennedy was the Company’s Vice President, Oncology Systems Marketing, Product Management and Engineering from September 2004 to January 2006. Prior to becoming Vice President, Ms. Kennedy served in various marketing management positions since she joined the Company in 1997. Ms. Kennedy holds a B.S. degree in Radiation Oncology and a B.S. degree in Psychology, both from Wayne State University, as well as an M.S. degree in Medical Physics from the University of Colorado.

Christopher A. Toth was appointed President of Oncology Systems effective October 2018. Mr. Toth joined Varian in 2001 and has held multiple cross-functional roles and executive positions during his tenure with the company. Prior to his appointment as President of Oncology Systems, Mr. Toth served as President of Global Commercial and Field Operations from January 2017 to

September 2018, where he was responsible for global sales strategy and execution for Oncology Systems and Proton Solutions. Additionally, in this role, Mr. Toth was responsible for global field service, applications training, market access and regional marketing for the Oncology Systems business. From September 2014 to January 2017, Mr. Toth was President, Oncology Systems Americas and from April 2011 to September 2014, Vice President, Global Marketing. Mr. Toth holds a B.A. degree in Business Administration with a concentration in Marketing from the Lundquist College of Business at the University of Oregon.

Gary E. Bischoping, Jr. was appointed Senior Vice President, Finance and Chief Financial Officer ("CFO") in May 2017. Prior to joining the Company, Mr. Bischoping was with Dell Technologies for 17 years where he held several management roles including CFO of its Client Solutions Group from 2016 to 2017, CFO of Enterprise Solutions Group and Commercial Sales from 2013 to 2016, CFO of its Commercial Business from 2012 to 2013, and VP and Treasurer from 2008 to 2012. Before joining Dell, Mr. Bischoping worked in financial management consulting for Stern Stewart & Company, Xerox and the SK Group. Mr. Bischoping earned his M.B.A. degree from the Simon School of Business at the University of Rochester and a B.S. degree in Accounting from the State University of New York at Oswego. He passed the Certified Public Accountants examination in 1991.

John W. Kuo was appointed Senior Vice President, in addition to being General Counsel and Corporate Secretary, in February 2012. Prior to that, he served as Corporate Vice President and General Counsel from July 2005 through January 2012 and as Corporate Secretary since February 2005. Mr. Kuo joined the Company as Senior Corporate Counsel in March 2003 and became Associate General Counsel in March 2004. Prior to joining the Company, Mr. Kuo was General Counsel and Secretary at BroadVision, Inc. (an e-commerce software provider) and held senior legal positions at 3Com Corporation (a networking equipment provider). Mr. Kuo has previously been with the law firms of Gray Cary Ware & Freidenrich (now DLA Piper) and Fulbright & Jaworski. Mr. Kuo holds a B.A. degree from Cornell University and a J.D. degree from Boalt Hall School of Law at the University of California at Berkeley.

Information Available to Investors

As soon as reasonably practicable after our filing or furnishing the information to the SEC, we make the following available free of charge on the Investors page of our website http://www.varian.com: our annual reports on Form 10-K; quarterly reports on Form 10-Q; current reports on Form 8-K (including any amendments to those reports); and proxy statements. Our Code of Conduct, Corporate Governance Guidelines and the charters of the Audit Committee, Compensation and Management Development Committee, Ethics and Compliance Committee, Nominating and Corporate Governance Committee and Executive Committee are also available on the Investors page of our website. Investors and others should note that we announce material financial and operational information to our investors using our investor relations website (http://investors.varian.com/), press releases, SEC filings and public conference calls and webcasts. Please note that information on, or that can be accessed through, our website is not deemed “filed” with the SEC and is not to be incorporated by reference into any of our filings under the Securities Act of 1933, as amended (the “Securities Act”), or the Securities Exchange Act of 1934, as amended (the “Exchange Act”).

Item 1A. Risk Factors

The following risk factors and other information included in this Annual Report on Form 10-K should be carefully considered. The occurrence of any of the following risks or of unknown risks and uncertainties may adversely affect our business, operating results and financial condition.

RISKS RELATING TO OUR BUSINESSES

Our performance depends on successful improvements to our existing products and commercialization of new products.

The markets in which we operate are characterized by rapid change and technological innovation. Our performance depends on the successful commercialization of new products that reflect and respond to changes in the marketplace, technology and customer demands.

Our Oncology Systems products often have long development and government approval cycles, are technologically complex and must demonstrate high performance to remain competitive.

Our software products compete in markets characterized by rapid technological advances, changing delivery models, evolving standards and frequent new product introductions and enhancements. We are expanding our software product lines and investing in the development of cloud and software-as-a-service ("SaaS") solutions. The development and introduction of new software platforms and delivery models, as well as different business models, is complex with many technology, regulatory and legal hurdles. We cannot assure you we can successfully develop and implement such platforms or models or that our customers will accept them.

Our Proton Solutions products require capital commitment, planning, design, development and testing. Because of the large footprint and high price of many proton therapy systems, there is increasing demand for the development of smaller, more compact proton therapy systems. Although we have introduced our ProBeam® Compact single-room proton therapy solution, other companies have more experience offering smaller, less expensive proton therapy systems. Our competitiveness will depend on our ability to continue to timely develop new technologies to reduce the size and price of our system or provide additional features and functionality that our competitors do not.

We may need to spend more time and money than anticipated to develop and introduce new products or enhancements. We may not be able to recover all or a meaningful part of our investment. New products may adversely impact orders and sales of our existing products, or make them less desirable or even obsolete. In addition, certain costs, including installation and warranty costs, associated with new products may be disproportionately greater than the costs associated with other products, and if we are unable to lower these costs over time, our operating results could be adversely affected.

Our ability to successfully develop and introduce new products and product enhancements depends on our ability to:

- properly identify and respond to customer needs;
- demonstrate the value proposition of new products;
- limit the time required from proof of feasibility to routine production;
- timely and efficiently comply with internal quality assurance systems and processes;
- limit the timing and cost of regulatory approvals;
- accurately predict and control costs associated with inventory overruns or shortages caused by phase-in of new products and phase-out of old products;
- price our products competitively and profitably;
- manufacture, deliver and install our products in sufficient volumes on time, and accurately predict and control costs associated with manufacturing, installation, warranty and maintenance of the products; and
- manage customer demands for new and old products, and optimize complementary product lines and services.

Furthermore, we cannot be sure that we will be able to successfully commercialize new products because commercialization involves compliance with complex quality assurance processes, including the Quality System Regulation ("QSR") of the FDA. Failure to complete these processes on a timely and efficient basis could result in delays that could affect our ability to attract or retain customers, or could cause customers to delay or cancel orders. A portion of a product's revenue is generally tied to installation and acceptance of the product, and our recognition of revenue associated with new products may be deferred where it takes longer to manufacture or install the new products. Customers may also decide not to upgrade their equipment, or customers may delay delivery of some of our more sophisticated products because of the longer preparation and renovation of treatment rooms required.

We compete in highly competitive markets, and we may lose market share to companies with greater resources or more effective technologies, or be forced to reduce our prices.

The markets for cancer treatment are characterized by rapidly evolving technology, intense competition and pricing pressure. In radiotherapy and radiosurgery markets, we compete primarily with Elekta AB and Accuray Incorporated. In addition, our software products compete with the product offerings of a variety of companies, such as Philips Medical Systems, RaySearch Laboratories AB and Brainlab AG.

New competitors may enter our markets and have already entered some of our newer markets such as radiosurgery, VMAT and proton therapy. Established enterprise software developers with greater software development capability may enter the markets for cancer treatment software. Some of these competitors may have greater financial, marketing and other resources. To compete successfully, we must provide technically superior, proven products that deliver more precise, cost-effective, high quality clinical capabilities, in a complete package of products and services, and do so ahead of our competitors.

As our Oncology Systems products are generally sold on a basis of total value to the customer, our business may suffer when purchase decisions are based solely upon price, which can happen if hospitals and clinics give purchasing decision authority to group purchasing organizations. New competitors may also delay the purchasing decisions of customers if customers decide to evaluate the products of such competitors along with ours, potentially extending our sales cycle and adversely affecting our gross orders and revenues.

The shift in the proportion of sales outside the United States towards emerging market countries, which typically purchase less complex, lower-priced products compared to more developed countries, and which usually have stiffer price competition and longer periods from placement of orders to revenue recognition, could also adversely impact our results of operations.

The market for proton therapy products is still developing and is characterized by rapidly evolving technology and pricing pressure. Our primary competitor in the proton therapy market is Ion Beam Applications S.A. Our ability to compete successfully depends, in part, on our ability to lower our product costs, and develop and provide technically superior, proven products that deliver precise, cost-effective, high quality capabilities.

The successful development of alternative therapies for cancer (e.g. pharmaceutical treatments such as immunotherapy), increased efficacy information about new therapies or existing products, pricing decisions by competitors and the rate of market penetration by competitive products may render our products obsolete, result in lost market share for us, reduce utilization of our products, lower prices, and reduce product sales and operating margins. The timing of our competitors' introduction of products into the market could affect the market acceptance and market share of our products. Some competitors offer specialized products that provide, or may be perceived by customers to provide, a marketing advantage over our mainstream cancer treatment products. Also, some of our competitors may not be subject to the same standards, regulatory and/or other legal requirements that we are subject to, and therefore, they could have a competitive advantage in developing, manufacturing and marketing products and services. Any inability to develop, gain regulatory approval for and supply commercial quantities of competitive products to the market as quickly and effectively as our competitors could limit market acceptance of our products and reduce our sales. In addition, some of our smaller competitors could be acquired by larger companies that have greater financial strength, which could enable them to compete more aggressively. Our competitors could also acquire some of our suppliers or distributors, which could disrupt supply or distribution arrangements and result in less predictable and reduced revenues in our businesses.

The interoperability of radiation oncology treatment products is becoming increasingly important, and sales of our products could fall if we fail to establish interoperability.

As radiation oncology treatment becomes more complex, our customers are increasingly focused on ease-of-use and interconnectivity. We have directed substantial product development efforts into (1) increasing the interconnectivity of our products for more seamless operation within a system, (2) making our software products easier to use and (3) reducing setup and treatment times to increase patient throughput. Our equipment and software are highly sophisticated and a high level of training and education is required to use them safely and effectively.

We have emphasized an "open systems" approach that allows customers to "mix and match" our individual products, incorporate products from other manufacturers, share information with other systems or products and offer various methods of radiation and chemotherapy treatment. We have done this based on our belief that such interconnectivity will increase the acceptance and adoption of IMRT, IGRT and VMAT and will stimulate demand for our products. There are competitive "closed-ended" dedicated-use systems that place simplicity of use ahead of flexibility. If we have misjudged the importance to our customers of maintaining an "open systems" approach, or if we are unsuccessful in our efforts to increase interconnectivity, enhance ease-of-use and reduce setup and treatment times, our revenues could suffer. Obtaining and maintaining interoperability and compatibility can be costly and time-consuming. While we try

to use standard published protocols for communication with widely-used oncology products manufactured by other companies, if we cannot do this, we may need to develop individual interfaces so that our products communicate correctly with other products.

When other companies modify the design or functionality of their products, this may affect their compatibility with our products. In addition, when we improve our products, customers may be reluctant to adopt our new technology due to potential

interoperability issues. For example, a clinic may be unwilling to implement one of our new technologies because its third-party software does not yet communicate correctly with our new product. Our ability to obtain compatibility with products of other companies may depend on our ability to obtain adequate information from them regarding their products. In many cases, these third parties are our competitors and may schedule their product changes or delay their release of relevant information to place us at a competitive disadvantage.

When we modify our products to make them interoperable or compatible with third-party products, we may be required to obtain additional regulatory clearances. This process is costly and could delay our ability to release our products for commercial use. It is also possible that, despite our efforts, we may not be able to make our products interoperable or compatible with widely used third-party products or may only be able to do so at a prohibitive expense, making our products less attractive to our customers.

Disruption of critical information systems or material security breaches in our products may adversely affect our business and customer relations.

Information technology helps us operate efficiently, interface with and support our customers, maintain financial accuracy and efficiency, and produce our financial statements. There is an increasing threat of information security attacks for companies such as Varian. Because the techniques used to obtain unauthorized access, or to sabotage systems, change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. If we do not allocate and effectively manage the resources necessary to build and sustain the proper technology infrastructure, we could be subject to, among other things, transaction errors, processing inefficiencies, the loss of customers, business disruptions, or the loss of or damage to intellectual property through a security breach. Such security breaches could expose us to a risk of loss of information, litigation and possible liability to employees, customers and regulatory authorities. If our data management systems do not effectively collect, secure, store, process and report relevant data for the operation of our business, whether due to equipment malfunction or constraints, software deficiencies, or human error, our ability to effectively plan, forecast and execute our business plan and comply with applicable laws and regulations will be impaired. Any such impairment could materially and adversely affect our financial condition and results of operations, and the timeliness with which we report our operating results internally and externally.

We manufacture and sell (i) hardware products that rely upon software systems to operate properly and (ii) software products that deliver treatment instructions and store confidential patient information. Both types of products often are connected to and reside within our customers' information technology infrastructures. While we have implemented security measures to protect our hardware and software products from unauthorized access, these measures may not be effective in securing these products, particularly since techniques used to obtain unauthorized access, or to sabotage systems, change frequently and generally are not recognized until launched against a target. Additionally, we are developing and offering cloud and SaaS software products which reside with and are hosted by third-party providers. A security breach, whether of our products, of our customers’ network security and systems or of third-party hosting services could disrupt treatments occurring on our products, disrupt access to our customers' stored information, such as patient treatment delivery instructions, and could lead to the loss of, damage to or public disclosure of our customers’ stored information, including patient health information. Such an event could have serious negative consequences, including possible patient injury, regulatory action, fines, penalties and damages, reduced demand for our solutions, an unwillingness of our customers to use our solutions, harm to our reputation and brand, and time-consuming and expensive litigation, any of which could have an adverse effect on our financial results.

If we were to experience a significant security breach of our information systems or data, the costs associated with the investigation, remediation and potential notification of the breach to customers and counter-parties could be material. We carry a limited amount of insurance for cybersecurity liability, and our insurance coverage may be inadequate. In the future, our insurance coverage may be expensive and/or not be available on acceptable terms or in sufficient amounts, if at all.

We may offer extended payment terms to certain customers, which could adversely affect our financial results.

We offer extended payment terms for certain qualified customers. As of September 28, 2018, customer contracts with remaining terms of more than one year amounted to approximately four percent of our net trade and unbilled receivables.

While we qualify customers to whom we offer extended payment terms, their financial positions may change adversely over the longer payment term. Many of the customers where we offer such extended payment terms are located in under-developed legal systems for securing debt and enforcing collection of debt. Concerns over economic instability could also make it more difficult for us to collect outstanding receivables. This may result in an increase in payment defaults and uncollectible accounts, or could cause us to increase our bad debt expense, which would adversely affect our net earnings. In addition, extended payment terms decrease our cash flow from operations.

Economic, political and other risks associated with international sales and operations could adversely affect our sales or make them less predictable.

Revenues outside of the United States accounted for approximately 55%, 53%, and 55% of our total revenues during fiscal years 2018, 2017 and 2016, respectively. Correspondingly, we must provide significant service and support globally. We intend to continue to expand our presence in international markets and expect to expend resources in doing so. We cannot assure you that we will be able to recover these investments in international markets.

Our results of operation could be adversely affected by a variety of factors, including:

- lower sales prices and gross margins usually associated with sales of our products and services in international regions, and in emerging markets in particular;
- the longer payment cycles associated with many foreign customers;
- the typically longer periods from placement of orders to revenue recognition in certain international and emerging markets;
- currency fluctuations;
- difficulties in interpreting or enforcing agreements and collecting receivables through many foreign country's legal systems;
- unstable regional political and economic conditions or changes in restrictions on trade between the United States and other countries;
- changes in the political, regulatory, safety or economic conditions in a country or region, including as a result of the pending United Kingdom exit from the European Union ("Brexit");
- the imposition by governments, including the United States, of additional taxes, tariffs, global economic sanctions programs or other restrictions on foreign trade;
- any inability to obtain required export or import licenses or approvals;
- any inability to comply with export or import laws and requirements or any violation of sanctions regulations, which may result in enforcement actions, civil or criminal penalties and restrictions on exportation;
- any increase in the cost of trade compliance functions to comply with changes to regulatory requirements;
- failure to obtain proper business licenses or other documentation, or to otherwise comply with local laws and requirements to conduct business in a foreign jurisdiction; and
- the possibility that it may be more difficult to protect our intellectual property in foreign countries.

Tariffs or cross-border trade restrictions could increase the cost of our products.

On July 6, 2018, the Trump Administration imposed 25% tariffs on a variety of imports from China, including Varian's radiotherapy systems manufactured in China and certain components imported into the U.S. for our manufacturing and service activities. The Administration subsequently imposed tariffs on two additional lists of products from China; the first of these additional lists involves 25% tariffs and the second list imposes 10% tariffs increasing to 25% on January 1, 2019. We expect our imports into the U.S. to be impacted less by these two additional tariff lists than by the initial tariff list.

China responded to the multiple U.S. tariff lists by announcing several lists of products from the U.S. that are subject to additional tariffs upon import to China. The first round of Chinese retaliatory tariffs went into effect on July 6, 2018. Our products are not impacted by these tariffs. Our exports of U.S. manufactured radiotherapy systems to China are impacted by the second Chinese list, implemented on August 23, 2018, which is subject to a 25% tariff. A third group of items, including certain of our manufacturing inputs and services, is subject to 5 to 10% tariffs, which went into effect on September 24, 2018. Any tariffs imposed by the United States and China that include Varian technology could increase the cost of our products and adversely impact the competitiveness of our products and/or our operational results in the future.

We are participating in the Office of the U.S. Trade Representative process to consider product-specific exclusions from these tariffs, but there can be no assurance that we will be successful in obtaining an exclusion.

Changes in foreign currency exchange rates may impact our results.

Because our business is global, and payments are generally made in local currency, fluctuations in foreign currency exchange rates can impact our results by affecting product demand, or our revenues and expenses, and/or the profitability in U.S. Dollars of products and services that we sell in foreign markets.

While we use hedging strategies to help offset the effect of fluctuations in foreign currency exchange rates, the protection these strategies provide is affected by the timing of transactions, the effectiveness of the hedges, the number of transactions that are hedged and forecast accuracy. If our hedging strategies do not offset these fluctuations, our revenues, margins and other operating results may be adversely impacted. Furthermore, movements in foreign currency exchange rates could impact our financial results positively or negatively in one period and not in another, making it more difficult to compare our financial results from period to period.

In addition, our hedging program is designed to hedge currency movements on a relatively short-term basis, typically up to the next twelve-month period. Therefore, we are exposed to currency fluctuations over a longer term. Long-term movements in foreign currency exchange rates can also affect the competitiveness of our products in the local currencies of our international customers. A substantial portion of our international sales are priced in local currencies, although our cost structure is weighted towards the U.S. Dollar. Therefore, the strengthening of the U.S. Dollar may adversely affect our competitiveness and financial results, as our foreign competitors may have cost structures based in other currencies and they may be more competitive when the U.S. Dollar strengthens against those currencies.

Changes in monetary or other policies here and abroad, including as a result of economic and or political instability, or in reaction thereto, would also likely affect foreign currency exchange rates. Furthermore, if one or more European countries were to replace the Euro with another currency, our sales into these countries, or into Europe generally, would likely be adversely affected until stable exchange rates are established.

We are subject to certain risks related to the separation of our former imaging components business into Varex Imaging Corporation.

On January 28, 2017, we completed the separation of our former Imaging Components business through the distribution of 100% of the outstanding common stock of Varex Imaging Corporation (“Varex”) to our stockholders. Following the separation, Varex is the sole source of supply of X-ray tubes, flat panels and detector components used in certain of our products, such as our On-Board Imager.

We obtained an opinion of outside counsel to the effect that the separation will qualify as a transaction that is generally tax-free to both Varian and its stockholders for United States federal income tax purposes under Sections 355 and 368(a)(1)(D) of the United States Internal Revenue Code of 1986, as amended. An opinion of outside counsel represents their legal judgment but is not binding on the Internal Revenue Service (the “IRS”) or any court. Accordingly, there can be no assurance that the IRS will not challenge the conclusions reflected in the opinion or that a court would not sustain such a challenge.

Unfavorable results of legal proceedings could adversely affect our financial results.

From time to time, we are a party to or otherwise involved in legal proceedings, claims and government inspections or investigations and other legal matters, both inside and outside the United States, including product liability claims and intellectual property claims. Legal proceedings are often lengthy, taking place over a period of years before the outcome is final. Litigation is subject to significant uncertainty and may be expensive, time-consuming, and disruptive to our operations.

If a legal proceeding were finally resolved against us, it could result in significant compensatory damages, and in certain circumstances punitive or trebled damages, disgorgement of revenue or profits, remedial corporate measures or injunctive relief imposed on us. If our existing insurance does not cover the amount or types of damages awarded, or if other resolution or actions taken as a result of the legal proceeding were to restrain our ability to market one or more of our material products or services, our consolidated financial position, results of operations or cash flows could be materially adversely affected. In addition, legal proceedings, and any adverse resolution thereof, can result in adverse publicity and damage to our reputation, which could adversely impact our business.

23

Consolidation among our oncology systems customers could adversely affect our sales of oncology products.

We have seen and may continue to see some consolidation among our customers in our Oncology Systems business, as hospitals and clinics combine through mergers and acquisitions, and as they join group purchasing organizations or affiliated enterprises. In addition, we have seen and may continue to see integration of equipment and information systems among hospitals as they consolidate their networks. As customers consolidate and/or integrate, the volume of product sales to these customers might decrease. Alternatively, order size may increase, as customers combine orders as one entity, or as groups of organizations combine their purchases. If orders increase in size and require more customer approvals, the purchasing cycle for our Oncology Systems products could lengthen. Both increased order size and extended purchasing cycles could cause our gross orders to be more volatile and less predictable and could result in longer overall order to revenue cycles. In addition, some customers appear to be developing new partnerships across clinical specialties to prepare for the possibility of operating in an accountable care organization ("ACO") environment and the possibility of bundled reimbursement payments. Group purchasing organizations often focus on pricing as the determinant in making purchase decisions. A reduction in pricing could negatively impact gross orders, future revenues and gross margins.

Our business will suffer if we are unable to provide the significant education and training required for the healthcare market to accept our products.

In order to achieve market acceptance for our radiation therapy products, we often need to (i) educate physicians about the use of treatment procedures such as IMRT, IGRT, VMAT, SRS, SBRT or proton therapy, (ii) overcome physician objections to some of the effects of the product or its related treatment regimen, (iii) convince healthcare payors that the benefits of the product and its related treatment process outweigh its costs, and (iv) help train qualified physicists in the skilled use of the product. For example, the complex and dynamic nature of IMRT and IGRT requires significant education of hospital personnel and physicians regarding the benefits of and practices associated with IMRT and IGRT. Further, the complexity and high cost of proton therapy requires similar significant education, as well as education regarding construction and facility requirements. We have devoted and will continue to devote significant resources to marketing and educational efforts to (a) create awareness of IMRT, IGRT, VMAT radiotherapy, SRS, SBRT and proton therapy, (b) encourage the acceptance and adoption of our products for these technologies and (c) promote the safe and effective use of our products in compliance with their operating procedures. Future products may not gain adequate market acceptance among physicians, patients and healthcare payors, even if we spend significant time and expense educating them about these products.

Our business may suffer if we are not able to hire and retain qualified personnel.

Our future success depends, to a great degree, on our ability to retain, attract, expand, integrate and train our management team and other key personnel, such as qualified engineering, service, sales, marketing and other staff. We compete for key personnel with other medical equipment and software manufacturers, as well as universities and research institutions. As we continue to grow our software revenues, we face intense competition for personnel from software and technology companies. Because this competition is intense, compensation-related costs could increase significantly if the supply of qualified personnel decreases or demand increases. If we are unable to hire and train qualified personnel, we may not be able to maintain or expand our business. Some of our executive officers have had long careers at our company. If these executives retire or leave, and we are unable to locate qualified or suitable replacements in a timely manner, our business could be adversely affected.

We may not realize expected benefits from acquisitions of or investments in new businesses, products, or technologies, which could harm our business.

We need to grow and evolve our businesses in response to changing technologies, customer demands and competitive pressures, and to execute on our strategy of becoming the global leader in multi-disciplinary, integrated cancer care solutions. In some circumstances, we may decide to grow our business through the acquisition of businesses, products or technologies rather than through internal development. Identifying suitable acquisition candidates can be difficult, time-consuming and costly, and we may not be able to identify suitable candidates or successfully complete identified acquisitions. In addition, negotiating and completing an acquisition can divert our management and key personnel from our current business operations, which could harm our business and affect our financial results.

If we acquire a business, we allocate the total purchase price to the acquired businesses' tangible assets and liabilities, identifiable intangible assets and liabilities based on their fair values as of the date of the acquisition, and we record the excess of the purchase price over those fair values as goodwill. If we fail to achieve the anticipated growth or cash flows from an acquisition, or if we decide to sell assets or a business, we may be required to recognize an impairment loss on the write down of our assets and goodwill, which could adversely affect our financial results. In addition, acquisitions can result in potentially

dilutive issuances of equity securities or the incurrence of debt, contingent liabilities or expenses, or other charges, any of which could harm our business and affect our financial results.

Additionally, we have investments in privately held companies. These investments are inherently risky, in some instances because the markets for the technologies or products these companies have under development may never materialize or reach expectations. If these companies do not succeed, we may be forced to record impairment charges and could lose some or all of our investment in these companies.

Our efforts to integrate acquisitions may not be successful, and this may adversely affect our financial results.

Our integration of the operations of acquired businesses requires significant efforts, including the coordination of information technologies, research and development, sales and marketing, operations, manufacturing and finance. Success of an acquisition may depend, in part, on our ability to successfully integrate the operations of the acquired business. If such integration efforts are not successful, the anticipated benefits and synergies of the acquisition may not be realized fully or at all, or may take longer to realize than expected. Our efforts to successfully integrate acquisitions may also result in additional expenses and divert significant amounts of management's time from other projects.

Our failure to manage successfully and coordinate the growth of acquired businesses could also have an adverse impact on our overall business. It may cost us more to commercialize new products, as we experienced with our proton therapy systems, or cause us to increase our research and development, sales and marketing or general and administrative expenses, either of which could adversely impact our results of operations. In addition, there is no guarantee that some of the businesses we acquire will become profitable or remain so. If our acquisitions do not meet our initial expectations, we may record impairment charges.

Factors that will affect the success of our acquisitions include:

- our ability to retain key employees of the acquired businesses;
- the performance of the acquired businesses and their technologies, products or services;
- our ability to integrate the operations, financial and other systems of the acquired businesses;
- the ability of the combined company to achieve synergies such as increasing sales of the combined company's products and services, achieving expected cost savings and effectively combining technologies to develop new products and services;
- any disruption in order fulfillment or loss of sales due to integration processes;
- increases in our risk of litigation, as a third-party may be more likely to assert a legal claim following an acquisition because of perceived deeper pockets or perceived greater value of a claim;
- the presence or absence of adequate internal controls and/or significant fraud in the financial systems of the acquired businesses;
- our ability to retain or grow the acquired company's customers, suppliers, distributors or other partners;
- any decrease in customer and distributor loyalty and product orders caused by dissatisfaction with the product lines and sales and marketing practices of the acquired businesses, including price increases; and
- our assumption of known contingent liabilities, known liabilities that prove greater than anticipated, or unknown liabilities that come to light, in each case to the extent that the realization of such liabilities increases our expenses or adversely affects our business or financial position.

We may face additional risks from the acquisition or development of new lines of business.

From time to time, we may acquire or develop new lines of business, as we did with proton therapy. There are substantial risks and uncertainties associated with new lines of business, particularly in instances where the markets are not fully developed. Risks include developing knowledge of and experience in the new business, recruiting market professionals, increasing research and development expenditures, and developing and capitalizing on new relationships with experienced market participants. External factors, such as compliance with regulations, competitive alternatives, and shifting market preferences,

may also impact whether implementation of a new business will be successful. Failure to manage these risks could have a material adverse effect on our business, results of operations and financial condition.

Losing distributors may harm our revenues in some territories.

We have strategic relationships with a number of key distributors for sales and service of our products. If these strategic relationships end and are not replaced, our revenues from product sales or the ability to service our products in the territories serviced by these distributors could be adversely affected.

We entered into a credit facility agreement that restricts certain activities, and failure to comply with this agreement may adversely affect our business, liquidity and financial position.

We maintain a credit facility that contains affirmative and negative covenants that could restrict our operating and financing activities. These provisions limit our ability to, among other things, incur future indebtedness, contingent obligations or liens, guarantee indebtedness, make certain investments and capital expenditures, sell stock or assets and pay dividends, and consummate certain mergers or acquisitions. Because of the restrictions on our ability to create or assume liens, we may find it difficult to secure additional indebtedness if required.

We have in the past used borrowings under our credit facility to fund the repurchase of VMS shares and we may continue to do so in the future. Furthermore, if we fail to comply with the credit facility requirements, we may be in default. Upon an event of default, if the credit agreement is not amended or the event of default is not waived, the lender could declare all amounts outstanding, together with accrued interest, to be immediately due and payable. If this happens, we may not be able to make those payments or borrow sufficient funds from alternative sources to make those payments. Even if we were to obtain additional financing, that financing may be on unfavorable terms.

Changes in the interpretation or application of generally accepted accounting principles may adversely affect our operating results.

We prepare our financial statements to conform to GAAP. These principles are subject to interpretation by the Financial Accounting Standards Board (“FASB”), the American Institute of Certified Public Accountants, the SEC and various other regulatory or accounting bodies. A change in interpretations of, or our application of, these principles can have a significant effect on our reported results and may even affect our reporting of transactions completed before a change is announced. In addition, when we are required to adopt new accounting standards, our methods of accounting for certain items may change, which could cause our results of operations to fluctuate each period. We may introduce new products or new technologies that require us to apply different accounting principles than we have applied in past periods, including accounting principals regarding revenue recognition. The application of different types of accounting principles and related potential changes may also make it more difficult to compare our financial results to prior periods, and the trading price of VMS common stock could suffer or become more volatile.

Our operations are vulnerable to interruption or loss due to natural or other disasters, power loss, strikes and other events beyond our control.

We conduct a significant portion of our activities, including manufacturing, administration and data processing at facilities located in the State of California and other seismically active areas that have experienced major earthquakes and other natural disasters. We carry limited earthquake insurance that may not be adequate or continue to be available at commercially reasonable rates and terms. A major earthquake or other disaster (such as a major fire, hurricane, flood, tsunami, volcanic eruption or terrorist attack) affecting our facilities, or those of our suppliers, could significantly disrupt our operations, and delay or prevent product manufacture and shipment during the time required to repair, rebuild or replace the damaged facilities. These delays could be lengthy and costly. If any of our customers’ facilities are adversely affected by a disaster, shipments of our products could be delayed. Additionally, customers may delay purchases of our products until operations return to normal or may move to a competitor that can meet their desired delivery time frame. In addition, our facilities may be subject to a shortage of available electrical power and other energy supplies. Any shortages may increase our costs for power and energy supplies or could result in blackouts, which could disrupt the operations of our affected facilities and harm our business. Further, our products are typically shipped from a limited number of ports, and any disaster, strike or other event blocking shipment from these ports could delay or prevent shipments and harm our business. In addition, concerns about terrorism, the effects of a terrorist attack, political turmoil or an outbreak of epidemic diseases could have a negative effect on our business operations, those of our suppliers and customers, and the ability to travel, resulting in adverse consequences on our

revenues and financial performance.

We work in international locations with high security risks, which could result in harm to our employees or contractors or cause us to incur substantial costs.

We work in some international locations where there are high security risks, which could result in harm to our employees and contractors or substantial costs to maintain the safety of our personnel. Some of our services are performed in high-risk locations or adjacent locations where the country or surrounding area is suffering from political, social, or economic issues, war or civil unrest, or has a high level of criminal or terrorist activity. Despite the precautions that we take, the safety of our personnel in these locations may continue to be at risk, and we may in the future suffer the loss of employees and contractors, which could harm our business and operating results.

Product defects or misuse may result in material product liability or professional errors and omissions claims, litigation, investigation by regulatory authorities or product recalls that could harm our future financial results.

Our business exposes us to potential product liability claims that are inherent in the manufacture, sale, installation, servicing and support of medical devices and other devices that deliver radiation. Because our products are involved in the intentional delivery of radiation to the human body and other situations where people may come into contact with radiation, the possibility for significant injury and/or death exists. Our products operate within our customers' facilities and network systems, and under quality assurance procedures established by the facility that ultimately delivers radiation to patients. Human and other errors or accidents may arise from the operation of our products in complex environments, particularly with products from other vendors, where interoperability or data sharing protocol may not be optimized even though the equipment or system operates according to specifications. As a result, we may face substantial liability to patients, our customers and others for damages resulting from the faulty, or allegedly faulty, design, manufacture, installation, servicing, support, testing or interoperability of our products with other products, or their misuse or failure. In addition, third-party service providers could fail to adequately perform their obligations, which could subject us to further liability. We may also be subject to claims for property damages or economic loss related to or resulting from any errors or defects in our products, or the installation, servicing and support of our products. Any accident or mistreatment could subject us to legal costs, litigation, adverse publicity and damage to our reputation, whether or not our products or services were a factor. In connection with our products that collect and store patient treatment data, we may be liable for the loss or misuse of such private data, if those products fail or are otherwise defective.

Product liability actions are subject to significant uncertainty and may be expensive, time-consuming, and disruptive to our operations. If a product liability action were determined against us, it could result in significant damages, including punitive damages, and our consolidated financial position, results of operations or cash flows could be materially adversely affected.

Adverse publicity regarding any accidents or mistreatments could cause patients to be less receptive to radiotherapy or radiosurgery treatments, to question the efficacy of radiation therapy and radiosurgery and to seek other methods of treatment. Adverse publicity could also result in additional regulation that could adversely affect our ability to promote, manufacture and sell our products.

In addition, if a product we design or manufacture was defective or found to be so by a competent regulatory authority, we may be required to correct or recall the product and notify other regulatory authorities. The adverse publicity resulting from a correction or recall, however imposed, could damage our reputation and cause customers to review and potentially terminate their relationships with us. A product correction or recall could consume management time, cause us to lose new orders, cause customers to cancel or delay installation of existing orders, or cause us to incur significant costs, any of which could have an adverse effect on our results of operation.

We maintain limited product liability insurance coverage and do not maintain professional liability/errors and omissions insurance. Our product liability insurance policies are expensive and have high deductible amounts and self-insured retentions. Our insurance coverage may be inadequate, and future policies may not be available on acceptable terms or in sufficient amounts, if at all. If a material claim is successfully brought against us, we may have to pay substantial damages if they are not covered by insurance.

ADDITIONAL RISKS RELATING TO OUR SOFTWARE PRODUCTS

We may face delays in the installation of our software products, which could have a material adverse effect on our operating results.

We may face delays in the installation and acceptance of our software products, which may take more time from order to completion of installation and acceptance than our hardware products. Though several of our software products are cloud-enabled, many of our current software product offerings are designed as on-premise products which must be installed on

customer systems on-site. Delays in installation of our software products may arise as a result of a variety of factors, including (i) longer installation timetables resulting from challenges in coordinating on-site visits with the customer personnel, (ii) customer IT systems not being ready to host the installation or (iii) the planning and customization required to deploy our software products in order to be compatible with a customer's unique, complex and/or dated health IT systems. Delays in installation of our software products could result in delays in our ability to recognize revenues from the sale of these products, which could have a material adverse effect on our operating results and financial performance.

The need to maintain and service multiple versions of the same software product across our installed base of customers could adversely affect our ability to release upgraded or new products.

Because there is no uniform practice among our customer base of updating to more recent versions of our software products and, for a variety of reasons, many of our customers do not regularly update to the newest version of our software products, at any point in time our installed base of customers may be running several different versions of our software products. The need to maintain and service multiple versions of the same software product across our installed base of customers can be cumbersome, time consuming and may require more personnel and other resources than would be the case if all of our customers utilized the same versions of our software products. Moreover, the fact that not all of our customers run the same version of our software products can complicate our ability to efficiently release upgrades to, or new versions of, our software products across our installed base. Similar complications to the release and installation of upgrades may be experienced with certain of our cloud-enabled products that have been developed using single tenant architecture, such as our 360 Oncology product. In addition, in many instances, unless a customer has a certain version of our software products installed, their system will not be compatible with certain of our other software or hardware products. Our inability to release new versions of software to customers or to sell customers other products because of incompatibility issues hurts our revenues and may make revenue projection less predictable.

Coding errors in our software and cloud offerings could adversely affect our results of operations.

Despite extensive testing prior to the release and throughout the lifecycle of a product or service, our software and cloud offerings sometimes contain coding or manufacturing errors that can impact their function, performance and security, and result in other negative consequences. The detection and correction of any errors in released software or cloud offerings can be time consuming and costly. Errors in our software or cloud offerings could affect their ability to properly function or operate with other software, hardware or cloud offerings, delay the development or release of new products or services or new versions of products or services, create security vulnerabilities in our products or services, and adversely affect market acceptance of our products or services. If we experience errors or delays in releasing our software or cloud offerings or new versions thereof, our sales could be affected and revenues could decline.

We may not be successful in transitioning our customer base to software solutions deployed via cloud and SaaS solutions.

We are expanding our software product lines and investing in the development of cloud and SaaS solutions. Cloud and SaaS solutions for use in the health care industry must comply with stringent regulations in many of the countries in which our customers are located, particularly in relation to the use and storage of patient health data and privacy, and the regulations vary on a country-by-country basis. Our software products must be compliant with applicable regulation in the country in question before we can operationalize our offerings for customers located in those countries. Ensuring the compliance of our cloud and SaaS solutions with applicable regulation may take longer than expected, occur more slowly in certain countries than in others, require that design changes be developed into our products, or require more financial resources than anticipated.

In addition, even where our cloud and SaaS solutions are compliant with applicable regulation, customers may nevertheless refuse to adopt our products for numerous reasons, particularly in regards to the security of patient health data. Moreover, unless and until our cloud and SaaS solutions find general acceptance among our customer base, we would likely need to maintain and continue to develop both our on-premise software product offerings and our cloud and SaaS solution platforms, which could prevent us from realizing the full benefits and efficiencies from transitioning to a cloud platform, result in higher costs and have a material adverse effect on our operating results and

financial performance.

An increase in the prevalence of cloud and SaaS delivery models offered by us and our competitors could also unfavorably impact the pricing of our on-premise software offerings, and have a dampening impact on overall demand for our on-premise software product and related service offerings, which could reduce our revenues and profitability. In addition, to the extent that demand for our cloud offerings increases in the future, we may experience volatility in our reported revenues and operating results due to the differences in timing of revenue recognition between our software licenses and our cloud offering arrangements.

Furthermore, our cloud and SaaS software products may reside upon and be hosted by third party providers. A security breach, whether of our products, of our customers' network security and systems or of third party hosting services, could disrupt treatments utilizing our products, disrupt access to our customers' stored information, such as patient treatment delivery instructions, and could lead to the loss of, damage to or public disclosure of our customers' stored information, including patient health information.

Since we recognize revenue from subscriptions for our SaaS solutions over the term of the subscription, downturns or upturns in our SaaS business may not be immediately reflected in our operating results.

We recognize SaaS related revenue from customers ratably over the terms of their subscription agreements. As a result, most of the revenue we report in each quarter relating to our SaaS products is the result of subscription agreements entered into during previous quarters. Consequently, a decline in new or renewed subscriptions in any one quarter may not be reflected in our revenue results for that quarter. Any such decline, however, could negatively impact our revenue in future quarters. Accordingly, the effect of significant downturns in sales and market acceptance of our SaaS solutions, and potential changes in our attrition rate, may not be fully reflected in our results of operations until future periods.

Certain software that we use in our products is licensed from third parties and, for that reason, may not be available to us in the future, which has the potential to delay product development and production or cause us to incur additional expenses.

Some of our software products contain software licensed from third parties. Some of these licenses may not be available to us in the future on terms that are acceptable to us or allow our products to remain competitive. The loss of these third-party licenses or the inability to maintain any of them on commercially acceptable terms could delay development of future products or the enhancement of existing products. We may also choose to pay a premium price for such a license in certain circumstances, thereby reducing the gross margin of our software sales.

ADDITIONAL RISKS RELATING TO OUR PROTON SOLUTIONS BUSINESS

We participate in project financing for our Proton Solutions business, which has resulted in impairment charges and could result in payment defaults that adversely affect our financial results.

We have participated along with others in providing financing for the construction and start-up operations of several proton therapy centers and may provide financing to other particle therapy customers in the future. As of September 28, 2018, we had $164.8 million of loans outstanding, including accrued interest, available-for-sale securities, notes receivable and short-term senior secured debt related to Proton Solutions customers. See "Management Discussion and Analysis - Overview - Proton Solutions" and Note 16, "Proton Solutions Loans and Investment" of the Notes to the Consolidated Financial Statements for the carrying value of our outstanding loans relating to the establishment of proton therapy centers. Providing such financing has affected and could in the future adversely affect, our financial results, since a center may not be completed on time or within budget, or may not generate sufficient patient volumes and revenues to support scheduled loan payments or facilitate a refinancing. If a borrower does not have the financial means to pay off loan amounts owing to us, and if we cannot recover loan amounts owing to us from the sale of any collateral or through other means, or in the event of a bankruptcy of the borrower, we may be required to write-off all, or a portion, of the loans, which would adversely affect our financial results. For example, in fiscal year 2017, the CPTC, to which we had project financing outstanding, filed for bankruptcy and we recorded $51.4 million in impairment charges related to that financing. We also recorded an allowance for doubtful accounts of $37.8 million related to CPTC and one other proton center in fiscal year 2017. Similarly, in fiscal year 2018, we recorded impairment charges of $22.1 million on our subordinated loans to the Maryland Proton Therapy Center ("MPTC"). Please refer to "Management Discussion and Analysis - Overview - Varian Proton Solutions" and Note 16, "Proton Solutions Loans and Investment" of the Notes to the Consolidated Financial Statements for a more detailed discussion of the impairment of the loan we extended. Any impairment charges relating to our Proton Solutions business could have a material adverse impact our operating results and financial position.

The financial results of our Proton Solutions business may be unpredictable and if our proton customers are unsuccessful, our financial results will be adversely affected.

The success of our Proton Solutions business will depend upon the widespread awareness, acceptance and adoption by the oncology market of proton therapy systems for the treatment of cancer. This technology is expensive and has not

been widely adopted. Future developments may not be adopted as quickly as technological developments in more traditional areas of radiation therapy.

Since proton therapy projects are generally large, highly customized and more complex than projects in our Oncology Systems radiotherapy business, planning for these projects takes more resources. Many of the components used in proton therapy equipment require long lead times, which may require an increase in our inventory levels. This may cause fluctuations in the operating results of Proton Solutions that may make it difficult to predict our results and compare our results from period to period.

The construction of a proton therapy facility requires significant capital investment and may involve complex project financing. Consequently, this business is vulnerable to deterioration in general economic and market conditions. Economic downturns that result in a contraction in credit markets, have made and may continue to make it more difficult for potential customers of this business to find appropriate financing for large proton therapy projects, which could cause them to delay or cancel their projects, or request payment concessions in their agreements with us, which could adversely impact our operating results.

Proton therapy is expensive and changes in reimbursement rates for proton therapy treatments or uncertainty regarding these reimbursement rates can affect growth or demand for our Proton Solutions products and services.

After a proton therapy facility is established, there can be no assurance that it will have sufficient patient volume to be successful or profitable. If a proton treatment center cannot generate sufficient patient volume, it may lead to a need to refinance or renegotiate debt, seek concession on payments, or ultimately insolvency and bankruptcy, as in the case of CPTC and the Rinecker Proton Therapy Center in Germany, which has and may in the future require us to impair loans if we have extended loans to the proton treatment center, or to record an allowance for doubtful accounts against accounts receivables due from the proton treatment center.

Our estimates as to future operating results include certain assumptions about the future results of Proton Solutions' business. If we are incorrect in our assumptions, our financial results could be materially and adversely affected. It is possible that Proton Solutions could perform significantly below our expectations due to a number of factors that cannot be predicted with certainty, including future market conditions, market acceptance of proton therapy and reimbursement rates. These factors could adversely impact Proton Solutions' ability to meet its projected results, which could cause a portion or all of the goodwill of Proton Solutions to become impaired. As of September 28, 2018, the goodwill of Proton Solutions was $51.5 million. Based upon the most recent annual goodwill analysis that we performed during the fourth quarter of fiscal year 2018, Proton Solutions' fair value was 48% in excess of its carrying value, and we believe each of the assumptions used to calculate Proton Solutions' fair value to be reasonable. However, Proton Solutions could be at risk for future goodwill impairment because adjustments to proton therapy orders, revenue growth rates, operating margins, weighted-average cost of capital ("WACC") and/or our working capital used in the fair value calculation could lead to an impairment. If we determine that Proton Solutions' goodwill becomes impaired, we would be required to record a charge that could have a material adverse effect on our results of operations in such period.

We compete for many proton therapy system sales through tenders, where parties compete on price and other factors. Many companies sell their products at a lower price than we do. If we are unable to lower our prices or our customers are not willing to pay for additional features and functionality that we may provide, we may lose sales, and if we lower our prices to gain business, our margins and other financial results may suffer. Further, the award of certain proton therapy system orders may be subject to challenge by third parties, which can make these orders more unpredictable than orders for other products. Because an order for a proton therapy system can be large and complex, and the sales cycle for proton therapy projects may take several years, an order in one fiscal period may cause our gross orders and revenues to vary significantly, making it difficult to predict and compare our results of operations from period to period.

We expect that a limited number of customers will account for a substantial portion of Proton Solutions' business for the foreseeable future. In instances where one customer undertakes multiple proton center projects, an adverse event with respect to one project could cause an adverse event with respect to the other projects, which in turn could adversely impact our operating results and financial position.

Our Proton Solutions business may subject us to increased liability.

Proton Solutions' business may subject us to increased liability. For example, because proton therapy projects are large in scale and require detailed project planning, failure to deliver or delays in delivering on our commitments

could result in greater than expected liabilities, as we could be required to indemnify business partners and customers for losses suffered or incurred if we are unable to deliver our products in accordance with the terms of customer contracts. Additionally, customers have in the past requested and may in the future request that the systems vendor, as the primary technology provider, provide guarantees for and suffer penalties in relation to the overall construction project. Since the cost of each proton therapy center project can often

exceed $100 million, the amount of potential liability and potential for financial loss would likely be higher than the levels historically assumed by us for our traditional radiation therapy business and may also exceed the project's value. Insurance covering these contingencies may be unobtainable or expensive. If we cannot reasonably mitigate or eliminate these contingencies or risks, our ability to competitively bid upon proton center projects will be negatively impacted or we may be required to assume material amounts of potential liability, all of which may have adverse consequences to us.

RISKS RELATING TO THE MANUFACTURE OF OUR PRODUCTS

Any inability to obtain supplies of important components could restrict the manufacture of products, cause delays in delivery, or significantly increase our costs.

We obtain some of the components included in our products from a limited group of suppliers or from a single source supplier, such as the radioactive sources for high dose rate brachytherapy, klystrons for linear accelerators and specialized integrated circuits and various other components; and radiofrequency components, magnets, patient positioning systems and gantry hardware for proton therapy systems.

If we lose any of these suppliers, if their operations were substantially interrupted, or if any of them failed to meet performance or quality specifications, we may be required to obtain and qualify one or more replacement suppliers. Such an event may then also require us to redesign or modify our products to incorporate new parts and/or further require us to obtain clearance, qualification or certification of these products by the FDA or obtain other applicable regulatory approvals in other countries. Events like these could significantly increase costs for the affected product and likely cause material delays in delivery of our products, which could have an adverse effect on our revenue and results of operations.

Some of our single-source suppliers provide components for some of our growing product lines. Manufacturing capacity limitations of any of our suppliers or other inability of these suppliers to meet increasing demand could adversely affect us, resulting in curtailed growth opportunities for our affected product lines. Shortage of, and greater demand for, components and subassemblies could also increase manufacturing costs if the supply/demand imbalance increases the price of the components and subassemblies. Disruptions or loss of any of our limited-sourced or sole-sourced components or subassemblies or the capacity limitations of the suppliers for these components or subassemblies could adversely affect our business and financial results and could damage our customer relationships. In addition, following the separation of our former Imaging Components business into Varex in January 2017, Varex is the sole source supplier of tubes, panels and detector components used in certain of our products, such as our On-Board Imager. Any disruption or reduction in the supply of these components could result in delays or reductions in our product deliveries, which could adversely affect our business and financial results and could damage our customer relationships. Also, any unforecasted increases in the price of these components could adversely impact our profitability.

A shortage or change in source of raw materials could restrict our ability to manufacture products, cause delays, or significantly increase our cost of goods.

We rely upon the supplies of certain raw materials such as tungsten, lead, iridium and copper for Oncology Systems and high-grade steel, high-grade copper and iron for Proton Solutions. Worldwide demand, availability and pricing of these raw materials have been volatile, and we expect that availability and pricing will continue to fluctuate in the future. If supplies are restricted or become unavailable or if prices increase, this could constrain our manufacturing of affected products, reduce our profit margins or otherwise adversely affect our business.

Pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act, the SEC has promulgated rules regarding disclosure of the presence in a company's products of certain metals, known as "conflict minerals," which are metals mined from the Democratic Republic of the Congo and adjoining countries, as well as procedures regarding a manufacturer's efforts to identify the sourcing of those minerals from this region. Complying with these rules requires investigative efforts, which has and will continue to cause us to incur associated costs, and could adversely affect the sourcing, supply, and pricing of materials used in our products, or result in process or manufacturing modifications, all of which could adversely affect our results of operations.

Our financial results may suffer if we are not able to match our manufacturing capacity with demand for our products.

Many of our products have a long production cycle, and we need to anticipate demand for our products in order to ensure adequate manufacturing or testing capacity. If we are unable to anticipate demand and our manufacturing or testing capacity does not keep pace with product demand, we will not be able to fulfill orders in a timely manner, which may negatively impact

our financial results and overall business. Conversely, if demand for our products decreases, the fixed costs associated with excess manufacturing capacity may harm our financial results.

We rely on third parties to perform spare parts shipping and other logistics functions on our behalf. Disruptions at our logistics providers may adversely impact our business.

Third-party logistics providers store a significant portion of our spare parts inventory in depots around the world and perform a significant portion of our spare parts logistics and shipping activities. If any of our logistics providers terminates its relationship with us, suffers an interruption in its business, or experiences delays, disruptions or quality control problems in its operations, or if we have to change and qualify alternative logistics providers for our spare parts, shipments of spare parts to our customers may be delayed and our reputation, business, financial condition and results of operations may be adversely affected.

RISKS RELATING TO OUR REGULATORY ENVIRONMENT

We face significant costs in complying with laws and regulations, and failure or delays in obtaining regulatory approvals or complying with laws and regulations could prevent product distribution, require product recalls, and result in significant penalties.

Our products and operations are subject to regulation by the FDA, the State of California, the Nuclear Regulatory Commission (‘NRC”) and countries or regions in which we market our products. In addition, our products must meet the requirements of a large and growing body of international standards which govern the design, manufacture, materials content and source, testing, certification, packaging, installation, use and disposal of our products. We must continually keep abreast of these standards and requirements and integrate our compliance protocols into the development and regulatory documentation for our products. Failure to obtain regulatory approval in a timely manner and to meet all local requirements including language and specific safety standards in any foreign country in which we plan to market our products could prevent us from marketing products in such countries or subject us to sanctions and fines.

United States FDA Regulations. Unless an exception applies, the FDA requires that the manufacturer of a new medical device obtain either 510(k) pre-market notification clearance or pre-market approval (“PMA”) before it can market or sell those products in the United States. Currently, we do not manufacture Class III medical devices which require PMA. Certain of our devices are subject to 510(k) clearance while others are exempt from 510(k) clearance. Modifications or enhancements to a product that could significantly affect its safety or effectiveness, or that would constitute a major change in the intended use of the device, technology, materials, labeling, packaging, or manufacturing process also require a new 510(k) clearance. Manufacturers make the initial determination whether a change to a cleared device requires a new 510(k) clearance, but the FDA can review any such decision. If the FDA disagrees with a manufacturer’s decision not to seek a new 510(k) clearance or PMA approval for a change, the FDA may retroactively require the manufacturer to seek 510(k) clearance or PMA approval. The FDA also can require the manufacturer to cease United States marketing and/or recall the modified device until 510(k) clearance or PMA approval is obtained. The FDA clearance process is uncertain and we may not be able to obtain the necessary clearances or approvals in a timely manner or at all.

The FDA has issued draft guidance that, if finalized and implemented, will result in manufacturers needing to seek a significant number of new clearances for changes made to legally marketed devices. If we cannot establish that a proposed product is substantially equivalent to a legally marketed device, we must seek pre-market approval through a PMA application. Under the PMA process, the applicant submits extensive supporting data, including, in most cases, data from clinical studies, in the PMA application to establish reasonable evidence of the safety and effectiveness of the product. This process typically takes at least one to two years from the date the PMA is accepted for filing but can take significantly longer for the FDA to review.

As we enter new businesses or pursue new business opportunities that require clinical trials, we may seek to conduct clinical studies or trials in the United States or other countries on products that have not yet been cleared or approved for a particular indication. Additional regulations govern the approval, initiation, conduct, documentation and reporting of clinical studies to regulatory agencies in the countries or regions in which they are conducted. Such investigational use is generally also regulated by local and institutional requirements and policies which usually include review by an ethics committee or institutional review board. Failure to comply with all regulations governing

such studies could subject us to significant enforcement actions and sanctions, including halting of the study, seizure of investigational devices or data, sanctions against investigators, civil or criminal penalties, and other actions. Without the data from one or more clinical studies, it may not be possible for us to secure the data necessary to support certain regulatory submissions, to secure reimbursement or demonstrate other requirements. We cannot assure you that access to clinical investigators, sites and subjects, documentation and data will be available on the terms and timeframes necessary.

In addition, after a device is placed on the market, numerous FDA and other regulatory requirements continue to apply. These include compliance with the medical device reporting regulations, that require that we report to regulatory authorities if our devices may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if the malfunction were to recur, and compliance with corrections and removal reporting regulations, which require that manufacturers report to the FDA field corrections and product recalls or removals if undertaken to reduce a risk to health posed by the device or to remedy a violation of the FFDCA that may present a risk to health. If these reports are not filed on a timely basis, regulators may impose sanctions and sales of our products may suffer, and we may be subject to product liability or regulatory enforcement actions, all of which could harm our business. The FDA and the Federal Trade Commission also regulate the advertising and promotion of our products to ensure that the claims we make are consistent with our regulatory clearances, that there is scientific data to substantiate the claims and that our advertising is neither false nor misleading. In general, we may not promote or advertise our products for uses not within the scope of our intended use statement in our clearances or make unsupported safety and effectiveness claims. Many regulatory jurisdictions outside of the United States have similar regulations to which we are subject.

Our manufacturing operations for medical devices, and those of our third-party suppliers are required to comply with the FDA's Quality System Regulation ("QSR"), as well as other federal and state regulations for medical devices and radiation-emitting products. The QSR covers, among other things, the methods used in, and the facilities and controls used for, the design, manufacture, packaging, labeling, storage, installation, and servicing of all medical devices intended for human use. The QSR also requires maintenance of extensive records which demonstrate compliance with FDA regulation, the manufacturer's own procedures, specifications and testing as well as distribution and post-market experience. Compliance with the QSR is necessary to receive FDA clearance or approval to market new products and for a manufacturer to be able to continue to market cleared or approved product offerings in the United States. The FDA makes announced and unannounced periodic and on-going inspections of medical device manufacturers to determine compliance with the QSR. In connection with these inspections, the FDA issues reports, known as Form FDA 483 reports, when it believes the manufacturer has failed to comply with applicable regulations and/or procedures. If observations from the inspection are not addressed, and/or corrective action is not taken in a timely manner and to the FDA's satisfaction, the FDA may issue an Untitled Letter, a Warning Letter and/or proceed directly to other forms of enforcement action. Failure to respond timely to Form FDA 483 observations, a Warning Letter or other notice of noncompliance and to promptly come into compliance could result in fines, injunctions, civil penalties, delays, suspension or withdrawal of clearances, seizures or recalls of products, operating restrictions, total shutdown of production facilities, prohibition on export or import and criminal prosecution. Such actions may have further indirect consequences for the manufacturer outside of the United States and may adversely affect the reputation of the manufacturer and the product.

United States NRC Regulations. Our products utilizing radioactive material are also subject to the NRC clearance and approval requirements, and the manufacture and sale of these products are subject to federal and state regulation that varies from state to state and among regions. The manufacture, distribution, installation and service (and decommissioning and removal) of medical devices utilizing radioactive material or emitting radiation also requires a number of licenses and certifications. Service of these products must also be in accordance with a specific radioactive materials license. In addition, the handling and disposal of radioactive materials resulting from the manufacture, use or disposal of our products may impose significant requirements. Disposal sites for the lawful disposal of materials generated by the manufacture, use or decommissioning of our products may no longer accept these materials in the future, or may accept them on unfavorable terms.

Foreign regulations. In general, outside the United States, our products are regulated as medical devices by foreign governmental agencies similar to the FDA. In order for us to market our products internationally, we must obtain clearances or approvals for products and product modifications. These processes (including for example in the European Union ("EU"), the European Economic Area ("EEA"), Switzerland, China, Japan and Canada) can be time consuming, burdensome and uncertain, which can delay our ability to market products in those countries. Failure to obtain regulatory approval in a timely manner and to meet all local requirements including language and specific safety standards in any foreign country in which we plan to market our products could prevent us from marketing

products in such countries or subject us to sanctions and fines.

Within the EEA, we must affix a CE mark, a marking of conformity that indicates that a product meets the essential requirements of the Medical Device Directive. This conformity to the Medical Device Directive is done through self-declaration and is verified by an independent certification body, called a “Notified Body.” Once the CE mark is affixed, the Notified Body will regularly audit us to ensure that we remain in compliance with the applicable European laws and Medical Device Directive. By affixing the CE mark to our product, we are certifying that our products comply with the laws and regulations required by the EEA countries, thereby allowing the free movement of our products within these countries and others that accept CE mark standards. If we cannot support our performance claims and demonstrate compliance with the applicable European laws and Medical Device Directive, we would lose our right to affix the CE mark to our products, which would prevent us from selling our products within the EU/EEA/Switzerland territory and in other countries that recognize the CE mark.

In April 2017, the Medical Device Regulation replaced the Medical Device Directive. The Medical Device Regulation will apply after a three-year transition period and imposes stricter requirements for the marketing and sale of medical devices and grants Notified Bodies increased post-market surveillance authority. We may be subject to risks associated with additional testing, modification, certification or amendment of our existing market authorizations, or we may be required to modify products already installed at our customers' facilities to comply with the official interpretations of these revised regulations.

We are also subject to laws and regulations that apply to manufacturers of radiation emitting devices and products utilizing radioactive materials, as well as laws and regulations of general applicability relating to matters such as environmental protection, safe working conditions, manufacturing practices and other matters. These are often comparable to, if not more stringent than, the equivalent regulations in the United States. Sales overseas are also affected by regulation of matters such as product standards, packaging, labeling, environmental and product recycling requirements, import and export restrictions, tariffs, duties and taxes. In some countries, we rely on our foreign distributors and agents to assist us in complying with foreign regulatory requirements, and we cannot be sure that they will always do so.

We are also subject to international "fraud and abuse" laws and regulations, as well as false claims and misleading advertisement laws. From time to time, these laws and regulations may be revised or interpreted in ways that could make it more difficult for our customers to conduct their businesses, which could have an adverse effect on the demand for our products, and therefore our business and results of operations. The laws and regulations and their enforcement are constantly undergoing change, and we cannot predict what effect, if any, changes to these laws and regulations may have on our business.

Data Privacy Laws. The EU General Data Protection Regulation ("GDPR") took effect in May 2018. The compliance and other burdens imposed by GDPR and similar privacy laws and regulations may be substantial since they are subject to differing interpretations and implementation among jurisdictions. The restrictions imposed by such laws and regulations may limit the use and adoption of our services, reduce overall demand for our services, require us to modify our data handling practices and impose additional costs and burdens. In addition, non-compliance could result in proceedings against us by governmental entities or others, significant fines, and may otherwise adversely impact our business, financial condition and operating results. Particularly within Europe, data protection legislation is comprehensive and complex and there has been a recent trend toward more stringent enforcement of requirements regarding protection and confidentiality of personal data.

Other United States Healthcare Laws. As a participant in the healthcare industry, we are also subject to federal and state laws and regulations pertaining to patient privacy and data security, fraud and abuse and physician payment transparency. The laws and regulations and their enforcement are constantly undergoing change, and we cannot predict what effect, if any, changes to these laws and regulations may have on our business. Government regulation also may cause considerable delay or even prevent the marketing and full commercialization of future products or services that we may develop. Non-compliance with "anti-kickback", "false claims" and transparency laws and regulations can result in civil and criminal penalties, which can be substantial, and potential mandatory or discretionary exclusion from healthcare programs. These healthcare laws include:

- The Medicare and Medicaid "anti-kickback" laws, and similar state laws, that prohibit payments or other remuneration intended to induce hospitals, physicians or others either to refer patients, or to purchase, lease or order, or arrange for or recommend the purchase, lease or order of healthcare products or services for which payment may be made under federal and state healthcare programs, such as Medicare and Medicaid. These laws affect our sales, marketing and other promotional activities by limiting the kinds of financial arrangements we may have with hospitals, physicians or other potential purchasers of our products. They particularly impact how we structure our sales offerings, including discount practices, customer support, education and training programs, physician consulting, research grants and other service arrangements. These laws are broadly written, and it is often difficult to determine precisely how these laws will be applied to specific circumstances.
- Federal and state "false claims" laws generally prohibit knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid or other government payors that are false or fraudulent, or for items or services that were not provided as claimed. Although we do not submit claims directly to payors, manufacturers can be, and

have been, held liable under these laws if they are deemed to “cause” the submission of false or fraudulent claims by providing inaccurate billing or coding information to customers, or through certain other activities, including promoting products for uses not approved or cleared by the FDA.

- State and federal transparency laws, including laws in Massachusetts and Vermont, and the federal Physician Payment Sunshine Act which require, among other things, the disclosure of equity ownership and payments to physicians, healthcare providers and hospitals.

Any failure or delay in complying with one or more of the regulatory requirements we face could result in reduced sales, increased costs, and harm to our reputation and competitiveness, all of which could have a material adverse effect on our business and financial results.

The Affordable Care Act includes provisions that may adversely affect our business, including an excise tax on the sales of most medical devices.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, the "ACA") became effective in 2010. The ACA could adversely impact the demand for our products and services, and therefore our financial position and results of operations, possibly materially. Specifically, one of the components of the ACA is a 2.3% excise tax on sales of most medical devices, which include our Oncology Systems and Proton Solutions products, which took effect on January 1, 2013. In January 2018, President Trump signed into law a spending package that included a two-year moratorium on the medical device excise tax starting January 1, 2018 and ending December 31, 2019. This tax has had, and may continue to have, a negative impact on our gross margin when the moratorium expires.

In addition, discussions relating to the ACA have included the possibility for bundled reimbursement payments and ACOs. ACOs and bundled payment programs were established by the ACA to reward integrated, efficient care and allow providers to share in any savings they achieve through the coordination of care and meeting certain mandated quality standards. ACOs and the bundled payment programs have primarily focused on primary care. However, some customers appear to be developing new partnerships across clinical specialties to prepare for the possibility of operating in an ACO environment and bundled reimbursement payments. These and other elements of the ACA, including comparative effectiveness research, an independent payment advisory board, payment system reforms (including shared savings pilots) and the reporting of certain payments by us to healthcare professionals and hospitals, could meaningfully change the way healthcare is developed and delivered, and may materially impact numerous aspects of our business, including the demand and availability of our products, the reimbursement available for our products from governmental and third-party payors, and medical procedure volumes. We believe that growth of the radiation oncology market, which includes both traditional radiation therapy as well as proton therapy in the United States could be adversely impacted as customers' decision-making processes are complicated by the uncertainties surrounding the implementation of the ACA and reimbursement rates for radiotherapy and radiosurgery, and that this uncertainty will likely continue into the next fiscal year and could result in a high degree of variability of gross orders and revenues from quarter-to-quarter.

Various healthcare reform proposals have also emerged at the state level, and we are unable to predict which, if any of these proposals will be enacted. We are also unable to predict what effect ongoing uncertainty surrounding federal and state health reform proposals, uncertainty related to implementation of ACA provisions, and instability within insurance markets created under the ACA, will have on our customer's purchasing decisions. However, an expansion in government's role in the United States healthcare industry may adversely affect our business, possibly materially. In addition, it is possible that changes in administration and policy, including the potential repeal of all or parts of the ACA could result in additional proposals and/or changes to health care system legislation which could have a material adverse effect on our business. The full effect that a full or partial repeal of the ACA would have on our business remains unclear at this time.

More recently, President Trump has signed an executive order and made statements that suggest he plans to seek repeal of all or portions of the ACA, and has asked Congress to replace the current legislation with new legislation. There is uncertainty with respect to the impact President Trump's administration may have, if any, and any changes likely will take time to unfold, and could have an impact on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA. However, we cannot predict the ultimate content, timing or effect of any healthcare reform legislation or the impact of potential legislation on us.

Changes to radiation oncology, reimbursements, and insurance deductibles and administration may affect demand for our products.

Sales of our healthcare products indirectly depend on whether adequate reimbursement is available to our customers from a variety of sources, such as government healthcare insurance programs, including the Medicare and Medicaid programs; private insurance plans; health maintenance organizations; and preferred provider organizations. In general, employers and third-party payors in the United States have become increasingly cost-conscious, with higher deductibles imposed or encouraged in many medical plans. The imposition of higher deductibles tends to inhibit individuals from seeking the same level of medical treatments as they might seek if the costs were lower. Third-party payors have also increased utilization controls related to the use of our products by healthcare providers.

There is no uniform policy on reimbursement among third-party payors, and we cannot be sure that third-party payors will reimburse our customers at a level that will enable us to achieve or maintain adequate sales and price levels for our products. Without adequate support from third-party payors, the market for our products may be limited.

Once Medicare makes a decision to provide reimbursement for a given treatment, these reimbursement rates are generally reviewed and adjusted by Medicare annually. Private third-party payors, although independent from Medicare, sometimes use portions of Medicare reimbursement policies and payment amounts in making their own reimbursement decisions. As a result, decisions by the Centers for Medicare and Medicaid Services ("CMS") to reimburse for a treatment, or changes to Medicare's reimbursement policies or reductions in payment amounts may extend to third-party payor reimbursement policies and amounts for that treatment. We have seen our customers' decision-making process complicated by the uncertainty surrounding Medicare reimbursement rates and coverage for modalities and indications for radiotherapy and radiosurgery in the United States. From time to time, CMS and third-party payors may review and modify the factors upon which they rely to determine appropriate levels of reimbursement and coverage of procedures for cancer treatments. For example, CMS and third-party payors have begun to focus on the comparative effectiveness of radiation therapy versus other methods of cancer treatment, including surgery, and could modify reimbursement rates based on the results of comparative effectiveness studies. In addition, CMS has announced their intention to unveil a mandatory Medicare payment model for radiation oncology. The timing and details of such a payment model are uncertain. Any significant cuts in reimbursement rates or changes in reimbursement methodology or administration for radiotherapy, radiosurgery, proton therapy or brachytherapy, or concerns or proposals regarding further cuts or changes in methodology or administration, could further increase uncertainty, influence our customers' decisions, reduce demand for our products, cause customers to cancel orders and have a material adverse effect on results of operations, financial position and stock price.

The Medicare Access and CHIP Reauthorization Act of 2015 ("MACRA") became effective on January 1, 2017, which made numerous changes to Medicare, Medicaid, and other healthcare related programs. These changes include new systems for establishing the annual updates to payment rates for physicians' services in Medicare. As this new payment system continues to be implemented and revised annually, our business may be significantly affected by any changes in reimbursement policies and other initiatives aimed at or having the effect of reducing healthcare costs associated with Medicare and other government healthcare programs.

Foreign governments also have their own healthcare reimbursement systems and there can be no assurance that adequate reimbursement will be made available with respect to our products under any foreign reimbursement system.

Any violation of federal, state and foreign laws governing our business practices may result in substantial penalties. Investigation into our business practices could cause adverse publicity and harm our business.

Anti-corruption laws and regulations. We are subject to the United States Foreign Corrupt Practices Act and anti-corruption laws, and similar laws in foreign countries, such as the U.K. Bribery Act of 2010, and the Law "On the Fundamentals of Health Protection in the Russian Federation.". Any violation of these laws by us or our agents or distributors could create a substantial liability for us, subject our officers and directors to personal liability and also cause a loss of reputation in the market. Transparency International's 2016 Corruption Perceptions Index found that approximately sixty-nine percent of the countries in the index, including many that we consider to be high growth areas for our products, such as China, India, Russia and Brazil, scored below 50, on a scale from 100 (very clean) to 0 (highly corrupt). We currently operate in many countries where the public sector is perceived as being more or highly corrupt. Our strategic business plans include expanding our business in regions and countries that are rated as higher

risk for corruption activity by Transparency International. Increased business in higher risk countries could subject us and our officers and directors to increased scrutiny and increased liability.

In addition, we have conducted, and in the future expect to conduct internal investigations or face audits or investigations by one or more domestic or foreign government agencies. For example, in June 2015, one of our foreign subsidiaries was charged

by the Department for Investigation and Penal Action of Lisbon with alleged improper activities relating to three tenders of medical equipment in Portugal during the period of 2003 to 2009. We previously undertook an internal investigation of this matter and voluntarily disclosed the results of this investigation to the United States Department of Justice and the United States Securities and Exchange Commission. After the Company requested a judicial review available under Portuguese criminal procedure processes as to whether or not such charges are proper under Portuguese law, the matter was resolved and definitively dismissed on December 9, 2016, with no adverse findings or charges against the Company. Any such proceeding results in costs and management distraction, which could adversely affect our business and financial results. An adverse outcome under any such proceeding, investigation or audit could subject us to fines, or criminal or other penalties, which could adversely affect our business and financial results.

Competition laws. We are subject to competition laws in the regions where we do business. Regulatory authorities under whose laws we operate may have enforcement powers that can subject us to sanctions and can impose changes or conditions in the way we conduct our business. In addition, an increasing number of jurisdictions provide private rights of action for competitors or consumers to seek damages asserting claims of anti-competitive conduct. Increased government scrutiny of our actions or enforcement or private rights of action could adversely affect our business or damage our reputation. In addition, we have conducted, and in the future expect to conduct, internal investigations or face audits or investigations by one or more domestic or foreign government agencies, which could be costly and time-consuming, and could divert our management and key personnel from our business operations. An adverse outcome under any such investigation or audit could subject us to fines or criminal or other penalties, which could adversely affect our business and financial results.

Environmental laws impose compliance costs on our business and can result in liability.

We are subject to environmental laws around the world. These laws regulate many aspects of our operations, including our handling, storage, transport and disposal of hazardous materials. They can also impose cleanup liabilities, including with respect to discontinued operations. As a consequence, we can incur significant environmental costs and liabilities, some recurring and others not recurring. Although we follow procedures intended to comply with existing environmental laws, we, like other businesses, can never completely eliminate the risk of contamination or injury from certain materials that we use in our business and, therefore, the prospect of resulting claims and damage payments. We may also be assessed fines or penalties for failure to comply with environmental laws and regulations. Although insurance has provided coverage for portions of cleanup costs resulting from historical occurrences, we maintain only limited insurance coverage for costs or claims that might result from any future contamination.

Future changes in environmental laws could also increase our costs of doing business, perhaps significantly. Several countries, including some in the EU, now require medical equipment manufacturers to bear certain disposal costs of products at the end of the product’s useful life, increasing our costs. The EU has also adopted directives that may lead to restrictions on the use of certain hazardous substances or other regulated substances in some of our products sold there. These directives, along with another that requires substance information to be provided upon request, could increase our operating costs in order to maintain access to certain markets. All of these costs, and any future violations or liabilities under environmental laws or regulations, could have a material adverse effect on our business.

RISKS RELATING TO OUR INTELLECTUAL PROPERTY

Protecting our intellectual property can be costly and we may not be able to maintain licensed rights, which would harm our business.

We file applications for patents covering new products and manufacturing processes. We cannot assure you that our current patents, the claims allowed under our current patents, or patents for technologies licensed to us will be sufficiently broad to protect our technology position against competitors. Issued patents owned by, or licensed to, us may be challenged, invalidated or circumvented, or the rights granted under the patents may not provide us with competitive advantages. We also cannot be sure that patents will be issued from any of our pending or future patent applications. Asserting our patent rights against others in litigation or other legal proceedings is costly and diverts managerial resources. An unfavorable outcome in such litigation or proceedings could harm us. In addition, we may not be able to detect patent infringement by others or may lose our competitive position in the market before we are

able to do so.

We also rely on a combination of copyright, trade secret and other laws, and contractual restrictions on disclosure, copying and transferring title (including confidentiality agreements with vendors, strategic partners, co-developers, employees, consultants and other third parties), to protect our proprietary and other confidential rights. These protections may prove inadequate, since agreements may still be breached, and we may not have adequate remedies for a breach, and our trade secrets may otherwise become known to or be independently developed by others. In the event that our proprietary or confidential information is

misappropriated, our business and financial results could be adversely impacted. We have trademarks, both registered and unregistered, that are maintained and enforced to provide customer recognition for our products in the marketplace, but unauthorized third parties may still use them. We also have agreements with third parties that license to us certain patented or proprietary technologies. In some cases, products with substantial revenues may depend on these license rights. If we were to lose the rights to license these technologies, or our costs to license these technologies were to materially increase, our business would suffer.

Third parties may claim we are infringing their intellectual property, and we could suffer significant litigation or licensing expenses or be prevented from selling our products.

There is a substantial amount of litigation over patent and other intellectual property rights in the industries in which we compete. Our competitors, like companies in many high technology businesses, continually review other companies' activities for possible conflicts with their own intellectual property rights. In addition, non-practicing entities may review our activities for conflicts with their patent rights. Determining whether a product infringes a third party's intellectual property rights involves complex legal and factual issues, and the outcome of this type of litigation is uncertain. Third parties may claim that we are infringing their intellectual property rights. We may not be aware of the intellectual property rights of others that relate to our products, services or technologies. From time to time, we have received notices from third parties asserting infringement and we have been subject to lawsuits alleging infringement of third-party patent or other intellectual property rights. Any dispute regarding patents or other intellectual property could be costly and time-consuming and could divert our management and key personnel from our business operations. We may not prevail in a dispute. We do not maintain insurance for intellectual property infringement, so costs of defense, whether or not we are successful in defending an infringement claim, will be borne by us and could be significant. If we are unsuccessful in defending or appealing an infringement claim, we may be subject to significant damages and our consolidated financial position, results of operations or cash flows could be materially adversely affected. We may also be subject to injunctions against development and sale of our products, the effect of which could be to materially reduce our revenues.

RISKS RELATING TO OUR COMMON STOCK

Fluctuations in our operating results, including quarterly gross orders, revenues, margins, and cash flows may cause our stock price to be volatile, resulting in losses for our stockholders.

We have experienced and expect to experience periodic fluctuations in our operating results, including gross orders, revenues, margins and cash flows. Drivers of orders include the introduction and timing of announcement of new products or product enhancements by us and our competitors, as well as changes or anticipated changes in third-party reimbursement amounts or policies applicable to treatments using our products. The availability of economic stimulus packages or other government funding, or reductions thereof, may also affect timing of customer purchases. Many of our products require significant capital expenditures by our customers. Accordingly, individual product orders can be quite large in dollar amounts, which can extend the customer purchasing cycle. We have experienced this with our IGRT products, and it is especially true with our proton therapy products because of the high cost of the proton therapy equipment and the complexity of project financing. In addition, the budgeting cycles of hospitals and clinics for capital equipment purchases are frequently fixed well in advance. Economic uncertainty also tends to extend the purchasing cycle as potential customers more closely scrutinize and prioritize their capital spending budgets and analyze appropriate financing alternatives. In addition, some of our more sophisticated equipment, such as IGRT and proton therapy products, requires greater site preparation and longer construction cycles, which can delay customer decision cycles and the placement of orders even further. The timing of order placement, equipment installation and revenue recognition affect our quarterly results.

Once orders are received and booked into backlog, factors that may affect whether these orders become revenue (or are cancelled or deemed dormant and reflected as a reduction in the backlog amounts) and the timing of revenue include:

- delay in shipment due (e.g. an unanticipated construction delay at a customer location where our products are to be installed), cancellations or reschedulings by customers, extreme weather conditions, natural disasters, port strikes or other labor actions;
- a challenge to a bid award for one or more of our products;

•delay in the installation and/or acceptance of a product;
•failure to satisfy contingencies associated with an order;

- the method of accounting used to recognize revenue;
- a change in a customer's financial condition or ability to obtain financing; or
- timing of necessary regulatory approvals or authorizations.

Our operating results, including our margins, may also be affected by a number of other factors, including:

- changes in our or our competitors' pricing or discount levels;
- imposition of tariffs on our products or components and services used in our products;
- impairment of loans, notes receivables, accounts receivable;
- changes in foreign currency exchange rates;
- changes in the relative mix between higher margin and lower margin products;
- changes in the relative portion of our revenues represented by different geographic regions;
- fluctuation in our effective tax rate, which may or may not be known to us in advance;
- changes to our organizational structure, which may result in restructuring or other charges;
- disruptions in the supply or changes in the costs of raw materials, labor, product components or transportation services;
- disruptions in our operations, including our ability to manufacture products, caused by events such as earthquakes, fires, floods, terrorist attacks or the outbreak of epidemic diseases;
- the unfavorable outcome of any litigation or administrative proceeding or inquiry, as well as ongoing costs associated with legal proceedings; and
- accounting changes and adoption of new accounting pronouncements.

Because many of our operating expenses are based on anticipated capacity levels and a high percentage of these expenses are fixed for the short term, a small variation in the timing of revenue recognition can cause significant variations in operating results from quarter to quarter. Our overall gross margin may also be impacted by the gross margin of our proton therapy products, which presently carry lower gross margins than do our traditional radiotherapy products. If our gross margins fall below the expectation of securities analysts and investors, the trading price of VMS common stock would likely decline.

We report our gross orders and backlog on a quarterly and annual basis. It is important to understand that, unlike revenues, gross orders and backlog are not governed by GAAP, and are not within the scope of the quarterly review or annual audit conducted by our independent registered public accounting firm; therefore, investors should not interpret our gross orders or backlog in such a manner. Also, for the reasons set forth above, our gross orders and backlog cannot necessarily be relied upon as accurate predictors of future revenues. Order cancellation or delays in delivery dates will reduce our backlog and future revenues, and we cannot predict if or when orders will mature into revenues. Particularly high levels of cancellations in one period will make it difficult to compare our operating results for other periods.

In addition, our gross orders, backlog, revenues and net earnings in one or more future periods may fall below the expectations of securities analysts and investors. In that event, the trading price of VMS common stock would almost certainly decline.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

As of September 28, 2018, we owned and leased a total of approximately 1.9 million square feet of floor space for office space, manufacturing, research and development and other services worldwide. In Palo Alto, California, we have approximately 30 acres of land, under leasehold which expires in 2056, and we own approximately 481,000 square feet of space used for our executive and administrative offices, and some Oncology Systems manufacturing facilities. In Las Vegas, Nevada, we own approximately 8 acres of land and approximately 97,000 square feet of space where we have Oncology Systems customer service and support operations. In Jundiai, Brazil, we own approximately 4 acres of land and approximately 66,000 square feet of space used for light assembly, office space and customer training. In Crawley, England, we own approximately 2 acres of land and approximately 48,000 square feet of space used for office space and manufacturing. In Beijing, China, we have approximately 5 acres of land under leasehold that expires in 2056, and own approximately 147,000 square feet of space used for office space and manufacturing. The balance of our remaining facilities are leased to support our business operations worldwide.

Substantially all of this space is fully utilized for its intended purpose. We believe that our facilities and equipment are generally well maintained, in good operating condition and adequate for our present operations.

Item 3. Legal Proceedings

In 1999, we transferred our instruments business to Varian, Inc. (“VI”) and our semiconductor equipment business to Varian Semiconductor Equipment Associates, Inc. (“VSEA”) and subsequently spun off VI and VSEA, which resulted in a non-cash dividend to our stockholders (the “Spin-offs”). Under the Amended and Restated Distribution Agreement dated as of January 14, 1999 and other associated agreements that govern the Spin-offs, we retained the liabilities related to the medical systems business and agreed to manage and defend claims related to legal proceedings and environmental matters arising from corporate and discontinued operations. Generally, each of the spun-off subsidiaries is obligated to indemnify us for one third of these liabilities (after adjusting for any insurance proceeds we realize or tax benefits we receive), including certain environmental liabilities, and to indemnify us fully for liabilities arising from the operations of the business transferred to it as part of the Spin-offs. For a more detailed discussion of environmental costs and liabilities, see Note 10, "Commitments and Contingencies" to the Notes to the Consolidated Financial Statements, which is by this reference incorporated herein.

From time to time, we are involved in other legal proceedings arising in the ordinary course of our business or otherwise and, from time to time, acquired as part of business acquisitions that we make. For a detailed discussion of current material legal proceedings, see Note 10, "Commitments and Contingencies" of the Notes to the Consolidated Financial Statements, which is by this reference incorporated herein.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

VMS common stock is traded on the New York Stock Exchange ("NYSE") under the symbol "VAR." As of November 16, 2018, there were 1,796 holders of record of VMS common stock.

PERFORMANCE GRAPH

This graph shows the total return on VMS common stock and certain indices from September 27, 2013 until the last day of fiscal year 2018.

COMPARISON OF FIVE YEAR CUMULATIVE TOTAL RETURN*
AMONG VARIAN MEDICAL SYSTEMS, INC., THE S&P 500 INDEX AND
THE S&P HEALTHCARE EQUIPMENT INDEX

*$100 invested on September 27, 2013 in stock or index, including reinvestment of dividends. Indexes are calculated based on our fiscal year-end.

	9/27/2013	9/26/2014	10/2/2015	9/30/2016	9/29/2017	9/28/2018
Varian Medical Systems, Inc.	100.00	109.06	101.36	134.17	152.32	170.39
S&P 500	100.00	119.73	119.00	137.36	162.92	192.10
S&P Health Care Equipment	100.00	121.75	132.05	173.19	195.73	263.63

The performance graph and related information shall not be deemed to be soliciting material or to be "filed" with the SEC or to be deemed to be incorporated by reference to any filing under the Securities Act or the Exchange Act.

Share Repurchase Program

The following table provides information with respect to the shares of VMS common stock repurchased by VMS during the fourth quarter of fiscal year 2018 (in millions, except per share price).

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs [1]
June 30, 2018 – July 27, 2018	—	$ —	—	4.1
July 28, 2018 – August 24, 2018	0.3	$ 114.71	0.3	3.8
August 25, 2018 – September 28, 2018	0.2	$ 112.01	0.2	3.6
Total	0.5	$ 113.63	0.5	3.6

(1) In November 2016, the VMS Board of Directors authorized the repurchase of an additional 8.0 million shares of VMS common stock commencing on January 1, 2017. Share repurchases may be made in the open market, in privately negotiated transactions (including accelerated share repurchase programs), or in Rule 10b5-1 share repurchase plans, and also may be made from time to time or in one or more larger blocks. All shares that were repurchased under the share repurchase programs have been retired.

The preceding table excludes an immaterial number of shares of VMS common stock that were tendered to VMS in satisfaction of tax withholding obligations upon the vesting of equity awards granted under our employee stock plans.

Item 6. Selected Financial Data

The following financial data should be read in conjunction with our consolidated financial statements and the accompanying notes and the MD&A included elsewhere herein.

Summary of Operations:	Fiscal Years [1]				
(In millions, except per share amounts)	2018	2017	2016	2015 [5]	2014 [5]
Revenues	$2,919.1	$2,619.3	$2,593.7	$2,490.7	$2,392.7
Earnings from continuing operations before taxes [2]	452.1	303.1	432.4	401.3	374.2
Taxes on earnings [3]	301.8	77.1	110.1	89.9	100.2
Net earnings from continuing operations	150.3	226.0	322.3	311.4	274.0
Net (loss) earnings from discontinued operations	—	(6.8)	77.4	100.6	129.7
Net earnings	150.3	219.2	399.7	412.0	403.7
Less: Net earnings attributable to noncontrolling interests	0.4	0.7	0.4	0.5	—
Net earnings attributable to Varian	$149.9	$218.5	$399.3	$411.5	$403.7
Net earnings (loss) per share - basic					
Continuing operations	$1.64	$2.44	$3.38	$3.13	$2.63
Discontinued operations	—	(0.08)	0.81	1.00	1.25
Net earnings per share - basic	$1.64	$2.36	$4.19	$4.13	$3.88
Net earnings (loss) per share – diluted					
Continuing operations	$1.62	$2.42	$3.36	$3.10	$2.60
Discontinued operations	—	(0.07)	0.80	0.99	1.23
Net earnings per share - diluted	$1.62	$2.35	$4.16	$4.09	$3.83
Financial Position at Fiscal Year End: [4]					
Working capital [5]	$848.7	$651.7	$1,053.0	$1,016.4	$1,177.3
Total assets [5]	$3,252.7	$3,294.4	$3,948.1	$3,576.9	$3,336.3
Short-term borrowings	$—	$350.0	$329.6	$108.4	$—
Long-term debt (including current maturities)	$—	$—	$336.3	$385.7	$435.1
Total equity [5]	$1,588.7	$1,521.9	$1,797.9	$1,726.3	$1,616.4

(1) Our fiscal years as reported are the 52- or 53-weeks periods ending on the Friday nearest September 30. Fiscal years 2018, 2017, 2016 and 2014 each included 52 weeks. Fiscal year 2015 included 53 weeks.

(2) In fiscal year 2018, earnings from continuing operations before taxes includes a $29.7 million hedging loss related to the Australian dollar purchase price for Sirtex Medical Limited ("Sirtex"), $22.4 million in impairment charges mostly related to our MPTC subordinated loan and $15.7 million of acquisition-related expenses, partially offset by $9.0 million for the Sirtex breakup fee. In fiscal year 2017, earnings from continuing operations before taxes includes $51.4 million in impairment charges related to our Original CPTC Loans and a $37.8 million allowance for doubtful accounts from CPTC and another proton center. In fiscal year 2014, earnings from continuing operations before taxes includes a $25.1 million litigation charge related to a settlement agreement with the University of Pittsburgh.

(3) In fiscal year 2018, taxes on earnings includes a $207.8 million tax expense related to the Tax Cuts and Jobs Act, partially offset by an $8.0 million benefit to income tax expense due to the partial release of a valuation allowance as a result of an acquisition.

(4) The financial position at year end includes Varex, which is presented as discontinued operations for all periods presented. See Note 2, "Discontinued Operations" of the Notes to the Consolidated Financial Statements for more information.

(5) Amounts prior to fiscal year 2016 do not reflect the adoption of Accounting Standards Update 2014-09, Revenue from Contracts with Customers (Topic 606), in the first quarter of fiscal year 2018. See Note 1, "Summary of

Significant Accounting Policies" of the Notes to the Consolidated Financial Statements for more information.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Overview

We, Varian Medical Systems, Inc., are a Delaware corporation originally incorporated in 1948 as Varian Associates, Inc. We are the world's leading manufacturer of medical devices and software for treating cancer and other medical conditions with radiotherapy, stereotactic radiosurgery, stereotactic body radiotherapy, brachytherapy and proton therapy. Our vision is a world without fear of cancer. Our mission is to combine the ingenuity of people with the power of data and technology to achieve new victories against cancer. To meet this challenge, we offer comprehensive solutions for fighting cancer.

We have two reportable operating segments: Oncology Systems and Proton Solutions (formerly known as Varian Particle Therapy). The operating segments were determined based on how our Chief Executive Officer, who is our Chief Operating Decision Maker ("CODM"), views and evaluates our operations. The CODM allocates resources to and evaluates the financial performance of each operating segment primarily based on operating earnings.

The Americas region includes North America (primarily the United States and Canada) and Latin America. The EMEA region includes Europe, Russia, the Middle East, India, and Africa. The APAC region primarily includes East and Southeast Asia, and Australia.

Long-term growth and value creation strategy

We are focused on cancer care solutions and well-positioned to positively influence more and more patients globally every day by bringing smarter and simpler solutions to healthcare providers. Our long-term growth and value creation strategy is to transform our company from the global leader in radiation therapy to be the global leader in multidisciplinary, integrated cancer care solutions. We intend to leverage our deep customer relationships, human-centered design, scale and financial strength to selectively broaden our capabilities to help cancer patients. To achieve these long-term objectives, we are focused on driving growth through strengthening our leadership in radiation therapy, extending our global footprint and expanding into other addressable markets.

Highlights from fiscal year 2018

Financial Summary

	Fiscal Years					
(In millions, except per share amounts)	2018		2017		Change	
Gross Orders	$3,171.6		$3,076.0		3	%
Oncology Systems	3,113.9		2,846.8		9	%
Proton Solutions	57.7		229.2		(75	)%
Backlog	$3,183.0		$3,083.2		3	%
Revenues	$2,919.1		$2,619.3		11	%
Oncology Systems	2,770.2		2,436.8		14	%
Proton Solutions	148.9		182.5		(18	)%
Gross margin as a percentage of revenues	43.6	%	42.5	%	110bps	
Effective tax rate	66.8	%	25.4	%		
Net earnings from continuing operations	$150.3		$226.0		(34	)%
Diluted net earnings per share	$1.62		$2.42		(33	)%
Net cash provided by operating activities	$454.9		$399.1		14	%
Number of shares repurchased	1.6		3.3		(50	)%
Total cost of shares repurchased	$181.9		$294.5		(38	)%

Adoption of ASC 606. At the beginning of our fiscal year 2018, we early adopted Accounting Standard Codification 606 "Revenues from Contracts with Customers" ("ASC 606"), the new revenue recognition standard, and used the full retrospective method. All financial statements and disclosures have been recast to comply with ASC 606. See Note 1, "Summary of Significant Accounting Policies" of the Notes to Consolidated Financial Statements, for additional information.

44

Change in Gross Orders Policy. In the first quarter of fiscal year 2018, we decided to retroactively change our policy on how we record services gross orders. Under the new policy, services gross orders do not include changes in deferred services revenue. We made the change to more accurately reflect the operational performance of the services business and to eliminate variations in orders reporting due to the timing of services billings. This policy change also impacts backlog, which no longer reflects the deferred revenue related to purchasable services. These changes only impact the Oncology Systems gross orders. All prior periods' gross orders and backlog have been recast to reflect this policy change.

Distribution. On January 28, 2017 (the "Distribution Date"), we completed the separation and distribution (the "Distribution") of Varex Imaging Corporation ("Varex"), our former Imaging Components business segment. The historical financial position and results of operations of the Imaging Components business and costs relating to the Distribution are reported in the consolidated financial statements as discontinued operations for all the periods presented. Unless otherwise noted, the financial information herein has been recast to reflect the effect of the Distribution. The Consolidated Statements of Comprehensive Earnings and the Statements of Cash Flows have not been recast to reflect the effect of the Distribution. See Note 3, "Business Combinations" of the Notes to Consolidated Financial Statements, for additional information.

Sirtex Medical Limited. On January 30, 2018, we signed an agreement to acquire Sirtex Medical Limited ("Sirtex"), an Australian company that was listed on the Australian Securities Exchange, for A$28 per share or approximately A$1.6 billion. On May 4, 2018, Sirtex received an unsolicited non-binding, indicative and conditional proposal from CDH Investments ("CDH"), a China-based alternative asset manager, for the acquisition of all of the issued shares in Sirtex for A$33.60 per share. On June 14, 2018, we received notification from Sirtex that it had accepted the proposal from CDH. Consequently, Sirtex terminated its agreement with us, and we received a net $9.0 million breakup fee from Sirtex.

Acquisitions. In fiscal year 2018, we acquired four companies, including two privately-held software companies, a distributor of radiotherapy equipment, and a manufacturer of a surface-guided radiation therapy positioning and motion management system, for an aggregate purchase price of $109.0 million. The purchase price allocation of all four acquisitions primarily consisted of $49.9 million in finite-lived intangible assets and $72.1 million in goodwill. We have integrated these four acquisitions into our Oncology Systems reporting unit.

Acquisition-related expenses. In fiscal year 2018, we incurred acquisition-related expenses of $36.4 million, which primarily includes $29.7 million in losses related to hedging the anticipated Australian dollar purchase price for Sirtex, partially offset by a net $9.0 million breakup fee received from Sirtex in connection with the termination of the acquisition.

2018 Revolving Credit Facility. On April 3, 2018, we entered into a credit agreement (the "2018 Credit Agreement") with certain lenders and Bank of America, N.A. ("BofA"), as the administrative agent. The 2018 Credit Agreement provides for a five-year revolving credit facility (the "2018 Revolving Credit Facility") in an aggregate principal amount of up to $1.8 billion. The 2018 Revolving Credit Facility also includes a $50.0 million sub-facility for the issuance of letters of credit and permits swing line loans of up to $25 million. The proceeds of the 2018 Revolving Credit Facility may be used for working capital, capital expenditures, our share repurchases, permitted acquisitions and other corporate purposes, as well as to satisfy the prior outstanding obligation under the 2017 Revolving Credit Facility. As of September 28, 2018, we did not have an outstanding principal balance on our 2018 Revolving Credit Facility. See, Liquidity and Capital Resources, herein for more information.

Tax Cuts and Jobs Act. The Tax Cuts and Jobs Act (the "Act") was signed into U.S. law on December 22, 2017. Two provisions of the new law had an immediate impact on us.

First, the U.S. corporate tax rate was reduced from 35% to 21%. This rate reduction required us to remeasure our net deferred tax assets, which were originally recorded assuming a future tax benefit at the 35% rate. In fiscal year 2018,

we recorded a provisional tax expense of $43.2 million related to remeasuring our net deferred tax assets as a result of the rate reduction.

Second, as part of the transition to a modified territorial system, the Act imposes a one-time transition tax on the unremitted earnings of our foreign subsidiaries. We recorded a provisional tax expense related to the one-time transition tax of $164.6 million during fiscal year 2018. We intend to elect to pay this tax over an eight-year period.

The Securities and Exchange Commission has issued guidance allowing companies a measurement period, not to exceed one year from the date of enactment, to refine their estimates of the tax impact of the new law. We will continue to refine our estimates and complete our accounting for the tax effects of the Act over the measurement period.

Medical Device Excise Tax. On January 22, 2018, a continuing budget resolution was signed into law that included a provision to extend the moratorium on the 2.3% medical device excise tax for two more years, or through December 31, 2019. This tax has had, and may continue to have, a negative impact on our gross margin when the moratorium expires.

Tariff Measures. On July 6, 2018, the Trump Administration imposed 25% tariffs on a variety of imports from China, including Varian's radiotherapy systems manufactured in China and certain components imported into the U.S. for our manufacturing and service activities. The Administration subsequently imposed tariffs on two additional lists of products from China; the first of these additional lists involves 25% tariffs and the second list imposes 10% tariffs increasing to 25% on January 1, 2019. We expect our imports into the U.S. to be impacted less by these two tariff lists than by the initial tariff list.

China responded to the multiple U.S. tariff lists by announcing several lists of products from the U.S. that are subject to additional tariffs upon import to China. The first round of Chinese retaliatory tariffs went into effect on July 6, 2018. Our products are not impacted by these tariffs. Our exports of U.S. manufactured radiotherapy systems to China are impacted by the second Chinese list, implemented on August 23, 2018, which is subject to a 25% tariff. A third group of items, including certain of our manufacturing inputs and services, is subject to 5 to 10% tariffs which went into effect on September 24, 2018. Any tariffs imposed by the United States and China that include Varian technology could increase the cost of our products and adversely impact the competitiveness of our products and/or our operational results in the future.

We are participating in the Office of the U.S. Trade Representative process to consider product-specific exclusions from these tariffs. While we are uncertain of the outcome of these exclusion discussions, if we are successful certain Varian products could be provided relief from these tariffs retroactive to the date of their enactment. In addition, we continue to engage in ongoing planning in and optimization of our global manufacturing and supply chain operations both in light of the long-term uncertainty of these tariff measures and to have a more flexible business disruption and continuity plan.

Currency Fluctuations. In order to assist with the assessment of how our underlying businesses performed, we compare the percentage change in revenues and Oncology Systems gross orders from one period to another, excluding the effect of foreign currency fluctuations (i.e., using constant currency exchange rates). To present this information on a constant currency basis, we convert current period revenues and gross orders in currencies other than U.S. Dollars into U.S. Dollars using the comparable prior period's average exchange rate. Percentage changes in revenue and gross orders are not adjusted for constant currency unless indicated. Currency fluctuations had a $50.6 million and a $38.0 million favorable impact on total revenues and Oncology Systems gross orders, respectively, in fiscal year 2018 compared to fiscal year 2017. We expect that fluctuations of non-U.S. Dollar currencies against the U.S. Dollar may continue to cause variability in our financial performance.

Reportable Segments

Oncology Systems. Our Oncology Systems business designs, manufactures, sells and services hardware and software products for treating cancer with conventional radiotherapy, and advanced treatments such as fixed field intensity-modulated radiation therapy ("IMRT"), image-guided radiation therapy ("IGRT"), volumetric modulated arc therapy ("VMAT"), stereotactic radiotherapy, stereotactic body radiotherapy and brachytherapy, as well as associated quality assurance equipment. Our software solutions also include informatics software for information management, clinical knowledge exchange, patient care management, practice management and decision-making support for comprehensive cancer clinics, radiotherapy centers and medical oncology practices.

Our primary goal in the Oncology Systems business is to promote the adoption of more advanced and effective cancer treatments. In our view, the fundamental market forces that drive long-term growth in our Oncology Systems business are the rise in cancer cases; technology advances and product developments that are leading to improvements in patient care; customer demand for the more advanced and effective cancer treatments that we enable; competitive conditions among hospitals and clinics to offer such advanced treatments; continued improvement in safety and cost efficiency in delivering radiation therapy; and underserved medical needs outside of the United States. Approximately half of Oncology Systems gross orders and revenues come from international markets, within which certain emerging markets often have lower gross margins and longer installation cycles since many of these purchases are for new sites where treatment vaults need to be constructed. We have also seen an increased portion of gross orders and revenues coming from services and software licenses, both of which have higher gross margin percentages than our hardware products. We have also been investing a higher portion of our Oncology Systems research and development expenses in software and software-related products.

The radiation oncology market in North America is largely characterized by replacements of older machines, with periodic increases in demand driven by the introduction of new technologies. Reimbursement rates in the United States have generally supported a favorable return on investment for the purchase of new radiotherapy equipment and technologies. While we believe that improved product functionality, greater cost-effectiveness and prospects for better clinical outcomes with new capabilities such as IMRT, IGRT and VMAT tend to drive demand for radiotherapy products, large changes in reimbursement rates or reimbursement structure can affect customer demand and cause market shifts. We believe that growth of the radiation oncology market in the United States could be impacted as customers' decision-making processes are complicated by the uncertainties surrounding the medical device excise tax, and reimbursement rates for radiotherapy and radiosurgery, and that this uncertainty will likely continue in future fiscal years. We believe this uncertainty could impact transaction size, timing and purchasing

processes, and also contribute to increased quarterly business variability. Given all the dynamic elements affecting this market, as outlined above, we believe the North America market will continue to grow in the low to mid-single digit range.

In the radiation oncology markets outside of North America, we expect the EMEA market to grow over the long-term with varying growth rates across the region. In APAC, we expect China to lead longer-term regional growth, with slower growth in the Japanese market. Latin America is currently experiencing volatility; however, our long-term outlook is cautiously optimistic. Overall, we believe the global radiation oncology market can grow over the long term, in constant currencies, in the low to mid-single-digit range.

Proton Solutions. Our Proton Solutions business develops, designs, manufactures, sells and services products and systems for delivering proton therapy, another form of external beam radiotherapy using proton beams, for the treatment of cancer. Proton therapy is a preferred option for treating certain cancers, particularly tumors near critical structures such as the optic nerve and pediatric cancers. Although proton therapy has been in clinical use for more than four decades, it has not been widely deployed due to the high capital cost.

We are investing substantial resources to grow this business. Proton therapy facilities are large-scale construction projects that are time consuming and involve significant customer investment and often complex project financing. Consequently, this business is vulnerable to general economic and market conditions, as well as reimbursement rates. Customer decision-making cycles tend to be very long, and orders generally involve many contingencies. While credit markets have improved in recent years, the funding environment for large capital projects, such as proton therapy projects, remains constrained. Our current focus is bringing our expertise in traditional radiation therapy to proton therapy to improve its clinical utility and to reduce its cost of treatment per patient, so that it is more widely accepted and deployed.

In fiscal year 2018, we recorded $22.1 million in impairment charges on our Maryland Proton Treatment Center ("MPTC') subordinated loan due to the expected difference in value between the original loan and the value of the new security, issued to us in exchange, as part of the refinancing that occurred in August 2018. As part of the refinancing, in exchange for our outstanding subordinated loan, we received $22.9 million in Subordinate Revenue Bonds ("MPTC Series B-2 Bonds") that carry an interest rate of 8.5% per annum with interest accruing up to the principal amount of $33.9 million until January 1, 2022 and then will pay cash interest semi-annually. The MPTC Series B-2 Bonds will mature on January 1, 2049. In exchange for the outstanding deferred payment arrangement, we also received $6.0 million in cash and $25.0 million in Subordinate Revenue Bonds ("MPTC Series B-1 Bonds") that carry an interest rate of 7.5% with interest accruing up to the principal amount of $32.0 million until January 1, 2022 and then will pay cash interest semi-annually. The MPTC Series B-1 Bonds will mature on January 1, 2048. As of September 28, 2018, the MPTC Series B-1 Bonds are expected to be sold over the next twelve months. The MPTC Series B-1 Bonds are senior in right and time to the MPTC Series B-2 Bonds.

In July 2018, we purchased the remaining $11.8 million of the commitment for our Georgia Proton Treatment Center ("GPTC") available-for-sale securities. In September 2018, we sold $8.5 million, including accrued interest, of our current carrying value of the securities for $8.3 million in cash. As of September 28, 2018, our remaining GPTC available-for-sale securities of $7.9 million are expected to be sold over the next twelve months.

In March 2017, California Proton Treatment Center, LLC (“Original CPTC”) filed for bankruptcy and concurrently entered into a Debtor-in-Possession facility (the "DIP Facility") with ORIX Capital Markets, LLC, J.P. Morgan and Varian (the “Lenders”). In September 2017, the Lenders to the Scripps Proton Therapy Center ("Scripps") signed a Transition Agreement to transition the operations of the center from Scripps to Proton Doctors Professional Corporation. As a result of these events, in fiscal year 2017, we recorded impairment charges of $51.4 million related to our Original CPTC loans and recorded an allowance for doubtful accounts of $34.2 million, which included $17.2 million related to CPTC long-term unbilled receivables.

On December 6, 2017 (“Closing Date”), the Bankruptcy Court approved the sale of Scripps Proton Therapy Center to the California Proton Therapy Center, LLC (“CPTC”), an entity owned by the Lenders. The Lenders purchased all assets

and assumed $112.0 million (“Term Loan”) of Original CPTC’s outstanding liabilities. On December 13, 2017, the Bankruptcy Court dismissed the bankruptcy filing of Original CPTC.

On the Closing Date, the Lenders entered into a Credit Agreement with Original CPTC of which the terms of the Original CPTC Loans, DIP Facility and accrued interest (collectively “Former Loans”) were modified. As a result, we received a 47.08% equity ownership in CPTC. Original CPTC has assigned all its Former Loans to CPTC at an amount of $112.0 million, the partially satisfied loan balance.

Per the terms of the Credit Agreement, our portion of the $112.0 million is $53.5 million; the remainder is allocated between ORIX and J.P. Morgan. The $53.5 million is composed of four tranches: Tranche A of $2.0 million, Tranche B of $7.2 million, Tranche C of $15.6 million, and Tranche D of $28.7 million (collectively the "Term Loan"). The maturity date of the Term Loan is three years from the Closing Date. The Term Loan is secured by the assets of CPTC.

In addition, the Lenders have committed to lend up to $15.0 million in a Revolving Loan with a maturity date of one year from the Closing Date. Our share of the funding commitment from the Revolving Loan is $7.2 million, and as of September 28, 2018, we have funded $3.7 million.

All of the tranches of the Term Loan accrue paid-in-kind interest at 7.5% per annum, except the Tranche B, which accrues paid-in-kind interest at 10% per annum. The seniority of these loans is as follows: Revolving Loan, Tranche A, Tranche B, Tranche C, and Tranche D. If CPTC is in default, the interest of the Tranche A, C, and D will increase to 9.5% and the interest of the Tranche B and the Revolving Loan will increase to 12.0%.

Considering Original CPTC’s financial difficulties, the modification of the original terms of the Former Loans, and the Lenders agreement to grant a concession on the Original CPTC Loans, we classified this transaction as a troubled debt restructuring (“TDR”). We did not have any unamortized fees from the Former Loans and any prepayment penalties. As a result, the cost basis and fair value of our outstanding Term Loan approximates the carrying value of the Former Loans prior to the TDR of $53.5 million.

We used a discounted cash flow approach and determined the fair value of CPTC's equity as of Closing Date was $20.1 million. Our 47.08% ownership percentage amounts to a $9.5 million equity interest in CPTC. Since the common stock received was in addition to a loan receivable partially satisfied through the bankruptcy proceedings, in accordance with TDR accounting guidance, we recorded the equity interest at fair value and as an offset to the reinstated loan balance. The equity investment in CPTC is accounted for under the equity method of accounting and we account for our equity method share of the income or loss of CPTC on a quarter lag basis. In fiscal year 2018, we recorded a loss of $7.3 million in selling, general and administrative expenses on the Consolidated Statements of Earnings.

As of September 28, 2018, we had a total of $47.7 million in loans outstanding to CPTC and $117.1 million carrying value of loans outstanding, including accrued interest, Proton Solutions customers, available-for-sale securities and short-term senior secured debt. See Note 16, "Proton Solutions Loans and Investment" of the Notes to the Consolidated Financial Statements for further information.

This discussion and analysis of our financial condition and results of operations is based upon and should be read in conjunction with the Consolidated Financial Statements and the Notes included elsewhere in this Annual Report on Form 10-K, as well as the information contained under Part I, Item 1A, “Risk Factors.” We discuss our results of operations below.

Critical Accounting Estimates

The preparation of our financial statements and related disclosures in conformity with accounting principles generally accepted in the United States (“GAAP”) requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. These estimates and assumptions are based on historical experience and on various other factors that we believe are reasonable under the circumstances. We periodically review our accounting policies, estimates and assumptions and make adjustments when facts and circumstances dictate. In addition to the accounting policies that are more fully described in the Notes to the Consolidated Financial Statements included in this Annual Report on Form 10-K, we consider the critical accounting policies described below to be affected by critical accounting estimates. Our critical accounting policies that are affected by accounting estimates include revenue recognition, share-based compensation expense, valuation of allowance for doubtful accounts, impairment of investments and notes receivable, valuation of inventories, assessment of recoverability of goodwill

and intangible assets, valuation of warranty obligations, assessment of loss contingencies, valuation of defined benefit pension and post-retirement benefit plans, valuation of derivative instruments and taxes on earnings. Such accounting policies require us to use judgments, often as a result of the need to make estimates and assumptions regarding matters that are inherently uncertain, and actual results could differ materially from these estimates. For a discussion of how these estimates and other factors may affect our business, see Part I, Item 1A, “Risk Factors.”

Revenue Recognition

Our revenues are derived primarily from the sale of hardware and software products, and services from our Oncology Systems and Proton Solutions businesses. We recognize revenues net of any value added or sales tax and net of sales discounts.

We frequently enter into revenue arrangements with customers that contain multiple performance obligations including hardware, software, and services. Judgments as to the stand alone selling price and allocation of consideration from an arrangement to the individual performance obligations, and the appropriate timing of revenue recognition are critical with respect to these arrangements.

Changes to the performance obligations, contact terms, or credit worthiness of the customer can impact the arrangement and the amounts allocated to each element could affect the timing and amount of revenue recognition. Revenue recognition also depends on the timing of shipment, readiness of customers' facilities for installation, installation requirements, and availability of products. If shipments or installations are not made on scheduled timelines or if the products are not accepted by the customer in a timely manner, our reported revenues may differ materially from expectations.

Service revenues include revenues from hardware service contracts, software service agreements, bundled support arrangements, paid services and trainings, and parts that are sold by our service department. Revenues allocated to service contracts are generally recognized ratably over the period of the related contracts.

We recognize revenues on proton therapy contracts over the life of the project as costs are incurred. We recognize revenue related to our proton therapy systems over time because the customer controls the work in process, the Company's performance does not create an asset with alternative use to the Company, and the Company has an enforceable right to payment for performance completed to date. Changes in estimates of total contract revenue, total contract cost or the extent of progress towards completion are recognized in the period in which the changes in estimates are identified. Estimated losses on contracts are recognized in the period in which the loss is identified. In circumstances in which the final outcome of a contract cannot be reliably estimated but a loss on the contract is not expected, we recognize revenues to the extent of costs incurred until reliable estimates can be made. If and when we can make more reliable estimates, revenues and costs of revenues are adjusted in the same period. Recognizing revenue over time based on costs incurred requires the use of estimates in determining revenues, costs and profits and in assigning the dollar amounts to relevant accounting periods. Because the estimates must be periodically reviewed and appropriately adjusted, if our estimates prove to be inaccurate or circumstances change over time, we may be required to adjust revenues or even record a contract loss in later periods, and our financial results could suffer.

For a discussion of the impact of ASC 606 on our revenue recognition, please see Note 1, "Summary of Significant Accounting Policies" of the Notes to the consolidated financial statements.

Share-based Compensation Expense

We grant our employees restricted stock units, stock options, performance units and performance options permit employees to purchase shares under the VMS employee stock purchase plan and grant our directors restricted stock units. We value our stock options and performance options granted and the component of the shares of VMS common stock purchased under the employee stock purchase plan using the Black-Scholes option-pricing model. We value our performance units that were granted prior to fiscal year 2018, which contain a market condition, using the Monte Carlo simulation model. The determination of fair value of share-based payment awards on the date of grant under both the Black-Scholes option-pricing model and the Monte Carlo simulation model is affected by VMS's stock price, as well as the input of other subjective assumptions, including the expected terms of share-based awards and the expected price volatilities of shares of VMS common stock and peer companies that are used to assess certain performance targets over the expected term of the awards, and the expected dividend yield of shares of VMS common stock. For performance units granted in fiscal year 2018, we value them at fair market value and adjust the value according to the contingent market condition as specified in terms and conditions of those awards.

The expected term of our stock options is based on the observed and expected time to post-vesting exercise and post-vesting cancellations of stock options by our employees. We use a blended volatility in deriving the expected volatility assumption for our stock options. Blended volatility represents the weighted average of implied volatility and historical volatility. In determining the grant date fair value of our performance units, historical volatilities of shares of VMS common stock, as well as the shares of common stock of peer companies, were used to assess certain performance targets. The risk-free interest rate assumption is based upon observed interest rates appropriate for the term of our stock awards. The dividend yield assumption is based on our history and expectation of no dividend payouts. If factors change and we employ different assumptions in future periods, the compensation expense that we

record may differ significantly from what we have recorded in the current period.

Beginning in the first quarter of fiscal year 2018, we now record forfeitures as they occur. We estimate the probability that certain performance conditions that affect the vesting of performance units will be achieved, and recognize expense only for those awards expected to vest. If the actual number of performance units that vest based on achievement of performance conditions are materially different from our estimates, the share-based compensation expense could be significantly different from what we have recorded in the current period.

Allowance for Doubtful Accounts

We evaluate the creditworthiness of our customers prior to authorizing shipment for all major sale transactions. Except for government tenders, group purchases and orders with letters of credit in Oncology Systems, our payment terms often require payment of a small portion of the total amount due when the customer signs the purchase order, a significant amount upon transfer of risk of loss to the customer and the remaining amount upon completion of the installation. On a quarterly basis, we evaluate aged items in the accounts receivable aging report and provide an allowance in an amount we deem adequate for doubtful accounts. If our evaluation of our customers' financial conditions does not reflect our future ability to collect outstanding receivables, additional provisions may be needed and our operating results could be negatively affected.

Impairment of Investments and Notes Receivable

We recognize an impairment charge when the declines in the fair values of our available-for-sale securities and notes receivable below their cost basis are determined to be other than temporary impairments ("OTTI"). We monitor our available-for-sale securities for possible OTTI on an ongoing basis. When there has been a decline in fair value of a debt security below the amortized cost basis, we recognize OTTI if: (i) we have the intention to sell the security; (ii) it is more likely than not that we will be required to sell the security before recovery of the entire amortized cost basis; or (iii) we do not expect to recover the entire amortized cost basis of the security.

We assess the fair value of our available-for-sale securities, which are classified in the level 3 fair value hierarchy based on the income approach by using the discounted cash flow model with key assumptions that include discount rates corresponding to the terms and risks associated with the loans, as well as underlying cash flow assumptions. As of September 28, 2018, we did not have any available-for-sale securities classified as level 3 in the fair value hierarchy. As of September 29, 2017, we had $47.4 million, which was comprised of the fair value our Original CPTC Loans, of available-for-sale securities classified as level 3 in the fair value hierarchy. See Note 5, "Fair Value" and Note 16, "Proton Solutions Loans and Investment" of the Notes to the Consolidated Financial Statements.

We also have investments in privately-held companies, some of which are in the startup or development stages. We monitor these investments for events or circumstances indicative of potential impairment, and we make appropriate reductions in carrying values if we determine that an impairment charge is required, based primarily on the financial condition, near-term prospects and recent financing activities of the investee. These investments are inherently risky because the markets for the technologies or products these companies are developing are typically in the early stages and may never materialize.

At times, we advance notes to third parties, including our customers. We regularly assess these notes for collectability by considering internal factors such as historical experience, credit quality, age of the note balances as well as external factors such as economic conditions that may affect the note holder's ability to pay.

Our ongoing consideration of all the factors described above could result in impairment charges in the future, which could adversely affect our operating results.

Inventories

Our inventories include high technology parts and components that are highly specialized in nature and that are subject to rapid technological obsolescence. We have programs to minimize the required inventories on hand and we regularly review inventory quantities on hand and on order and adjust for excess and obsolete inventory based primarily on historical usage rates and our estimates of product demand and production. Actual demand may differ from our estimates, in which case we may have understated or overstated the provision required for obsolete and excess inventory, which would have an impact on our operating results.

Business Combinations

We allocate the fair value of purchase consideration to the tangible assets acquired, liabilities assumed and intangible assets acquired based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill. Such valuations require management to make significant estimates and assumptions, especially with respect to intangible assets. Significant estimates in valuing certain intangible assets include, but are not limited to, future expected cash flows primarily from acquired technologies, patents, customer contracts and supplier relationships, useful lives and discount rates. Management's estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ from

estimates. During the measurement period, which is not to exceed one year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill.

Goodwill, Intangible Assets and Impairment Assessment

Goodwill represents the excess of the purchase price in a business over the fair value of net tangible and intangible assets acquired. The determination of the value of the intangible assets acquired involves certain judgments and estimates. These judgments can include, but are not limited to, the cash flows that an asset is expected to generate in the future and the appropriate discount weighted-average cost of capital ("WACC"). Each period we evaluate the estimated remaining useful lives of purchased intangible assets and whether events or changes in circumstances warrant a revision to the remaining periods of amortization.

Goodwill is allocated to reporting units expected to benefit from the business combination. We evaluate our reporting units when changes in our operating structure occur, and if necessary, reassign goodwill using a relative fair value allocation approach. Goodwill is tested for impairment at the reporting unit level on an annual basis or whenever events or changes in circumstances indicate its carrying value may not be recoverable. We can opt to perform a qualitative assessment to test a reporting unit’s goodwill for impairment or we can directly perform a quantitative assessment. Various factors are considered in the qualitative assessment, including macroeconomic conditions, industry and market considerations, financial performance and other relevant events affecting the reporting unit. Based on our qualitative assessment, if we determine that the fair value of a reporting unit is more likely than not (i.e., a likelihood of more than 50 percent) to be less than its carrying amount, the quantitative assessment will be performed. The quantitative assessment compares the fair value of a reporting unit against its carrying amount, including the goodwill allocated to each reporting unit. We determine the fair value of our reporting units based on a combination of income and market valuation approaches. The income approach is based on the present value of estimated future cash flows that the reporting unit is expected to generate and the market approach is based on a market multiple calculated for each reporting unit based on market data of other companies engaged in similar business. Any excess of the reporting unit’s carrying value over its fair value will be recorded as an impairment loss.

Determining the fair value of a reporting unit involves the use of significant estimates and assumptions. These estimates and assumptions include revenue growth rates, operating margins and working capital needs to calculate projected future cash flows, WACC, future economic and market conditions, estimation of the long-term rate of growth for our business and determination of appropriate market comparables. We base our fair value estimates on assumptions we believe to be reasonable but that are inherently uncertain. Actual future results related to assumed variables could differ from these estimates. In addition, we make certain judgments and assumptions in allocating assets and liabilities to determine the carrying values for each reporting unit.

We have two reporting units: (i) Oncology Systems and (ii) Proton Solutions, with $242.1 million and $51.5 million in goodwill, respectively, as of September 28, 2018. Based upon the most recent annual goodwill analysis that we performed during the fourth quarter of fiscal year 2018, Proton Solutions' fair value was 48% in excess of its carrying value, and we believe each of the assumptions used to calculate Proton Solutions’ fair value to be reasonable. However, Proton Solutions could be at risk for a goodwill impairment because adjustments to proton therapy orders, revenue growth rates, operating margins, WACC and/or our working capital used in the fair value calculation could lead to an impairment.

Warranty Obligations

We warrant most of our products for a specific period of time, usually 12 months from installation, against material defects. We provide for the estimated future costs of warranty obligations in cost of revenues when the related revenues are recognized. The accrued warranty costs represent our best estimate at the time of sale of the total costs that we will incur to repair or replace product parts that fail while still under warranty. The amount of accrued estimated warranty costs obligation for established products is primarily based on historical experience as to product failures adjusted for current information on repair costs. For new products, estimates will include historical experience of similar products, as well as reasonable allowance for start-up expenses. Actual warranty costs could differ from the

estimated amounts. On a quarterly basis, we review the accrued balances of our warranty obligations and update the historical warranty cost trends, if required. If we were required to accrue additional warranty costs in the future, it would have a negative effect on our operating results.

Loss Contingencies

From time to time, we are a party to or otherwise involved in legal proceedings, claims and government inspections or investigations or other legal matters, both inside and outside the United States, arising in the ordinary course of our business or otherwise. We accrue amounts, to the extent they can be reasonably estimated, that we believe are adequate to address any

liabilities related to legal proceedings and other loss contingencies that we believe will result in a probable loss. Such matters are subject to many uncertainties, outcomes are not predictable with assurance, and actual liabilities could significantly exceed our estimates of potential liabilities. In addition, we are subject to a variety of environmental laws around the world. Those laws regulate multiple aspects of our operations, including the handling, storage, transport and disposal of hazardous substances. They impose costs on our operations. In connection with our past and present operations and facilities, we record environmental remediation liabilities when we conclude that environmental assessments or remediation efforts are probable and we believe we can reasonably estimate the costs of those efforts. Our accrued environmental costs represent our best estimate of the total costs of assessments and remediation and the time period over which we expect to incur those costs. We review these accrued balances quarterly. If we were required to increase or decrease the accrued environmental costs in the future, it would adversely or favorably impact our operating results.

Defined Benefit Pension Plans

We sponsor five defined benefit pension plans in Germany, Japan, Switzerland and the United Kingdom covering employees who meet the applicable eligibility requirements in these countries. Several statistical and other factors that attempt to anticipate future events are used in calculating the expenses and liabilities related to the aforementioned plans. These factors include assumptions about the discount rate, expected return on plan assets, and rate of future compensation increases, all of which we determine within certain guidelines. In addition, we also use assumptions, such as withdrawal and mortality rates, to calculate the expenses and liabilities. The actuarial assumptions we use are long-term assumptions and may differ materially from actual experience particularly in the short term due to changing market and economic conditions and changing participant demographics. These differences may have a significant impact on the amount of defined benefit pension plan expenses we record.

The expected rates of return on the various defined benefit pension plans' assets are based on the asset allocation of each plan and the long-term projected return on those assets. The discount rate enables us to report expected future cash flows at a present value on the measurement date. The discount rates used for defined benefit plans are primarily based on the current effective yield of long-term corporate bonds that are of high quality with satisfactory liquidity and credit rating with durations corresponding to the expected durations of the benefit obligations. A change in the discount rate may cause the present value of benefit obligations to change significantly.

Valuation of Derivative Instruments

We use foreign currency forward contracts to reduce the effects of currency rate fluctuations on sales transactions denominated in foreign currencies and on net monetary assets and liabilities denominated in foreign currencies. These foreign currency forward contracts are derivative instruments and are measured at fair value. There are three levels of inputs that may be used to measure fair value (see Note 5, "Fair Value" of the Notes to the Consolidated Financial Statements). The fair value of foreign currency forward contracts is calculated primarily using Level 2 inputs, which include currency spot and forward rates, interest rate and credit or non-performance risk. The spot rate for each currency is the same spot rate used for all balance sheet translations at the measurement date and sourced from our major trading banks. The forward point values for each currency and the London Interbank Offered Rate ("LIBOR") to discount assets and liabilities are interpolated from commonly quoted broker services. One-year credit default swap spreads of the counterparty at the measurement date are used to adjust derivative assets, all of which mature in 13 months or less, for non-performance risk. We are required to adjust derivative liabilities to reflect the potential non-performance risk to lenders based on our incremental borrowing rate. Each contract is individually adjusted using the counterparty credit default swap rates (for net assets) or our borrowing rate (for net liabilities). The use of Level 2 inputs in determining fair values requires certain management judgment and subjectivity. Changes to these Level 2 inputs could have a material impact on the valuation of our derivative instruments. There were no transfers of assets or liabilities between fair value measurement levels during fiscal years 2018, 2017 and 2016.

Taxes on Earnings

We are subject to taxes on earnings in both the United States and numerous foreign jurisdictions. As a global taxpayer, significant judgments and estimates are required in evaluating our tax positions and determining our provision for taxes on earnings. We account for uncertainty in income taxes following a two-step approach for recognizing and measuring uncertain tax positions. The first step is to evaluate the tax position for recognition by determining whether

the weight of available evidence indicates that it is more likely than not that, based on the technical merits, the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. Recognition and measurement are based on management's best judgment given the facts, circumstances and information available at the end of the accounting period.

Generally, the carrying value of our net deferred tax assets assumes that we will be able to generate sufficient future taxable earnings in the applicable tax jurisdictions to utilize these deferred tax assets. Should we conclude it is more likely than not that we will be unable to recover our net deferred tax assets in these tax jurisdictions, we would increase our valuation allowance and our tax provision would increase in the period in which we make such a determination.

Our foreign earnings are taxed at rates that are, on average, lower than U.S. rates. Our effective tax rate is impacted by existing tax laws in both the United States and in the respective countries in which our foreign subsidiaries do business. A decrease in the percentage of our total earnings from foreign countries, or a change in the mix of foreign countries among particular tax jurisdictions could increase or decrease our effective tax rate. Our current effective tax rate does not assume U.S. taxes on certain undistributed profits of certain foreign subsidiaries. These earnings could become subject to incremental foreign withholding or U.S. federal and state taxes should they either be remitted or deemed to be remitted to the United States.

The Act was signed into law on December 22, 2017. Among other changes, the Act reduces the U.S. corporate tax rate from 35% to 21%. The reduction in the rate required us to remeasure our net deferred tax assets that were originally recorded assuming a future tax benefit at the 35% rate. During fiscal year 2018, we recorded a provisional tax expense of $43.2 million related to re-measuring our net deferred tax assets as a result of the rate reduction.

As part of the transition to a modified territorial system, the Act imposes a one-time transition tax on the unremitted earnings of our foreign subsidiaries. During fiscal year 2018, we recorded a $164.6 million provisional tax expense related to the one-time transition tax. We intend to elect to pay this tax over an eight-year period. The transition to a modified territorial regime and the one-time transition tax on unremitted earnings has caused us to re-evaluate our intentions with respect to the unremitted earnings of our foreign subsidiaries. In the past, we did not accrue U.S. taxes on certain undistributed profits of certain foreign subsidiaries because the earnings were considered to be indefinitely reinvested. In light of the changes to the taxation of foreign earnings in the Act, we no longer consider the earnings of our foreign subsidiaries to be indefinitely reinvested.

On December 22, 2017, the Securities and Exchange Commission issued Staff Accounting Bulletin No. 118 (“SAB 118”). This guidance allows registrants a “measurement period,” not to exceed one year from the date of enactment, to complete their accounting for the tax effects of the Act. SAB 118 further directs that during the measurement period, registrants who are able to make reasonable estimates of the tax effects of the Act should include those amounts in their financial statements as “provisional” amounts. Registrants should reflect adjustments over subsequent periods as they are able to refine their estimates and complete their accounting for the tax effects of the Act. We have made reasonable estimates and recorded provisional amounts within the meaning of SAB 118. Also, it is expected that the U.S. Treasury will issue regulations and other guidance on the application of certain provisions of the Act. We will analyze that guidance and other necessary information to refine our estimates and complete our accounting for the tax effects of the Act over the measurement period.

Results of Operations

Fiscal Year

Our fiscal year is the 52- or 53-week period ending on the Friday nearest September 30. Fiscal year 2018 was the 52-week period ended September 28, 2018, fiscal year 2017 was the 52-week period ended September 29, 2017, and fiscal year 2016 was the 52-week period ended September 30, 2016. Set forth below is a discussion of our results of operations for fiscal years 2018, 2017 and 2016.

Discussion of Results of Operations for Fiscal Years 2018, 2017 and 2016

Total Revenues

Revenues by sales classification	Fiscal Years				
(Dollars in millions)	2018	Percent Change	2017	Percent Change	2016
Product	$1,569.9	13 %	$1,394.0	(3)%	$1,435.9
Service	1,349.2	10 %	1,225.3	6 %	1,157.8
Total Revenues	$2,919.1	11 %	$2,619.3	1 %	$2,593.7
Product as a percentage of total revenues	54 %		53 %		55 %

Service as a percentage of total revenues	46	%	47	%	45	%

Total product revenues increased in fiscal year 2018 over fiscal year 2017 due to an increase in revenues from Oncology Systems, partially offset by a decrease from Proton Solutions. Total product revenues decreased in fiscal year 2017 over fiscal year 2016 due to a decrease in revenues from Oncology Systems, partially offset by an increase in revenues from Proton Solutions. Total service revenues increased in fiscal year 2018 over fiscal year 2017, and fiscal year 2017 over fiscal year 2016, primarily due to an increase in revenues from Oncology Systems.

Revenues by region	Fiscal Years							
(Dollars in millions)	2018	Percent Change	Constant Currency	2017	Percent Change	Constant Currency	2016
Americas	$1,436.9	7 %	7 %	$1,344.6	4 %	4 %	$1,289.2
EMEA	942.8	24 %	18 %	759.2	(5)%	(3)%	798.1
APAC	539.4	5 %	4 %	515.5	2 %	1 %	506.4
Total Revenues	$2,919.1	11 %	10 %	$2,619.3	1 %	1 %	$2,593.7
North America	$1,347.2	6 %	6 %	$1,267.8	5 %	5 %	$1,205.9
International	1,571.9	16 %	13 %	1,351.5	(3)%	(2)%	1,387.8
Total Revenues	$2,919.1	11 %	10 %	$2,619.3	1 %	1 %	$2,593.7
North America as a percentage of total revenues	47 %			48 %			46 %
International as a percentage of total revenues	53 %			52 %			54 %

The Americas revenues increased in fiscal year 2018 over fiscal year 2017 primarily due to Oncology Systems. The Americas revenues increased in fiscal year 2017 over fiscal year 2016 due to an increase in revenues from Proton Solutions and Oncology Systems.

EMEA revenues increased in fiscal year 2018 over fiscal year 2017 primarily due to Oncology Systems. EMEA revenues decreased in fiscal year 2017 over fiscal year 2016 due to a decrease in revenues from Oncology Systems and Proton Solutions.

APAC revenues increased in fiscal year 2018 over fiscal year 2017 primarily due to Oncology Systems partially offset by a decrease in revenues from Proton Solutions. APAC revenues increased in fiscal year 2017 over fiscal year 2016 primarily due to an increase in revenues in Oncology Systems and Proton Solutions.

Oncology Systems Revenues

Revenues by sales classification	Fiscal Years							
(Dollars in millions)	2018	Percent Change	Constant Currency	2017	Percent Change	Constant Currency	2016
Product	$1,431.0	17 %	15 %	$1,221.5	(5)%	(5)%	$1,282.4
Service	1,339.2	10 %	8 %	1,215.3	6 %	6 %	1,148.2
Total Oncology Systems Revenues	$2,770.2	14 %	12 %	$2,436.8	— %	— %	$2,430.6
Product as a percentage of Oncology Systems revenues	52 %			50 %			53 %
Service as a percentage of Oncology Systems revenues	48 %			50 %			47 %
Oncology Systems revenues as a percentage of total revenues	95 %			93 %			94 %

Oncology systems product revenues increased in fiscal year 2018 over fiscal year 2017, primarily due to an increase in revenues from higher volumes of hardware unit shipments and an increase in revenues from our software products.

Oncology Systems product revenues decreased in fiscal year 2017 over fiscal year 2016, primarily due to a decrease in revenues from hardware products resulting from a lengthening backlog conversion cycle due to a greater portion of the backlog being from emerging markets, and customer readiness delays in several countries.

Oncology Systems service revenues, which include performance obligations for installation, training and warranty, increased in fiscal year 2018 over fiscal year 2017 and in fiscal year 2017 over fiscal year 2016, primarily due to increased customer adoption of service contracts as the warranty period on our TrueBeam systems expire and an increased number of customers as the installed base of our products continues to grow.

Revenues by region	Fiscal Years								
(Dollars in millions)	2018	Percent Change	Constant Currency	2017	Percent Change	Constant Currency	2016
Americas	$1,351.3	8 %	8 %	$1,256.8	2 %	2 %	$1,233.7
EMEA	883.2	28 %	21 %	691.1	(3)%	(1)%	712.7
APAC	535.7	10 %	9 %	488.9	1 %	— %	484.2
Total Oncology System Revenues	$2,770.2	14 %	12 %	$2,436.8	— %	— %	$2,430.6
North America	$1,261.6	7 %	7 %	$1,180.0	3 %	3 %	$1,150.4
International	1,508.6	20 %	16 %	1,256.8	(2)%	(1)%	1,280.2
Total Oncology System Revenues	$2,770.2	14 %	12 %	$2,436.8	— %	— %	$2,430.6
North America as a percentage of total Oncology Systems revenues	46 %			49 %			48 %
International as a percentage of total Oncology Systems revenues	54 %			51 %			52 %

The Americas Oncology Systems revenues increased in fiscal year 2018 over fiscal year 2017, primarily due to an increase in revenues from hardware products in North America and, to a lesser extent, an increase in revenues from services, partially offset by a decrease in revenues from software licenses. The Americas Oncology Systems revenues increased in fiscal year 2017 over fiscal year 2016, primarily due to an increase in revenues from services in North America, partially offset by a decrease in revenues from software licenses.

EMEA Oncology Systems revenues increased in fiscal year 2018 over fiscal year 2017, primarily due to an increase in revenues from hardware products and, to a lesser extent, an increase in revenues from services and software licenses. EMEA Oncology Systems revenues decreased in fiscal year 2017 over fiscal year 2016 due to a decrease in revenues from software licenses and hardware products, partially offset by an increase in revenues from services.

APAC Oncology Systems revenues increased in fiscal year 2018 over fiscal year 2017, primarily due to an increase in revenues from services, partially offset by a decrease in revenues from software licenses and hardware products. APAC Oncology Systems revenues increased in fiscal year 2017 over fiscal year 2016, primarily due to an increase in revenues from software licenses and, to a lesser extent, an increase in revenues from services, partially offset by a decrease in revenues from hardware products.

Variations of higher and lower revenues between the North America and international regions are impacted by regional factors influencing our gross orders, which include government spending, philanthropy/donations, economic and political instability in some countries, uncertainty created by health care reform (such as the excise tax on the sale of most medical devices, Medicare reimbursement rates and consolidation of free standing clinics in the United States), and different technology adoption cycles. See further discussion of orders under “Gross Orders.”

Proton Solutions Revenues

Revenues by sales classification	Fiscal Years				
(Dollars in millions)	2018	Percent Change	2017	Percent Change	2016
Product	$138.9	(19)%	$172.5	13 %	$153.1
Service	10.0	— %	10.0	4 %	9.5
Total Proton Solutions revenues	$148.9	(18)%	$182.5	12 %	$162.6
Proton Solutions revenues as a percentage of total revenues	5 %		7 %		6 %

Proton Solutions revenues decreased in fiscal year 2018 over fiscal year 2017, primarily due to completion of the financing of the Georgia Proton Treatment Center in fiscal year 2017, which resulted in $56.0 million of revenue recorded for that project in fiscal year 2017, partially offset by an increase in revenues from the continued production and installation of Proton Solutions projects in fiscal year 2018.

Proton Solutions revenues increased in fiscal year 2017 over fiscal year 2016, primarily due to the continued production and installation of Proton Solutions projects, which included the completion of the financing of the Georgia Proton Treatment Center in fiscal year 2017.

Other

In fiscal year 2016, we had $0.5 million in revenues from our former Ginzton Technology Center business, which was dissolved in the first quarter of fiscal year 2017 and is no longer a separate business.

Gross Margin

	Fiscal Years				
Dollars by segment	2018	Percent Change	2017	Percent Change	2016
(Dollars in millions)					
Oncology Systems	$1,253.2	14 %	$1,097.9	2 %	$1,079.5
Proton Solutions	20.4	27 %	16.0	(36)%	25.2
Gross margin	$1,273.6	14 %	$1,113.9	1 %	$1,104.7
Percentage by segment					
Oncology Systems	45.2 %		45.1 %		44.4 %
Proton Solutions	13.7 %		8.8 %		15.4 %
Total Company	43.6 %		42.5 %		42.6 %
Percentage by sales classification					
Total Company - Product	34.7 %		31.8 %		31.2 %
Total Company - Service	54.0 %		54.7 %		56.8 %

Oncology Systems product gross margin percentage was 36.5% in fiscal year 2018, compared to 35.1% in fiscal year 2017 and 33.1% in fiscal year 2016. The increase in product gross margin percentage in fiscal year 2018 over fiscal year 2017 was primarily due to the mix of higher-priced products. The increase in product gross margin percentage in fiscal year 2017 over fiscal year 2016 was due to a favorable product mix and supply chain efficiencies.

Oncology Systems service gross margin percentage was 54.6% in fiscal year 2018, compared to 55.0% in fiscal year 2017 and 57.1% in fiscal year 2016. The decrease in service gross margin percentage in fiscal year 2018 compared to fiscal year 2017 was primarily due to an increase in the mix of revenues from lower margin performance obligations. The decrease in service gross margin percentage in fiscal year 2017 over fiscal year 2016 was primarily due to higher personnel-related costs and materials associated with operating system upgrades for our installed customer base.

Proton Solutions gross margin percentage increased in fiscal year 2018, compared to fiscal year 2017, primarily due to expanding service revenues and more revenues from higher margin projects. Proton Solutions gross margin percentage decreased in fiscal year 2017, compared to fiscal year 2016, primarily due to lower service revenues and the revision of profitability estimates caused by the weakening of the British Pound for projects in the United Kingdom during the second quarter of fiscal year 2017, partially offset by higher margins of new project revenue recognized in fiscal year 2017.

Research and Development

	Fiscal Years				
(Dollars in millions)	2018	Percent Change	2017	Percent Change	2016
Research and development	$233.9	11 %	$210.0	5 %	$200.4
As a percentage of total revenues	8 %		8 %		8 %

Research and development expenses increased $23.9 million in fiscal year 2018 over fiscal year 2017, primarily due to an increase in investments in new product development projects and the enhancement of existing products in Oncology Systems.

Research and development expenses increased $9.6 million in fiscal year 2017 over fiscal year 2016, primarily due to increased headcount in Oncology Systems and an increase in consulting services to support new product development projects and enhancement of existing products in both Oncology Systems and Proton Solutions.

Selling, General and Administrative, Impairment Charges and Acquisition-Related Expenses

	Fiscal Years				
(Dollars in millions)	2018	Percent Change	2017	Percent Change	2016
Selling, general and administrative	$539.3	(2)%	$550.4	16 %	$472.2
Impairment charges	$22.4	(56)%	$51.4	n/m	$2.2
Acquisition-related expenses	$36.4	n/m	$1.9	(39)%	$3.1
Selling, general and administrative as a percentage of total revenues	18 %		21 %		18 %
Impairment charges as a percentage of total revenues	1 %		2 %		— %
Acquisition-related expenses as a percentage of total revenues	1 %		— %		— %

n/m = not meaningful

Selling, general and administrative expenses decreased $11.1 million in fiscal year 2018 over fiscal year 2017, primarily due to a $32.7 million decrease in the allowance for doubtful accounts that was mostly for CPTC and another proton center in the first quarter of fiscal year 2017, a $15.3 million decrease in litigation expenses primarily as a result of the settlement with Elekta in April 2017, and an $11.3 million decrease in restructuring charges, partially offset by a $29.3 million increase in employee-related costs largely due to an increase in headcount, share-based compensation and accrued bonuses, a $7.3 million loss on our equity investment in CPTC, and a $3.9 million unfavorable impact when foreign-currency denominated expenses were translated into U.S. dollars.

Selling, general and administrative expenses increased $78.2 million in fiscal year 2017 over fiscal year 2016, primarily due to a $39.6 million increase in the allowance for doubtful accounts that was mostly for CPTC and another proton center in fiscal year 2017, a $24.4 million increase in employee-related costs largely due to an increase in headcount, a $9.1 million increase in restructuring charges, a $3.5 million increase in consulting expenses and a $3.4 million increase in trade show and marketing expenses, partially offset by an $8.3 million decrease in litigation expenses primarily as a result of the settlement with Elekta in April 2017 and a $4.4 million decrease in international commissions paid to third-party distributors who sell our products.

In fiscal year 2018, we recorded $22.4 million in impairment charges, which was mostly related to our MPTC subordinated loan. In fiscal year 2017, we recorded $51.4 million in impairment charges related to our Original CPTC Loans. In fiscal year 2016, we recorded a $2.2 million impairment charge related to the sale of the New York Proton Center Senior First Lien loan. See Note 16, "Proton Solutions Loans and Investment" of the Notes to the Consolidated Financial Statements for additional information.

57

Acquisition-related expenses were $36.4 million in fiscal year 2018, $1.9 million in fiscal year 2017 and $3.1 million in fiscal year 2016. The increase in fiscal year 2018 was primarily due to $29.7 million in losses related to hedging the anticipated Australian dollar Sirtex purchase price, partially offset by the net $9.0 million breakup fee received from Sirtex in connection with the termination of the acquisition. See, Note 9, "Derivative Instruments and Hedging Activities" of the Notes to the Consolidated Financial Statements for additional information on the hedging losses.

Interest Income, Net

	Fiscal Years				
(Dollars in millions)	2018	Percent Change	2017	Percent Change	2016
Interest income, net	$10.5	263 %	$2.9	(49)%	$5.6

Interest income, net of interest expense, increased in fiscal year 2018 over fiscal year 2017, primarily due to a decrease in interest expense associated with a decrease in borrowings from our credit facility in fiscal year 2018, and an increase in interest income generated from our loans to our Proton Solutions' customers and available-for-sale securities. In fiscal year 2018, interest income includes $6.0 million in cash received in exchange for the outstanding deferred payment arrangement with MPTC into the MPTC Series B-1 Bonds.

Interest income, net of interest expense, decreased in fiscal year 2017 over fiscal year 2016, primarily due to a decrease in interest income generated from our loans to our Proton Solutions' customers and available-for-sale securities, partially offset by an increase in interest expense associated with the borrowing from our credit facility.

Taxes on Earnings

	Fiscal Years				
(Dollars in millions)	2018	Percent Change	2017	Percent Change	2016
Taxes on earnings	$301.8	292.0 %	$77.1	(30.0)%	$110.1
Effective tax rate	66.8 %		25.4 %		25.5 %

Our effective tax rate increased in fiscal year 2018 over fiscal year 2017 primarily due to enactment of the Act, which was signed into U.S. law on December 22, 2017. Our effective tax rate decreased in fiscal year 2017 from fiscal year 2016 primarily due to a favorable shift in the geographic mix of earnings.

Two provisions of the Act had an immediate impact on us:

First, the U.S. corporate tax rate was reduced from 35% to 21%. This rate reduction required us to remeasure our net deferred tax assets which were originally recorded assuming a future tax benefit at the 35% rate. In fiscal year 2018, we recorded a provisional tax expense of $43.2 million related to re-measuring our net deferred tax assets as a result of the rate reduction.

Second, as part of the transition to a modified territorial system, the Act imposes a one-time transition tax on the unremitted earnings of our foreign subsidiaries. In fiscal year 2018, we recorded a provisional tax expense related to the one-time transition tax of $164.6 million. We intend to elect to pay this tax over an eight-year period.

The SEC has issued guidance allowing companies a measurement period, not to exceed one year from the date of enactment, to refine their estimates of the tax impact of the new law. We fully expect that we will true up our estimates of these tax impacts from the new tax legislation over the measurement period.

We adopted the guidance related to employee share-based payments during the period ended December 29, 2017. Under the prior standard, the tax effect of the “excess stock deduction” related to stock-based compensation was recorded to Additional Paid-in Capital in the equity section on the Balance Sheet. For a stock-based compensation instrument, the excess stock deduction is the difference between the amount of the deduction for taxable income and the amount of book expense related to that instrument. Under the new standard, the tax effect of the “excess stock deduction” related to stock-based compensation is recorded as a discrete item to Taxes on Earnings in the Consolidated

Statements of Earnings. In fiscal year 2018, we recorded a tax benefit $6.9 million related to excess stock deduction activity. We expect that the new standard may cause our effective tax rate to be less predictable and more volatile going forward.

In general, our effective income tax rate differs from the U.S. federal statutory rate primarily because our foreign earnings are taxed at rates that are, on average, lower than the U.S. federal rate, and our domestic earnings are subject to state income taxes. See Note 12, "Taxes on Earnings" of the Notes to the Consolidated Financial Statements for further information.

Discontinued Operations

The following table summarizes the key components of net (loss) earnings from discontinued operations:

	Fiscal Years [1]	
(Dollars in millions)	2017 [2]	2016
Revenues	$194.0	$596.7
Cost of revenues	117.3	348.3
Gross margin	76.7	248.4
Operating expenses [3]	76.1	132.6
Operating earnings	0.6	115.8
Taxes on earnings	7.4	38.4
Net (loss) earnings from discontinued operations	(6.8)	77.4
Less: Net earnings from discontinued operations attributable to noncontrolling interests	0.1	0.5
Net (loss) earnings from discontinued operations attributable to Varian	$(6.9)	$76.9

(1) There was no activity in net loss from discontinued operations in fiscal year 2018.

(2) In fiscal year 2017, the net loss from discontinued operations represents activity through the date of the Distribution.

(3) Operating expenses from discontinued operations included separation costs of $34.2 million and $16.9 million during fiscal years 2017 and 2016, respectively. Separation costs include expenses for transaction advisory services, consulting services, restructuring and other expenses.

Net Earnings Per Diluted Share

	Fiscal Years				
	2018	Percent Change	2017	Percent Change	2016
Net earnings per diluted share - continuing operations	$1.62	(33)%	$2.42	(28)%	$3.36
Net earnings per diluted share - discontinued operations	—	n/m	(0.07)	n/m	0.80
Total net earnings per diluted share	$1.62	(31)%	$2.35	(44)%	$4.16

n/m = not meaningful

Net earnings per diluted share from continuing operations decreased in fiscal year 2018 over fiscal year 2017, primarily due to an increase in income tax expense as a result of the Act, partially offset by an increase in operating earnings from continuing operations.

Net earnings per diluted share from continuing operations increased in fiscal year 2017 over fiscal year 2016, primarily due to $51.4 million in impairment charges related to our Original CPTC Loans and a $37.8 million allowance for doubtful accounts from CPTC and another proton center in fiscal year 2017, partially offset by a reduction in the number of diluted shares of common stock outstanding due to share repurchases.

Gross Orders

Total Gross Orders (by segment)

(Dollars in millions)	Fiscal Years 2018	Percent Change	2017	Percent Change	2016
Oncology Systems	$3,113.9	9 %	$2,846.8	5 %	$2,702.1
Proton Solutions	57.7	(75)%	229.2	119 %	104.7
Total Gross Orders	$3,171.6	3 %	$3,076.0	10 %	$2,806.8

Gross orders are defined as new orders recorded during the period and revisions to previously recorded orders. New orders are recorded for the total contractual amount, excluding certain pass-through items and service items which are recognized as the revenue is recognized, once a written agreement for the delivery of goods or provision of services is in place and, other than Proton Solutions, when shipment of the product is expected to occur within two years, so long as any contingencies are deemed perfunctory. For our Proton Solutions business, we record orders when construction of the related proton therapy treatment center is reasonably expected to start within two years, but only if any contingencies are deemed perfunctory. We will not record Proton Solutions orders if there are major financing contingencies, if a substantial portion of the financing for the project is not reasonably assured or if customer board approval contingencies are pending. We perform a quarterly review to verify that outstanding orders remain valid. If an order is no longer expected to ultimately convert to revenue, we record a backlog adjustment, which reduces backlog but does not impact gross orders for the period.

Gross orders in any period may not be directly correlated to the level of revenues in any particular future quarter or period since the timing of revenue recognition will vary significantly based on the delivery requirements of individual orders, acceptance schedules and the readiness of individual customer sites for installation of our products. Moreover, certain types of orders, such as orders for software or newly introduced products in our Oncology Systems segment, typically take more time from order to completion of installation and acceptance than hardware or older products. Because an order for a proton therapy system can be relatively large, an order in one fiscal period will cause gross orders in our Proton Solutions business to vary significantly, making comparisons between fiscal periods more difficult.

Oncology Systems Gross Orders

Gross Orders by region

(Dollars in millions)	Fiscal Years 2018	Percent Change	Constant Currency	2017	Percent Change	Constant Currency	2016
Americas	$1,509.5	5 %	5 %	$1,439.6	1 %	1 %	$1,427.3
EMEA	1,009.6	17 %	13 %	860.3	12 %	13 %	765.7
APAC	594.8	9 %	8 %	546.9	7 %	7 %	509.1
Total Oncology Systems Gross Orders	$3,113.9	9 %	8 %	$2,846.8	5 %	5 %	$2,702.1
North America	$1,396.9	3 %	3 %	$1,350.6	4 %	4 %	$1,302.4
International	1,717.0	15 %	12 %	1,496.2	7 %	7 %	1,399.7
Total Oncology Systems Gross Orders	$3,113.9	9 %	8 %	$2,846.8	5 %	5 %	$2,702.1

The Americas Oncology Systems gross orders increased in fiscal year 2018 over fiscal year 2017 primarily due to growth in orders for our products in both North America and Latin America. The Americas Oncology Systems gross orders increased in fiscal year 2017 over fiscal year 2016 primarily due to an increase in gross orders for services and, to a lesser extent, software licenses in North America, partially offset by a decrease in gross orders for hardware products in Latin America.

EMEA Oncology Systems gross orders increased in fiscal year 2018 over fiscal year 2017 due to growth across the region in hardware products, software licenses and services, with significant strength in Western Europe. EMEA gross orders were further impacted by a favorable foreign currency exchange impact in fiscal year 2018. EMEA Oncology

Systems gross orders increased in fiscal year 2017 over fiscal year 2016 primarily due to increases in gross orders for hardware products and, to a lesser extent, an increase in gross orders for services.

APAC Oncology Systems gross orders increased in fiscal year 2018 over fiscal year 2017 primarily due to growth in Greater China driven by hardware products, software licenses and services, Australia and Japan driven by hardware products and services. APAC Oncology Systems gross orders increased in fiscal year 2017 over fiscal year 2016 primarily due to increases in gross orders for hardware products and services.

The trailing 12 months' growth in gross orders for Oncology Systems at the end of September 28, 2018, and at the end of the three previous fiscal quarters were:

	Trailing 12 months ended			
	September 28, 2018	June 29, 2018	March 30, 2018	December 29, 2017
Americas	5%	2%	1%	1%
EMEA	17%	20%	15%	14%
APAC	9%	(3)%	2%	3%
North America	3%	4%	2%	3%
International	15%	9%	8%	7%
Total Oncology Systems Gross Orders	9%	6%	5%	5%

Consistent with the historical pattern, we expect that Oncology Systems gross orders will continue to experience regional fluctuations. Over the long-term, we expect international gross orders, specifically from emerging markets, will grow as a percentage of overall orders. Oncology Systems gross orders are affected by foreign currency fluctuations, which could impact the demand for our products. In addition, government programs that stimulate the purchase of healthcare products could affect the demand for our products from period to period, and could therefore make it difficult to compare our financial results.

Proton Solutions Orders

Proton Solutions orders decreased in fiscal year 2018 over fiscal year 2017 primarily due to recording two proton therapy orders in fiscal year 2018 compared to six proton therapy orders in fiscal year 2017. Proton Solutions orders increased in fiscal year 2017 over fiscal year 2016 primarily due to recording six proton therapy orders 2017, compared to two proton therapy orders in fiscal year 2016.

Backlog

Backlog is the accumulation of all gross orders for which revenues have not been recognized but are still considered valid. Backlog is stated at historical foreign currency exchange rates and revenue is released from backlog at current exchange rates, with any difference recorded as a backlog adjustment. Backlog at September 28, 2018 was $3.2 billion, including approximately $232.8 million in Proton Solutions backlog, which was an increase of 3% over the backlog at September 29, 2017. Our Oncology Systems backlog at September 28, 2018 was 7% higher than the backlog at September 29, 2017, which reflected a 11% and 2% increase for our international and North America regions, respectively.

We perform a quarterly review to verify that outstanding orders in the backlog remain valid. Aged orders that are not expected to ultimately convert to revenues are deemed dormant and are reflected as a reduction in the backlog amounts in the period identified. Backlog adjustments are comprised of dormancies, cancellations, foreign currency exchange rate adjustments, backlog acquired from our acquisitions, and other adjustments. Gross orders do not include backlog adjustments. Backlog adjustments total net reductions of $152.8 million, $154.5 million and $189.8 million in fiscal years 2018, 2017 and 2016, respectively.

Liquidity and Capital Resources

Liquidity is the measurement of our ability to meet potential cash requirements, including ongoing commitments to repay borrowings, acquire businesses or make other investments or loans, repurchase shares of VMS common stock, and fund continuing operations and capital expenditures. Our sources of cash have included operations, borrowings, stock option exercises and employee stock purchases.

61

Cash and Cash Equivalents

The following table summarizes our cash and cash equivalents:

(In millions)	September 28, 2018	September 29, 2017	Decrease
Total cash and cash equivalents	$ 504.8	$ 716.2	$(211.4)

The decrease in cash and cash equivalents in fiscal year 2018 compared to fiscal year 2017 was primarily due to $350.0 million in debt repayments, net of borrowings, under our credit facility agreements, $181.9 million used for the repurchase of shares of VMS common stock, $109.0 million used for acquisitions, and $47.7 million used for purchases of property, plant and equipment. These decreases were partially offset by $454.9 million in cash provided by operating activities and $60.7 million of cash provided by stock option exercises and employee stock purchases.

At September 28, 2018, we had approximately $117 million, or 23%, of cash and cash equivalents in the United States, which included approximately $44 million held as money market funds, and approximately $388 million, or 77%, of cash and cash equivalents were held abroad. As a result of the transition to a modified territorial system and the one-time transition tax on the unremitted earnings of our foreign subsidiaries in the Act, we expect that the cash and cash equivalents held by our foreign subsidiaries will generally no longer be subject to U.S. federal income tax upon a subsequent actual repatriation to the United States. However, a portion of this cash may still be subject to foreign and state income taxes upon future remittance. In light of the changes to the taxation of foreign earnings in the Act, we no longer consider the earnings of our foreign subsidiaries to be indefinitely reinvested. As a result, we have accrued for the foreign and state income taxes that we expect would be imposed upon a future remittance.

As of September 28, 2018, most of our cash and cash equivalents that was held abroad was in U.S. Dollars and was primarily held as bank deposits. In addition to cash flows generated from operations, a significant portion of which are generated in the United States, we have used our credit facilities to meet our cash needs from time to time and expect to continue to do so in the future. Borrowings under our credit facilities may be used for working capital, capital expenditures, VMS share repurchases, acquisitions and other corporate purposes.

Cash Flows

	Fiscal Years		
(In millions)	2018	2017	2016
Net cash flow provided by (used in):			
Operating activities	$454.9	$399.1	$356.3
Investing activities	(184.0)	(130.1)	(109.2)
Financing activities	(487.0)	(392.4)	(245.8)
Effects of exchange rate changes on cash and cash equivalents	4.7	(3.9)	(3.3)
Net decrease in cash and cash equivalents	$(211.4)	$(127.3)	$(2.0)

Our primary cash inflows and outflows for fiscal years 2018, 2017 and 2016, were as follows:

We generated net cash from operating activities of $454.9 million in fiscal year 2018, compared to $399.1 million in fiscal year 2017. The $55.8 million increase in net cash from operating activities during fiscal year 2018 compared to fiscal year 2017 was driven primarily by an increase of $114.6 million in the net change from operating assets and liabilities, an increase of $10.1 million in non-cash items, partially offset by a decrease of $68.9 million in net earnings.

The major contributors to the net change in operating assets and liabilities in fiscal year 2018 were as follows:

- Accrued liabilities and other long-term liabilities increased $175.6 million primarily due to an increase in a long-term income tax liability that resulted from the enactment of the Act and an increase in accrued compensation costs.

- Trade and unbilled receivables increased $76.1 million primarily due to an increase in unbilled receivables in Oncology Systems, partially offset by higher collections than billings.

62

- Inventories increased $16.4 million primarily due to an increase in hardware product inventory in Oncology Systems.
- Accounts payable increased $21.9 million primarily due to the timing of payments.

We generated net cash from operating activities of $399.1 million in fiscal year 2017, compared to $356.3 million in fiscal year 2016. The $42.8 million increase in net cash from operating activities during fiscal year 2017 compared to fiscal year 2016 was driven primarily by an increase of $137.5 million in the net change from operating assets and liabilities, an increase of $85.8 million in non-cash items, partially offset by a decrease of $180.5 million in net earnings.

The major contributors to the net change in operating assets and liabilities in fiscal year 2017 were as follows:

- Trade and unbilled receivables increased $18.0 million primarily due to an increase in unbilled receivables associated with additional projects booked in Proton Solutions, partially offset by a decrease in unbilled receivables in Oncology Systems.
- Prepaid and other assets increased $48.9 million mainly due to an increase in prepaid income taxes.
- Accrued liabilities and other long-term liabilities increased $12.7 million primarily due to an increase in accrued compensation and benefit costs, partially offset by a decrease in accruals for income taxes.
- Deferred revenues increased $43.2 million primarily due to an increase in service revenues and advances from customers in Oncology Systems.

We expect that cash provided by operating activities may fluctuate in future periods as a result of a number of factors, including fluctuations in our operating results, timing of product shipments, product installation or customer acceptance, collection of accounts receivable, inventory management, contracts with extended payment terms, and the timing and amount of tax and other payments. See Item 1A, “Risk Factors.”

Cash used for investing activities was $184.0 million, $130.1 million and $109.2 million in fiscal years 2018, 2017 and 2016, respectively. Cash used for purchases of property, plant and equipment was $47.7 million, $59.1 million and $80.4 million in fiscal years 2018, 2017 and 2016, respectively. During fiscal year 2018, we also used $109.0 million for acquisitions, net of cash acquired, $17.8 million for investments in available-for-sale securities, $10.1 million for investments in privately-held companies, $9.2 million to increase in restricted cash, $5.9 million for loans to CPTC and $5.5 million for the purchase of a foreign currency option for the anticipated Sirtex acquisition, partially offset by $15.9 million received from the sale of available-for-sale securities and $6.3 million received from the repayment on notes receivables. During fiscal year 2017, we also used $24.5 million for the purchase of a senior secured debt, $18.2 million for the issuance of notes receivable and $13.4 million for investments in available-for-sale securities. During fiscal year 2016, we also used $21.7 million for the issuance of notes receivable and $21.1 million for acquisitions, net of cash acquired.

- Cash used for financing activities was $487.0 million, $392.4 million and $245.8 million in fiscal years 2018, 2017 and 2016, respectively. We used $181.9 million, $294.5 million and $461.3 million for the repurchase of VMS common stock in fiscal years 2018, 2017 and 2016, respectively. Cash proceeds from the issuance of common stock to employees was $60.7 million, $72.1 million and $60.6 million in fiscal years 2018, 2017 and 2016, respectively. Under our credit facility agreements, we had $350.0 million of net debt repayments in fiscal year 2018, $314.5 million of net debt repayments in fiscal year 2017 and $167.1 million of net borrowings in fiscal year 2016. In fiscal year 2017, we also received $200 million from the Varex Term Facility in conjunction with the Distribution, and contributed $42.6 million in cash and cash equivalents to Varex.

We expect our capital expenditures, which typically represent construction and/or purchases of facilities, manufacturing equipment, office equipment and furniture and fixtures, as well as capitalized costs related to the implementation of software applications, will be approximately 2% of revenues in fiscal year 2019.

On April 3, 2018, we entered into the 2018 Credit Agreement with certain lenders and Bank of America, N.A. as administrative agent. The 2018 Credit Agreement provides for a five-year revolving credit facility ("2018 Revolving Credit Facility") in an aggregate principal amount of up to $1.8 billion. The 2018 Revolving Credit Facility also includes a $50.0 million sub-facility for the issuance of letters of credit and permits swing line loans of up to $25 million. Under the 2018 Revolving Credit Facility, we have the right to (i) request to increase the aggregate commitments by an aggregate amount for all such requests of up to $100.0 million and (ii) request an additional increase in the commitments or establish one or more term loans, provided that, in

each case, the lenders are willing to provide such new or increased commitments and certain other conditions are met. The proceeds of the 2018 Revolving Credit Facility may be used for working capital, capital expenditures, share repurchases, permitted acquisitions and other corporate purposes, as well as to satisfy the prior outstanding obligation under the 2017 Revolving Credit Facility.

The 2018 Revolving Credit Facility replaced the 2017 Revolving Credit Facility of $600 million.

In addition, our Japanese subsidiary ("VMS KK") has an unsecured uncommitted credit agreement with Sumitomo Mitsui Banking Corporation that enables VMS KK to borrow and have outstanding at any given time a maximum of 3.0 billion Japanese Yen (the "Sumitomo Credit Facility"). The Sumitomo Credit Facility will expire in February 2019.

The following table summarizes our short-term borrowings:

	September 28, 2018		September 29, 2017	
(In millions, except for percentages)	Amount	Weighted-Average Interest Rate	Amount	Weighted-Average Interest Rate
2017 Revolving Credit Facility	$ —	—%	$350.0	2.36 %
Total short-term borrowings	$ —		$350.0	

As of September 28, 2018, we did not have any outstanding borrowings under the 2018 Revolving Credit Facility and Sumitomo Credit Facility. See Note 8, "Borrowings" of the Notes to the Consolidated Financial Statements for further information regarding the 2018 Revolving Credit Facility and the Sumitomo Credit Facility.

The following table provides additional information regarding our short-term borrowings (excluding current maturities of long-term debt):

	Fiscal Years		
(In millions, except for percentages)	2018	2017	2016
Amount outstanding (at end of period)	$—	$350.0	$329.6
Weighted average interest rate (at end of period)	— %	2.36 %	1.78 %
Average amount outstanding (during period)	$144.9	$192.6	$320.8
Weighted average interest rate (during period)	2.53 %	1.90 %	1.68 %
Maximum month-end amount outstanding during period	$340.0	$350.0	$431.6

Our liquidity is affected by many factors, some of which result from the normal ongoing operations of our business and some of which arise from uncertainties and conditions in the United States and global economies. Although our cash requirements will fluctuate as a result of the shifting influences of these factors, we believe that existing cash and cash equivalents and cash to be generated from operations and current or future credit facilities will be sufficient to satisfy anticipated commitments for capital expenditures and other cash requirements for the next twelve months and into the foreseeable future. We currently anticipate that we will continue to utilize our available liquidity and cash flows from operations, as well as borrowed funds, to make strategic acquisitions, invest in the growth of our business, invest in advancing our systems and processes, repurchase VMS common stock and fund loan commitments and other strategic investments.

We did not have any outstanding debt at September 28, 2018. Total debt as a percentage of total capital was 18.9% at September 29, 2017. The ratio of current assets to current liabilities increased to 1.63 to 1 at September 28, 2018, from 1.40 to 1 at September 29, 2017.

Days Sales Outstanding

Our Oncology Systems trade and unbilled receivables days sales outstanding ("DSO") was 102 days at September 28, 2018, and 111 days at September 29, 2017. Our trade and unbilled receivable and DSO are impacted by a number of factors, primarily including the timing of product shipments, product installation or customer acceptance, collections performance, payment terms, the mix of revenues from different regions and the effects of economic instability. Proton Solutions' DSO is not meaningful because it is highly variable. As of September 28, 2018, approximately 4% of our net trade and unbilled receivable balance was related to customer contracts with remaining terms of more than one year.

Share Repurchase Program

We repurchased shares of VMS common stock under various authorizations during the periods presented as follows:

	Fiscal Years		
(In millions, except per share amounts)	2018	2017	2016
Number of shares	1.6	3.3	5.7
Average repurchase price per share	$112.63	$90.63	$81.61
Total cost	$181.9	$294.5	$461.3

In November 2016, the VMS Board of Directors authorized the repurchase of an additional 8.0 million shares of VMS common stock commencing on January 1, 2017. As of September 28, 2018, approximately 3.6 million shares of VMS common stock remained available for repurchase under the November 2016 authorization.

Stock repurchases may be made in the open market, in privately negotiated transactions (including accelerated share repurchase programs), or under Rule 10b5-1 share repurchase plans, and also may be made from time to time or in one or more larger blocks. All shares that were repurchased under our share repurchase programs have been retired.

For more details see Note 13, "Stockholders' Equity and Noncontrolling Interests" of the Notes to the Consolidated Financial Statements for further discussion.

Contractual Obligations

The following summarizes our contractual obligations as of September 28, 2018 and the effect such obligations are expected to have on our liquidity and cash flows in future periods:

	Payments Due By Period				
	Fiscal Year	Fiscal Years	Fiscal Years		
(In millions)	2019	2020-2021	2022-2023	Beyond	Total
Operating leases [1]	$25.9	$ 41.7	$ 27.2	$ 17.8	$112.6
Purchase obligations [2]	41.2	34.6	8.4	4.3	88.5
Defined benefit pension plans [3]	8.0	—	—	—	8.0
Total [4]	$75.1	$ 76.3	$ 35.6	$ 22.1	$209.1

(1) Operating leases include future minimum lease payments under all our non-cancellable operating leases as of September 28, 2018.

(2) Purchase obligations include agreements to purchase goods or services that are enforceable, are legally binding and non-cancellable. Purchase obligations do not include agreements that are cancellable without penalty.

(3) As further described in Note 11, "Retirement Plans" of the Notes to the Consolidated Financial Statements, our post-retirement benefit plan is not presented in the table above as it is not material. As of September 28, 2018, the remaining defined benefit pension plans were underfunded by $1.0 million. Due to the impact of future plan asset performance, changes in interest rates and other economic and demographic assumptions, the potential for changes in legislation in the United States and other foreign jurisdictions, we are not able to reasonably estimate the timing and amount of contributions necessary to fund our defined benefit pension plans beyond the next fiscal year.

(4) The following items are not included in the table above:

- Long-term income taxes payable, which include the liability for uncertain tax positions, including interest and penalties, and other long-term tax liabilities. As of September 28, 2018, our total liability for uncertain tax positions was $47.0 million, of which we do not anticipate a payment in the next 12 months. We are unable to reliably estimate the timing of the remainder of future payments related to uncertain tax positions; we believe that existing cash and cash equivalents, cash to be generated from operations, and current or future credit facilities will be sufficient to satisfy any payment obligations that may arise related to our liability for uncertain tax positions. The Act allows taxpayers to elect to pay the one-time transition tax over a period of 8 years as follows: 8% per year for each of the first five years and 15%, 20%, and 25%, in years 6 through 8, respectively. As of September 28, 2018, the noncurrent portion of the one-time transition tax on unremitted foreign earnings was

$142.1 million. See Note 12, "Taxes on Earnings" of the Notes to the Consolidated Financial Statements for more information.

- As of September 28, 2018, we had accrued $5.4 million for environmental remediation liabilities. The amount accrued represents estimates of anticipated future costs and the timing and amount of actual future environmental remediation costs may vary as the scope of our obligations becomes more clearly defined. See Note 10, "Commitments and Contingencies" of the Notes to the Consolidated Financial Statements or more information.
- As of September 28, 2018, our outstanding loan commitment to CPTC was $3.5 million for the short-term revolving loan. See Note 16, "Proton Solutions Loans and Investment" of the Notes to the Consolidated Financial Statements for further information.

Contingencies

Environmental Remediation Liabilities

For a discussion of environmental remediation liabilities, see Note 10, "Commitments and Contingencies" — Environmental Remediation Liabilities of the Notes to the Consolidated Financial Statements, which discussion is incorporated herein by reference.

Other Matters

From time to time, we are a party to or otherwise involved in legal proceedings, claims and government inspections or investigations and other legal matters both inside and outside the United States, arising in the ordinary course of our business or otherwise. Such matters are subject to many uncertainties and outcomes are not predictable with assurance. Note 10, "Commitments and Contingencies" of the Notes to the Consolidated Financial Statements, which discussion is incorporated herein by reference.

Off-Balance Sheet Arrangements

In conjunction with the sale of our products in the ordinary course of business, we provide standard indemnification of business partners and customers for losses suffered or incurred for property damages, death and injury and for patent, copyright or any other intellectual property infringement claims by any third parties with respect to our products. The terms of these indemnification arrangements are generally perpetual. Except for losses related to property damages, the maximum potential amount of future payments we could be required to make under these arrangements is unlimited. As of September 28, 2018, we have not incurred any significant costs since the Spin-offs to defend lawsuits or settle claims related to these indemnification arrangements. As a result, we believe the estimated fair value of these arrangements is minimal.

We have entered into indemnification agreements with our directors and officers and certain of our employees that serve as officers or directors of our foreign subsidiaries that may require us to indemnify our directors and officers and those certain employees against liabilities that may arise by reason of their status or service as directors or officers, and to advance their expenses incurred as a result of any legal proceeding against them as to which they could be indemnified.

Recent Accounting Standards or Updates Not Yet Effective

See Note 1, "Summary of Significant Accounting Policies" of the Notes to the Consolidated Financial Statements for a description of recent accounting standards, including the expected dates of adoption and the estimated effects on our consolidated financial statements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risks

We are exposed to three primary types of market risks: credit risk and counterparty risk, foreign currency exchange rate risk and interest rate risk.

Credit Risk and Counterparty Risk

We are exposed to credit loss in the event of nonperformance by counterparties on the foreign currency forward contracts used in hedging activities. These counterparties are large international and regional financial institutions and to date, no such counterparty has failed to meet its financial obligation to us under such contracts.

We are also exposed to credit loss in the event of default by counterparties of our financing receivables and our loans to Proton Solutions customers such as:

As of September 28, 2018, the Term Loan with CPTC was $53.5 million. The $53.5 million is composed of four Tranches: Tranche A of $2.0 million, Tranche B of $7.2 million, Tranche C of $15.6 million, and Tranche D of $28.7 million. All of the Tranches accrue paid-in-kind interest at 7.5% per annum, except the Tranche B which accrues paid-in-kind interest at 10% per annum. The maturity date of the Term Loan is December 2020. The Term Loan is secured by the assets of CPTC.

In addition, the Lenders have committed to lend up to $15.0 million in Revolving Loans. Our share of the funding commitment from the Revolving Loan is $7.2 million and as of September 28, 2018, we have funded $3.7 million. The Revolving Loan accrues paid-in-kind interest at 10% per annum.

The seniority of these loans is as follows: Revolving Loan, Tranche A, Tranche B, Tranche C and Tranche D. If CPTC is in default, the interest on Tranche A, C and D will increase to 9.5% and the interest on Tranche B and the Revolving Loan will increase to 12.0%.

We also have loans, including accrued interest, associated with the New York Proton Center, and Proton International LLC totaling $28.0 million and $1.7 million, respectively.

In July 2017, we purchased the outstanding senior secured debt related to the Rinecker Proton Therapy Center ("RPTC") in Munich, Germany for 21.5 million Euros or $24.5 million. By purchasing the senior secured debt, we have a right to 89 million Euros in claims against all of RPTC's assets. In September 2017, the management of RPTC filed for bankruptcy in Germany. In January 2018, the final insolvency proceedings commenced, and we expect the insolvency proceedings to be finalized within the next twelve months. Upon finalization of bankruptcy proceedings, we believe it is probable it will recover the outstanding senior secured debt balance and trade accounts receivable, net. See Note 16, "Proton Solutions Loans and Investment" of the Notes to the Consolidated Financial Statements for further information on loans to Proton Solutions customers.

In addition, cash and cash equivalents held with financial institutions may exceed the Federal Deposit Insurance Corporation insurance limits or similar limits in foreign jurisdictions. We also may need to rely on our credit facilities as described below under “Interest Rate Risk.” Our access to our cash and cash equivalents or ability to borrow could be reduced if one or more financial institutions with which we have deposits or from which we borrow should fail or otherwise be adversely impacted by conditions in the financial or credit markets. Conditions such as those we experienced as a result of the last economic downturn and accompanying contraction in the credit markets heighten these risks. Concerns over economic instability could make it more difficult for us to collect outstanding receivables and could adversely impact our liquidity.

Foreign Currency Exchange Rate Risk

As a global entity, we are exposed to movements in foreign currency exchange rates. These exposures may change over time as business practices evolve. Adverse foreign currency rate movements could have a material negative impact on our financial results. Our primary exposures related to foreign currency denominated sales and purchases are in Europe, Asia, Australia and Canada.

We have many transactions denominated in foreign currencies and address certain of those financial exposures through a risk management program that includes the use of derivative financial instruments. We sell products throughout the world, often in the currency of the customer’s country, and may hedge certain of these larger foreign currency sale transactions when they are not transacted in the subsidiaries’ functional currency or in U.S. Dollars. The foreign currency transactions that fit our risk management policy criteria are hedged with foreign currency forward contracts. We may use other derivative instruments in the future. We enter into foreign currency forward contracts primarily to reduce the effects of fluctuating foreign currency exchange rates. We do not enter into foreign currency forward contracts for speculative or trading purposes. The forward contracts range from one to thirteen months in maturity.

We also hedge the balance sheet exposures from our various foreign subsidiaries and business units. We enter into foreign currency forward contracts to minimize the short-term impact of currency fluctuations on assets and liabilities denominated in currencies other than the subsidiaries' functional currency or the U.S. Dollar. However, our foreign exchange forward contract gains or losses may impact our effective tax rate.

67

The notional values of our sold and purchased foreign currency forward contracts outstanding as of September 28, 2018 were $398.3 million and $70.3 million, respectively. The notional amounts of foreign currency forward contracts are not a measure of our exposure. The fair value of forward contracts generally reflects the estimated amounts that we would receive or pay to terminate the contracts at the reporting date, thereby taking into account and approximating the current unrealized and realized gains or losses of the open contracts. A move in foreign currency exchange rates would change the fair value of the contracts, and the fair value of the underlying exposures hedged by the contracts would change in a similar offsetting manner.

The notional values and the weighted average contractual foreign currency exchange rates of our sold and purchased foreign currency forward contracts outstanding at September 28, 2018 were as follows:

(Dollars in millions)	Notional Value Sold	Notional Value Purchased	Weighted Average Contract Rate (Foreign Currency Units per USD)
Australian Dollar	$ 14.4	$ —	1.38
Brazilian Real	6.9	—	4.02
British Pound	41.6	0.6	0.77
Canadian Dollar	—	0.4	1.30
Chinese Yuan	2.0	—	6.90
Danish Krone	—	4.8	6.41
Euro	216.7	1.7	0.86
Indian Rupee	15.8	—	72.94
Japanese Yen	51.5	—	113.34
New Zealand Dollar	1.3	—	1.51
Norwegian Krona	2.7	—	8.14
Polish Zloty	6.7	—	3.68
Singapore Dollar	5.7	—	1.37
South African Rand	5.6	—	14.21
Swedish Krona	9.7	—	8.88
Swiss Franc	—	62.8	0.98
Taiwan Dollar	11.6	—	30.45
Thai Baht	6.1	—	32.29
Totals	$ 398.3	$ 70.3	

In addition to our foreign currency forward contracts mentioned above, in February 2018, we entered into foreign currency forward contracts and a foreign currency option contract to economically hedge the foreign currency exchange rate risk on the consideration to be paid for the anticipated Sirtex acquisition. The foreign currency forward contracts allowed us to purchase a notional amount of A$793.0 million for $621.0 million on May 25, 2018. On May 25, 2018, we purchased the off-setting foreign currency forward contracts for a notional amount of $596.8 million. Also, in February 2018, we paid a premium of $5.5 million for a foreign currency option that allowed us to purchase a notional amount of A$792.0 million for $641.5 million which expired on May 23, 2018. Since we did not acquire Sirtex, the foreign currency option was not exercised.

The foreign currency forward contracts and option contract did not qualify for hedge accounting. As such, changes in the fair value were recognized in acquisition-related expenses on the Consolidated Statements of Earnings. In fiscal year 2018, we recorded losses of $24.2 million on the foreign currency forward contracts and $5.5 million on the foreign currency option contract.

Interest Rate Risk

Our market risk exposure to changes in interest rates depends primarily on our investment portfolio and borrowings. Our investment portfolio primarily consisted of cash and cash equivalents and available-for-sale securities as of September 28, 2018. The principal amount of cash and cash equivalents in continuing operations at September 28, 2018 totaled $504.8 million with a weighted average interest rate of 0.94%. Cash and cash equivalents at September 28, 2018 include $44.1 million of money market funds with a weighted average interest rate of 2.04%.

Our available-for-sale securities are carried at fair value. At September 28, 2018, our available-for-sale securities, which include accrued interest are as follows:

(In millions, except for percentages)	Fair Value	Interest Rate
MPTC Series B-1 Bonds	$ 25.1	7.5 %
MPTC Series B-2 Bonds	23.1	8.5 %
GPTC securities	7.9	8.0 %
APTC securities	6.4	8.5 %

Borrowings under the 2018 Revolving Credit Facility accrue interest at either (i) based on the Eurodollar Rate plus a margin of 1.000% to 1.375% based on a leverage ratio involving funded indebtedness and EBITDA, or (ii) based upon a base rate of (a) the federal funds rate plus 0.50%, (b) BofA’s announced prime rate, or (c) the Eurodollar Rate plus 1.00%, whichever is highest, plus a margin of 0.000% to 0.375% based on the same leverage ratio, depending upon instructions from the Company. Borrowings under the 2018 Revolving Credit Facility have a contract repayment date of twelve months, or less, and a final maturity of five years if based on the Eurodollar Rate and all overnight borrowings on the base rate would also have a final maturity of five years.

We are affected by market risk exposure primarily through the effect of changes in interest rates on amounts payable under our 2018 Revolving Credit Facility. At September 28, 2018, we did not have any short-term borrowings under the under the 2018 Revolving Credit Facility. See Note 8, "Borrowings" of the Notes to the Consolidated Financial Statements for a discussion regarding the 2018 Credit Facility.

In addition, the Sumitomo Credit Facility allows VMS KK to borrow up to a maximum amount of 3.0 billion Japanese Yen. Borrowings under the Sumitomo Credit Facility accrue interest based on the basic loan rate announced by the Bank of Japan plus a margin of 0.5% per annum. As of September 28, 2018, we did not have an outstanding balance under the Sumitomo Credit Facility.

To date, we have not used derivative financial instruments to hedge the interest rate within our investment portfolio, borrowings, but may consider the use of derivative instruments in the future. In addition, although payments under certain of our operating leases for our facilities are tied to market indices, these operating leases do not expose us to material interest rate risk.

Item 8. Financial Statements and Supplementary Data

VARIAN MEDICAL SYSTEMS, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF EARNINGS

	Fiscal Years		
(In millions, except per share amounts)	2018	2017	2016
Revenues:			
Product	$1,569.9	$1,394.0	$1,435.9
Service	1,349.2	1,225.3	1,157.8
Total revenues	2,919.1	2,619.3	2,593.7
Cost of revenues:			
Product	1,024.4	950.9	988.5
Service	621.1	554.5	500.5
Total cost of revenues	1,645.5	1,505.4	1,489.0
Gross margin	1,273.6	1,113.9	1,104.7
Operating expenses:			
Research and development	233.9	210.0	200.4
Selling, general and administrative	539.3	550.4	472.2
Impairment charges	22.4	51.4	2.2
Acquisition-related expenses	36.4	1.9	3.1
Total operating expenses	832.0	813.7	677.9
Operating earnings	441.6	300.2	426.8
Interest income	17.3	13.6	17.2
Interest expense	(6.8)	(10.7)	(11.6)
Earnings from continuing operations before taxes	452.1	303.1	432.4
Taxes on earnings	301.8	77.1	110.1
Net earnings from continuing operations	150.3	226.0	322.3
Net (loss) earnings from discontinued operations	—	(6.8)	77.4
Net earnings	150.3	219.2	399.7
Less: Net earnings attributable to noncontrolling interests	0.4	0.7	0.4
Net earnings attributable to Varian	$149.9	$218.5	$399.3
Net earnings (loss) per share - basic			
Continuing operations	$1.64	$2.44	$3.38
Discontinued operations	—	(0.08)	0.81
Net earnings per share - basic	$1.64	$2.36	$4.19
Net earnings (loss) per share - diluted			
Continuing operations	$1.62	$2.42	$3.36
Discontinued operations	—	(0.07)	0.80
Net earnings per share - diluted	$1.62	$2.35	$4.16
Shares used in the calculation of net earnings per share:			
Weighted average shares outstanding - basic	91.5	92.5	95.4
Weighted average shares outstanding - diluted	92.5	93.2	96.0

See accompanying notes to the consolidated financial statements.

VARIAN MEDICAL SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE EARNINGS

	Fiscal Years		
(In millions)	2018	2017	2016
Net earnings	$150.3	$219.2	$399.7
Other comprehensive earnings (loss), net of tax:			
Defined benefit pension and post-retirement benefit plans:			
Net gain (loss) arising during the year, net of tax (expense) benefit of ($1.1), ($2.5), and $4.3	4.7	10.0	(21.4)
Prior service credit arising during the year, net of tax expense of ($0.3), ($0.7), and ($0.2)	1.9	4.3	1.1
Amortization of prior service cost included in net periodic benefit cost, net of tax benefit of $0.2, $0.2, and $0.2	(1.0)	(0.8)	(0.4)
Amortization, settlement and curtailment of net actuarial loss included in net periodic benefit cost, net of tax expense of ($0.6), ($1.0), and ($0.5)	3.3	5.7	3.5
	8.9	19.2	(17.2)
Derivative instruments:			
Change in unrealized gain (loss), net of tax benefit of $0.3, $0.0, and $0.4	(0.6)	—	(0.6)
Reclassification adjustments, net of tax (expense) benefit of ($0.3), $0.0, and ($0.4)	0.6	—	0.6
	—	—	—
Available-for-sale securities:			
Change in unrealized loss, net of tax benefit of $0.0, $0.0, and $0.1	—	—	(0.3)
Reclassification adjustments, net of tax expense of $0.0, $0.0, and ($0.2)	—	—	0.4
	—	—	0.1
Currency translation adjustment	(5.4)	12.8	2.8
Other comprehensive earnings (loss)	3.5	32.0	(14.3)
Comprehensive earnings	153.8	251.2	385.4
Less: Comprehensive earnings attributable to noncontrolling interests	0.4	0.7	0.4
Comprehensive earnings attributable to Varian	$153.4	$250.5	$385.0

See accompanying notes to the consolidated financial statements.

VARIAN MEDICAL SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

(In millions, except par values)	September 28, 2018	September 29, 2017
Assets		
Current assets:		
Cash and cash equivalents	$504.8	$716.2
Trade and unbilled receivables, net of allowance for doubtful accounts of $41.1 at September 28, 2018, and $45.9 at September 29, 2017	1,009.9	961.5
Inventories	438.1	417.7
Prepaid expenses and other current assets	233.3	190.3
Current assets of discontinued operations	2.3	11.1
Total current assets	2,188.4	2,296.8
Property, plant and equipment, net	274.6	255.3
Goodwill	293.6	222.6
Intangible assets, net	101.1	71.6
Deferred tax assets	102.2	147.3
Other assets	292.8	300.8
Total assets	$3,252.7	$3,294.4
Liabilities and Equity		
Current liabilities:		
Accounts payable	$190.3	$162.3
Accrued liabilities	419.7	374.9
Deferred revenues	729.7	755.4
Short-term borrowings	—	350.0
Current liabilities of discontinued operations	—	2.5
Total current liabilities	1,339.7	1,645.1
Other long-term liabilities	324.3	127.4
Total liabilities	1,664.0	1,772.5
Commitments and contingencies (Note 10)		
Equity:		
Varian stockholders' equity:		
Preferred stock of $1 par value: 1.0 shares authorized; none issued and outstanding	—	—
Common stock of $1 par value: 189.0 shares authorized; 91.2 and 91.7 shares issued and outstanding at September 28, 2018, and at September 29, 2017, respectively	91.2	91.7
Capital in excess of par value	778.1	716.1
Retained earnings	780.4	778.6
Accumulated other comprehensive loss	(65.3)	(68.8)
Total Varian stockholders' equity	1,584.4	1,517.6
Noncontrolling interests	4.3	4.3
Total equity	1,588.7	1,521.9
Total liabilities and equity	$3,252.7	$3,294.4

See accompanying notes to the consolidated financial statements.

VARIAN MEDICAL SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Fiscal Years		
(In millions)	2018	2017	2016
Cash flows from operating activities:			
Net earnings	$150.3	$219.2	$399.7
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Share-based compensation expense	45.9	41.2	48.3
Depreciation	52.1	58.5	64.2
Amortization of intangible assets	20.6	18.4	15.6
Deferred taxes	48.0	(23.3)	(28.3)
Provision for doubtful accounts receivable	4.0	43.7	3.5
Impairment charges	22.4	51.4	2.2
Loss (gain) on equity investments	7.3	(0.1)	1.6
Loss on hedges related to acquisition-related activities	5.5	—	—
Other, net	(3.1)	2.8	(0.3)
Changes in assets and liabilities, net of effects of acquisitions:			
Trade and unbilled receivables	(76.1)	(18.0)	(167.7)
Inventories	(16.4)	(7.2)	(42.3)
Prepaid expenses and other assets	(3.9)	(48.9)	7.3
Accounts payable	21.9	5.5	9.7
Accrued liabilities and other long-term liabilities	175.6	12.7	58.5
Deferred revenues	0.8	43.2	(15.7)
Net cash provided by operating activities	454.9	399.1	356.3
Cash flows from investing activities:			
Purchases of property, plant and equipment	(47.7)	(59.1)	(80.4)
Acquisitions, net of cash acquired	(109.0)	(3.0)	(21.1)
Issuance of notes receivable	—	(18.2)	(21.7)
Purchase of senior secured debt	—	(24.5)	—
Investment in available-for-sale securities	(17.8)	(13.4)	(3.3)
Sale of available-for-sale securities	15.9	—	8.6
Loans to CPTC	(5.9)	—	—
Purchase of foreign currency option related to acquisition-related activities	(5.5)	—	—
Repayment of notes receivables	6.3	—	8.3
Investment in privately-held companies	(10.1)	(8.4)	(0.6)
(Increase) decrease in restricted cash	(9.2)	0.3	—
Other, net	(1.0)	(3.8)	1.0
Net cash used in investing activities	(184.0)	(130.1)	(109.2)
Cash flows from financing activities:			
Repurchases of common stock	(181.9)	(294.5)	(461.3)
Proceeds from issuance of common stock to employees	60.7	72.1	60.6
Tax withholdings on vesting of equity awards	(11.6)	(10.7)	(11.0)
Cash received from Varex term facility	—	200.0	—
Cash and cash equivalents contributed to Varex Imaging Corporation	—	(42.6)	—
Borrowings under credit facility agreement	503.3	231.0	83.0
Repayments under credit facility agreement	(503.3)	(223.5)	(133.0)
Net (repayments) borrowings under the credit facility agreements with maturities less than 90 days	(350.0)	(322.0)	217.1
Other	(4.2)	(2.2)	(1.2)

Net cash used in financing activities	(487.0)	(392.4)	(245.8)
Effects of exchange rate changes on cash and cash equivalents	4.7	(3.9)	(3.3)
Net decrease in cash and cash equivalents	(211.4)	(127.3)	(2.0)
Cash and cash equivalents at beginning of period	716.2	843.5	845.5
Cash and cash equivalents at end of period	$504.8	$716.2	$843.5

See accompanying notes to the consolidated financial statements.

VARIAN MEDICAL SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY

(In millions)	Common Stock Shares	Common Stock Amount	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Loss	Total Varian Stockholders' Equity	Noncontrolling Interests	Total Equity
Balances at October 2, 2015 (1)	98.1	$ 98.1	$ 682.2	$ 1,074.5	$ (86.5)	$ 1,768.3	$ 14.7	$ 1,783.0
Net earnings	—	—	—	399.3	—	399.3	(0.1)	399.2
Other comprehensive loss	—	—	—	—	(14.3)	(14.3)	—	(14.3)
Issuance of common stock	1.4	1.4	60.5	—	—	61.9	—	61.9
Tax withholdings on vesting of equity awards	(0.1)	(0.1)	(10.9)	—	—	(11.0)	—	(11.0)
Share-based compensation expense	—	—	48.3	—	—	48.3	—	48.3
Repurchases of common stock	(5.7)	(5.7)	(104.5)	(351.1)	—	(461.3)	—	(461.3)
Reclassification of noncontrolling interest in MeVis to redeemable noncontrolling interest	—	—	—	—	—	—	(10.4)	(10.4)
Other	—	—	3.0	—	—	3.0	(0.5)	2.5
Balances at September 30, 2016	93.7	93.7	678.6	1,122.7	(100.8)	1,794.2	3.7	1,797.9
Net earnings	—	—	—	218.5	—	218.5	0.6	219.1
Other comprehensive earnings	—	—	—	—	32.0	32.0	—	32.0
Issuance of common stock	1.4	1.4	69.3	—	—	70.7	—	70.7
Tax withholdings on vesting of equity awards	(0.1)	(0.1)	(10.6)	—	—	(10.7)	—	(10.7)
Share-based compensation expense	—	—	40.8	—	—	40.8	—	40.8
Repurchases of common stock	(3.3)	(3.3)	(62.7)	(228.5)	—	(294.5)	—	(294.5)
Distribution of Varex	—	—	—	(334.1)	—	(334.1)	—	(334.1)
Other	—	—	0.7	—	—	0.7	—	0.7
Balances at September 29, 2017	91.7	91.7	716.1	778.6	(68.8)	1,517.6	4.3	1,521.9
Net earnings	—	—	—	149.9	—	149.9	0.4	150.3
Other comprehensive earnings	—	—	—	—	3.5	3.5	—	3.5
Issuance of common stock	1.2	1.2	59.5	—	—	60.7	—	60.7
Tax withholdings on vesting of equity awards	(0.1)	(0.1)	(11.5)	—	—	(11.6)	—	(11.6)
Share-based compensation expense	—	—	45.9	—	—	45.9	—	45.9
	(1.6)	(1.6)	(32.5)	(147.8)	—	(181.9)	—	(181.9)

Repurchases of common stock								
Other	—	—	0.6	(0.3)	—	0.3	(0.4)	(0.1)
Balances at September 28, 2018	91.2	$91.2	$ 778.1	$780.4	$ (65.3)	$ 1,584.4	$ 4.3	$1,588.7

(1) The cumulative effect of Accounting Standard Codification 606 "Revenues from Contracts with Customers" to the Company's retained earnings at October 2, 2015 was $56.7 million.

See accompanying notes to the consolidated financial statements.

VARIAN MEDICAL SYSTEMS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Description of Business

Varian Medical Systems, Inc. (“VMS”) and subsidiaries (collectively, the “Company”) designs, manufactures, sells and services hardware and software products for treating cancer with radiotherapy, stereotactic radiosurgery, stereotactic body radiotherapy, and brachytherapy. Software solutions include informatics software for information management, clinical knowledge exchange, patient care management, practice management and decision-making support for comprehensive cancer clinics, radiotherapy centers and medical oncology practices. The Company also develops, designs, manufactures, sells and services proton therapy products and systems for cancer treatment.

Distribution

On January 28, 2017 (the "Distribution Date"), the Company completed the separation and distribution (the "Distribution") of Varex Imaging Corporation ("Varex"), the Company's former Imaging Components business segment. On the Distribution Date, each of Varian's stockholder of record as of the close of business on January 20, 2017 (the "Record Date") received 0.4 of a share of Varex common stock for every one share of Varian common stock owned as of the Record Date. Varex is now an independent publicly traded company and is listed on The NASDAQ Global Select Market under the ticker “VREX.” Varian continues to trade on the New York Stock Exchange under the ticker “VAR.” See Note 2, "Discontinued Operations" for additional information.

Basis of Presentation

The consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States ("GAAP"). At the beginning of the Company's fiscal year 2018, the Company early adopted the new revenue recognition Accounting Standard Codification 606 "Revenues from Contracts with Customers" ("ASC 606") by using the full retrospective method. All financial statements and disclosures have been recast to comply with ASC 606. See "Recently Adopted Accounting Pronouncements" below for further information.

The historical financial position and results of operations of the Imaging Components business and costs relating to the Distribution are reported in the consolidated financial statements as discontinued operations for all the periods presented. Information in the accompanying notes to the consolidated financial statements have been recast to reflect the effect of the Distribution. The Consolidated Statements of Comprehensive Earnings and Cash Flows have not been recast to reflect the effect of the Distribution.

Fiscal Year

The fiscal years of the Company as reported are the 52- or 53-week periods ending on the Friday nearest September 30. Fiscal year 2018 was the 52-week period that ended on September 28, 2018. Fiscal year 2017 was the 52-week period that ended on September 29, 2017. Fiscal year 2016 was the 52-week period that ended on September 30, 2016.

Spin-offs

On April 2, 1999, Varian Associates, Inc. reorganized into three separate publicly traded companies by spinning off, through a tax-free distribution, two of its businesses to stockholders (the “Spin-offs”). The Spin-offs resulted in the following three companies: 1) the Company (renamed from Varian Associates, Inc. to Varian Medical Systems, Inc. following the Spin-offs); 2) Varian, Inc. (“VI”), which became a wholly owned subsidiary of Agilent Technologies Inc. in May 2010; and 3) Varian Semiconductor Equipment Associates, Inc. (“VSEA”), which became a wholly owned subsidiary of Applied Materials, Inc. in November 2011. The Spin-offs resulted in a non-cash dividend to stockholders.

In connection with the Spin-offs, the Company, VI and VSEA also entered into various agreements that set forth the principles to be applied in separating the companies and allocating certain related costs and specified portions of contingent liabilities. See Note 10, "Commitments and Contingencies" for additional information.

Principles of Consolidation

The consolidated financial statements include those of VMS and its wholly-owned and majority-owned or controlled subsidiaries. Intercompany balances, transactions and stock holdings have been eliminated in consolidation.

Consolidation of Variable Interest Entities

For entities in which the Company has variable interests, the Company focuses on identifying which entity has the power to direct the activities that most significantly impact the variable interest entity's economic performance and which enterprise has the obligation to absorb losses or the right to receive benefits from the variable interest entity. If the Company is the primary beneficiary of a variable interest entity, the assets, liabilities, and results of operations of the variable interest entity will be included in the Company's Consolidated Financial Statements. For fiscal years 2018, 2017 and 2016, the Company did not consolidate any variable interest entities because the Company determined that it was not the primary beneficiary.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates.

Foreign Currency Translation

The Company uses the U.S. dollar predominately as the functional currency of its foreign subsidiaries. For foreign subsidiaries where the U.S. dollar is the functional currency, gains and losses from remeasurement of foreign currency balances into U.S. dollars are included in the Consolidated Statements of Earnings. The aggregate net gains (losses) resulting from foreign currency transactions and remeasurement of foreign currency balances into U.S. dollars that were included in the Consolidated Statements of Earnings were $3.0 million, $3.0 million and $1.6 million in fiscal years 2018, 2017 and 2016, respectively. For the foreign subsidiary where the local currency is the functional currency, translation adjustments of foreign currency financial statements into U.S. dollars are recorded to a separate component of accumulated other comprehensive loss. See Note 9, "Derivative Instruments and Hedging Activities" regarding the Company's hedging activities and derivative instruments.

Cash and Cash Equivalents

The Company considers currency on hand, demand deposits, time deposits, and all highly liquid investments with an original maturity of three months or less at the date of purchase to be cash and cash equivalents. Cash and cash equivalents is held in various financial institutions in the United States and internationally.

Fair Value

Fair value is defined as the exchange price that would be received for 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 at the measurement date. There is a three-level fair value hierarchy that prioritizes the inputs used to measure fair value. This hierarchy requires entities to maximize the use of observable inputs and minimize the use of unobservable inputs. The three levels of inputs used to measure fair value are as follows:

Level 1 — Quoted prices in active markets for identical assets or liabilities.

Level 2 — Observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; or other inputs that are observable or can be corroborated by observable market data.

Level 3 — Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

See Note 5, "Fair Value" for additional discussions.

Available-For-Sale Securities and Notes Receivable

The Company has investments in securities that are classified as available-for-sale securities, and which are reflected on the Consolidated Balance Sheets at fair value. Unrealized gains and losses on these investments are included as a separate

76

component of accumulated other comprehensive loss, net of tax, on the Consolidated Balance Sheets. The Company classifies its available-for-sale securities as short-term or long-term based on the nature of the investment, its maturity date and its availability for use in current operations. The Company monitors its available-for-sale securities for possible other-than-temporary impairment when business events or changes in circumstances indicate that the carrying value of the investment may not be recoverable. The Company recorded no significant impairment charges in fiscal year 2018 to its available-for-sale securities and recorded $51.4 million of impairment charges in fiscal year 2017. The Company did not have an impairment to its available-for-sale securities for fiscal year 2016. See Note 16, "Proton Solutions Loans and Investment" for more information about the impairment charge.

The Company advances notes to third parties, including its customers. The Company regularly assesses these notes for collectability by considering internal factors such as historical experience, credit quality, age of the note balances as well as external factors such as economic conditions that may affect the note holder's ability to pay. In fiscal year 2018, the Company recorded $22.1 million of impairment charges related to its notes receivables. See Note 16, "Proton Solutions Loans and Investment" for more information about the impairment charge.

Investments in Privately-Held Companies

Equity investments in privately-held companies in which the Company holds less than a 20% ownership interest and does not have the ability to exercise significant influence are accounted for under the cost-method of accounting and are included in other assets on the Consolidated Balance Sheets. See Note 4, “Balance Sheet Components.” The Company monitors these investments for impairment and makes appropriate reductions in carrying values if the Company determines that impairment charges are required based primarily on the financial condition and near-term prospects of these companies. As of September 28, 2018, the Company has 47.08% of equity ownership in California Proton Therapy Solutions ("CPTC"). The equity investment in CPTC is accounted for under the equity method of accounting. See Note 16, "Proton Solutions Loans and Investment" for more information about the Company's equity ownership in CPTC.

Concentration of Risk

Financial instruments that potentially expose the Company to concentrations of credit risk consist principally of cash, cash equivalents, available-for-sale securities, trade accounts receivable, notes receivable, and derivative financial instruments used in hedging activities. Cash and cash equivalents held with financial institutions may exceed the Federal Deposit Insurance Corporation insurance limits or similar limits in foreign jurisdictions. The Company has not experienced any losses on its deposits of cash and cash equivalents. With respect to its available-for-sale securities and notes receivable, the Company performs a periodic credit evaluation of various counterparties. In addition, the Company will be exposed to credit loss in the event of nonperformance by counterparties on the foreign currency forward contracts used in hedging activities. The Company transacts its foreign currency forward contracts with several large international and regional financial institutions and, therefore, does not consider the risk of nonperformance to be concentrated in any specific counterparty. The Company has not experienced any losses resulting from the failure of counterparty to meet its financial obligations under foreign currency forward contracts.

Concentrations of credit risk with respect to trade accounts receivable are limited due to the large number of customers comprising the Company’s customer base and their geographic dispersion. The Company performs ongoing credit evaluations of its customers and, except for government tenders, group purchases and orders with a letter of credit, often requires its Oncology Systems and Proton Solutions customers to provide a down payment. The Company maintains an allowance for doubtful accounts based upon the expected collectability of all accounts receivable. See, Note 6, "Receivables" for additional information on allowance for doubtful accounts. No single customer represented 10% or more of the accounts receivable amount for any period presented. The Company obtains some of the components in its products from a limited group of suppliers or from a single-source supplier.

Inventories

Inventories are valued at the lower of cost or market (realizable value). Excess and obsolete inventories are determined primarily based on future demand forecasts, and write-downs of excess and obsolete inventories are recorded as a component of cost of revenues. Cost is computed using standard cost (which approximates actual cost) or actual cost on a first-in-first-out or average basis.

Property, Plant and Equipment
Property, plant and equipment are stated at cost, net of accumulated depreciation and amortization. Major improvements are capitalized, while repairs and maintenance are expensed as incurred. Internal and external costs incurred to acquire or create

internal use software during the application development stage are capitalized in accordance with guidance on internal-use software. Internally developed software primarily includes enterprise-level business software that the Company customizes to meet its specific operational needs. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the assets. Land is not subject to depreciation, but land improvements are depreciated over fifteen years. Land leasehold rights and leasehold improvements are amortized over the lesser of their estimated useful lives or remaining term of the lease. Buildings are depreciated between twenty and thirty years. Machinery and equipment are depreciated over their estimated useful lives, which range from three to seven years. Assets subject to lease are amortized over the lesser of their estimated useful lives or remaining lease terms. When assets are retired or otherwise disposed of, the assets and related accumulated depreciation are removed from the accounts. Gains or losses resulting from retirements or disposals of property, plant and equipment are included in operating expenses.

Goodwill and Intangible Assets, Net

Goodwill is recorded when the purchase price of an acquisition exceeds the fair value of the net identified tangible and intangible assets acquired. Purchased intangible assets are carried at cost, net of accumulated amortization. Intangible assets with finite lives are amortized primarily using the straight-line method over their estimated useful lives which generally range from two to ten years. In-process research and development ("IPR&D") is initially capitalized at fair value as an intangible asset with an indefinite life and assessed for impairment thereafter. The impairment test for intangible assets with indefinite useful lives, if any, consists of a comparison of fair value to carrying value, with any excess of carrying value over fair value being recorded as an impairment loss. When an IPR&D project is completed, the IPR&D is reclassified as an amortizable purchased intangible asset and amortized over the asset's estimated useful life.

Impairment of Long-lived Assets, Goodwill and Intangible Assets

The Company reviews long-lived assets and identifiable intangible assets with finite lives for impairment whenever events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. The Company assesses these assets for impairment based on their estimated undiscounted future cash flows. If the carrying value of the assets exceeds the estimated future undiscounted cash flows, the Company recognizes an impairment loss based on the excess of the carrying amount over the fair value of the assets. The Company did not recognize any impairment charges for long-lived assets and identifiable intangible assets in fiscal years 2018, 2017 and 2016.

The Company evaluates goodwill for impairment at least annually or whenever an event occurs or circumstances changes that would more likely than not reduce the fair value of a reporting unit below its carrying amount. If the Company determines that a quantitative analysis is necessary the Company will compare the fair value of a reporting unit against its carrying amount, including the goodwill allocated to each reporting unit. The Company determines the fair value of its reporting units based on a combination of income and market approaches. The income approach is based on the present value of estimated future cash flows of the reporting units and the market approach is based on a market multiple calculated for each business unit based on market data of other companies engaged in similar business. If the carrying amount of the reporting unit is in excess of its fair value, a goodwill impairment loss will be recorded for the difference.

In fiscal years 2018, 2017 and 2016 the Company performed the annual goodwill impairment test for its two reporting units that carried goodwill: Oncology Systems and Proton Solutions. Based upon the most recent annual goodwill analysis performed during the fourth quarter of fiscal year 2018, the Company opted to evaluate Oncology Systems by using qualitative factors and Proton Solutions by using the step one approach and determined no further goodwill impairment analysis was required. The Company considered various factors in the qualitative assessment for Oncology Systems, including macroeconomic conditions, industry and market considerations, financial performance and other relevant events affecting the reporting unit. Proton Solutions' fair value was 48% in excess of its carrying value. The Company did not record any goodwill impairment charges in fiscal years 2018, 2017 and 2016.

Loss Contingencies

From time to time, the Company is a party to or otherwise involved in legal proceedings, claims and government inspections or investigations and other legal matters, both inside and outside the United States, arising in the ordinary course of its business or otherwise. The Company accrues amounts, to the extent they can be reasonably estimated,

that it believes are adequate to address any liabilities related to legal proceedings and other loss contingencies that it believes will result in a probable loss.

Environmental remediation liabilities are recorded when environmental assessments and/or remediation efforts are probable, and the costs of these assessments or remediation efforts can be reasonably estimated.

Product Warranty

The Company warrants most of its products for a specific period of time, usually 12 months from installation, against material defects. The Company provides for the estimated future costs of warranty obligations in cost of revenues when the related revenues are recognized. The accrued warranty costs represent the best estimate at the time of sale of the total costs that the Company will incur to repair or replace product parts that fail while still under warranty. The amount of the accrued estimated warranty costs obligation for established products is primarily based on historical experience as to product failures adjusted for current information on repair costs. For new products, estimates include the historical experience of similar products, as well as reasonable allowance for warranty expenses associated with new products. On a quarterly basis, the Company reviews the accrued warranty costs and updates the historical warranty cost trends, if required.

Revenue Recognition

The Company's revenues are derived primarily from the sale of radiotherapy and proton therapy hardware and software products, support, training and maintenance of all those products, installation services and the sale of parts. The Company accounts for a contract with a customer when there is approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable.

The Company's revenues are measured based on consideration specified in the contract with each customer, net of any sales incentives and amounts collected on behalf of third parties such as sales taxes. The Company recognizes revenues as the performance obligations are satisfied by transferring control of the product or service to a customer. The majority of the Company's revenue arrangements consist of multiple performance obligations including hardware, software, and services. Determining the stand-alone selling price ("SSP") and allocation of consideration from an arrangement to the individual performance obligations, and the appropriate timing of revenue recognition are determined based on the Company's best estimates with respect to these arrangements.

The Company's products are generally not sold with a right of return, and the Company does not provide credits or incentives, which may be required to be accounted for as variable consideration when estimating the amount of revenue to be recognized.

The Company recognizes an asset for the incremental costs of obtaining a contract with a customer if the Company expects the benefit of those costs to be longer than one year. The Company applies a practical expedient to expense costs as incurred for costs to obtain a contract when the amortization period would have been one year or less. These costs mainly include the Company's internal sales force compensation program; under the terms of these programs, compensation is generally earned and the costs are recognized at the time the revenue is recognized.

For bundled arrangements, the Company accounts for individual products and services separately if they are distinct, that is, if a product or service is separately identifiable from other items in the bundled package and if a customer can benefit from it on its own or with other resources that are readily available to the customer. The consideration (including any discounts) is allocated between separate products and services in a bundle based on their individual SSP. The SSP is determined based on observable prices at which the Company separately sells the products and services. If an SSP is not directly observable, then the Company will estimate the SSP considering marketing conditions, entity-specific factors, and information about the customer or class of customer that is reasonably available.

The following is a description of the principal activities, separated by reportable segment, from which the Company generates its revenues.

Oncology Systems

The Company's Oncology Systems linear accelerators are generally sold in a bundled arrangement with hardware and software accessory products that enhance efficiency and enable delivery of advanced radiotherapy and radiosurgery treatments; however, certain products are infrequently sold on a stand-alone basis. The majority of machine and software sales include installation services, training, warranty, and support services. Delivery of different performance obligations in a revenue arrangement often span more than one reporting period. For example, a linear accelerator and software may be delivered in one reporting period, but the related installation of those products may be completed in a later period. Hardware and software extended maintenance and service contracts are occasionally sold during the

initial product sale, but the majority are sold separately near or at the end of the initial warranty period. Revenues related to extended warranty and service contracts are earned after the expiration of the initial warranty period.

Payment terms and conditions vary by contract type, although terms are generally commensurate with a significant milestone, such as contract signing, shipment, delivery, acceptance or service commencement. In instances where the timing of revenue recognition differs from the timing of invoicing, the Company has determined its contracts generally do not include a significant financing component. The primary purpose of the Company's invoicing terms is to provide customers with simplified and predictable ways of purchasing the Company's products and services, rather than to receive financing from the Company's customers, such as invoicing at the beginning of a contract term with revenue recognized ratably over the contract period for a service contract. Payment terms can also vary based on the type of customer, such as government purchases. There are occasions where the Company provides extended payment terms in which case a portion of the transaction price is allocated to imputed interest income. Customer billing milestones are typically event driven, which may result in revenue recognized in excess of billings at some point during the contract which the Company presents as unbilled receivables on the Consolidated Balance Sheets.

From time to time, the Company's contracts are modified to account for additional, or to change existing, performance obligations. The Company's contract modifications are generally accounted for prospectively.

Hardware Products and Installation

Hardware products may include software that the hardware is dependent on and highly interrelated with and cannot operate without. The Company typically has a standard base configuration for its hardware products, but there are typically multiple options and configuration choices. Revenues from the sale of hardware are recognized when the Company transfers control to the customer.

Product installation includes uncrating, moving the machine to the treatment room, connection and validating configuration. In addition, a number of testing protocols are completed to confirm the equipment is performing to the contracted specifications. The Company recognizes revenues for hardware installation over time as the customer receives and consumes benefits provided as the Company performs the installation services.

Software Products and Installation

Software products include information management, treatment planning, image processing, clinical knowledge exchange, patient care management, decision-making support, and practice management software. Software installation includes transferring software to the customer’s computers, configuration of the software and potentially data migration. The Company recognizes revenues for on-premise software and software installation upon the customer's acceptance of the software and installation services.

Service

Service revenues include revenues from initial and extended software support agreements, extended hardware warranty agreements, training, paid service arrangements when a customer does not have an extended warranty and parts that are sold by the service department.

Revenues from hardware and software support agreements are accounted for ratably over the term of the agreement. Services and training revenues are recognized in the period the services and training are performed. Revenues for sales of parts are recognized when the parts are delivered to the customer and control is transferred.

Warranties

The Company's sale of hardware includes a one-year warranty. The Company uses the cost accrual method to account for assurance-type warranties. The standard warranty provision further includes services in addition to an assurance-type warranty (for example, preventative maintenance inspections, help desk support, and when and if available operating system upgrades). These service-type warranty features are recorded as a separate performance obligation and recognized ratably over the one-year warranty period.

Proton Solutions

The manufacturing of the major components of a proton therapy system, installation, and commissioning typically lasts 18 to 24 months. The Company's proton therapy system is highly customized. A proton therapy system typically includes hardware, software that the hardware is dependent upon and highly interrelated with, and without which the hardware cannot operate, and installation. The Company also sells software products that include information management, treatment planning, image

processing, clinical knowledge exchange, patient care management, decision-making support, and practice management software, and software installation.

The Company provides operations and maintenance services related to the proton therapy system under a separate arrangement. These contracts are typically executed at or about the same time as the proton therapy system contracts; however, the pricing and performance of the proton therapy system contracts are not typically related to the pricing or performance of the operations and maintenance contracts. Therefore, the Company recognizes operations and maintenance services as a separate performance obligation.

Under the typical payment terms of the Company's fixed-price contracts, the customer pays the Company an up-front advance payment and then performance-based payments based on quantifiable measures of performance or on the achievement of specified events or milestones. Customers do not typically receive discounts in their overall selling price based on the amount and timing of milestone payments. As the revenue is recognized over time relative to the costs incurred and the customer billing milestones are typically event driven, this may result in revenue recognized in excess of billings at some point during the contract which the Company presents as unbilled receivables on the Consolidated Balance Sheets. Amounts billed and due from the Company's customers are classified as trade accounts receivable on the Consolidated Balance Sheets. In most contracts, the Company is entitled to receive an advance payment at the beginning of the contract. The Company recognizes a liability for these advance payments in excess of revenue recognized and presents it as deferred revenues on the Consolidated Balance Sheets. The advance payment typically is not considered a significant financing component because it is used to ensure the customer's commitment to the project and to provide assurance that the customer will perform its obligations under the contract.

The Company recognizes revenue for its proton therapy systems over time because the customer controls the work in process, the Company's performance does not create an asset with an alternative use to the Company, and the Company has an enforceable right to payment for performance completed to date.

Due to the nature of the work required to be performed on many of the Company's performance obligations, the estimation of total revenues and costs at completion is complex, subject to many variables and requires significant judgment. The Company's contracts generally do not include award fees, incentive fees or other provisions that may be considered variable consideration.

The Company has a standard quarterly progress review process in which management reviews the progress and execution of the Company's performance obligations. As part of this process, management reviews information including, but not limited to, any outstanding key contract matters, progress towards completion and the related program schedule, identified risks and the related changes in estimates of revenues and costs. The risks and opportunities include management's judgment about the ability and costs to achieve the schedule (e.g., the number and type of milestone events), technical and other contract requirements. Management must make assumptions and estimates regarding the complexity of the work to be performed, the availability of materials and outside services, the length of time to complete the performance obligation and labor and overhead cost rates, among other significant judgments. Based on this analysis, any quarterly adjustments to revenues, cost of revenues, and the related impact to operating earnings are recognized as necessary in the period they become known on a cumulative catch-up basis. When estimates of total costs to be incurred on a performance obligation exceed total estimates of revenues to be earned, a provision for the entire loss on the performance obligation is recognized in the period the loss is determined.

Similar to the Oncology Systems segment, the Company recognizes Proton Solutions revenues for software and installation upon completion and acceptance of the software and installation services.

Unfulfilled Performance Obligations for Oncology Systems and Proton Solutions

The following table represents the Company's unfulfilled performance obligations as of September 28, 2018, and the estimated revenue expected to be recognized in the future related to these unfulfilled performance obligations:

	Fiscal years of revenue recognition			
(In millions)	2019	2020	2021	Thereafter
Unfulfilled Performance Obligations	$2,501.5	$1,485.6	$572.4	$1,527.4

The table above includes both product and service unfulfilled performance obligations, which include a component of service performance obligations which have not been invoiced. The fiscal years presented reflect management’s best estimate of when

81

the Company will transfer control to the customer and may change based on timing of shipment, readiness of customers' facilities for installation, installation requirements, and availability of products or customer acceptance terms.

As part of the Company's adoption of ASC 606, the Company elected to use the following practical expedients: (i) exclude disclosures of transaction prices allocated to remaining performance obligations when the Company expects to recognize such revenue for all periods prior to the date of initial application of ASC 606; (ii) not adjust the promised amount of consideration for the effects of a significant financing component when the Company expects, at contract inception, that the period between the Company's transfer of a promised product or service to a customer and when the customer pays for that product or service will be one year or less; (iii) expense costs as incurred for costs to obtain a contract when the amortization period would have been one year or less, which mainly includes the Company's internal sales force compensation program and certain partner sales incentive programs; (iv) not recast revenue for contracts that begin and end in the same fiscal period; and (v) not assess whether promised goods or services are performance obligations if they are immaterial in the context of the contract with the customer.

Contract Balances

The timing of revenue recognition, billings and cash collections results in trade and unbilled receivables, and deferred revenues on the Consolidated Balance Sheets. In Oncology Systems, the Company often collects an advance payment and the balance is typically billed on a combination of delivery and/or acceptance. In Proton Solutions, the Company usually collects an advance payment and additional amounts are billed as work progresses in accordance with agreed-upon contractual terms upon achievement of contractual milestones. Service contracts are usually billed at the beginning of the contract period or at periodic intervals (e.g. monthly or quarterly) during the contract which could result in a contract asset and contract liability. At times, billing occurs subsequent to revenue recognition, resulting in an unbilled receivable which represents a contract asset. However, when the Company receives advances or deposits from customers, which can be higher in the initial stages of the contract, particularly international contracts in the case of Oncology Systems, before revenue is recognized, this results in deferred revenues which represents a contract liability. These contract assets and liabilities are reported as unbilled receivables and deferred revenues, respectively, on the Consolidated Balance Sheet on a contract-by-contract basis at the end of each reporting period.

Share-Based Compensation Expense

The Company measures and recognizes compensation expense for all share-based payment awards made to employees and directors, including stock options, employee stock purchases related to the Varian Medical Systems, Inc. Employee Stock Purchase Plan (the "Employee Stock Purchase Plan"), deferred stock units, restricted stock, restricted stock units and performance units based on their fair values.

Share-based compensation expense recognized in the Consolidated Statements of Earnings includes compensation expense for the share-based payment awards based on the grant date fair value estimated in accordance with the guidance on share-based compensation. The Company values VMS's stock options and performance-based options granted, and the option component of the shares of VMS common stock purchased under the Employee Stock Purchase Plan, using the Black-Scholes option-pricing model, which was developed for use in estimating the fair value of traded options that have no vesting restrictions and are fully transferable. In addition, the valuation of the performance-based options include a market condition using a Monte Carlo simulation model on the date of grant. Share-based compensation expense for restricted common stock, restricted stock units and deferred stock units is measured at the stock's fair value on the date of grant and is amortized over each award's respective service period. The Company values performance units, which contain a market condition, using the Monte Carlo simulation model on the date of grant. In addition, the Company estimates the probability that certain performance conditions that affect the vesting of performance-based options and units will be achieved, and recognizes expense only for those awards expected to vest. Both the Black-Scholes option-pricing model and the Monte Carlo simulation model require the input of certain assumptions and changes in the assumptions can materially affect the fair value estimates of share-based payment awards.

Share-based compensation expense recognized is based on the value of the portion of share-based payment awards that is ultimately expected to vest. The Company attributes the value of share-based compensation to expense using the straight-line method. The Company considers only the direct tax impacts of share-based compensation awards

when calculating the amount of tax windfalls or shortfalls.

Earnings per share

Basic net earnings per share is computed by dividing net earnings attributable to Varian by the weighted average number of shares of VMS common stock outstanding for the period. Diluted net earnings per share is computed by dividing net earnings attributable to Varian by the sum of the weighted average number of common shares outstanding and dilutive common shares under the treasury stock method. The Company excludes potentially dilutive common shares (consisting of shares underlying stock options and the employee stock purchase plan) from the computation of diluted weighted average shares outstanding if the per share value, which consists of either (i) the exercise price of the awards or (ii) the sum of (a) the exercise price of the awards and (b) the amount of the compensation cost attributed to future services and not yet recognized, is greater than the average market price of the shares, because the inclusion of the shares underlying these stock awards would be anti-dilutive to earnings per share.

Shipping and Handling Costs

Shipping and handling costs are included as a component of cost of revenues.

Research and Development

Research and development costs have been expensed as incurred. These costs primarily include employees' compensation, consulting fees, material costs and research grants.

Software Development Costs

Costs for the development of new software products and substantial enhancements to existing software products are expensed as incurred until technological feasibility has been established, at which time any additional costs would be capitalized. No costs associated with the development of software have been capitalized as the Company believes its current software development process is essentially completed concurrent with the establishment of technological feasibility.

Comprehensive Earnings

Comprehensive earnings include all changes in equity (net assets) during a period from non-owner sources. Comprehensive earnings include currency translation adjustments, change in unrealized gain or loss on derivative instruments designated as cash flow hedges, net of taxes (see Note 9, "Derivative Instruments and Hedging Activities"), change in unrealized gain or loss on available for sale securities, net of taxes and adjustments to and amortization of unrecognized actuarial gain or loss, unrecognized transition obligation and unrecognized prior service cost of our defined benefit pension and post-retirement benefit plans (see Note 11, "Retirement Plans").

Taxes on Earnings

Taxes on earnings are based on pretax financial accounting income. Deferred tax assets and liabilities are recorded based on the difference between the financial statement and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse.

Recently Adopted Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") issued ASC 606. Under the standard, revenue is recognized when a customer obtains control of promised goods or services in an amount that reflects the consideration the entity expects to receive in exchange for those goods or services. Effective September 30, 2017, the Company elected to early adopt the requirements of ASC 606 using the full retrospective method, which required the Company to recast the prior reporting periods presented.

The most significant impacts on adoption were in the Oncology Systems segment and are primarily due to the removal of the contingent revenue cap which limited revenue recognition to the amount of cash received from the customer, the elimination of the mandatory revenue deferral for software sold with extended payment terms and the removal of the vendor-specific objective evidence requirement for the separation of bundled software products. The Company also identified additional performance obligations for training and certain elements of warranty that are recognized as separate performance obligations, and identified that certain new performance obligations were previously accounted for as part of hardware products resulting in a change in classification of revenues from product to service. In preparation for adoption of the standard, the Company implemented internal controls and key system functionalities to enable the preparation of financial information.

83

The Company has recast its consolidated financial statements from amounts previously reported due to the adoption of ASC 606. Select Consolidated Statements of Earnings line items, which reflect the adoption of ASC 606 are as follows:

(In millions, except per share amounts)	Fiscal Year 2017 As Previously Reported	Adjustments	As Adjusted
Revenues:			
Product	$1,555.5	$ (161.5)	$1,394.0
Service	1,112.7	112.6	1,225.3
Total revenues	2,668.2	(48.9)	2,619.3
Cost of revenues:			
Product	1,025.3	(74.4)	950.9
Service	487.3	67.2	554.5
Total cost of revenues	1,512.6	(7.2)	1,505.4
Gross margin	1,155.6	(41.7)	1,113.9
Earnings from continuing operations before taxes	344.8	(41.7)	303.1
Taxes on earnings	87.7	(10.6)	77.1
Net earnings from continuing operations	257.1	(31.1)	226.0
Net loss from discontinued operations	(6.8)	—	(6.8)
Net earnings	$250.3	$ (31.1)	$219.2
Net earnings attributable to Varian	$249.6	$ (31.1)	$218.5
Diluted net earnings per share from continuing operations attributable to Varian	$2.75	$ (0.33)	$2.42

(In millions, except per share amounts)	Fiscal Year 2016 As Previously Reported	Adjustments	As Adjusted
Revenues:			
Product	$1,583.9	$ (148.0)	$1,435.9
Service	1,037.2	120.6	1,157.8
Total revenues	2,621.1	(27.4)	2,593.7
Cost of revenues:			
Product	1,071.3	(82.8)	988.5
Service	436.9	63.6	500.5
Total cost of revenues	1,508.2	(19.2)	1,489.0
Gross margin	1,112.9	(8.2)	1,104.7
Earnings from continuing operations before taxes	440.6	(8.2)	432.4
Taxes on earnings	115.3	(5.2)	110.1
Net earnings from continuing operations	325.3	(3.0)	322.3
Net loss from discontinued operations	77.4	—	77.4
Net earnings	$402.7	$ (3.0)	$399.7
Net earnings attributable to Varian	$402.3	$ (3.0)	$399.3
Diluted net earnings per share from continuing operations attributable to Varian	$3.39	$ (0.03)	$3.36

Select Consolidated Statements of Balance Sheet line items, which reflect the adoption of ASC 606 are as follows:

	September 29, 2017		
(In millions)	As Previously Reported	Adjustments	As Adjusted
Assets:			
Trade and unbilled receivables, net	$823.5	$ 138.0	$ 961.5
Inventories	439.7	(22.0)	417.7
Prepaid expenses and other current assets	199.8	(9.5)	190.3
Deferred tax assets	138.8	8.5	147.3
Liabilities and Equity:			
Accrued liabilities	394.7	(19.8)	374.9
Deferred revenues	640.6	114.8	755.4
Other long-term liabilities	130.0	(2.6)	127.4
Retained earnings	756.0	22.6	778.6

Adoption of ASC 606 had no impact to net cash from or used in operating, investing or financing activities in the Company's Consolidated Statements of Cash Flows.

In the first quarter of fiscal year 2018, the Company elected to early adopt the FASB guidance which targeted improvements to the accounting for hedging activities. The guidance allows companies to more accurately present the economic effects of risk management activities in the financial statements. This amendment is required to be applied prospectively. The primary impact of the adoption is the required disclosure changes. The adoption of the new guidance did not have a material impact on the Company's consolidated financial statements.

In the first quarter of fiscal year 2018, the Company adopted the FASB guidance related to employee share-based payments. The amendment simplifies several aspects of the accounting for employee share-based payments including the accounting for income taxes, forfeitures, and statutory tax withholding requirements, as well as classification in the statement of cash flows. The Company elected to use the prospective transition method for the presentation of excess tax benefits on the statement of cash flows. Under the new standard, excess tax benefits are now included in taxes on earnings in the Consolidated Statements of Earnings. The Company elected to recognize forfeitures as they occur, and the impact of this change in accounting policy was recorded as a $0.4 million reduction, net, to its beginning retained earnings balance as of September 30, 2017. See Note 12, "Income Taxes" for more information on the impact of this accounting guidance. The remaining provisions of this amendment did not have a material impact on the Company's consolidated financial statements.

In the first quarter of fiscal year 2018, the Company adopted the FASB accounting guidance related to inventory measurement. The amendment requires inventory measured using first-in, first-out (FIFO) or average cost to be subsequently measured at the lower of cost and net realizable value, thereby simplifying the current guidance that requires an entity to measure inventory at the lower of cost or market. This amendment is required to be applied prospectively. The adoption of this new guidance did not have a material impact to the Company’s consolidated financial statements.

In the first quarter of fiscal year 2018, the Company elected to early adopt the FASB guidance on the definition of a business in accounting for transactions when determining whether they represent acquisitions or disposals of assets or of a business. The Company adopted this amendment prospectively. The adoption of this new guidance did not have an impact to the Company’s consolidated financial statements.

In the first quarter of fiscal year 2018, the Company elected to early adopt the FASB guidance simplifying the measurement of goodwill by eliminating the Step 2 impairment test. The new guidance requires companies to perform the goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. The Company adopted this amendment prospectively. The adoption of this new guidance did not have an impact to the Company’s consolidated financial statements.

Recent Accounting Standards or Updates Not Yet Effective

In November 2018, the FASB amended its guidance to clarify revenue accounting for collaborative arrangements. The standard is effective for the Company beginning in the first quarter of fiscal year 2020 and will be applied retrospectively to the date of

the initial application of ASC 606. Early adoption is permitted. The Company is evaluating the impact of adopting this amendment to its consolidated financial statements.

In October 2018, the FASB amended its guidance which will add the Overnight Index Swap rate based on the Secured Overnight Financing Rate as a benchmark interest rate for hedge accounting purposes. The standard is effective for the Company beginning in the first quarter of fiscal year 2020. Early adoption is permitted. The Company is evaluating the impact of adopting this amendment to its consolidated financial statements.

In August 2018, the FASB amended its guidance for costs of implementing a cloud computing service arrangement and aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. This new standard also requires customers to expense the capitalized implementation costs of a hosting arrangement that is a service contract over the term of the hosting arrangement. This new standard becomes effective for the Company in the first quarter of fiscal year 2021, with early adoption permitted. This new standard can be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. The Company is evaluating the impact of adopting this amendment to its consolidated financial statements.

In August 2018, the FASB issued guidance which modifies the disclosure requirements for employers that sponsor defined benefit pension or other post-retirement plans by removing and adding certain disclosures for these plans. The standard is effective for the Company beginning in the first quarter of fiscal year 2022. Early adoption is permitted. The Company is evaluating the impact of adopting this guidance to its consolidated financial statements.

In August 2018, the FASB issued guidance which changed the disclosure requirements for fair value measurements by removing, adding and modifying certain disclosures. The standard is effective the Company beginning in the first quarter of fiscal year 2021. Early adoption is permitted. The Company is evaluating the impact of adopting this guidance to its consolidated financial statements.

In February 2018, the FASB amended its guidance that will allow companies to reclassify disproportionate tax effects in accumulated other comprehensive income caused by the Tax Cuts and Jobs Act to retained earnings. The amendment will be effective for the Company beginning in its first quarter of fiscal year 2020. Early adoption is permitted. The Company is evaluating the impact of adopting this amendment to its consolidated financial statements.

In May 2017, the FASB provided guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting. The guidance became effective for the Company beginning in the first quarter of fiscal year 2019. The Company does not expect the adoption of the amendment to have a material impact on its consolidated financial statements.

In March 2017, the FASB amended its guidance on the accounting related to defined benefit plans and other post-retirement benefits. This amendment requires the service cost component of net periodic pension and post-retirement benefit cost be presented in the same line item as other employee compensation costs, while the other components be presented separately as non-operating income (expense). The amendment became effective for the Company beginning in its first quarter of fiscal year 2019. The Company does not expect the adoption of the amendment to have a material impact on its consolidated financial statements.

In November 2016, the FASB amended its guidance on the classification and presentation of restricted cash in the statement of cash flow. The amendment requires entities to include restricted cash and restricted cash equivalents in its cash and cash equivalents in the statement of cash flows. The amendment became effective for the Company beginning in its first quarter of fiscal year 2019. The amendment is required to be adopted retrospectively. The Company does not expect the adoption of the amendment to have a material impact on its Consolidated Statements of Cash Flow.

In October 2016, the FASB amended its guidance for tax accounting for intra-entity asset transfers. The amendment removes the prohibition against the immediate recognition of the current and deferred income tax effects of intra-entity transfers of assets other than inventory. The amendment will be effective for the Company beginning in its

first quarter of fiscal year 2019. Early adoption is permitted. The amendment is required to be adopted on a modified retrospective basis. The Company does not expect the adoption of the amendment to have a material impact on its consolidated financial statements.

In August 2016, the FASB issued an amendment to its accounting guidance related to the classification of certain cash receipts and cash payments. The amendment was issued to reduce the diversity in practice in how certain transactions are classified in the statement of cash flows. The amendment became effective for the Company beginning in its first quarter of fiscal year 2019. The amendment is required to be adopted retrospectively. The Company does not expect the adoption of the amendment to have a material impact on its Consolidated Statements of Cash Flow.

In June 2016, the FASB issued an amendment to its accounting guidance related to impairment of financial instruments. The amendment adds a new impairment model that is based on expected losses rather than incurred losses. The amendment will be effective for the Company beginning in its first quarter of fiscal year 2021 with early adoption permitted beginning in the first quarter of fiscal year 2020. The Company is evaluating the impact of adopting this amendment to its consolidated financial statements.

In February 2016, the FASB issued a new standard on accounting for leases. The new standard is intended to provide enhanced transparency and comparability by requiring lessees to record right-of-use assets and corresponding lease liabilities on the balance sheet. The new standard will continue to classify leases as either finance or operating, with classification affecting the pattern of expense recognition in the statement of earnings. The new standard is required to be adopted using a modified retrospective method to each prior reporting period presented with various optional practical expedients. The Company expects to adopt this new standard beginning in its first quarter of fiscal year 2020. The Company is still evaluating the impact of adopting this new standard to its consolidated financial statements.

In January 2016, the FASB issued an amendment to its accounting guidance related to recognition and measurement of financial assets and financial liabilities. The amendment addresses certain aspects of recognition, measurement, presentation and disclosure of financial instruments. Most prominent among the changes is the requirement for changes in the fair value of the Company's equity investments to be recognized through net earnings rather than other comprehensive income. Under the amendment, equity investments that do not have a readily determinable fair value are eligible for the measurement alternative, which will require the Company to measure these investments at cost, with adjustments for changes in price or impairments reflected through net earnings. The amendment will become effective for the Company beginning in its first quarter of fiscal year 2019. The amendment will be applied prospectively for the Company's privately-held investments for which the measurement alternative is elected, and applied on a modified retrospective basis for all other financial instruments. The Company does not expect the adoption of the amendment to have a material impact on its consolidated financial statements.

2. DISCONTINUED OPERATIONS

On January 28, 2017, the Company completed the Distribution of Varex. In connection with the Distribution, the Company and Varex entered into a separation and distribution agreement as well as various other agreements that governs the relationships between the parties, including a transition services agreement, a tax matters agreement, an employee matters agreement, an intellectual property matters agreement, a trademark license agreement and supply/distribution agreements. The separation and distribution agreement and other agreements related to the separation were entered into on January 27, 2017. Services under the transition services agreement were for 60 days to 24 months following the Distribution Date, depending on the service provided.

On January 25, 2017, the Company entered into a term facility ("Varex Term Facility"), and on the same day drew down $203.0 million under the facility. In conjunction with the Distribution, the Company used $200.0 million of those proceeds to repay a portion of its outstanding 2013 Revolving Credit Facility. At the Distribution Date, the Company contributed $81.3 million in cash and cash equivalents to Varex as part of the distribution and transfer of certain legal entities. In fiscal year 2017, the Company received $38.7 million from Varex for excess cash and cash equivalents contributed at the Distribution Date. In fiscal 2017, the Company recorded a $334.1 million reduction to retained earnings as a result of the Distribution of Varex, which included assets and liabilities transferred to Varex on the Distribution Date, including $203.0 million of debt outstanding under the Varex Term Facility.

Following the Distribution, Varex retained a specified amount of cash that would enable Varex to pay the Company consideration for certain net assets outside of the United States that were required to be transferred to Varex, but which did not occur on the Distribution Date due to not having received regulatory approvals for such transfers. The Company transferred the remaining assets to Varex in the fourth quarter of fiscal year 2018. At September 28, 2018, the Company had $2.3 million in assets (net of liabilities) on its Consolidated Balance Sheet which represents a net receivable from Varex for the payment of the transferred assets.

The financial results of Varex are presented as net (loss) earnings from discontinued operations on the Consolidated Statements of Earnings, and primarily include the financial results of the Company's former Imaging Components

operating segment and costs relating to the Distribution. Corporate costs previously allocated to the Company's Imaging Components operating segment are not included in discontinued operations. See Note 17, "Segment Information" for more information related to corporate allocated costs.

The following table summarizes the key components of net (loss) earnings from discontinued operations:

	Fiscal Years[1]	
(In millions)	2017 [2]	2016
Revenues	$194.0	$596.7
Cost of revenues	117.3	348.3
Gross margin	76.7	248.4
Operating expenses [3]	76.1	132.6
Operating earnings	0.6	115.8
Taxes on earnings	7.4	38.4
Net (loss) earnings from discontinued operations	(6.8)	77.4
Less: Net earnings from discontinued operations attributable to noncontrolling interests	0.1	0.5
Net (loss) earnings from discontinued operations attributable to Varian	$(6.9)	$76.9

(1) There was no activity in net loss from discontinued operations during fiscal 2018.

(2) In fiscal year 2017, the net loss from discontinued operations represents activity through the date of the Distribution.

(3) Operating expenses from discontinued operations included separation costs of $34.2 million and $16.9 million during fiscal years 2017 and 2016, respectively. Separation costs include expenses for transaction advisory services, consulting services, restructuring and other expenses.

The following table summarizes the major classes of assets and liabilities of discontinued operations that were included in the Company's balance sheet:

(In millions)	September 28, 2018	September 29, 2017
Assets:		
Accounts receivable, net	$ —	$ 8.1
Inventories	—	2.9
Prepaid expenses and other current assets	2.3	0.1
Current assets of discontinued operations	2.3	11.1
Total assets of discontinued operations	$ 2.3	$ 11.1
Liabilities:		
Accounts payable	$ —	$ 2.0
Accrued liabilities	—	0.5
Current liabilities of discontinued operations	—	2.5
Total liabilities of discontinued operations	$ —	$ 2.5

The following table presents supplemental cash flow information of discontinued operations:

	Fiscal Years[1]	
(In millions)	2017	2016
Operating activities:		
Share-based compensation expense	$2.0	$6.1
Depreciation expense	4.8	10.5
Amortization expense	1.8	5.5
Investing activities:		
Purchases of property, plant & equipment	(6.4)	(28.9)
Acquisition of business, net of cash acquired	—	(1.2)
Sale of available-for-sale securities	$—	$8.6

(1) There was no significant cash flow activity from discontinued operations in fiscal year 2018.

88

3. BUSINESS COMBINATIONS

Sirtex

On January 30, 2018, the Company signed an agreement to acquire Sirtex Medical Limited ("Sirtex"), an Australian company that was listed on the Australian Securities Exchange, for A$28 per share or approximately A$1.6 billion. On May 4, 2018, Sirtex received an unsolicited non-binding, indicative and conditional proposal from CDH Investments ("CDH"), a China-based alternative asset manager, for the acquisition of all of the issued shares in Sirtex for A$33.60 per share. On June 14, 2018, the Company received notification from Sirtex that it had accepted the proposal from CDH. Consequently, Sirtex terminated its agreement with the Company and the Company received a net $9.0 million breakup fee from Sirtex.

Business Combinations in Fiscal Year 2018

During fiscal year 2018, the Company acquired four companies, including two privately-held software companies, a distributor of radiotherapy equipment, and a manufacturer of a surface-guided radiation therapy positioning and motion management system, for an aggregate purchase price of $109.0 million. The purchase price of all four acquisitions primarily consisted of $72.1 million in goodwill and $49.9 million in finite-lived intangible assets. The Company has integrated these four acquisitions into its Oncology Systems reporting unit.

Business Combinations in Fiscal Year 2017
The Company did not have any business combinations in fiscal year 2017.
Business Combination in Fiscal Year 2016
During fiscal year 2016, the Company purchased a privately-held distributor of radiotherapy equipment for an aggregate purchase price of $35.2 million. The purchase price primarily consisted of $24.9 million in finite-lived intangible assets and $11.4 million in goodwill. The Company integrated the acquired business into its Oncology Systems reporting unit.

Other information

The excess of purchase price over the fair value amounts assigned to the assets acquired and liabilities assumed represents the goodwill amount resulting from the completed acquisitions above. The Company believes the factors that contributed to goodwill include synergies that are specific to the Company's completed acquisitions and not available to market participants and the acquisition of a talented workforce. Of the goodwill acquired in fiscal year 2018, $14.0 million is deductible for income tax purposes. In fiscal year 2016, the goodwill acquired was not deductible for income tax purposes.

The fair value of assets acquired and liabilities assumed has been determined on a preliminary basis for acquisitions completed in fiscal year 2018, and the Company will finalize these amounts as it obtains the information necessary to complete the measurement process. Any changes resulting from facts and circumstances that existed as of the date of the acquisitions may result in adjustments to the amounts of goodwill, intangible assets and deferred revenue balances recorded. The Company expects to finalize these amounts no later than one year from the date of each acquisition.

Management applied significant judgment in determining the fair value of intangible assets, which involved the use of significant estimates and assumptions with respect to the revenue growth rates, the economic lives, and the discount rate.

The consolidated financial statements include the operating results from the date of acquisition. The impact of the completed acquisitions to the periods presented was not material. Pro forma results of operations for the completed acquisitions have not been presented because the effects of the acquisitions, individually and in the aggregate, were not material to the Company's consolidated financial statements.

During fiscal years 2018, 2017 and 2016, the Company incurred acquisition-related expenses of $36.4 million, $1.9 million and $3.1 million, respectively. In 2018, acquisition-related expenses included a $29.7 million loss related to hedging the anticipated Australian dollar purchase price for Sirtex, $15.7 million acquisitions costs, partially offset by a $9.0 million breakup fee received from Sirtex in connection with the termination of the acquisition. See Note 9, "Derivative Instruments and Hedging Activities" for more information on the hedging losses.

4. BALANCE SHEET COMPONENTS

The following tables summarize the Company's cash equivalents and available-for-sale securities:

	September 28, 2018			
(In millions)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Cash equivalents				
Money market funds	$44.1	$ —	$ —	$44.1
Total money market funds	$44.1	$ —	$ —	$44.1
Available-for-sale securities				
MPTC Series B-1 Bonds [1]	$25.1	$ —	$ —	$25.1
MPTC Series B-2 Bonds [2]	23.1	—	—	23.1
GPTC securities [1]	7.9	—	—	7.9
APTC securities [1]	6.4	—	—	6.4
Total available-for-sale securities	$62.5	$ —	$ —	$62.5

	September 29, 2017			
(In millions)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Available-for-sale securities				
Original CPTC Loans [2]	$47.4	$ —	$ —	$47.4
DRTC securities [2]	8.3	—	—	8.3
GPTC securities [2]	4.4	—	—	4.4
Total available-for-sale securities	$60.1	$ —	$ —	$60.1

(1) Included in prepaid and other current assets on the Company's Consolidated Balance Sheets because the Company has the ability and intent to sell this security in the next twelve months.

(2) Included in other assets on the Company's Consolidated Balance Sheets because the maturity dates are greater than one year, and the Company does not have the intent and ability to collect or sell all or a portion of its loans or securities in the next twelve months.

See Note 5, "Fair Value" and Note 16, "Proton Solutions Loans and Investment" for more information the Original California Proton Treatment Center, LLC (“Original CPTC”) Loans, Maryland Proton Therapy Center ("MPTC"), Atlanta Proton Therapy Center ("APTC"), Delray Radiation Therapy Center ("DRTC") and Georgia Proton Therapy Center ("GPTC") Securities.

In the fiscal year 2017, the Company's Original CPTC Loans were determined to be other-than-temporarily impaired due to credit losses. As a result of this determination, the investment was written down to its estimated fair value of $47.4 million, resulting in impairment charges of $51.4 million. See Note 16, "Proton Solutions Loans and Investment" for more information on CPTC impairment charges during fiscal year 2018.

The following table provides the Company's unbilled receivables and deferred revenues from contracts with customers:

(In millions)	September 28, 2018	September 29, 2017
Unbilled receivables - current	$362.8	$259.1
Unbilled receivables - long-term [1]	36.3	10.9
Deferred revenues - current	(729.7)	(755.4)

Deferred revenues - long-term [2]	(38.6)	$ (7.2)
Total net unbilled receivables (deferred revenues)	$ (369.2)	$ (492.6)

[1] Included in other assets on the Company's Consolidated Balance Sheets.

(2) Included in other long-term liabilities on the Company's Consolidated Balance Sheets.

During fiscal year 2018, unbilled receivables net of deferred revenues increased by $123.4 million primarily due to the contractual timing of billings occurring after the revenues were recognized, as well as the timing of milestone payments.

During fiscal year 2018, the Company recognized revenues of $407.0 million which was included in the deferred revenues balance as of September 29, 2017. During fiscal year 2017, the Company recognized revenues of $468.9 million which was included in the deferred revenues balance as of September 30, 2016.

The Company did not record a significant allowance for doubtful accounts on its unbilled receivables during fiscal year 2018. The Company recognized an allowance for doubtful accounts for CPTC of $17.2 million from long-term unbilled receivables during fiscal year 2017.

The following table summarizes the Company's inventories:

(In millions)	September 28, 2018	September 29, 2017
Raw materials and parts	$ 304.1	$ 296.5
Work-in-process	50.6	47.7
Finished goods	83.4	73.5
Total inventories	$ 438.1	$ 417.7

The following table summarizes the Company's prepaid expenses and other current assets:

(In millions)	September 28, 2018	September 29, 2017
Prepaid income taxes	$ 48.1	$ 59.9
Available-for-sale securities (1)	39.4	—
RPTC senior secured debt (1)	24.9	25.4
Prepaid compensation	14.2	11.6
Advance payments to suppliers	16.6	14.9
Other current receivables	24.1	28.7
Other prepaid expenses	66.0	49.8
Total prepaid expenses and other current assets	$ 233.3	$ 190.3

(1) See Note 16, "Proton Solutions Loans and Investment" for more information on the Company's available-for-sale securities and the Rinecker Proton Therapy Center ("RPTC").

The following table summarizes the Company's property, plant and equipment, net:

(In millions)	September 28, 2018	September 29, 2017
Land and land improvements	$ 44.2	$ 44.2
Buildings and leasehold improvements	227.0	220.4
Machinery and equipment	404.0	375.9
Construction in progress	28.6	14.6
	703.8	655.1
Accumulated depreciation and amortization	(429.2)	(399.8)
Total property, plant and equipment, net	$ 274.6	$ 255.3

The following table summarizes the Company's other assets:

(In millions)	September 28, 2018	September 29, 2017
Long-term receivables, net	$ 115.7	$ 114.8
Deferred Compensation Plan ("DCP") assets	75.2	72.7
Long-term available-for-sale securities	23.1	60.1
Investments in privately-held companies	39.4	27.1
Other	39.4	26.1
Total other assets	$ 292.8	$ 300.8

The following table summarizes the Company's accrued liabilities:

(In millions)	September 28, 2018	September 29, 2017
Accrued compensation and benefits	$ 151.1	$ 109.7
DCP liabilities	74.4	70.7
Product warranty	40.9	37.0
Income taxes payable	49.0	38.8
Other	104.3	118.7
Total accrued liabilities	$ 419.7	$ 374.9

The following table summarizes the Company's other long-term liabilities:

(In millions)	September 28, 2018	September 29, 2017
Long-term income taxes payable	$ 189.1	$ 48.6
Long-term deferred revenues	38.6	7.2
Deferred income taxes	31.4	17.1
Other	65.2	54.5
Total other long-term liabilities	$ 324.3	$ 127.4

5. FAIR VALUE

Assets/Liabilities Measured at Fair Value on a Recurring Basis

In the tables below, the Company has segregated all assets and liabilities that are measured at fair value on a recurring basis into the most appropriate level within the fair value hierarchy based on the inputs used to determine the fair value at the measurement date.

	Fair Value Measurement Using			
Type of Instruments	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Balance
(In millions)				
Assets at September 28, 2018:				
Cash equivalents:				
Money market funds	$44.1	$ —	$ —	$44.1
Available-for- sale securities:				
MPTC Series B-1 Bonds	—	25.1	—	25.1
MPTC Series B-2 Bonds	—	23.1	—	23.1
APTC securities	—	6.4	—	6.4
GPTC securities	—	7.9	—	7.9
Total assets measured at fair value	$44.1	$ 62.5	$ —	$106.6
Liabilities at September 28, 2018:				
Contingent consideration	$—	$ —	$ (24.4)	$(24.4)
Total liabilities measured at fair value	$—	$ —	$ (24.4)	$(24.4)
Assets at September 29, 2017:				
Available-for- sale securities:				
Original CPTC loans	$—	$ —	$ 47.4	$47.4
DRTC securities	—	8.3	—	8.3
GPTC securities	—	4.4	—	4.4
Total assets measured at fair value	$—	$ 12.7	$ 47.4	$60.1

The Company classifies its money market funds as Level 1 because they have daily liquidity, quoted prices for the underlying investments can be obtained, and there are active markets for the underlying investments. The Company's Level 2 available-for-sale securities consist of bonds for MPTC, APTC, GPTC, and DRTC. The observable inputs for these securities are comparable bond issues, broker/dealer quotations for the same or similar investments in active markets and other observable inputs such as yields, credit risks, default rates, and volatility. As of September 28, 2018, and September 29, 2017, the carrying amount of the Level 2 available-for-sale securities approximated their fair value. See Note 16, "Proton Solutions Loans and Investment" for more information about these bonds.

As of September 28, 2018, and September 29, 2017, the fair value of the Company's derivative instruments was not material. The Company has elected to use the income approach to value its derivative instruments using standard valuation techniques and Level 2 inputs, such as currency spot rates, forward points and credit default swap spreads. The Company’s derivative instruments are generally short-term in nature, typically one month to thirteen months in duration.

The Company measures the fair value of its Level 3 contingent consideration liabilities based on the income approach by using a discounted cash flow model with key assumptions that include estimated sales units or revenues of the acquired business or completion of certain milestone targets during the earn-out period, volatility, and estimated discount rates corresponding to the periods of expected payments. If the estimated sales units, revenues or probability of completing certain milestones were to increase or decrease during the respective earn-out period, the fair value of the contingent consideration would increase or decrease, respectively. If the estimated discount rates were to increase or decrease, the fair value of contingent consideration

would decrease or increase, respectively. Changes in volatility may result in an increase or decrease in the fair value of contingent consideration. The Company's contingent consideration are from its business combinations in fiscal year 2018 and is included in accrued liabilities and other long-term liabilities on the Consolidated Balance Sheets.

In December 2017, the Original CPTC loans were modified and partially satisfied resulting in a Term Loan of $53.5 million, as defined in Note 16, "Proton Solutions Loans and Investment". One of the modifications was that the loan agent no longer has the option to purchase these loans from the Company; therefore, the Original CPTC loans are no longer classified as an available-for-sale security. The Company had no unrealized gains or unrealized losses associated with the Original CPTC loans recorded in its other comprehensive earnings. The modification to the Original CPTC Loans had no impact on the Company's Consolidated Statements of Earnings. As of September 29, 2017, the Company classified the Original CPTC loans as available-for-sale securities, the fair value of which was based on the income approach by using the discounted cash flow model with key assumptions that include discount rates corresponding to the terms and risks associated with the loans as well as underlying cash flow assumptions. However, the Company did not increase the fair value of the Original CPTC loans above their par values as ORIX Capital Markets, LLC (“ORIX”), the loan agent, had the option to purchase these loans from the Company under the original terms and conditions at par value.

The following table presents the reconciliation for all assets and liabilities measured and recorded at fair value on a recurring basis using significant unobservable inputs (Level 3):

(In millions)	Available-for-sale Securities	Contingent Consideration
Balance at September 30, 2016	$ 95.3	$ (1.3)
Additions [1]	3.3	—
Settlements [2]	—	1.6
Change in fair value recognized in earnings	(51.2)	(0.3)
Balance at September 29, 2017	47.4	—
Additions [2]	—	(24.9)
Reclassification of Original CPTC Loans to Term Loan	(47.4)	—
Settlements [2]	—	0.5
Balance at September 28, 2018	$ —	$ (24.4)

[1] Amounts reported under available-for-sale securities represent additional investments and accrued interest.

[2] Amounts reported under contingent consideration represent cash payments to settle contingent consideration liabilities or additional liabilities from business acquisitions.

There were no transfers of assets or liabilities between fair value measurement levels during fiscal years 2018, 2017 and 2016. Transfers between fair value measurement levels are recognized at the end of the reporting period.

Fair Value of Other Financial Instruments

The fair values of certain of the Company’s financial instruments, including bank deposits included in cash equivalents, trade and unbilled receivables, net of allowance for doubtful accounts, short-term notes receivable, revolving loan to CPTC, RPTC senior secured debt, accounts payable, and short-term borrowings approximate their carrying amounts due to their short maturities.

As of September 28, 2018, the fair value of the Term Loan with CPTC approximated its carrying value of $44.0 million. See Note 16, "Proton Solutions Loans and Investment" for further information. The carrying value is based on the present value of expected future cash payments discounted at a rate reflecting the nature and duration of the loans, risks involved with CPTC, and its industry. As a result, the Term Loan is categorized as Level 3 in the fair value hierarchy.

The fair value of the outstanding long-term notes receivable, including accrued interest, approximated their carrying value of $29.7 million and $100.2 million at September 28, 2018 and September 29, 2017, respectively, because it is based on terms of recent comparable transactions and is categorized as Level 3 in the fair value hierarchy. The fair value is based on the income approach by using the discounted cash flow model with key assumptions that include

discount rates corresponding to the terms and risks as well as underlying cash flow assumptions. See Note 16, "Proton Solutions Loans and Investment" for more information on the long-term notes receivable.

6. RECEIVABLES

The following table summarizes the Company's trade and unbilled receivable and notes receivable as of September 28, 2018 and September 29, 2017:

(In millions)	September 28, 2018	September 29, 2017
Trade and unbilled receivable, gross	$1,093.0	$1,039.2
Allowance for doubtful accounts	(41.1)	(63.1)
Trade and unbilled receivable, net	$1,051.9	$976.1
Short-term	$1,009.9	$961.5
Long-term [1]	$42.0	$14.6
Notes receivable	$29.8	$105.2
Short-term [2]	$0.1	$5.0
Long-term [1] [3]	$29.7	$100.2

[1] Included in other assets on the Company's Consolidated Balance Sheets.

[2] Included in prepaid expenses and other current assets on the Company's Consolidated Balance Sheets.

[3] Balances include accrued interest and are recorded in other assets on the Company's Consolidated Balance Sheets.

A financing receivable represents a financing arrangement with a contractual right to receive money, on demand or on fixed or determinable dates, and that is recognized as an asset on the Company’s Consolidated Balance Sheets. The Company’s financing receivables consist of trade receivables with contractual maturities of more than one year and notes receivable. A small portion of the Company's financing trade receivables are included in short-term trade accounts receivable.

As of September 28, 2018, the allowance for doubtful accounts is entirely related to short-term receivables. As of September 29, 2017, the allowance for doubtful accounts includes $45.9 million related to short-term trade and unbilled receivables and $17.2 million related to long-term unbilled receivables, which was written off in the first quarter of fiscal year 2018.

See Note 16, "Proton Solutions Loans and Investment" for more information on the Company's short-term and long-term notes receivable balances.

7. GOODWILL AND INTANGIBLE ASSETS

The following table reflects the activity of goodwill by reportable operating segment:

(In millions)	Oncology Systems	Proton Solutions	Total
Balance at September 30, 2016	$ 170.2	$ 49.8	$220.0
Foreign currency translation adjustments	—	2.6	2.6
Balance at September 29, 2017	170.2	52.4	222.6
Business combinations	72.1	—	72.1
Foreign currency translation adjustments	(0.2)	(0.9)	(1.1)
Balance at September 28, 2018	$ 242.1	$ 51.5	$293.6

The following table reflects the gross carrying amount and accumulated amortization of the Company's intangible assets, net:

	September 28, 2018			September 29, 2017		
(In millions)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Technologies and patents	$139.6	$ (73.9)	$ 65.7	$102.0	$ (60.9)	$ 41.1
Customer contracts and supplier relationship	44.9	(19.1)	25.8	33.9	(14.3)	19.6
Other	6.6	(5.8)	0.8	5.5	(3.4)	2.1
Total intangible with finite lives	191.1	(98.8)	92.3	141.4	(78.6)	62.8
In-process research and development with indefinite lives	8.8	—	8.8	8.8	—	8.8
Total intangible assets	$199.9	$ (98.8)	$ 101.1	$150.2	$ (78.6)	$ 71.6

Amortization expense for intangible assets was $20.6 million , $16.6 million and $10.1 million for fiscal years 2018, 2017 and 2016, respectively.

As of September 28, 2018, the Company estimates that its remaining amortization expense for intangible assets with finite lives will be as follows (in millions):

Fiscal Years	Total
2019	$18.2
2020	18.7
2021	14.1
2022	12.7
2023	12.0
Thereafter	16.6
Total remaining amortization	$92.3

8. BORROWINGS

The following table summarizes the Company's short-term borrowings:

	September 28, 2018		September 29, 2017	
(In millions, except for percentages)	Amount	Weighted-Average Interest Rate	Amount	Weighted-Average Interest Rate
Short-term borrowings:				
2017 Revolving Credit Facility	$ —	—%	$350.0	2.36 %
Total short-term borrowings	$ —		$350.0	

On April 3, 2018, the Company entered into a credit agreement (the "2018 Credit Agreement") with certain lenders and Bank of America, N.A. ("BofA"), as the administrative agent. The 2018 Credit Agreement provides for a five-year revolving credit facility (the "2018 Revolving Credit Facility") in an aggregate principal amount of up to $1.8 billion. The 2018 Revolving Credit Facility also includes a $50.0 million sub-facility for the issuance of letters of credit and permits swing line loans of up to $25 million. Under the 2018 Revolving Credit Facility, the Company has the right to (i) request to increase the aggregate commitments by an aggregate amount for all such requests of up to $100.0 million and (ii) request an additional increase in the commitments or establish one or more term loans, provided that, in each case, the lenders are willing to provide such new or increased commitments and certain other conditions are met. The proceeds of the 2018 Revolving Credit Facility may be used for working capital, capital expenditures, Company share repurchases, permitted acquisitions and other corporate purposes, as well as to satisfy the prior outstanding obligation under the 2017 Revolving Credit Facility.

The 2018 Revolving Credit Facility replaced the 2017 Revolving Credit Facility of $600 million. As of September 28, 2018, the Company did not have an outstanding principal balance on its 2018 Revolving Credit Facility.

96

Borrowings under the 2018 Revolving Credit Facility accrue interest based on either (i) the Eurodollar Rate plus a margin of 1.000% to 1.375% based on a net leverage ratio involving funded indebtedness and EBITDA, or (ii) a base rate of (a) the federal funds rate plus 0.50%, (b) BofA's announced prime rate, or (c) the Eurodollar Rate plus 1.00%, whichever is highest, plus a margin of 0.000% to 0.375% based on the same leverage ratio, depending upon instructions from the Company. Borrowings under the 2018 Revolving Credit Facility have a contract repayment date of twelve months, or less, and a final maturity of five years if based on the Eurodollar Rate and all overnight borrowings on the base rate would also have a final maturity of five years.

The Company must pay a commitment fee on the unused portion of the 2018 Revolving Credit Facility at a rate from 0.125% to 0.25% based on a net leverage ratio. The Company may prepay, reduce or terminate the commitments without penalty. Swing line loans under the 2018 Revolving Credit Facility will bear interest at the base rate plus the then applicable margin for base rate loans. The Company paid commitment fees of $0.9 million, $0.7 million and $0.3 million in fiscal years 2018, 2017 and 2016, respectively, related to its borrowings.

The 2018 Credit Agreement provides that certain material domestic subsidiaries must guarantee the 2018 Revolving Credit Facility, subject to certain limitations on the amount secured. As of September 28, 2018, no subsidiary guaranties were required to be executed under the 2018 Credit Agreement.

The 2018 Credit Agreement contains provisions that limit the Company's ability to, among other things, incur future indebtedness, contingent obligations or liens, guarantee indebtedness, make certain investments and capital expenditures, sell stock or assets and pay dividends, and consummate certain mergers or acquisitions.

The 2018 Credit Agreement contains affirmative and negative covenants applicable to the Company and its subsidiaries that are typical for credit facilities of this type, and that are subject to materiality and other qualifications, carve-outs, baskets and exceptions. The Company agreed to maintain a financial covenant which requires a maximum consolidated net leverage ratio. The Company was in compliance with all financial covenants under the 2018 Credit Agreement for fiscal year 2018.

VMS's Japanese subsidiary ("VMS KK") has an unsecured uncommitted credit agreement with Sumitomo that enables VMS KK to borrow and have outstanding at any given time a maximum of 3.0 billion Japanese Yen (the "Sumitomo Credit Facility"). In February 2018, the Sumitomo Credit Facility was extended and will expire in February 2019. Borrowings under the Sumitomo Credit Facility accrue interest based on the basic loan rate announced by the Bank of Japan plus a margin of 0.5%. As of September 28, 2018, the Company did not have an outstanding principal balance on its Sumitomo Credit Facility.

Total Company interest paid on borrowings was $4.6 million, $9.0 million and $10.8 million fiscal years 2018, 2017 and 2016, respectively.

9. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES

The Company measures all derivatives at fair value on the Consolidated Balance Sheets. The accounting for gains or losses resulting from changes in the fair value of those derivatives depends upon the use of the derivative and whether it qualifies for hedge accounting.

As of September 28, 2018, and September 29, 2017, the Company did not have any outstanding derivatives designated as hedging instruments. As of September 28, 2018, and September 29, 2017, the fair value of the Company's derivatives not designated as hedging instruments were not material. Also, see Note 1, "Summary of Significant Accounting Policies" for the credit risk associated with the Company's derivative instruments.

Offsetting of Derivatives

The Company presents its derivative assets and derivative liabilities on a gross basis on the Consolidated Balance Sheets. However, under agreements containing provisions on netting with certain counterparties of foreign exchange contracts, subject to applicable requirements, the Company is allowed to net-settle transactions on the same date in the same currency, with a single net amount payable by one party to the other. As of September 28, 2018, and September 29, 2017, there were no potential effects of rights of setoff associated with derivative instruments. The Company is neither required to pledge nor entitled to receive cash collateral related to these derivative transactions.

Cash Flow Hedging Activities

The Company has many transactions denominated in foreign currencies and addresses certain of those financial exposures through a risk management program that includes the use of derivative financial instruments. The Company sells products

throughout the world, often in the currency of the customer's country, and may hedge certain of the larger foreign currency transactions when they are either not denominated in the relevant subsidiary's functional currency or the U.S. Dollar. These foreign currency sales transactions are hedged using foreign currency forward contracts. The Company may use other derivative instruments in the future. The Company does not enter into foreign currency forward contracts for speculative or trading purposes. Foreign currency forward contracts are entered into several times a quarter and range from one to thirteen months in maturity.

The hedges of foreign currency denominated forecasted revenues are designated and accounted for as cash flow hedges. The designated cash flow hedges de-designate when the anticipated revenues associated with the transactions are recognized and the effective portion in accumulated other comprehensive loss on the Consolidated Balance Sheets is reclassified to revenues in the Consolidated Statements of Earnings. Subsequent changes in fair value of the derivative instrument are recorded in selling, general and administrative expenses in the Consolidated Statements of Earnings to offset changes in fair value of the resulting non-functional currency receivables. For derivative instruments that are designated and qualified as cash flow hedges, the Company formally documents for each derivative instrument at the hedge's inception, the relationship between the hedging instrument (foreign currency forward contract) and hedged item (forecasted foreign currency revenues), the nature of the risk being hedged and its risk management objective and strategy for undertaking the hedge. The Company records the gain or loss on the derivative instruments that are designated and qualified as cash flow hedges in accumulated other comprehensive loss on the Consolidated Balance Sheets and reclassifies these amounts into revenues in the Consolidated Statements of Earnings in the period in which the hedged transaction is recognized in earnings. The Company assesses hedge effectiveness both at the onset of the hedge and on an ongoing basis using regression analysis. The time value of the derivative and hedged item is included in the assessment of hedge effectiveness.

At the inception of the hedge relationship and quarterly thereafter, the Company assesses whether the likelihood of meeting the forecasted cash flow is highly probable. As of September 28, 2018, and September 29, 2017, the Company did not have any foreign currency forward contracts designated as cash flow hedges.

The following table presents the amounts, before tax, recognized in accumulated other comprehensive loss on the Consolidated Balance Sheets that are related to the foreign currency forward contracts designated as cash flow hedges:

	Loss Recognized in Other Comprehensive Earnings Fiscal Years		
(In millions)	2018	2017	2016
Foreign currency forward contracts	$(0.9)	$ —	$(1.0)

The effect of cash flow hedge accounting on the Consolidated Statements of Earnings was as follows:

	Location and Amount of Loss Recognized in Earnings (Loss) on Cash Flow Hedging Relationships Twelve Months Ended		
(In millions)	September 28, 2018 Revenues	September 29, 2017 Revenues	September 30, 2016 Revenues
Total amounts of income and expense line items presented in the Consolidated Statement of Earnings in which the effects of fair value and cash flow hedges are recorded	$2,919.1	$ 2,619.3	$2,593.7
Loss on cash flow hedge relationships:			
Foreign exchange contracts:			
Amount loss reclassified from other comprehensive earnings into earnings	$(0.9)	$ —	$(1.0)

In fiscal year 2018, the Company adopted new accounting guidance where it no longer excludes the ineffective portion from the assessment of effectiveness. The new accounting guidance was adopted on a prospective basis.

The portion of cash flow hedges gain or loss excluded from the assessment of effectiveness and the ineffective portion of the cash flow hedges were not material in fiscal years 2017 and 2016.

Balance Sheet Hedging Activities

The Company also hedges balance sheet exposures from its various subsidiaries and business units where the U.S. Dollar is the functional currency. The Company enters into foreign currency forward contracts to minimize the short-term impact of foreign currency fluctuations on monetary assets and liabilities denominated in currencies other than the U.S. Dollar functional currency. The foreign currency forward contracts are short term in nature, typically with a maturity of approximately one month, and are based on the net forecasted balance sheet exposure. For derivative instruments not designated as hedging instruments, changes in their fair values are recognized in selling, general and administrative expenses in the Consolidated Statements of Earnings. Changes in the values of these hedging instruments are offset by changes in the values of foreign-currency-denominated assets and liabilities. Variations from the forecasted foreign currency assets or liabilities, coupled with a significant currency rate movement, may result in a material gain or loss if the hedges are not effectively offsetting the change in value of the foreign currency asset or liability. Other than foreign exchange hedging activities, the Company has no other free-standing or embedded derivative instruments.

The Company had the following outstanding foreign currency forward contracts:

	September 28, 2018	
(In millions)	Notional Value Sold	Notional Value Purchased
Australian Dollar	$14.4	$ —
Brazilian Real	6.9	—
British Pound	41.6	0.6
Canadian Dollar	—	0.4
Chinese Yuan	2.0	—
Danish Krone	—	4.8
Euro	216.7	1.7
Indian Rupee	15.8	—
Japanese Yen	51.5	—
New Zealand Dollar	1.3	—
Norwegian Krone	2.7	—
Polish Zloty	6.7	—
Singapore Dollar	5.7	—
South African Rand	5.6	—
Swedish Krona	9.7	—
Swiss Franc	—	62.8
Taiwan Dollar	11.6	—
Thai Baht	6.1	—
Totals	$398.3	$ 70.3

The following table presents the gains (losses) recognized in the Company's Consolidated Statements of Earnings related to the foreign currency forward contracts that are not designated as hedging instruments.

Location of Gain (Loss) Recognized in Income on Derivative	Amount of Gain (Loss) Recognized in Net Earnings on Derivative		
	Fiscal Years		
(In millions)	2018	2017	2