IDEXX LABORATORIES INC /DE
Form 10-K
February 16, 2018

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
Form 10-K
(Mark One)
ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2017
or
TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____.
COMMISSION FILE NUMBER: 0-19271

IDEXX LABORATORIES, INC.
(Exact name of registrant as specified in its charter)

DELAWARE	01-0393723
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
ONE IDEXX DRIVE, WESTBROOK, MAINE	04092
(Address of principal executive offices)	(ZIP Code)

Registrant's telephone number, including area code: 207-556-0300

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

Title of each class	Name of each exchange on which registered
Common Stock, $0.10 par value per share	NASDAQ Global Select Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant’s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act.

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

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

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

Based on the closing sale price on June 30, 2017 of the registrant’s Common Stock, the last business day of the registrant’s most recently completed second fiscal quarter, as reported by the NASDAQ Global Select Market, the aggregate market value of the voting stock held by non-affiliates of the registrant was $ 14,011,555,111. For these purposes, the registrant considers its directors and executive officers to be its only affiliates.

The number of shares outstanding of the registrant’s Common Stock was 87,122,794 on February 6, 2018.

DOCUMENTS INCORPORATED BY REFERENCE

Part III—Specifically identified portions of the Company's definitive Proxy Statement to be filed in connection with the Company's 2018 annual meeting of stockholders (the "2018 Annual Meeting"), to be held on May 9, 2018, are incorporated herein by reference.

GLOSSARY OF TERMS AND SELECTED ABBREVIATIONS

Term/Abbreviation	Definition
2015 Amended Agreement	Amended and Restated Multi-Currency Note Purchase and Private Shelf Agreement executed in June 2015
2021 Notes	$50 million of 3.32% Series A Senior Notes due July 21, 2021
2022 Notes	$75 million of 3.25% Series A Senior Notes due February 12, 2022
2023 Notes	$75 million of 3.94% Series A Senior Notes due December 11, 2023
2024 Notes	$75 million of 3.76% Series B Senior Notes due July 21, 2024
2025 Series B Notes	$75 million of 4.04% Series B Senior Notes due December 11, 2025
2025 Series C Notes	€88.9 million of 1.785% Series C Senior Notes due June 18, 2025
2026 Notes	$75 million of unsecured 3.72% Senior notes due September 4, 2026
2027 Notes	$75 million of 3.72% Series B Senior Notes due February 12, 2027
Adjusted operating income	A non-GAAP financial measure that represents total Company operating income adjusted for the 2015 software impairment charge. Adjusted operating income should be considered in addition to, and not as a replacement for or as a superior measure to, operating income reported in accordance with U.S. GAAP. Management believes that reporting adjusted operating income provides useful information to investors by facilitating easier comparisons of our operating income performance with prior and future periods and to the performance of our peers.
AOAC RI	Association of Analytical Communities Research Institute
AOCI	Accumulated other comprehensive income or loss
APHIS	Animal and Plant Health Inspector Service
ASU 2014-09	Accounting Standards Update (“ASU”) 2014-09, Revenue from Contracts with Customers (Topic 606), also referred to as the “New Revenue Standard”
ASU 2016-02	ASU 2016-02, Leases (Topic 842)
ASU 2016-09	ASU 2016-09, Compensation-Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting
ASU 2017-01	ASU 2017-01, Business Combinations (Topic 805): Clarify the Definition of a Business
ASU 2017-09	ASU 2017-09, Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting
BSE	Bovine spongiform encephalopathy
CAG	Companion Animal Group, a reporting segment that provides veterinarians diagnostic products and services and information management solutions that enhance the health and well-being of pets
cGMP	The FDA’s current Good Manufacturing Practice regulations
Credit Facility	Our $850 million five-year unsecured revolving credit facility under an amended and restated credit agreement that was executed in December 2015
EMA	Extended maintenance agreements

EPA	U.S. Environmental Protection Agency
EPS	Earnings per share, if not specifically stated, EPS refers to earnings per share on a diluted basis
EU	European Union
FASB	U.S. Financial Accounting Standards Board
FDA	U.S. Food and Drug Administration
FDC Act	Food, Drug and Cosmetics Act
FeLV	Feline leukemia virus
FIV	Feline immunodeficiency virus, similar to the virus that leads to AIDS in humans
FTC	U.S. Federal Trade Commission
IVLS	IDEXX VetLab Station, connects and integrates the diagnostic information from all the IDEXX VetLab analyzers and thus provides reference laboratory information management system capability
Kits and consumables	Rapid assay kits and IDEXX VetLab consumables
LPD	Livestock, Poultry and Dairy, a reporting segment that provides diagnostic products and services for livestock and poultry health and to ensure the quality and safety of milk and food and improve bovine reproductive efficiency
MEA	Multiple element arrangements, contracts with customers that include multiple deliverables
MetLife Agreement	Multi-Currency Note Purchase and Private Shelf Agreement, entered into in December 2014
Moss	Moss Inc., a supplier of certain components used in our SNAP products and certain livestock and poultry testing kits
NASDAQ Index	The Total Return Index for the NASDAQ Stock Market (U.S. Companies) prepared by the Center for Research in Security Prices
NCIMS	National Conference of Interstate Milk Shipments
OCI	Other comprehensive income or loss
OPTI Medical	OPTI Medical Systems, Inc., a wholly-owned subsidiary of IDEXX Laboratories Inc., located in Roswell, Georgia. This business manufactures and supplies blood gas analyzers and consumables worldwide for the human point-of-care medical diagnostics market. The Roswell facility also manufactures electrolytes slides (instrument consumables) to run Catalyst One® and Catalyst Dx®, chemistry analyzers, and blood gas analyzers and consumables for the veterinary market. Also referred to as OPTI

Organic revenue growth	A non-GAAP financial measure and represents the percentage change in revenue, as compared to the same period for the prior year, net of the effect of changes in foreign currency exchange rates, acquisitions and divestitures. Organic revenue growth should be considered in addition to, and not as a replacement for or as a superior measure to, revenues reported in accordance with U.S. GAAP, and may not be comparable to similarly titled measures reported by other companies. Management believes that reporting organic revenue growth provides useful information to investors by facilitating easier comparisons of our revenue performance with prior and future periods and to the performance of our peers.
Ortho	Ortho Clinical Diagnostics, Inc., a supplier of dry slide consumables used in our Catalyst Dx Chemistry Analyzer, Catalyst One Chemistry Analyzer and the VetTest Chemistry Analyzer
PACS	Picture archiving and communication software, our software solution for accessing, storing and sharing diagnostic images
R&D	Research and Development
Reagent rentals	Refers to instruments being placed at customer sites at little or no cost in exchange for a long-term customer commitment to purchase instrument consumables.
S&P	Standard & Poor's
S&P 500 Health Care Index	The index for the S&P 500 Health Care (U.S. companies) measures the performance of companies that are classified as members in the Global Industry Classification Standard of health care services sub-industry
S&P 500 Index	The S&P 500 Index is a U.S. stock market index based on the market capitalization of 500 large companies having common stock listed on the New York Stock Exchange or NASDAQ, including IDEXX
SaaS	Software-as-a-service
SDMA	Symmetrical dimethyl arginine, a biomarker that detects kidney disease
SEC	U.S. Securities and Exchange Commission
Senior Note Agreement	Private placement senior notes having an aggregate principal amount of approximately $600 million, referred to as senior notes
T4	Thyroxine, a hormone produced by the thyroid gland, tested to indicate thyroid health
Tax Act	The Tax Cuts and Jobs Act enacted on December 22, 2017, which has significant changes to the U.S. corporate tax system
TPE	Third-party evidence, relevant in determining revenue recognition for multiple element arrangement
U.S. GAAP	Accounting principles generally accepted in the United States of America
USDA	United States Department of Agriculture
VSOE	Vendor-specific objective evidence, relevant in determining revenue recognition for multiple element arrangements
Water	Water, a reporting segment that provides water microbiology testing products around the world

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IDEXX LABORATORIES, INC.

Annual Report on Form 10-K

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The terms “IDEXX,” “Company,” “registrant,” “we,” “us,” and “our” included in this Annual Report on Form 10-K mean IDE Laboratories, Inc. and all subsidiaries that are consolidated under U.S. GAAP.

We have included certain terms and abbreviations used throughout this Annual Report on Form 10-K in the "Glossary of Terms and Selected Abbreviations.”

Our name, logo and the following terms used in this Annual Report on Form 10-K are either registered trademarks or trademarks of IDEXX Laboratories, Inc. in the United States and/or other countries: 4Dx®, Animana® Veterinary Software, Catalyst Dx®, Catalyst One®, Coag Dx™, Colilert®, Colisure®, Cornerstone®, DVMAX®, Enterolert®, Feline Triple®, Filta-Max®, Filta-Max xpress®, IDEXX I-Vision CR®, IDEXX I-Vision DR®, IDEXX I-Vision Mobile™, IDEXX ImageBank™ , IDEXX Neo®, IDEXX-PACS™, IDEXX Petly® Plans, IDEXX SDMA®, IDEXX VetLab®, IDEXX VPM™, LaserCyte®, LaserCyte® Dx, OPTI®, OPTI LION™, PetChek®, PetDetect®, Pet Health Network®, Practice Profile™, ProCyte Dx®, Pseudalert®, Quanti-Tray®, SediVue Dx®, SimPlate®, IDEXX SmartService™, SNAP®, SNAPduo®, SNAP Pro®, SNAP® cPL™, SNAP® fPL™, SNAPshot Dx®, IDEXX VetAutoread™, VetConnect®, IDEXX VetLab® UA™, VetLINK®, VetLyte®, VetStat®, VetTest® and VetVault®.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

This Annual Report on Form 10-K for the year ended December 31, 2017, contains statements which, to the extent they are not statements of historical fact, constitute “forward-looking statements.” Such forward-looking statements about our business and expectations within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), include statements relating to future revenue growth rates, future tax benefits; business trends, earnings and other measures of financial performance; the effect of economic downturns on our business performance; projected impact of foreign currency exchange rates; demand for our products; realizability of assets; future cash flow and uses of cash; future repurchases of common stock; future levels of indebtedness and capital spending; interest expense; warranty expense; share-based compensation expense; the adoption and projected impact of new accounting standards; future commercial efforts; future product launches; and competition. Forward-looking statements can be identified by the use of words such as “expects,” “may,” “anticipates,” “intends,” “would,” “will,” “plans,” “believes,” “estimates,” “should,” “project,” and similar words and expressions. These forward-looking statements are intended to provide our current expectations or forecasts of future events, are based on current estimates, projections, beliefs, and assumptions, and are not guarantees of future performance. Actual events or results may differ materially from those described in the forward-looking statements. These forward-looking statements involve a number of risks

and uncertainties as more fully described under the heading “Part I, Item 1A. Risk Factors” in this Annual Report on Form 10-K. Any forward-looking statements represent our estimates only as of the day this Annual Report on Form 10-K was first filed with the Securities and Exchange Commission (“SEC”) and should not be relied upon as representing our estimates as of any subsequent date. From time to time, oral or written forward-looking statements may also be included in other materials released to the public and they are subject to the risks and uncertainties described or cross-referenced in this section. While we may elect to update forward-looking statements at some point in the future, we specifically disclaim any obligation to do so, even if our estimates or expectations change.

PART I

ITEM 1. BUSINESS

COMPANY OVERVIEW

IDEXX was incorporated in Delaware in 1983. We develop, manufacture, and distribute products and provide services primarily for the companion animal veterinary, livestock and poultry, dairy and water testing markets. We also sell a line of portable electrolytes and blood gas analyzers for the human point-of-care medical diagnostics market. Our primary products and services are:

- Point-of-care veterinary diagnostic products, comprising instruments, consumables, and rapid assay test kits;
- Veterinary reference laboratory diagnostic and consulting services;
- Practice management and diagnostic imaging systems and services used by veterinarians;
- Biological materials testing, laboratory diagnostic instruments and services used by the biomedical research community;
- Diagnostic, health-monitoring products for livestock, poultry and dairy;
- Products that test water for certain microbiological contaminants; and
- Point-of-care electrolytes and blood gas analyzers used in the human point-of-care medical diagnostics market.

Our purpose guides our strategy: to be a great company that creates exceptional long-term value for our customers, employees, and shareholders by enhancing the health and well-being of pets, people, and livestock.

DESCRIPTION OF BUSINESS BY SEGMENT

We operate primarily through three business segments: diagnostic and information technology-based products and services for the veterinary market, which we refer to as the Companion Animal Group (“CAG”); water quality products (“Water”); and diagnostic products and services for livestock and poultry health and to ensure the quality and safety of milk and food, and improve bovine reproductive efficiency, which we refer to as Livestock, Poultry and Dairy (“LPD”).

Our Other operating segment combines and presents products for the human point-of-care medical diagnostics market ("OPTI Medical") with our pharmaceutical product line and our out-licensing arrangements because they do not meet the quantitative or qualitative thresholds for reportable segments.

The performance of our business is particularly subject to various risks that are associated with doing business internationally. For the year ended December 31, 2017, sales of products and services to customers outside the U.S. accounted for approximately 39 percent of our overall revenue. See "Part I, Item 1A. Risk Factors", "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 15 to the consolidated financial statements for the year ended December 31, 2017, included in this Annual Report on Form 10-K for more information about our segments and revenue from customers outside of the U.S.

We believe that the breadth of our full diagnostic solution, including novel products and services developed and made available only by IDEXX, as well as the seamless software integration of our offering, comprise a unique competitive advantage, providing veterinarians with the tools and services to offer advanced veterinary medical care. We believe that with the use of our products and services, veterinary practices significantly improve the quality of veterinary care provided to their patients, increase staff efficiencies, and effectively communicate the value of this medical care to the pet owner. We believe that these capabilities, enabled by the use of IDEXX products and services, improve the financial health of the veterinary practice.

CAG Diagnostics

We provide diagnostic capabilities that meet veterinarians' diverse needs through a variety of modalities, including in-clinic diagnostic solutions and outside reference laboratory services. Regardless of modality utilized, veterinarians are provided with clinically relevant data which is integrated within our information management technologies. The result is a comprehensive view of patient diagnostic information that is easily accessible by both the veterinarian and pet owner.

Integrated Diagnostic Information Management

VetConnect PLUS is a cloud-based technology that enables veterinarians to access and analyze patients' data from all of IDEXX's diagnostic modalities. These integrated diagnostic results provide the veterinarian with a visualization of patient-specific testing results, allowing the veterinarian to easily see and trend diagnostic results, enabling greater medical insight and enhanced decision making. In addition, VetConnect PLUS provides instant mobile or browser-based access to results, which can be printed or emailed to pet owners and other veterinarians. In this way, VetConnect PLUS can aid veterinarians and practice staff in engaging the pet owner in the patient's care, which can support greater compliance with medical recommendations or preventive care protocols. Customers have activated VetConnect PLUS in over 80 countries.

In-Clinic Diagnostic Solutions

Our in-clinic diagnostic solutions are comprised of our IDEXX VetLab suite of in-clinic chemistry, hematology, immunoassay, urinalysis, and coagulation analyzers, associated proprietary consumable products that provide real-time reference lab quality diagnostic results and a broad range of single-use, handheld IDEXX SNAP rapid assay test kits that provide quick, accurate, and convenient point-of-care diagnostic test results for a variety of companion animal diseases and health conditions.

The IDEXX VetLab suite includes several instrument systems, as well as associated proprietary consumable products, all of which are described below. Additionally, we offer extended maintenance agreements in connection with the sale of our instruments.

Blood and Urine Chemistry. We sell three chemistry analyzers, the Catalyst One Chemistry analyzer, the Catalyst Dx Chemistry analyzer, and the VetTest chemistry analyzer, that are used by veterinarians to measure levels of certain enzymes and other substances in blood or urine for monitoring health status and assisting in diagnosing physiologic conditions. These three instruments use consumables manufactured for IDEXX by Ortho-Clinical Diagnostics, Inc. ("Ortho") based on Ortho's dry slide technology. In addition, the Catalyst analyzers also use dry slide electrolyte consumables manufactured by OPTI Medical Systems, Inc. ("OPTI Medical"), one of our wholly-owned subsidiaries, and other slides also manufactured by IDEXX. Blood tests commonly run on these analyzers include glucose, alkaline phosphatase, ALT (alanine aminotransferase), albumin, calcium, creatinine, blood urea nitrogen, total protein, and many others. Tests are sold individually and in prepackaged panels. All three analyzers also run a urine test called urine protein:creatinine ratio, which assists in the detection of renal disease.

The Catalyst analyzers provide significantly improved throughput, ease of use and test menu relative to the VetTest analyzer (our original chemistry analyzer), including the ability to run electrolytes, phenobarbital, fructosamine and total thyroxine ("T_4"). Key ease-of-use features include the ability to run a whole blood sample using an on-board centrifuge, the ability to run pre-packaged, multi-slide clips in addition to single chemistry slides and an automated metering system. These analyzers also enable automated dilutions, which is an ease-of-use feature both for certain blood chemistries and the test for urine protein:creatinine ratio. The Catalyst Dx analyzer allows a veterinarian to run multiple patient samples simultaneously and both the Catalyst Dx and Catalyst One run different sample types including whole blood, plasma, serum, and urine. In addition, the Catalyst Dx and Catalyst One analyzers run a test to measure phenobarbital levels in blood, allowing veterinarians to adjust anticonvulsant medication more quickly and efficiently. Our fructosamine test helps veterinarians to diagnose and manage canine and feline diabetes mellitus, helping to assess insulin treatments, and adjust insulin dosages. We launched our total T_4 test globally for use on the Catalyst One analyzer during the first quarter of 2015 and for use on the Catalyst Dx analyzer early in the third quarter of 2015. T_4 testing is essential to assessing and managing thyroid function and is an accepted standard for baseline testing for both sick pets and preventive care in senior pets.

The Catalyst One analyzer, launched in November 2014, is engineered to deliver the same laboratory-quality results and real-time work flow as the Catalyst Dx analyzer. The Catalyst One analyzer currently offers all the same tests as the Catalyst Dx, plus an expanded menu of 30 tests, including tests for thyroid disease, kidney disease, diabetes, and therapeutic drug monitoring.

In January 2018, we launched the Catalyst SDMA Test in North America, which allows our customers to use the Catalyst One and Catalyst Dx to screen for SDMA. We expect to launch our Catalyst SDMA Test outside of North America in 2018 as well.

We also have two other chemistry analyzers, the VetLyte Electrolyte analyzer and the VetStat Electrolyte and Blood Gas analyzer. The VetStat analyzer runs single-use disposable cassettes that are manufactured by OPTI Medical.

Sales of consumables to customers who use our chemistry analyzers provide the majority of our instrument consumables revenues from our installed base of IDEXX VetLab instruments.

Hematology. We sell four hematology analyzers that assess the cellular components of blood, including red blood cells, white blood cells and platelets (also called a complete blood count). These analyzers include the ProCyte Dx hematology analyzer, the first and only in-house analyzer to combine laser-flow cytometry, optical fluorescence, and laminar-flow impedance in its analysis; the original LaserCyte hematology analyzer and the latest generation LaserCyte Dx hematology analyzer, launched in 2013, which both use laser-flow cytometry technology in their analysis; and the IDEXX VetAutoread hematology analyzer, our original hematology analyzer. In addition, the ProCyte Dx hematology analyzer, the LaserCyte Dx hematology analyzer, and the LaserCyte hematology analyzer each have the ability to analyze the components of certain body fluids. We also sell the Coag Dx analyzer, which permits the detection and diagnosis of blood clotting disorders.

The ProCyte Dx analyzer, our premier hematology analyzer, provides significantly improved throughput and accuracy and more complete medical information relative to the LaserCyte, LaserCyte Dx and VetAutoread hematology analyzers. The ProCyte Dx analyzer provides up to 26 different blood parameters, including the ability to detect band neutrophils and nucleated red blood cells, for a more complete picture of a patient’s health. The ProCyte Dx is validated for many animal species (canine, feline, equine, bovine, ferret, rabbit, gerbil, pig, guinea pig, mini pig, llama, alpaca, camel, sheep, goat, dolphin, and hamster) with research and development efforts focused on validating results for additional species.

Immunoassay Testing Instruments. During the first quarter of 2014, we launched the SNAP Pro Mobile Device, which automatically activates a SNAP test, properly times the run, and captures an image of the result. This device improves medical care by allowing veterinarians to share the test results on the SNAP Pro Mobile screen, or via VetConnect PLUS. In addition, the SNAP Pro Mobile Device improves staff efficiency and ensures that all SNAP test runs are captured and entered into the patient record for customer billing. In January 2017, we launched ProRead for the SNAP Pro Mobile Device. ProRead is a software upgrade that enables the SNAP Pro Mobile Device to interpret the test results.

With multiple-patient testing functionality, the SNAPshot Dx analyzer provides quantitative measurements of total T_4, cortisol and bile acids to assist in the evaluation of thyroid, adrenal and liver function, respectively. The SNAPshot Dx analyzer also reads, interprets, and records the results of many IDEXX rapid assay SNAP tests, including our canine SNAP 4Dx Plus test, feline SNAP FIV/FeLV Combo test, canine SNAP cPL test, feline SNAP fPL test, SNAP Feline Triple test and canine SNAP Heartworm RT test.

Urinalysis. In April 2016, we launched the SediVue Dx urine sediment analyzer in North America. In the fourth quarter of 2016 we launched Sedivue Dx in the UK and Australia. During the first half of 2017, we continued our international launch of SediVue Dx to include other parts of Europe and New Zealand. We plan to continue our international deployment in 2018 to include Switzerland, Poland, and Japan. SediVue Dx is the first and only veterinary in-clinic urine sediment analyzer. It is designed to provide automated real-time results in a fraction of the time of manual microscope analysis. SediVue Dx brings automation, speed and consistency to urinalysis, a traditionally laborious and variable process. Its leading-edge technology allows veterinary staff to perform a complete urinalysis in approximately 3 minutes. SediVue Dx uses proprietary image processing algorithms similar to facial recognition technology to identify clinically relevant particles found in urine and to capture high-contrast digital images that become part of the permanent patient record. The IDEXX VetLab UA analyzer provides rapid, automated capture of semi-quantitative chemical urinalysis and is validated specifically for veterinary use.

IDEXX VetLab Station. The IDEXX VetLab Station (“IVLS”) connects and integrates the diagnostic information from all the IDEXX VetLab analyzers and thus provides reference laboratory information management system capability. IVLS securely connects to the internet, and in this way, enables IDEXX to perform, through its SmartService Solutions wireless services, remote instrument service and software updates to IVLS and certain connected instruments. IVLS also sends all results created on connected instruments instantly to VetConnect PLUS. We sell IVLS as an integral component of the Catalyst One, Catalyst Dx, LaserCyte Dx and ProCyte Dx analyzers, SNAP Pro Mobile Device, SNAPshot Dx analyzer and also as a standalone hardware platform. The IVLS includes a touch screen user interface to simplify laboratory work flow, connect with a practice management system and send information to run the individual analyzers. IVLS also generates one integrated patient report incorporating all of the lab work generated by the IDEXX VetLab suite, stores, retrieves and analyzes historical patient diagnostics data, including SNAP test results, and sends and receives information from practice management systems, including the IDEXX Cornerstone system, as well as a wide variety of third-party systems.

The SNAP rapid assays are single-use, handheld test kits that can work without the use of instrumentation, although many kits may also be read and recorded automatically by the SNAPshot Dx analyzer or activated and captured automatically by the SNAP Pro Mobile Device and interpreted using ProRead, as discussed above. The principal SNAP rapid assay tests are as follows:

Single-Use Canine Tests:

- SNAP 4Dx Plus, which tests for the six vector-borne diseases; Lyme disease, Ehrlichia canis, Ehrlichia ewingii, Anaplasma phagocytophilum and Anaplasma platys, and canine heartworm;
- SNAP Heartworm RT, which tests for heartworm;
- SNAP Parvo, which tests for parvovirus, a virus causing life-threatening damage to the immune system and intestinal tract;
- SNAP cPL, which tests for canine pancreatitis;
- SNAP Giardia, which is a fecal test for soluble Giardia antigens, a common cause of waterborne infection; and
- SNAP Lepto, which tests for leptospirosis, a life-threatening bacterial infection spread through contact with water or soil that has been contaminated by the urine of infected animals.

Sales of canine vector-borne disease tests, including SNAP 4Dx Plus and SNAP Heartworm RT, are greater in the first half of our fiscal year due to seasonality of disease testing in the veterinary practice in the Northern Hemisphere.

Single-Use Feline Tests:

- SNAP Feline Triple, which tests for feline immunodeficiency virus (“FIV”) (which is similar to the virus that leads to AIDS in humans), feline leukemia virus (“FeLV”) and feline heartworm;
- SNAP FIV/FeLV Combo Test, which tests for FIV and FeLV;
- SNAP fPL, which tests for feline pancreatitis;
- SNAP Giardia, which is a fecal test for soluble Giardia antigens; and

· SNAP Feline proBNP, which uses a cardiac biomarker (NT proBNP) to test for stretch and stress on the heart.

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Outside Reference Laboratory Diagnostic and Consulting Services

We offer commercial reference laboratory diagnostic and consulting services to veterinarians worldwide, including customers in the U.S., Europe, Canada, Australia, Japan, New Zealand, South Africa, South Korea, and Brazil. We have reference laboratories in Memphis, Tennessee and Leipzig, Germany that are strategically located near large logistics hubs of major air cargo carriers. Customers use our services by submitting samples by courier or overnight delivery to one of our facilities. Most test results have same-day or next-day turnaround times. Our reference laboratories offer a large selection of tests and diagnostic panels to detect a number of disease states and other conditions in animals, including all tests that can be run in-clinic at the veterinary practice with our instruments or rapid assays. This menu of tests also includes a number of specialized and proprietary tests that we have developed that allow practitioners to diagnose increasingly relevant diseases and conditions in dogs and cats, including parasites, heart disease, allergies, pancreatitis, diabetes, and infectious diseases. Canine vector-borne disease testing volumes are greater in the first half of our fiscal year due to seasonality of disease testing in the veterinary practice in the Northern Hemisphere.

In the third quarter of 2015, we launched the IDEXX SDMA test in North America, a new proprietary kidney test which detects the onset of canine and feline kidney disease months or years earlier than traditional methods. Upon its introduction in North America, the IDEXX SDMA test was included in every chemistry panel submitted by our customers at no incremental charge. During the first quarter of 2016, we launched the IDEXX SDMA test in all of the major European countries and Australia, followed by a full international launch of the IDEXX SDMA test during the remainder of 2016.

In the second quarter of 2015, we launched Hookworm and Roundworm antigen tests to all fecal panels that already include the Whipworm antigen test. These new intestinal parasite panels detect the presence of intestinal worms left undiagnosed by current methods, finding them earlier in the infection cycle and therefore enabling earlier disease diagnosis and treatment intervention.

Additionally, we provide specialized veterinary consultation, telemedicine, and advisory services, including radiology, cardiology, internal medicine, and ultrasound consulting. These services enable veterinarians to obtain readings and interpretations of test results transmitted by telephone and over the internet.

Our diagnostic laboratory business also provides health monitoring and diagnostic testing services to bioresearch customers in North America, Europe, and Asia.

Veterinary Software, Services and Diagnostic Imaging Systems

Veterinary Software and Services. We develop, market and sell practice management systems, including hardware, software and services that run key functions of veterinary clinics, including managing patient electronic health records, scheduling (including for boarding and grooming), client communication, billing, and inventory management. Our principal practice management systems are Cornerstone, DVMAX, Animana and IDEXX Neo. IDEXX Neo, which we launched in the United States during the third quarter of 2015, and IDEXX Animana are cloud-based practice management systems available in the U.S., Europe, and Australia. We also support several other practice management systems installed with our customers, including Better Choice, VPM, VetLINK and BeeFree. Our practice management services include Payment Solutions, Data Backup & Recovery and PetDetect boarding collars.

In addition, we offer client communication and preventive care plan management services designed to strengthen the relationship between the veterinarian and the pet owner. We commercially launched Pet Health Network Pro in 2013, which is a subscription-based service that permits veterinarians to provide online communication and education to pet owners before, during and after each patient visit, thus strengthening the loyalty between a practice and its clients. Further, veterinarians can share VetConnect PLUS testing results directly with pet owners via Pet Health Network Pro. We also offer Pet Health Network 3D, an educational subscription-based service that replaces cumbersome plastic anatomy models with engaging, three-dimension anatomical animations on a desktop or mobile device. In September 2014, we acquired Petly Plans, a cloud-based software solution for veterinary practices to customize, manage and monitor a range of monthly payment preventive care plans for their pet owner clients. Petly Plans complements the Pet Health Network suite of client marketing services by making it easier for practices to increase access to the best care and offer plans that spread the cost of that care, including

examinations, vaccines, and diagnostics, over the course of the year. Certain of our services are compatible with non-IDEXX practice management systems.

With our acquisition of rVetLink in June 2017, we now also offer a comprehensive referral management solution for specialty care hospitals that streamlines the referral process between primary care and specialty care veterinarians. General practice veterinarians occasionally refer patients to board-certified specialists for advanced care in areas such as cardiology, oncology, dermatology, ophthalmology, surgery, or internal medicine. rVetLink automates the time-consuming process of sharing medical records and images, and sending notifications to facilitate generalist-specialist collaboration in the delivery of care. rVetLink's cloud technology integrates with our other major specialty hospital management systems, including IDEXX Cornerstone Software and IDEXX DVMAX Software.

Diagnostic Imaging Systems. Our diagnostic imaging systems capture radiographic images in digital form, replacing traditional x-ray film and the film development process, which generally requires the use of hazardous chemicals and darkrooms. We market and sell three diagnostic imaging systems primarily used in small animal veterinary applications: the IDEXX ImageVue DR50, the IDEXX ImageVue DR40 and the IDEXX ImageVue CR20.

Our newest radiography system, the IDEXX ImageVue DR50, was launched in June 2016 and enables low-dose radiation image capture without sacrificing clear, high-quality images, a component in reducing the risk posed by excess radiation exposure for veterinary professionals. The IDEXX ImageVue DR50 system also offers wireless capabilities for flexibility in patient positioning.

Our diagnostic imaging systems employ picture archiving and communication system ("PACS") software called IDEXX-PACS, which facilitates radiographic image capture and review. IDEXX Web PACS is our cloud-based software-as-a-service ("SaaS") offering for viewing, accessing, storing, and sharing multi-modality diagnostic images. IDEXX Web PACS is integrated with Cornerstone, IDEXX Neo and IDEXX VetConnect PLUS to provide centralized access to diagnostic imaging results alongside patient diagnostic results from any internet connected device. IDEXX Web PACS updates automatically and offers secure storage for an unlimited number of diagnostic images. The new software features advanced radiology measurement tools as well as an interactive collaboration feature that allows veterinarians to collaborate and consult remotely with other practitioners.

IDEXX I-Vision Mobile is a software application that allows veterinarians with IDEXX digital radiography systems the ability to request, view and send images using an iPad® or an Android™ mobile tablet. This application integrates with our IDEXX-PACS software.

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Our principal products are the Colilert, Colilert-18 and Colisure tests, which simultaneously detect the presence of total coliforms and E. coli in water. These organisms are broadly used as microbial indicators for potential fecal contamination in water. These products utilize nutrient-indicators that produce a change in color or fluorescence when metabolized by target microbes in the sample. Our water tests are used by government laboratories, water utilities and private certified laboratories to test drinking water in compliance with regulatory standards, including U.S. Environmental Protection Agency ("EPA") standards. The tests also are used in evaluating water used in production processes (for example, in beverage and pharmaceutical applications) and in evaluating bottled water, recreational water, wastewater, and water from private wells.

Our Enterolert products detect the presence of enterococci in drinking, waste, and recreational waters. Enterococci, bacteria normally found in human and animal waste, are organisms broadly used as microbial indicators for potential fecal contamination in water. Our Pseudalert products detect the presence of Pseudomonas aeruginosa in pool, spa, and bottled water. Pseudomonas aeruginosa is a pathogen that can cause "hot-tub rash," "swimmer's ear" and potentially fatal infections in individuals with weakened immune systems. Our Filta-Max and Filta-Max xpress products are used in the detection of Cryptosporidium and Giardia in water. Cryptosporidium and Giardia are parasites that can cause potentially fatal gastrointestinal illness if ingested. We also distribute certain water testing kits manufactured by Thermo Fisher Scientific, Inc. that complement our Cryptosporidium and Giardia testing products.

In July 2016, we launched Legiolert, a simple culture method test for the detection of Legionella pneumophila, the most common Legionella species in water and the primary cause of Legionnaires' disease. The Legiolert test is designed to be used on potable or non-potable water sources with results in seven days.

Our Quanti-Tray products, when used in conjunction with our Colilert, Colilert-18, Colisure, Enterolert, Pseudalert or Heterotrophic Plate Count (HPC) products, provide users quantitative measurements of microbial contamination rather than a presence/absence indication. In the second quarter of 2015, we launched the Quanti-Tray Sealer PLUS, a next generation instrument of the previously available Quanti-Tray Sealer 2X. These instruments are used with the Quanti-Tray products for the determination of bacterial density in water samples. Our SimPlate for HPC product detects the total number of the most common bacteria in a water sample.

We also sell consumables, parts, and accessories to be used with many of our water testing products.

We sell diagnostic tests, services and related instrumentation that are used to manage the health status of livestock and poultry, to improve bovine reproductive efficiency, and to ensure the quality and safety of milk and food. Our livestock and poultry diagnostic products are purchased by government and private laboratories that provide testing services to livestock veterinarians, producers, and processors. Our herd health screening services are offered to livestock veterinarians and producers. Our principal livestock and poultry diagnostic products include tests for Bovine Viral Diarrhea Virus ("BVDV") and Porcine Reproductive and Respiratory Syndrome ("PRRS"). BVDV is a common and contagious viral infection that suppresses the immune system, making the animal susceptible to a host of other infections, impacting beef and dairy production yields as a result. PRRS is a contagious virus causing reproductive problems and respiratory diseases in swine, leading to increased piglet mortality, reduced growth, and vulnerability to secondary infections.

Our principal dairy products use our SNAP test format and are used by dairy producers and processors worldwide to detect antibiotic drug residue in milk. Our primary product lines are SNAP Beta-Lactam ST and SNAPduo Beta-Tetra ST, which detect certain beta lactam and tetracycline antibiotic residues. We also sell SNAP tests for the detection of certain other contaminants in milk, such as Aflatoxin M1.

In June 2016, we launched the Rapid Visual Pregnancy Test for cattle, which is a point-of-care test that can detect pregnancy 28 days after breeding. This test provides a quick and accurate identifier using whole blood samples that will enable veterinarians to optimize value-added medical consulting services while on farm visits.

OTHER

OPTI Medical

Through OPTI Medical, we sell point-of-care analyzers and related consumables for use in human medical hospitals and clinics to measure electrolytes, blood gases, acid-base balance, glucose, lactate, blood urea nitrogen and ionized calcium, and to calculate other parameters such as base excess and anion gap. These OPTI analyzers are used primarily in emergency rooms, operating rooms, cardiac monitoring areas and other locations where time-critical diagnostic testing is performed within the hospital setting. Our latest generation OPTI CCA-TS2 Blood Gas and Electrolyte analyzer, which launched in 2013, contains many new features relative to previous generation blood gas analyzers including customized work flows, faster time to result, improved communication and a multi-level electronic control. Similar to our earlier generation OPTI CCA and OPTI Touch Electrolyte analyzers, the OPTI CCA-TS2 runs whole blood, plasma, and serum samples on single-use disposable cassettes that contain various configurations of analytes.

In addition, OPTI Medical manufactures our VetStat analyzer, an instrument and consumable system that is a member of the IDEXX VetLab suite for the veterinary market, and provides the dry slides for electrolyte testing on the Catalyst analyzers for our CAG segment.

Other Activities

We own certain drug delivery technology intellectual property, that we continue to seek to commercialize through agreements with third parties, such as pharmaceutical companies, that are included in the Other segment.

MARKETING AND DISTRIBUTION

We market, sell, and service our products worldwide through our marketing, customer service, sales, and technical service groups, as well as through independent distributors and other resellers. We maintain sales offices outside the U.S. in all major regions including Africa, Asia Pacific, Canada, Europe, Middle East, and Latin America.

Generally, we select the appropriate distribution channel for our products based on the type of product, technical service requirements, number and concentration of customers, regulatory requirements, and other factors. Effective January 1, 2015, we market our companion animal diagnostic products to veterinarians directly in the U.S. Prior to January 1, 2015, we marketed our companion animal diagnostic products to veterinarians both directly and through independent veterinary distributors in the U.S., with most instruments sold directly by IDEXX sales personnel and rapid assay test kits and instrument consumables supplied primarily by distributors. Outside the U.S., we sell our companion animal diagnostic products through our direct sales force and, in certain countries, through distributors and other resellers. We sell our veterinary reference laboratory diagnostic and consulting services worldwide generally through our direct sales force. We market our diagnostic imaging products primarily through our direct sales force in the U.S. and Canada. We market our software products primarily through our direct sales force in the U.S., Canada, Europe, and Australia. We market our Water and LPD products primarily through our direct sales force in the U.S. and Canada. Outside the U.S. and Canada, we market these products through selected independent distributors and, in certain countries, through our direct sales force. We sell our OPTI electrolyte and blood gas analyzers both directly and through independent human medical product distributors in the U.S. and we sell most of the related consumables through the distribution channel. Outside the U.S., we sell our OPTI products primarily through distributors and other resellers.

RESEARCH AND DEVELOPMENT

Our business includes the development and introduction of new products and services and may involve entry into new business areas. We maintain active research and development programs in each of our business segments. Our research and development expenses, which consist of salaries, employee benefits, materials and external consulting and development costs, were $109.2 million for the year ended December 31, 2017, or 5.5 percent of our consolidated revenue, $101.1 million for the year ended December 31, 2016, or 5.7 percent of our consolidated revenue and $99.7 million for the year ended December 31, 2015, or 6.2 percent of our consolidated revenue.

PATENTS AND LICENSES

We actively seek to obtain patent protection in the U.S. and other countries for inventions covering our products and technologies. We also license patents and technologies from third parties. Patents and licenses of patents and technologies from third parties are considered important to the Company based on a variety of factors, including providing protection for the Company's inventions and other proprietary intellectual property, affording protection from competitors in certain markets, enabling the use of more effective and efficient technologies in the development and production of our products and offerings, strengthening our reputation and standing among customers, employees and key suppliers, and acting as a deterrent against counterfeiters, imitators and other copiers of technologies.

Important patents and licenses include:

- An exclusive license from Tulane University to patents that expire in 2019 relating to reagents for the detection of Lyme disease utilized in certain of our SNAP products and a reference laboratory diagnostic test;
- An exclusive license from Cornell University to patents covering methods for detecting BVDV that started to expire in 2017 and will continue into 2022;
- Patents relating to reagents and methods for the detection of Anaplasma phagocytophilum utilized in certain of our SNAP products that started to expire in 2017 and will continue into 2022;
- Patents relating to reagents and methods for the detection of Ehrlichia canis utilized in certain of our SNAP products that expire beginning in 2019 and continuing into 2022;
- A patent concerning LaserCyte consumables that expires in 2020;
- Patents concerning Catalyst consumables that expire beginning in 2023 and continuing into 2029;
- Patents concerning Catalyst instruments that expire beginning in 2026 and continuing into 2035;
- Patents relating to reagents and methods for the detection of canine pancreatic lipase that expire in 2026; and
- Patents relating to reagents and methods for the detection of SDMA that expire in 2029.

In addition, we have pending U.S. patent applications concerning reagents and methods for detecting SDMA. If such applications are granted, we expect the associated patents would have expirations ranging from 2036 to 2038.

While we consider these proprietary technology rights to be important to us, a range of factors help to mitigate the future effects of patent and license expiration on our results of operations and financial position. These factors include our brand strength and reputation in the marketplace; the breadth, quality and integration of our product offerings; our existing customer relationships and our customer support; our sales force; our online ordering platform that enables direct ordering of (including establishing automatic reorder schedules for) our consumables, tests and other products by our customers; the applicable regulatory approval status for certain products; our continued investments in innovative product improvements that often result in new technologies and/or additional patents; our investment in diagnostic innovations that results in new product offerings that often are patentable and that expand the test menu for our in-house instruments and/or reference laboratory business; our significant know-how, scale and investments related to manufacturing processes of associated product offerings and certain supply arrangements for consumables that are compatible with our instruments. Although we have several patents and licenses of patents and technologies

from third parties that expired during 2017, and are expected to expire in 2018 and beyond, the expiration of these patents, individually or in the aggregate, is not expected to have a material effect on the Company's financial position or future operations. In addition, we already face notable competition in certain areas as other companies have been successful in bringing competitive products to market, despite the protections afforded by these proprietary technology rights.

To the extent some of our products may now, or in the future, embody technologies protected by patents, copyrights, or trade secrets of others, we may be required to obtain licenses to such technologies in order to continue to sell our products. These licenses may not be available on commercially reasonable terms or at all. Our failure to obtain any such licenses may delay or prevent the sale of certain new or existing products. See "Part I, Item 1A. Risk Factors."

PRODUCTION AND SUPPLY

Many of the instruments that we sell are manufactured by third parties. We rely on third parties in our supply chain to supply us, and our direct suppliers, with certain important components, raw materials and consumables used in or with our products. In some cases, these third parties are sole or single source suppliers. From time to time we seek to qualify alternative suppliers.

Instruments and consumables. Significant products supplied by sole and single source providers include Catalyst Dx and Catalyst One consumables (other than electrolyte consumables and the Fructosamine, T4, CRP, and SDMA slides), VetLyte consumables, LaserCyte and LaserCyte Dx consumables, VetTest, VetAutoread and ProCyte Dx analyzers and consumables, SediVue Dx urinalysis instrument and consumables and components of our SNAP Pro Mobile Device.

VetTest and Catalyst chemistry slides are supplied by Ortho under supply agreements that are currently set to expire at the end of 2028. We are required to purchase all of our requirements for our current menu of VetTest and Catalyst chemistry slides from Ortho to the extent Ortho is able to supply those requirements. The agreements provide for pricing based on purchase volumes and a fixed annual inflationary adjustment. The agreements also prohibit Ortho from promoting and selling these chemistry slides in the veterinary market, excluding the EU, other than to IDEXX.

We purchase other analyzers and consumables under supply agreements with terms extending through 2032, which in some cases may be extended at our option. We have minimum purchase obligations under some of these agreements, and our failure to satisfy these obligations may result in loss of some or all of our rights under these agreements. See “Part I, Item 1A. Risk Factors.”

Other components. We purchase certain other products, raw materials, and components from sole and single source suppliers. These products include certain diagnostic imaging systems and certain components used in our SNAP rapid assay and dairy devices, livestock, and poultry testing kits and water testing products.

Certain components incorporated into our SNAP products and certain livestock and poultry testing kits are supplied by Moss, Inc. (“Moss”) under a supply agreement that either party may terminate with 24 months prior written notice. Pursuant to the terms of the supply agreement, Moss has escrowed its manufacturing information relating to the components, which may be released to us upon certain triggering events that would render Moss incapable of supplying the components to us. If such a triggering event occurs, we will make royalty payments to Moss for the use of such information until Moss is able to again begin manufacturing.

We have been successful in ensuring an uninterrupted supply of products purchased from sole and single source suppliers. However, there can be no assurance that uninterrupted supply can be maintained if these agreements terminate for any reason or our suppliers otherwise are unable to satisfy our requirements for products. See “Part I, Item 1A. Risk Factors.”

BACKLOG

We do not generally maintain significant backlog orders and believe that our backlog at any particular date historically has not been indicative of future sales.

COMPETITION

We compete with many companies ranging from large human and animal health pharmaceutical and medical diagnostics companies to small businesses focused on animal health. Our companion animal veterinary diagnostic products and services compete with both reference laboratory service and in-clinic product providers. Our competitors vary in our different markets. In some markets, academic institutions, governmental agencies, and other public and private research organizations conduct research activities and may commercialize products or services which could compete with our products, on their own or through joint ventures. Several of our direct and potential competitors have substantially greater capital, manufacturing, marketing, and research and development resources than we do.

Competitive factors in our different business areas are detailed below:

- Companion animal diagnostic offerings. We compete primarily on the basis of ease of use and speed of our products, diagnostic accuracy, product quality, breadth of our product line and services, unique product innovations, fully integrated technology, information management capability, availability of medical consultation, effectiveness of our sales and distribution channels, quality of our technical and customer service and our pricing relative to the value of our products and services in comparison with competitive products and services. Our major competitors in most geographic locations in North America are Antech Diagnostics, a unit of VCA Inc., a division of Mars Inc., Abaxis, Inc., Heska Corporation, Zoetis Inc., Samsung Electronics Co., Ltd. and FUJIFILM North America Corporation. In 2015, following our transition to an all-direct sales and distribution model in the U.S., certain of our competitors began to sell products through our formerly exclusive U.S. distributors. See “Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations - Results of Operations and Trends” for more information. We also compete in certain international markets with Fujifilm Holdings Corporation, Samsung Electronics, Arkray, Inc. and BioNote, Inc.
- Water, livestock, poultry, and dairy testing products. We compete primarily on the basis of the ease of use, speed, accuracy, product quality and other performance characteristics of our products and services (including unique tests), the breadth of our product line and services, the effectiveness of our sales and distribution channels, the quality of our technical and customer service, our ability to receive regulatory approvals from governing agencies and our pricing relative to the value of our products in comparison with competitive products and services. Our competitors include highly focused smaller companies and multi-billion dollar companies with small livestock and poultry diagnostics and water testing solution franchises.
- Veterinary Software, Services and Diagnostic Imaging Systems. We compete primarily on the basis of functionality, connectivity to equipment and other systems, performance characteristics, effectiveness of our implementation, training process and customer service, information handling capabilities, advances in technologies and our pricing relative to the value of our products and services. We sell these products primarily in North America and Europe. Our largest competitor is Henry Schein in North America and the U.K., which offers several systems and leverages their animal health distribution business in sales and service. We also compete with numerous focused smaller companies throughout the markets in which we offer veterinary software.
- Electrolyte and blood gas analyzers for the human point-of-care medical diagnostics market. We compete primarily on the basis of the ease of use, menu, convenience, international distribution and service, instrument reliability, and our pricing relative to the value of our products. We compete primarily with large human medical diagnostics

companies such as Radiometer A/S, Siemens Medical Solutions Diagnostics, Instrumentation Laboratory Company, Abbott Diagnostics, a division of Abbott Laboratories and Roche Diagnostics Corporation.

GOVERNMENT REGULATION

Many of our products are subject to comprehensive regulation by U.S. and foreign regulatory agencies that relate to, among other things, product approvals, registrations, manufacturing, import, export, distribution, marketing and promotion, labeling, recordkeeping, testing, quality, storage, and product disposal. The following is a description of the principal regulations affecting our businesses.

Veterinary diagnostic products. Diagnostic tests for animal health infectious diseases, including most of our livestock and poultry products and our rapid assay products, are regulated in the U.S. by the Center for Veterinary Biologics within the United States Department of Agriculture ("USDA") Animal and Plant Health Inspection Service ("APHIS"). These products must be approved by APHIS before they may be sold in the U.S. The APHIS regulatory approval process involves the submission of product performance data and manufacturing documentation. Following regulatory approval to market a product, APHIS requires that each lot of product be submitted for review before release to customers. In addition, APHIS requires special approval to market products where test results are used in part for government-mandated disease management programs. A number of foreign governments accept APHIS approval, including for the purpose of obtaining product registration, as part of their separate regulatory approvals. However, compliance with an extensive regulatory process is required in connection with importing and marketing diagnostic products in Japan, Germany, Canada, Brazil, the Netherlands, and many other countries. We are also required to have a facility license from APHIS to manufacture USDA-licensed products. We have a facility license for our manufacturing facility in Westbrook, Maine and our distribution center in Memphis, Tennessee. Our LPD manufacturing facility in Montpellier, France has been approved by APHIS and we have a permit to import products manufactured in Montpellier, France to the U.S. for distribution.

Our veterinary diagnostic instrument systems are veterinary medical devices regulated by the FDA under the Food, Drug and Cosmetics Act (the "FDC Act"). While the sale of these products does not require premarket approval by the FDA and does not subject us to the FDA's current Good Manufacturing Practices regulations ("cGMP"), these products must not be adulterated, mislabeled, or misbranded under the FDC Act.

In the EU, our veterinary diagnostic instrument systems are not subject to regulation under the European Medical Device Directive or the In Vitro Diagnostic Directive, which are both strictly applicable to human use products. However, these systems are subject to the requirements of the Electromagnetic Compatibility Directive, which applies to all electronic or electrical products capable of causing or being disturbed by electromagnetic interference and requires European Conformity marking on our analyzers. In addition, we anticipate our analyzers will be subject to the requirements of the Restriction of Hazardous Substances Directive, or RoHS, which regulates and restricts certain hazardous substances in electrical and electronic equipment, beginning in July 2019.

Water testing products. Our water tests are not subject to formal premarket regulatory approval. However, before a test can be used as part of a water quality monitoring program in the U.S. that is regulated by the EPA, the test must first be approved by the EPA. The EPA approval process involves submission of extensive product performance data in accordance with an EPA-approved protocol, evaluation of the data by the EPA and publication for public comment of any proposed approval in the Federal Register before final approval. Our Colilert, Colilert-18, Colisure, Quanti-Tray, Filta-Max xpress, Enterolert and SimPlate for heterotrophic plate counts products have been approved by the EPA for use under various regulatory programs. Water testing products are subject to similarly extensive regulatory processes in other countries around the world.

Dairy testing products. Dairy products used in National Conference on Interstate Milk Shipments ("NCIMS") milk-monitoring programs in the U.S. are regulated by the FDA as veterinary medical devices. However, before products requiring FDA approval can be sold in the U.S., performance data must be submitted in accordance with an FDA-approved protocol administered by an independent body, such as the Association of Analytical Communities Research Institute ("AOAC RI"). Following approval of a product by the FDA, the product must also be approved by NCIMS, an oversight body that includes state, federal and industry representatives. Our SNAP Beta-Lactam antibiotic residue test product has been approved by the FDA, NCIMS and AOAC RI for sale in the U.S. While some foreign countries accept AOAC RI approval as part of their regulatory approval process, many countries have separate regulatory processes.

Human point-of-care electrolyte and blood gas analyzers. Our OPTI instrument systems are classified as Class I and/or Class II medical devices, and their design, manufacture and marketing are regulated by the FDA. Accordingly, we must comply with cGMP in the manufacture of our OPTI products. The FDA's Quality System regulations further set forth standards for product design and manufacturing processes, require the maintenance of certain records and provide for inspections of our facilities by the FDA. New OPTI products fall into FDA classifications that require notification of and review by the FDA before marketing, and which are submitted as a 510(k) application. OPTI Medical products are also subject to the European Medical Device Directives and regulations governing the manufacture and marketing of medical devices in other countries in which they are sold.

The European Union regulates and restricts the use of certain substances that we currently use in our products or processes. These requirements include the Biocidal Products Regulation, which may require the use of approved biocides in our products prior to being used or sold in the European Union, the European Regulation for Registration, Evaluation, Authorization and Restriction of Chemical Substances, or REACH, which regulates and restricts the use of certain chemicals in the European Union, and the Restriction of Hazardous Substance or RoHS which regulates and restricts certain hazardous substances in electrical and electronic equipment. Compliance with these regulations (and similar regulations that may be adopted elsewhere) may require registration of the applicable substances or the redesign or reformulation of our products.

In addition to the foregoing, our business is generally subject to various U.S. and foreign regulatory authorities, including the U.S. Federal Trade Commission (the "FTC") and other anti-competition authorities, and we are also subject to anti-bribery and anti-corruption laws, such as the Foreign Corrupt Practices Act, import and export laws and regulations, including U.S. import and export control and sanctions laws and laws and regulations governing the collection, use, retention, sharing and security of data. Any acquisitions of new products and technologies may subject us to additional areas of government regulation. These may involve, medical device, water-quality and other regulations of the FDA, the EPA, the USDA, the FTC, and other federal agencies, as well as state, local and foreign governments. See "Part I, Item 1A. Risk Factors."

EMPLOYEES

As of February 6, 2018, we had approximately 7,600 employees.

AVAILABLE INFORMATION

Our principal executive offices are located at One IDEXX Drive, Westbrook, Maine 04092, our telephone number is 207-556-0300, and our internet address is www.idexx.com. References to our website in this Annual Report on Form

10-K are inactive textual references only and the content of our website should not be deemed incorporated by reference for any purpose.

We make available free of charge at www.idexx.com our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we file such information with, or furnish it to, the SEC. In addition, copies of our reports filed electronically with the SEC may be accessed at www.sec.gov. The public may also read and copy any materials filed with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, DC 20549. Information on the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330.

Our Corporate Governance Guidelines and our Code of Ethics are also available on our website at www.idexx.com.

ITEM 1A.RISK FACTORS

You should consider carefully the risks and uncertainties described below in addition to the other information included or incorporated by reference in this Annual Report on Form 10-K in evaluating our company and our business. Our future operating results involve a number of risks and uncertainties and actual events or results may differ materially from those discussed in this Annual Report on Form 10-K. Factors that could cause or contribute to such differences include, but are not limited to, the factors discussed below, as well as those factors discussed elsewhere herein. Any of these factors, in whole or in part, could materially and adversely affect our business, financial condition, operating results and stock price.

Because our business lines are highly attractive, they are also highly competitive. Our failure to successfully execute certain strategies within this competitive environment could have a material negative impact on our future growth and profitability

The companion animal healthcare industry is highly competitive, and we anticipate increasing levels of competition from both existing competitors and new market entrants given our performance and the market's strong growth and returns. Our ability to maintain or enhance our growth rates and our profitability depends on our successful execution of many elements of our strategy, including:

- Developing, manufacturing and marketing innovative new or improved and cost competitive in-clinic laboratory analyzers that drive sales of IDEXX VetLab instruments, grow our installed base of instruments and increase demand for related recurring sales of consumable products, services, and accessories;

- Developing and introducing new proprietary diagnostic tests and services for both our reference laboratories and in-clinic applications that provide valuable medical information to our customers and effectively differentiate our products and services from those of our competitors;

- Increasing the value to our customers of our companion animal products and services by enhancing the integration of the information and transactions of these products and the management of diagnostic information derived from our products;

- Maintaining premium pricing, including by effectively implementing price increases, for our differentiated products and services through, among other things, effective communication and promotion of the value of our products and services in an environment where many of our competitors promote, market and sell lesser offerings at prices lower than ours;

- Providing our veterinary customers with the medical and business tools, information, and resources that enable them to grow their practices and the utilization of our diagnostic products and services, through increased pet visits and enhanced practice of real-time care;

- Achieving cost improvements in our worldwide network of reference laboratories by implementing global best practices, including lean processing techniques, incorporating technological enhancements, including laboratory automation and a global laboratory information management system, employing purchasing strategies to maximize leverage of our global scale, increasing the leverage of existing infrastructure and consolidating testing in high volume laboratory hubs;

- Achieving cost improvements in the manufacture and service of our in-clinic laboratory analyzers by employing the benefits of economies of scale in both negotiating supply contracts and leveraging manufacturing overhead, and by improving reliability of our instruments;

- Continuing to expand, develop, and advance the productivity of our companion animal diagnostic sales, marketing, customer support and logistics organizations in the U.S. and international markets in support of, among other things, our all-direct sales strategies;

- Attracting, developing, and retaining key leadership and talent necessary to support all elements of our strategy, which is challenging due to the increasingly competitive and tight labor markets in which we operate;

- Expanding our served market and growing our market share by strengthening our sales and marketing activities both within the U.S. and in geographies outside of the U.S.;

- Identifying, completing, and integrating acquisitions that enhance our existing businesses or create new business or geographic areas for us;

- Developing and implementing new technology and licensing strategies; and

- Continuing to effectively manage our growth and expansion on a global scale through, among other things, designing and implementing cost-effective improvements to our processes, procedures, and infrastructure.

If we are unsuccessful in implementing and executing on some or all of these strategies, our rate of growth or profitability may be negatively impacted.

Our dependence on suppliers could limit our ability to sell certain products or negatively affect our operating results

We rely on third-party suppliers to provide components in our products, manufacture products that we do not manufacture ourselves and perform services that we do not provide ourselves, including package-delivery services. Because these suppliers are independent third parties with their own financial objectives, actions taken by them could have a materially negative effect on our results of operations. The risks of relying on suppliers include our inability to enter into contracts with third-party suppliers on reasonable terms, breach, or termination by suppliers of their contractual obligations, inconsistent or inadequate quality control, relocation of supplier facilities, disruption to suppliers' business, including work stoppages, suppliers' failure to comply with complex and changing regulations, and third party financial failure. Any problems with our suppliers and associated disruptions to our supply chain could materially negatively impact our ability to supply the market, substantially decrease sales, lead to higher costs, or damage our reputation with our customers, and any longer-term disruptions could potentially result in the permanent loss of our customers, which could reduce our recurring revenues and long-term profitability. Disruption to our supply chain could occur as a result of any number of events, including, but not limited to, increases in wages that drive up prices; the imposition of regulations, quotas or embargoes on key components; labor stoppages; transportation failures affecting the supply and shipment of materials and finished goods; the unavailability of raw materials; severe weather conditions; natural disasters; civil unrest, geopolitical developments, war or terrorism; computer viruses, physical or electronic breaches, or other information system disruptions or security breaches; and disruptions in utility and other services. For more information regarding the risks presented by natural and other disasters and system disruptions and security breaches from cyberattacks, see "Natural and other disasters, information technology system failures and network disruptions and cybersecurity breaches and attacks could adversely affect our business" below.

In addition, we currently purchase many products and materials from sole or single sources. Some of the products that we purchase from these sources are proprietary and, therefore, cannot be readily or easily replaced by alternative sources. These products include the majority of our Catalyst Dx and Catalyst One consumables; VetLyte electrolyte consumables; ProCyte Dx hematology, IDEXX VetAutoread hematology, and VetTest chemistry analyzers and related consumables and accessories; SediVue Dx urine sediment analyzer and consumables; image capture plates used in our diagnostic imaging systems; and certain components and raw materials used in our SNAP rapid assay kits and SNAP Pro Mobile Device, Catalyst One, LaserCyte and LaserCyte Dx hematology analyzers, livestock and poultry diagnostic tests, dairy testing products, and water testing products. Even where products and materials are available from alternate suppliers, if any becomes unavailable to us for any reason we likely would incur added costs and delays in identifying or qualifying replacement materials and there can be no assurance that replacements would be available to us on acceptable terms, or at all. In certain cases, we may be required to obtain regulatory approval to use alternative suppliers, and this process of approval could delay production of our products or development of product candidates indefinitely.

We seek to mitigate risks associated with sole and single source suppliers, when possible, by entering into long-term contracts that provide for an uninterrupted supply of products at predictable prices. However, some suppliers decline to enter into long-term contracts and we are thus required to purchase products via short-term contracts or on a purchase order basis. There can be no assurance that suppliers with which we do not have long-term contracts will continue to supply our requirements for products, that suppliers with which we do have contracts will always fulfill their obligations under those contracts, or that any of our suppliers will not experience disruptions in their ability to supply our requirements for products. In cases where we purchase sole and single source products or components under purchase orders, we are more susceptible to unanticipated cost increases or changes in other terms of supply. In addition, under some contracts with suppliers we have minimum purchase obligations, and our failure to satisfy those obligations may result in loss of some or all of our rights under these contracts or require us to compensate the supplier. If we are unable to obtain adequate quantities of products in the future from sole and single source suppliers, or if such sole and single source suppliers are unable to obtain the components or other materials required to manufacture the products, we may be unable to supply the market, which could have a material adverse effect on our results of operations, and any longer-term disruptions could potentially result in the permanent loss of customers, which could reduce our recurring revenues and long-term profitability.

Our biologic products are complex and difficult to manufacture, which could negatively affect our ability to supply the market

Many of our rapid assay, livestock and poultry diagnostic, water and dairy products are biologic products, which are products that include materials from living organisms, such as antibodies, cells, and sera. Manufacturing biologic products is highly complex due to the inherent variability of biological input materials and the difficulty of controlling the interactions of these materials with other components of the products, samples, and the environment. There can be no assurance that we will be able to maintain adequate sources of biological materials or that we will be able to consistently manufacture biologic products that satisfy applicable product release criteria and regulatory requirements. Further, products that meet release criteria at the time of manufacture may fall out of specification while in customer inventory, which could require us to incur expenses associated with recalling products and providing customers with new products, either of which could damage customer relations. Our inability to produce or obtain necessary biological materials or to successfully manufacture biologic products that incorporate such materials could result in our inability to supply the market with these products, which would have an adverse effect on our results of operations.

Risks associated with doing business internationally could negatively affect our operating results

For the years ended December 31, 2017, 2016 and 2015, approximately 39 percent of our revenue was attributable to sales of products and services to customers outside the U.S. Although we intend to continue to expand our international operations and business, we may not be able to successfully promote, market, import, export, sell or distribute our products and services outside the U.S. Various risks associated with foreign operations may impact our international sales, including, but not limited to, disruptions in transportation of our products or our supply chain;

fluctuations in oil prices; increased border protection and restriction on travel; the differing product and service needs of foreign customers; difficulties in building, staffing and managing foreign operations (including a geographically dispersed workforce); differing protection of intellectual property; trade protection measures, quotas, embargoes, import/export restrictions, tariffs, duties, and regulatory and licensing requirements; natural and other disasters; ongoing instability or changes in a country's or region's regulatory, economic or political conditions, including as a result of the United Kingdom's June 2016 vote and formal notice in March 2017 to leave the European Union; other unfavorable geopolitical conditions; security concerns; and local business and cultural factors that differ from our normal standards and practices, including business practices prohibited by the Foreign Corrupt Practices Act and other anti-corruption laws and regulations.

Further, prices that we charge to foreign customers may be different than the prices we charge for the same products in the U.S. due to competitive, market or other factors, or changes in foreign currency exchange rates. Our results of operations are also susceptible to changes in foreign currency exchange rates. As a result, the mix of domestic and international sales in a particular period could have an adverse impact on our results of operations for that period.

Various U.S. and foreign government regulations could limit or delay our ability to market and sell our products or otherwise negatively impact our business

As a global business, we sell products and services in more than 175 countries and operate in an increasingly complex legal and regulatory environment. In the U.S., the manufacture and sale of certain of our products are regulated by agencies such as the USDA, the FDA, or the EPA. Our diagnostic tests for animal health applications that involve the detection of infectious diseases, including most rapid assay canine and feline SNAP tests and livestock and poultry diagnostic tests, must be approved by the USDA prior to sale in the U.S. Our dairy testing products as well as the manufacture and sale of our OPTI line of human point-of-care electrolytes and blood gas analyzers require approval by the FDA before they may be sold commercially in the U.S. Our water testing products must be approved by the EPA, as a part of a water quality monitoring program required by the EPA, before they can be used by customers in the U.S. Delays in obtaining regulatory approvals for new products or product upgrades could have a negative impact on our growth and profitability.

The manufacture, import, and sale of our products, as well as our research and development processes, are subject to similar and sometimes more stringent laws in many foreign countries. For example, the European Union regulates the use of certain substances that we currently use in our products or processes. These regulations include the Biocidal Products Regulation, which may require approval for the use of certain biocides in our products prior to being used or sold in the European Union, the European Regulation for Registration, Evaluation, Authorization and Restriction of Chemical Substances, or REACH, which regulates and restricts the use of certain chemicals in the European Union, and the Restriction of Hazardous Substances which regulates and restricts certain hazardous substances in electrical and electronic equipment. Compliance with these regulations (and similar regulations that may be adopted elsewhere) may require registration of the applicable substances or the redesign or reformulation of our products and may reduce or eliminate the availability of certain parts and components used in our products and services in the event our suppliers are unable to comply with the applicable regulations in a timely and cost-effective manner. Any redesign or reformulation or restricted supply of parts and components may negatively affect the availability or performance of our products and services, add testing lead-times for products and reformulated products, reduce our margins, result in additional costs, or have other similar effects. In addition, the costs to comply with these regulations may be significant. Any of these could adversely affect our business, financial condition, or results of operations. These legal and regulatory requirements are complex and subject to change, and we continue to evaluate their impact.

In addition, some foreign governments require us to register our products, and these product registration requirements, which vary among the applicable jurisdictions and change from time to time, are often complex and require us to engage in lengthy and costly processes. There can be no assurance that we will be able to obtain or maintain any product registration required by one or more foreign governments. Any inability to obtain or maintain a required product registration in a jurisdiction could adversely affect our ability to market and sell the applicable product in that jurisdiction, which could have a negative effect on our business, financial condition and results of operations.

We are also subject to a variety of federal, state, local, and international laws and regulations, as well as the associated legal and political environments, concerning, among other things, the importation and exportation of products; our business practices in the U.S. and abroad, such as anti-corruption, anti-money laundering, and anti-competition laws; and immigration and travel restrictions. These legal, regulatory, and political requirements and environments differ among jurisdictions around the world and are rapidly changing and increasingly complex. The costs associated with compliance with these legal and regulatory requirements and adjusting to changing legal and political environments are significant and likely to increase in the future.

Any failure by us to comply with applicable legal and regulatory requirements, or to adjust to changing legal and political environments, could result in fines, penalties, and sanctions; product recalls; suspensions or discontinuations of, or limitations or restrictions on, our ability to design, manufacture, market, import, export or sell our products; and damage to our reputation. Any of these could negatively impact our business.

Increased competition from and technological advances by our competitors could negatively affect our operating results

We face intense competition within the markets in which we sell our products and services, and we expect that future competition may become even more intense as new products, services and technologies become available and new competitors enter the market. Our competitors in the veterinary diagnostic market in the United States and abroad include companies that develop, manufacture, and sell veterinary diagnostic tests and commercial veterinary reference laboratories, certain large and well-funded animal health pharmaceutical companies, as well as corporate hospital chains that operate reference laboratories that serve both their hospitals and unaffiliated hospitals, such as the vertically integrated corporate hospital chain formed when Mars, Incorporated acquired VCA Inc. (formerly named VCA Antech, Inc.) in 2017, which resulted in the combination of two large U.S. veterinary hospital chains. While we believe that our reference laboratory service offerings are competitively differentiated due to our proprietary products and services, such as the IDEXX SDMA test, there can be no assurance that increased consolidation and reference laboratory vertical integration among our customers would not have a negative impact on our ability to compete successfully. For more information regarding the risks presented by consolidation and reference laboratory vertical integration among our customers, see “Consolidation in our customer base, including through increased corporate hospital ownership, and prevalence of buying consortiums could negatively affect our business” below.

Competition could negatively affect our sales and profitability in a number of ways. New competitors may enter our markets through the development of innovative new technology, the acquisition of rights to use existing technologies or the use of existing technologies when patents protecting such existing technologies expire. New or existing competitors may introduce new, innovative, and competitive products and services, which could be superior, or be perceived by our customers to be superior, to our products and services or lead to the obsolescence of one or more of our products or services. While an important aspect of our strategy is to continue, on a cost-effective and timely basis, to enhance our existing products and services and to develop and introduce new and innovative products and services, there can be no assurance that we will be able to successfully develop such products and services or that those products or services will be superior to our competitors’ products or service or otherwise achieve market acceptance. Some of our competitors and potential competitors may choose to differentiate themselves by offering products and services similar to ours at lower sales prices, which could have an adverse effect on our results of operations through loss of market share or a decision to lower our own sales prices to remain competitive. In addition, our ability to attract and retain customers depends on the effectiveness of our customer marketing and incentive programs and multiple competitors could bundle product and service offerings through co-marketing or other arrangements, which could enhance their ability to compete with our broad product and service offering. Certain of our competitors and potential competitors, including large diagnostic and pharmaceutical companies, also have substantially greater financial and managerial resources than us, as well as greater experience in manufacturing, marketing, research and development, and obtaining regulatory approvals than we do.

Consolidation in our customer base, including through increased corporate hospital ownership, and prevalence of buying consortiums could negatively affect our business

Veterinarians are our primary customers for our CAG products and services, and the veterinary services industry in the U.S. and abroad has been consolidating in recent years. In the United States., the number of owners of veterinary hospitals has been declining, and an increasing percentage of veterinary hospitals are owned by corporations that are in the business of acquiring veterinary hospitals and/or opening new veterinary hospitals nationally or regionally. Major corporate hospital owners in the U.S. include Mars, Incorporated (owner of Banfield Pet Hospitals, Blue Pearl Veterinary Partners, Pet Partners and VCA Inc.), and National Veterinary Associates. A similar trend exists in other regions such as Europe, and is developing in other international markets. Furthermore, an increasing percentage of individually-owned veterinary hospitals in the U.S. are participating in buying consortiums. Corporate owners of veterinary hospitals and buying consortiums often seek to improve profitability by leveraging the buying power they derive from their scale to obtain favorable pricing from suppliers, which could have a negative impact on our profitability and results of operations. While we have strong supplier relationships with several corporate hospital groups and buying consortiums, decisions by larger corporate owners and buying consortiums to shift their purchasing of products and services away from us and to a competitor would have a negative impact on our results of operations. In addition, certain corporate owners also operate reference laboratories that serve both their hospitals and unaffiliated hospitals. Any hospitals acquired by these companies generally shift all or a large portion of their testing to the reference laboratories operated by these companies, and there can be no

assurance that hospitals that otherwise become affiliated with these companies would not shift all or a portion of their testing to such reference laboratories. Furthermore, because these companies compete with us in the reference laboratory services marketplace, hospitals acquired by these companies or those that establish other affiliations with these companies may cease to be customers or potential customers of our other companion animal products and services, which would cause our sales of these products and services to decline.

Changes in testing patterns could negatively affect our operating results

The market for our companion animal, livestock and poultry diagnostic tests and our dairy and water testing products could be negatively impacted by a number of factors impacting testing practices. The introduction or broad market acceptance of vaccines or preventatives for the diseases and conditions for which we sell diagnostic tests and services could result in a decline in testing. Changes in accepted medical protocols regarding the diagnosis of certain diseases and conditions could have a similar effect. Eradication or substantial declines in the prevalence of certain diseases also could lead to a decline in diagnostic testing for such diseases. Our livestock and poultry products business in particular is subject to fluctuations resulting from changes in disease prevalence. Changes in government regulations or in the availability of government funds available for monitoring programs could negatively affect sales of our products that are driven by compliance testing, such as our livestock and poultry, dairy and water products. In addition, changes and trends in local dairy, poultry, or other food markets around the world could negatively affect the related production markets resulting in a decline in demand for our testing products. Declines in testing for any reason, including the reasons described above, along with lost opportunities associated with a reduction in veterinary visits, could have an adverse effect on our results of operations.

Our success is heavily dependent upon proprietary technologies

We rely on a combination of patent, trade secret, trademark, and copyright laws to protect our proprietary rights. We also license patents and technologies from third parties to enable the use of third-party technologies in the development and production of our products and offerings. If we do not have adequate protection of our proprietary rights or are unable to license third-party patents and technologies on reasonable terms, our business may be affected by competitors who utilize substantially equivalent technologies that compete with us.

We cannot ensure that we will obtain issued patents, that any patents issued or licensed to us will remain valid, or that any patents owned or licensed by us will provide protection against competitors with similar technologies. Even if our patents cover products sold by our competitors, the time and expense of litigating to enforce our patent rights could be substantial, and could have an adverse effect on our results of operations. In addition, expiration of patent rights could result in substantial new competition in the markets for products previously covered by those patent rights.

In the past, we have received notices claiming that our products infringe third-party patents and we may receive such notices in the future. Patent litigation is complex and expensive, and the outcome of patent litigation can be difficult to predict. We cannot ensure that we will win a patent litigation case or negotiate an acceptable resolution of such a case. If we lose, we may be prohibited from selling certain products and/or we may be required to pay damages and/or ongoing royalties as a result of the lawsuit. Any such result could have an adverse effect on our results of operations.

Natural and other disasters, information technology system failures and network disruptions and cybersecurity breaches and attacks could adversely affect our business

Our business and results of operations could be negatively affected by certain factors beyond our control, such as natural disasters (such as hurricanes, earthquakes, fires, and floods); civil unrest; negative geopolitical conditions and developments; war, terrorism or other man-made disasters; and information technology system failures, network disruptions and cybersecurity breaches and attacks. Any of these events could result in, among other things, damage to or the temporary closure of one or more of our manufacturing or distribution facilities or reference laboratories (damage to one of our facilities or the manufacturing equipment we use could be costly and may require substantial lead-time to repair or replace); damage to or closure of one or more facilities of our third-party business partners or suppliers on which we rely; a temporary lack of an adequate work force in one or more markets; an interruption in power supply; a temporary or long-term disruption in our supply chain (including a disruption to our ability to obtain critical components for the manufacture of our products); a temporary disruption

in our ability to deliver (or delays in the delivery of) our products or services; and short- or long-term damage to our customers' businesses (which would adversely impact customer demand for our products and services). For more information regarding the risks presented by disruption to our suppliers' operations and supply chain, see "Our dependence on suppliers could limit our ability to sell certain products or negatively affect our operating results" above.

We manufacture many of our significant companion animal products, including our rapid assay devices and certain instruments, many of our water testing products and certain of our livestock, poultry, and dairy testing products, at a single facility in Westbrook, Maine. Certain of our companion animal products, as well as our human point-of-care products, are manufactured in Roswell, Georgia. We also manufacture certain of our livestock and poultry testing products in Bern, Switzerland and Montpellier, France. In addition, we maintain major distribution facilities in North America and in the Netherlands and major reference laboratories in Memphis, Tennessee; Ludwigsburg, Germany; Sacramento, California; Elmhurst, Illinois; North Grafton, Massachusetts; East Brisbane, Australia; Markham, Ontario; Wetherby, U.K.; and Tokyo, Japan. Interruption of operations at any of these facilities due to the occurrence of one or more of the events described above could have an adverse effect on our results of operations.

We rely on several information systems throughout our company, as well as our third-party business partners' and suppliers' information systems, to provide access to our web-based products and services, keep financial records, analyze results of operations, process customer orders, manage inventory, process shipments to customers, store confidential or proprietary information and operate other critical functions. Although we employ system backup measures and engage in information system redundancy planning and processes, such measures, planning and processes, as well as our current disaster recovery plan, may be ineffective or inadequate to address all eventualities. Further, our information systems and our business partners' and suppliers' information systems may be vulnerable to attacks by hackers and other security breaches, including computer viruses and malware, through the Internet (including via devices and applications connected to the Internet), email attachments and persons with access to these information systems, such as our employees or third parties with whom we do business. As information systems and the use of software and related applications by us, our business partners, suppliers, and customers become more cloud-based and connected to the "Internet of Things," there has been an increase in global cybersecurity vulnerabilities and threats, including more sophisticated and targeted cyber-related attacks that pose a risk to the security of our information systems and networks and the confidentiality, availability and integrity of data and information. We process credit card payments electronically over secure networks and also offer products and services that connect to and are part of the "Internet of Things," such as our connected devices (e.g., IDEXX VetLab instruments). Any such attack or breach could compromise our networks and the information stored thereon could be accessed, publicly disclosed, lost, or stolen. While we have implemented network security and internal control measures, especially for the purpose of protecting our connected products and services from cyberattacks, and invested in our data and information technology infrastructure, there can be no assurance that these efforts will prevent a system disruption, attack, or security breach and, as such, the risk of system disruptions and security breaches from a cyberattack remains.

If we or our business partners or suppliers were to experience a system disruption, attack or security breach that impacts any of our critical functions, or our customers were to experience a system disruption, attack or security

breach via any of our connected products and services, it could result in a period of shutdown of information systems during which we (or our customers) may not be able to operate, the loss of sales and customers, financial misstatement, potential liability for damages to our customers, reputational damage and significant incremental costs, which could adversely affect our business, results of operations and profitability. Furthermore, any access to, public disclosure of, or other loss of data or information (including any of our confidential or proprietary information or personal data or information) as a result of an attack or security breach could result in governmental actions or private claims or proceedings, which could damage our reputation, cause a loss of confidence in our products and services, damage our ability to develop (and protect our rights to) our proprietary technologies and adversely affect our business.

While we maintain plans to continue business under such circumstances, there can be no assurance that such plans will be successful in fully or partially mitigating the effects of such events. We also maintain property and business interruption insurance to insure against the financial impact of certain events of this nature. However, this insurance may be insufficient to compensate us for the full amount of any losses that we may incur. In addition, such insurance will not compensate us for the long-term competitive effects of being out of the market for the period of any interruption in operations.

Our operations and reputation may be impaired if we, our products, or our services do not comply with evolving laws and regulations regarding data privacy and protection

The privacy and security of personally identifiable information stored, maintained, received, or transmitted electronically is a major issue in the United States and abroad. We offer products and services that collect and use personal data provided by client practices and individuals, including practice management systems for veterinary practices (e.g., Cornerstone and IDEXX Neo), online client communication tools and services (e.g., Pet Health Network Pro), and cloud-based technology through VetConnect PLUS that enables veterinarians to access and analyze patients' diagnostic data from our in-clinic analyzers, our Rapid Assays and Reference Laboratories in one place. Some of these products and services rely on third-party providers for cloud storage. We also engage in e-commerce through various websites and collect contact and other personally identifiable information from our customers and visitors to our websites.

Numerous federal and state laws and regulations govern the collection, use, retention, sharing and security of personally identifiable information, including personal data that we receive from our employees, customers, vendors and visitors to our websites and personal data collected by our customers and others when using our products and services. We are also subject to laws and regulations in non-U.S. countries covering data privacy and the protection of personal information. EU member states and other jurisdictions have adopted, or are considering adopting, data protection laws and regulations, which impose significant compliance obligations. Laws and regulations in these jurisdictions apply broadly to the collection, use, storage, disclosure, sharing and security of personal information that identifies or may be used to identify an individual, such as names, contact information, and sensitive personal data. These laws and regulations are subject to frequent revisions and differing interpretations, and have generally become more stringent over time. In many cases, the federal, state and international laws described above apply not only to third-party transactions, but also to transfers of information between us and our subsidiaries, and among us, our subsidiaries, and other parties with which we have commercial relations.

For example, in April 2016, the EU Parliament adopted the General Data Protection Regulation, or GDPR, which, among other things, imposes more stringent operational requirements for processors and controllers of personal data, including, for example, expanded disclosures about how personal information is to be used, limitations on retention of information and mandatory data breach notification requirements. The GDPR is expected to take effect in 2018.

The laws and regulations related to data privacy and protection continue to develop, are subject to differing interpretations and may be applied inconsistently from jurisdiction to jurisdiction and may be inconsistent with our current data protection and privacy policies and practices. Further, the costs associated with compliance with these evolving legal and regulatory requirements are significant and likely to increase in the future and as a result may cause us to incur substantial costs, require us to change our business practices in a manner adverse to our business or limit

our ability to use and share personal data. Any failure, or perceived failure, by us, the third parties with whom we work or our products and services to protect employee, applicant, vendor, website visitor or customer personal data (including as a result of a breach by or of a third-party provider) or to comply with any privacy-related laws, government regulations or directives or industry self-regulatory principles or our posted privacy policies could result in damage to our reputation or proceedings or actions against us by governmental entities or otherwise, which could have an adverse effect on our business. In addition, concerns about our practices with regard to the collection, use, disclosure, or security of personally identifiable information or other privacy-related matters, even if unfounded and even if we are in compliance with applicable laws, could damage our reputation and harm our business. We have and post on our website our own privacy policy concerning the collection, use and disclosure of user personal data.

Strengthening of the rate of exchange for the U.S. dollar has a negative effect on our business

We are a global business, with 39 percent of our revenue during the year ended December 31, 2017, attributable to sales of products and services to customers outside of the U.S. Any strengthening of the rate of exchange for the U.S. dollar against foreign currencies, and in particular the euro, British pound, Canadian dollar, Chinese renminbi, Japanese yen, Australian dollar and Brazilian real, adversely affects our results, as it reduces the dollar value of sales and profits that are made in those currencies. The strengthening of the U.S. dollar has a greater adverse effect on the profits from products manufactured or sourced in U.S. dollars that are exported to international markets and a lesser effect on profits from foreign sourced products and services due to a natural hedge from international expenses denominated in the corresponding foreign currencies. For the year ended December 31, 2017, approximately 21 percent of our consolidated revenue was derived from products manufactured or sourced in U.S. dollars and sold internationally in local currencies, as compared to 21 percent and 20 percent for the years ended December 31, 2016 and 2015, respectively. A strengthening U.S. dollar could also negatively impact the ability of customers outside the U.S. to pay for purchases denominated in U.S. dollars as well as affect our overall competitiveness in international markets. The accumulated impacts from any continued, longer-term growth in the value of the U.S. dollar against foreign currencies may have a material adverse effect on our operating results. See “Part II, Item 7A. Quantitative and Qualitative Disclosure About Market Risk” included in this Annual Report on Form 10-K for additional information regarding currency impact.

Our foreign currency hedging activities (see Note 17 — Hedging Instruments in the accompanying Notes to the consolidated financial statements), which are designed to minimize and delay, but not to eliminate, the effects of foreign currency fluctuations, may not sufficiently offset the adverse financial effect of unfavorable movements in foreign exchange rates on our financial results over the limited time the hedges are in place. In addition, our hedging activities involve costs and risks, such as transactions costs and the risk that our hedging counterparties will default on their obligations.

We primarily hedge intercompany product purchases and sales denominated in the euro, British pound, Canadian dollar, Japanese yen, Australian dollar, and Swiss franc. Other foreign currency exposures related to foreign sourced services and emerging markets may not be practical to hedge. In certain cases, these exposures are not offset by foreign currency denominated costs. As we primarily use foreign currency exchange contracts with durations of less than 24 months and enter into contracts to hedge incremental portions of anticipated foreign currency transactions on a quarterly basis for the current and following year, the effectiveness of our foreign currency hedging activities to offset longer-term appreciation in the value of the U.S. dollar against non-U.S. currencies may be limited. Factors that could affect the effectiveness of our hedging activities include accuracy of sales and other forecasts, volatility of currency markets, and the cost and availability of hedging instruments. Since our hedging activities are designed to minimize volatility, they not only temporarily reduce the negative impact of a stronger U.S. dollar, but they also temporarily reduce the positive impact of a weaker U.S. dollar. Our future financial results could be significantly affected by a strengthening value of the U.S. dollar in relation to the foreign currencies in which we conduct business. The degree to which our financial results are affected for any given time period will depend in part upon our hedging activities.

A weak worldwide economy could result in reduced demand for our products and services or increased customer credit risk

A substantial percentage of our sales are made worldwide to the companion animal veterinary market. Demand for our companion animal diagnostic products and services is driven in part by the number of patient visits to veterinary hospitals and the practices of veterinarians with respect to the recommendations for diagnostic testing, as well as pet owner compliance with these recommendations. Economic weakness in our significant markets could cause pet owners to forgo or defer visits to veterinary hospitals or affect their willingness to approve certain diagnostic tests, comply with a treatment plan or, even more fundamentally, continue to own a pet. In addition, concerns about the financial resources of pet owners could cause veterinarians to be less likely to recommend certain diagnostic tests, and concerns about the economy may cause veterinarians to defer purchasing capital items such as our instruments and systems. These conditions, if they continue, could result in a decrease in sales or decrease in sales growth, of diagnostic products and services, which could have an adverse effect on our results of operations.

Demand for our water products is driven in part by the availability of funds at government laboratories, water utilities and private certified laboratories that utilize our products. Availability of funds also affects demand by

government laboratories and cattle, swine and poultry producers that utilize our livestock and poultry diagnostic products, and by users of our human point-of-care diagnostic instruments. Economic weakness in our markets has caused and could continue to cause our customers to reduce their investment in such testing, which could have an adverse effect on our results of operations.

In all of our markets, a weak economy may also cause deterioration in the financial condition of our distributors and customers, which could inhibit their ability to pay us amounts owed for products delivered or services provided in a timely fashion or at all.

We sell many products through distributors, which presents risks that could negatively affect our operating results

Some of our product sales in international markets occur through distributors. As a result, we are dependent on these distributors to promote and create demand for our products. Our distributors often offer products from several different companies, and certain of our distributors may carry our competitors' products and promote our competitors' products over our own products. We have limited ability, if any, to cause our distributors to devote adequate resources to promoting, marketing, selling and supporting our products or to maintain certain inventory levels, and changes in our distributors' inventory levels, as compared to comparable prior periods, could negatively impact our revenue growth rates. We cannot assure you that we will be successful in maintaining and strengthening our relationships with our distributors or establishing relationships with new distributors who have the ability to market, sell and support our products effectively. We may rely on one or more key distributors for a product or a region, and the loss of these distributors could reduce our revenue. Distributors may face financial difficulties, including bankruptcy, which could harm our collection of accounts receivable and financial results. In addition, violations of anti-corruption or similar laws by our distributors could have a material impact on our business and reputation, and any termination of a distributor relationship may result in increased competition in the applicable jurisdiction. Failure to manage the risks associated with our use of distributors outside of the U.S. may reduce sales, increase expenses, and weaken our competitive position, any of which could have a negative effect on our operating results.

Future operating results could be negatively affected by changes in tax rates, the adoption of new U.S. or international tax legislation or exposure to additional tax liabilities

The nature of our international operations subjects us to local, state, regional and federal tax laws in jurisdictions around the world. Our future tax expense could be affected by changes in the mix of earnings in countries with differing statutory tax rates, changes in the valuation of deferred tax assets and liabilities or changes in tax laws or their interpretation. Additionally, tax rules governing cross-border activities are continually subject to modification as a result of both coordinated actions by governments and unilateral measures designed by individual countries, both intended to tackle concerns over base erosion and profit shifting (BEPS) and perceived international tax avoidance techniques.

The Tax Cuts and Jobs Act (the "Tax Act") was enacted in the U.S. on December 22, 2017 and includes significant changes to the U.S. corporate tax system. Effective January 1, 2018, the Tax Act reduced the U.S. federal corporate tax rate from 35 percent to 21 percent, and transitioned from a worldwide tax system to a territorial tax system. The Tax Act introduced new provisions including the Global Intangible Low-Taxed Income ("GILTI"), Foreign Derived Intangible Income ("FDII"), Base Erosion Anti-Abuse Tax ("BEAT'), expanded bonus depreciation and changed deductions for executive compensation and interest expense. We continue to assess the impact of the new provisions which become effective beginning in 2018. See Note 12 – Income Taxes in the accompanying Notes to the consolidated financial statements for more information regarding the impact of the Tax Act.

We have received tax rulings from various governments that have jurisdictional authority over our operations. If we are unable to meet the requirements of such agreements, or if they expire or are renewed on less favorable terms, the result could negatively impact our future earnings. Additionally, the European Commission has opened formal investigations into specific tax rulings granted by several countries to specific taxpayers. While we believe that our rulings in the Netherlands and Switzerland are different than those being discussed, the ultimate resolution of such activities cannot be predicted and could also have an adverse impact on future operating results.

Our income tax filings are regularly under audit by various tax authorities, and the final determination of tax audits could be materially different than that which is reflected in historical income tax provisions and accruals. Significant judgment is required in determining our worldwide provision for income taxes. We regularly assess our exposures related to our worldwide provision for income taxes to determine the adequacy of our provision for taxes. Any reduction in these contingent liabilities or additional assessments would increase or decrease income, respectively, in the period such determination is made.

Our limited experience and small scale in the human point-of-care market could inhibit our success in this market

We have limited experience in the human point-of-care medical diagnostics market and we operate at a small scale in this market. This market differs in many respects from the veterinary diagnostic market. Significant differences include the impact of third-party reimbursement on diagnostic testing, more extensive regulation, greater product liability risks, larger competitors, a more segmented customer base and more rapid technological innovation. Our limited experience and small scale in the human point-of-care medical diagnostics market could negatively affect our ability to successfully manage the risks and features of this market that differ from the veterinary diagnostic market. There can be no assurance that we will be successful in achieving growth and profitability in the human point-of-care medical diagnostics market comparable to the results we have achieved in the veterinary diagnostic market.

Restrictions in our debt agreements or our inability to obtain financing on favorable terms may limit our activities

Our ability to make scheduled payments and satisfy our other obligations under our Credit Facility and senior notes depends on our future operating performance and on economic, financial, competitive, and other factors beyond our control. Our business may not generate sufficient cash flows to meet these obligations or generate sufficient levels of earnings to satisfy the applicable affirmative, negative, and financial covenants. Our failure to comply with these covenants and the other terms of the Credit Facility and senior notes could result in an event of default and acceleration of our obligations under these agreements, which may require us to seek additional financing or restructure existing debt on unfavorable terms. In addition, adverse changes in credit markets could increase our cost of borrowing and make it more difficult for us to obtain financing.

Our senior notes include provisions which stipulate a prepayment penalty for which we will be obligated in the event that we elect to repay the notes prior to their stated maturity dates. Should we elect to repay some or all of the outstanding principal balance on our senior notes, the prepayment penalty we incur could adversely affect our results of operations and cash flows.

We fund our operations, capital purchase requirements and strategic growth needs through cash on hand, funds generated from operations, amounts available under our Credit Facility and senior note financings. If we are unable to obtain financing on favorable terms, we could face restrictions that would limit our ability to execute certain strategies, which could have an adverse effect on our revenue growth and profitability.

We are subject to risks associated with fluctuations in the market values of our investment portfolio

We invest our surplus cash in a diversified portfolio of marketable securities, including corporate bonds, commercial paper, and a short-term money market fund which invests in securities issued or sponsored by the U.S. government. The value and liquidity of these marketable securities may fluctuate substantially, and could be negatively affected by increases in interest rates, downgrades of the bonds and other securities included in our portfolio, instability in the global financial markets, declines in the value of collateral underlying the securities included in our portfolio, geopolitical events, or other factors. Any adverse changes in the financial markets and resulting declines in the value of our portfolio could have an adverse impact on our financial condition and operating results.

Fluctuations in our quarterly or annual results may cause our stock price to decline

Our prior operating results have fluctuated due to a number of factors, including seasonality of certain product lines; changes in our accounting estimates; the impact of acquisitions; timing of distributor purchases product launches, operating expenditures, customer marketing and incentive programs; changes in foreign currency exchange rates; timing of regulatory approvals and licenses; litigation and claim-related expenditures; increase in the number and type of competitors; changes in competitors' product offerings; changes in our sales and distribution model; changes in the economy affecting consumer spending; and other matters. Similarly, our future operating results may vary significantly from quarter to quarter or year to year due to these and other factors, many of which are beyond our control. If our operating results or projections of future operating results do not meet the expectations of securities analysts or investors in future periods, our stock price may fall.

The market price of our common stock may be highly volatile, and you may not be able to resell your shares at or above the price you paid

The trading price of our common stock may be volatile. Securities markets worldwide experience significant price and volume fluctuations. This market volatility, as well as other general economic, market or political conditions, could reduce the market price of our common stock in spite of our operating performance. The following factors, in addition to other factors described in this "Risk Factors" section and elsewhere in this Form 10-K, may have a significant impact on the market price of our common stock:

- Changes in customer needs, expectations or trends and our ability to maintain relationships with key customers;
- Our ability to implement our business strategy;
- Our stock repurchase program;
- Changes in our capital structure, including the issuance of additional debt;
- Public announcements (including the timing of these announcements) regarding our business, financial performance and prospects or new products or services, product enhancements or technological advances by our competitors or us;
- Trading activity in our stock, including portfolio transactions in our stock by us, our executive officers and directors, and significant stockholders or trading activity that results from the ordinary course rebalancing of stock indices in which we may be included, such as the S&P 500 Index;
- Short-interest in our common stock, which could be significant from time to time;
- Our inclusion in, or removal from, any stock indices;
- Investor perception of us and the industry and markets in which we operate;
- Changes in earnings estimates or buy/sell recommendations by securities analysts;
- Whether or not we meet earnings estimates of securities analysts who follow us; and
- General financial, domestic, international, economic and market conditions, including overall fluctuations in the U.S. equity markets.

In addition, broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance, and factors beyond our control may cause our stock price to decline rapidly and unexpectedly. Furthermore, the stock market has experienced extreme volatility that, in some cases, has been unrelated or disproportionate to the operating performance of particular companies.

ITEM 1B.UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2.PROPERTIES

Our worldwide headquarters is located on a company-owned, 65-acre site in Westbrook, Maine where we occupy a 647,000 square-foot building utilized for manufacturing, research and development, marketing, sales, and general and administrative support functions.

Additional property ownership and leasing arrangements with approximate square footage, purpose and location are as follows:

Additional Properties Owned:

- 34,200 square feet of laboratory space located in the U.S., used for our Reference Laboratory Diagnostic and Consulting Services line of business of CAG
- 24,800 square feet of office and laboratory space located in the U.K., used for our Reference Laboratory Diagnostic and Consulting Services line of business of CAG
- 3,100 square feet of laboratory space located in Canada, used for our Reference Laboratory Diagnostic and Consulting Services line of business of CAG

Additional Properties Leased:

- 633,900 total square feet of laboratory, office and warehousing space located throughout the U.S., Europe, Canada, Australia, New Zealand, Brazil, Asia, and South Africa, primarily used for our Reference Laboratory Diagnostic and Consulting Services line of business of CAG
- 126,200 square feet of distribution, warehousing and office space in the Netherlands, which serves as our European headquarters
- 114,400 square feet of industrial space in Tennessee for distribution and warehousing related to various lines of business
- 84,300 square feet of office, manufacturing and warehousing space in Georgia related to our OPTI Medical line of business
- 84,000 total square feet of office and manufacturing space in France, Switzerland, and Brazil related to our Livestock, Poultry and Dairy line of business
- 69,300 square feet of office space in Wisconsin related to our Veterinary Software, Services and Diagnostic Imaging Systems line of business of CAG
- 65,000 square feet of office space in Maine for corporate, customer service, and information technology support services
- 8,100 square feet of manufacturing space in the U.K. related to our Water line of business

We believe that our owned and leased properties are generally in good condition, are well-maintained, and are generally suitable and adequate to carry on our business.

ITEM 3.LEGAL PROCEEDINGS

Due to the nature of our activities, we are at times subject to pending and threatened legal actions that arise out of the ordinary course of business. In the opinion of management, based in part upon advice of legal counsel, the disposition of any such currently pending matters is not expected to have a material effect on our results of operations, financial condition, or cash flows. However, the results of legal actions cannot be predicted with certainty. Therefore, it is possible that our results of operations, financial condition or cash flows could be materially adversely affected in any particular period by the unfavorable resolution of one or more legal actions.

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

Market Information

Our common stock is quoted on the NASDAQ Global Select Market under the symbol IDXX. The following table shows the quarterly range of high and low sale prices per share of our common stock as reported on the NASDAQ Global Select Market for the years 2016 and 2017.

For the Quarter Ended	High	Low
March 31, 2016	$ 79.03	$ 63.48
June 30, 2016	92.87	76.55
September 30, 2016	115.06	92.52
December 31, 2016	121.77	102.45
March 31, 2017	155.65	113.92
June 30, 2017	173.01	153.24
September 30, 2017	171.37	148.80
December 31, 2017	168.66	146.09

Holders of Common Stock

As of February 6, 2018, there were 460 holders of record of our common stock. Because the majority of our common stock is held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders.

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Purchases of Equity Securities by the Issuer

During the three months ended December 31, 2017, we repurchased shares of common stock as described below:

1

Period	Total Number of Shares Purchased (a)	Average Price Paid per Share (b)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (1) (c)	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs (d)
October 1, 2017 to October 31, 2017	106,900	$ 160.71	106,900	5,230,335
November 1, 2017 to November 30, 2017	140,343	152.12	140,343	5,089,992
December 1, 2017 to December 31, 2017	105,463	158.28	103,900	4,986,092
Total	352,706	(2) $ 156.57	351,143	4,986,092

(1) As of December 31, 2017, our Board of Directors had approved the repurchase of up to 68 million shares of our common stock in the open market or in negotiated transactions pursuant to the Company's share repurchase program. The program was approved and announced on August 13, 1999, and the maximum number of shares that may be purchased under the program was subsequently increased on each of October 4, 1999, November 16, 1999, July 21, 2000, October 20, 2003, October 12, 2004, October 12, 2005, February 14, 2007, February 13, 2008, February 10, 2010, October 12, 2011, May 7, 2013, July 16, 2014, and June 15, 2015. Effective May 2, 2017, an additional 3 million shares of our common stock was authorized for repurchase, increasing the total shares of common stock authorized to be repurchased by the Company up from 65 million to 68 million shares. There is no specified expiration date for this repurchase program. There were no other repurchase programs outstanding during the three months ended December 31, 2017, and no repurchase programs expired during the period. Repurchases of 351,143 shares were made during the three months ended December 31, 2017, in transactions made pursuant to our repurchase program.

(2) During the three months ended December 31, 2017, we received 1,563 shares of our common stock that were surrendered by employees in payment for the minimum required withholding taxes due on the vesting of restricted

stock units and settlement of deferred stock units. In the above table, these shares are included in columns (a) and (b), but excluded from columns (c) and (d). These shares do not reduce the number of shares that may yet be purchased under the repurchase program.

During the year ended December 31, 2017, we repurchased 1,749,416 shares of our common stock in transactions made pursuant to our repurchase program and received 56,638 shares of common stock that were surrendered by employees in payment for the minimum required withholding taxes due on the vesting of restricted stock units and settlement of deferred stock units. See Note 18 to the consolidated financial statements for the year ended December 31, 2017, included in this Annual Report on Form 10-K for further information.

Dividends

We have never declared or paid any cash dividends on our common stock. From time to time our Board of Directors may consider the declaration of a dividend. However, we have no intention to declare or pay a dividend at this time.

Stock Performance

This graph compares our total stockholder returns, the Total Return for the Standard & Poor's ("S&P") 500 Index, the Total Return for the S&P 500 Health Care Index, and the Total Return for the NASDAQ Stock Market Index (U.S. Companies) prepared by the Center for Research in Security Prices (the "NASDAQ Index"). This graph assumes the investment of $100 on December 31, 2012, in IDEXX's common stock, the S&P 500 Index, the S&P 500 Health Care Index, and the NASDAQ Index and assumes dividends, if any, are reinvested. Measurement points are the last trading days of the years ended December 2012 to 2017.

	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017
IDEXX Laboratories, Inc.	$ 100.00	$ 114.63	$ 159.77	$ 157.16	$ 252.74	$ 337.03
NASDAQ Index	100.00	140.12	160.78	171.97	187.22	242.71
S&P 500 Health Care Index	100.00	141.46	177.30	189.52	184.42	225.13
S&P 500 Index	100.00	132.39	150.51	152.59	170.84	208.14

ITEM 6.SELECTED FINANCIAL DATA

The following table sets forth selected consolidated financial data for each of the last five fiscal years. The selected consolidated financial data presented below has been derived from our consolidated financial statements. This financial data should be read in conjunction with the consolidated financial statements, related notes and other financial information appearing elsewhere in this Annual Report on Form 10-K.

On May 6, 2015, we announced a two-for-one split of our outstanding shares of common stock which was effected through a stock dividend that was paid through the issuance of treasury shares on June 15, 2015. All share and per share amounts presented below, for periods prior to June 15, 2015, retroactively reflect the effect of the stock split.

	For the Years Ended December 31, (in thousands, except per share data)				
	2017	2016	2015	2014	2013
INCOME STATEMENT DATA:					
Revenue	$ 1,969,058	$ 1,775,423	$ 1,601,892	$ 1,485,807	$ 1,377,058
Cost of revenue	871,676	799,987	711,622	669,691	620,940
Gross profit	1,097,382	975,436	890,270	816,116	756,118
Expenses:					
Sales and marketing	354,294	317,058	299,955	283,708	243,492
General and administrative	220,878	207,017	182,510	173,890	157,861
Research and development	109,182	101,122	99,681	98,263	88,003
Impairment charge	-	-	8,212	-	-
Income from operations	413,028	350,239	299,912	260,255	266,762
Interest expense, net	(31,971)	(28,393)	(26,771)	(13,700)	(3,501)
Income before provision for income taxes	381,057	321,846	273,141	246,555	263,261
Provision for income taxes	117,788	99,792	81,006	64,604	75,467
Net income	263,269	222,054	192,135	181,951	187,794
Less: Net income (loss) attributable to noncontrolling interest	125	9	57	45	(6)
Net income attributable to IDEXX Laboratories, Inc. stockholders	$ 263,144	$ 222,045	$ 192,078	$ 181,906	$ 187,800
Earnings per share:					
Basic	$ 3.00	$ 2.47	$ 2.07	$ 1.82	$ 1.77
Diluted	$ 2.94	$ 2.44	$ 2.05	$ 1.79	$ 1.74
Weighted average shares outstanding:					
Basic	87,769	89,732	92,601	100,094	106,318

Diluted	89,567	90,884	93,649	101,503	107,970
BALANCE SHEET DATA:					
Cash and cash equivalents	$ 187,675	$ 154,901	$ 128,994	$ 322,536	$ 279,058
Marketable securities(1)	284,255	236,949	213,591	-	-
Cash and cash equivalents and marketable securities	$ 471,930	$ 391,850	$ 342,585	$ 322,536	$ 279,058
Working capital	$ (32,582)	$ (88,984)	$ (35,127)	$ (61,508)	$ 174,353
Total assets	$ 1,713,416	$ 1,530,704	$ 1,474,993	$ 1,384,211	$ 1,230,516
Total long-term debt(2)	$ 606,075	$ 593,110	$ 597,085	$ 350,000	$ 150,359
Total stockholders' equity (deficit)	$ (53,842)	$ (108,213)	$ (83,995)	$ 117,589	$ 518,214

(1) See Note 5 to the consolidated financial statements included in this Annual Report on Form 10-K for additional information regarding our marketable securities.

(2) See Note 11 to the consolidated financial statements included in this Annual Report on Form 10-K for additional information regarding our senior notes.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10 K.

We have included certain terms and abbreviations used throughout this Annual Report on Form 10-K in the "Glossary of Terms and Selected Abbreviations."

Description of Business Segments. We operate primarily through three business segments: diagnostic and information technology-based products and services for the veterinary market, which we refer to as the Companion Animal Group ("CAG"); water quality products ("Water"); and diagnostic products and services for livestock and poultry health and to ensure the quality and safety of milk and food, which we refer to as Livestock, Poultry and Dairy ("LPD"). Our Other operating segment combines and presents products for the human point-of-care medical diagnostics market ("OPTI Medical") with our pharmaceutical product line and our out-licensing arrangements because they do not meet the quantitative or qualitative thresholds for reportable segments. See Note 15 to the consolidated financial statements for the year ended December 31, 2017, included in this Annual Report on Form 10-K for financial information about our segments, including our product and service categories, and our geographic areas.

Certain costs are not allocated to our operating segments and are instead reported under the caption "Unallocated Amounts". These costs include costs that do not align with one of our existing operating segments or are cost prohibitive to allocate, which primarily consist of our R&D function, regional or country expenses, certain foreign currency revaluation gains and losses on monetary balances in currencies other than our subsidiaries' functional currency and unusual items. Corporate support function costs (such as information technology, facilities, human resources, finance and legal), health benefits and incentive compensation are charged to our business segments at pre-determined budgeted amounts or rates. Differences from these pre-determined budgeted amounts or rates are captured within Unallocated Amounts.

The following is a discussion of the strategic and operating factors that we believe have the most significant effect on the performance of our business.

Companion Animal Group

Our strategy is to provide veterinarians with both the highest quality diagnostic information to support more advanced medical care and information management solutions that help demonstrate the value of diagnostics to pet owners and enable efficient practice management. By doing so, we are able to build a mutually successful relationship with our veterinarian customers based on healthy pets, loyal customers and expanding practice revenues.

CAG Diagnostics. We provide diagnostic capabilities that meet veterinarians' diverse needs through a variety of modalities including in-clinic diagnostic solutions and outside reference laboratory services. Veterinarians that utilize our full line of diagnostic modalities obtain a single view of a patient's diagnostic results, which allows them to track and evaluate trends and achieve greater medical insight.

The breadth and complementary nature of our diagnostic solutions also provides us scale in sales and distribution. To further increase our customer reach, effective January 1, 2015, we transitioned to an all-direct sales strategy in the U.S. and did not renew our annual contracts with our U.S. distribution partners. Under this approach, we take orders, ship product, invoice and receive payment for all rapid assay test kits and IDEXX VetLab consumables in the U.S., aligning with our direct model for instruments, reference laboratory services, and other CAG products and services. We believe these changes will continue to strengthen customer loyalty and help support growth of our diagnostic revenues in North America.

Our diagnostic capabilities generate both recurring and non-recurring revenues. Revenues related to capital placements of our in-clinic IDEXX VetLab suite of instruments and our SNAP Pro Mobile Device are non-recurring in nature in that they are sold to a particular customer only once. Revenues from the associated proprietary IDEXX VetLab consumables, SNAP rapid assay test kits, reference laboratory and consulting services, and extended maintenance agreements and accessories related to our IDEXX VetLab instruments and our SNAP Pro Mobile Device are recurring in nature, in that they are regularly purchased by our customers, typically as they perform diagnostic testing as part of ongoing veterinary care services. Our recurring revenues, most prominently IDEXX VetLab consumables and rapid assay test kits, have significantly higher gross margins than those provided by our instrument sales. Therefore, the mix of recurring and non-recurring revenues in a particular period will impact our gross margins.

Diagnostic Capital Revenue. Revenues related to the placement of the IDEXX VetLab suite of instruments are non-recurring in nature, in that the customer will buy an instrument once over its respective product life cycle, but will purchase consumables for that instrument on a recurring basis as they use that instrument for testing purposes. During the early stage of an instrument's life cycle, we derive relatively greater revenues from instrument placements, while consumable sales become relatively more significant in later stages as the installed base of instruments increases and instrument placement revenues begin to decline. In the early stage of an instrument's life cycle, placements are made primarily through sales transactions. As the market for the product matures, an increasing percentage of placements are made in transactions, sometimes referred to as "reagent rentals," in which instruments are placed at customer sites at little or no cost in exchange for a multi-year customer commitment to purchase instrument consumables.

Prior to the Catalyst One instrument launch during November 2014, we pre-sold the instrument under a customer marketing program through which customers preordering a Catalyst One were initially provided with the right to use a Catalyst Dx instrument. Under this marketing program, we deferred $7 million of instrument revenue in 2014, which was fully recognized in 2015 upon delivery of the Catalyst One instruments or customer election to keep the Catalyst Dx was received.

We place our Catalyst chemistry analyzers through sales, leases, rental and other programs. In addition, we continue to place VetTest instruments through sales, lease, rental and other programs, with substantially all of our revenues from that product line currently derived from consumable sales. As of December 31, 2017, these three chemistry analyzers provided for a combined active installed base of approximately 47,000 units globally, as compared to 43,000 units globally in 2016. Approximately 54 percent of 2017 Catalyst analyzer placements were to customers that are new to IDEXX, including customers who had been using instruments from one of our competitors, sometimes referred to as competitive accounts. Generally, placement of an instrument with a new or competitive account is more attractive as the entire consumable stream associated with that placement represents incremental recurring revenue, whereas the consumable stream associated with a Catalyst placement at a VetTest customer substitutes a Catalyst consumable stream for a VetTest consumable stream. We have found that the consumables revenues increase when a customer upgrades from a VetTest analyzer to a Catalyst analyzer due to the superior test menu capability, flexibility, and ease of use of the Catalyst analyzers, which leads to additional testing by the customer.

As we continue to experience growth in placements of Catalyst analyzers and in sales of related consumables, we expect this growth to be partly offset by a decline in placements of VetTest analyzers and in sales of related consumables.

The Procyte Dx analyzer is our latest generation hematology analyzer. In addition, we sell the LaserCyte Dx and VetAutoread analyzers. As of December 31, 2017, these hematology analyzers provided for a combined active installed base of approximately 33,400 units, as compared to 31,000 units in 2016 and 29,000 units in 2015. A substantial portion of ProCyte Dx analyzer placements continue to be made at veterinary clinics that elect to upgrade from their LaserCyte Dx analyzer to a ProCyte Dx analyzer. In 2017, approximately 60 percent of ProCyte placements were made at competitive accounts. We also continue to place a substantial number of LaserCyte Dx instruments, both new and recertified, as trade-ups from the VetAutoread analyzer and at new and competitive accounts. As we continue to experience growth in placements of ProCyte Dx analyzers and in sales of related consumables, we expect this growth to be partly offset by a decline in placements of LaserCyte Dx and VetAutoread analyzers and a decrease in the associated recurring revenue stream.

Our SediVue Dx instrument was launched in North America early in 2016 and in the U.K. and Australia in the fourth quarter of 2016. During 2017, we continued to launch Sedivue Dx internationally. Sedivue Dx is the first veterinary in-clinic analyzer to provide urine sediment analysis. This instrument and single-use consumable system provides a highly accurate way to automate the in-house process of examining urine under a microscope. We provide customers with SediVue Dx consumables that are charged upon utilization, which we refer to as pay-per-run, as compared to other instruments where we charge upon shipment of consumables.

We seek to enhance the attractiveness and customer loyalty of our SNAP rapid assay tests, by providing the SNAP Pro Mobile Device, which activates SNAP tests, properly times the run, captures, and saves images of the results and, in conjunction with IVLS, records invoice charges in the patient record. Beginning in January of 2017, with our ProRead software, the SNAP Pro Mobile Device interprets results. These features promote practice efficiency by eliminating manual entry of test results in patient records and also helps ensure that the services are recorded and accurately invoiced. In addition, SNAP Pro Mobile Device results can be shared with pet owners on the SNAP Pro screen or, in conjunction with IVLS, via VetConnect PLUS. We also sell the SNAPshot Dx, which automatically reads certain SNAP test results and, in conjunction with IVLS, records those results in the electronic medical record. We continue to work on enhancing the functionality of our analyzers to read the results of additional tests from our canine and feline family of rapid assay products.

Our long-term success in the continuing growth of our CAG recurring diagnostic product and services is dependent upon new customer acquisition, customer loyalty and retention of their recurring revenues, our ability to realize price increases based on our differentiated products and customer utilization of existing and new assays introduced for use on our analyzers. We continuously seek opportunities to enhance the care that veterinary professionals give to their patients and clients through supporting the implementation of real-time care testing work flows, which is performing tests and sharing test results with the client at the time of the patient visit. Our latest generation of chemistry and hematology instruments demonstrates this commitment by offering enhanced ease of use, faster time to results, broader test menu and connectivity to various information technology platforms that enhance the value of the diagnostic information generated by the instruments. In addition, we provide marketing tools and customer support that help drive efficiencies in veterinary practice processes and allow practices to increase the number of clients they see on a daily basis.

With all of our instrument product lines, we seek to differentiate our products from our competitors' products based on time-to-result, ease-of-use, throughput, breadth of diagnostic menu, flexibility of menu selection, accuracy, reliability, ability to handle compromised samples, analytical capability of software, integration with the IDEXX VetLab Station and VetConnect PLUS, client communications capabilities, education and training, and superior sales and customer service. Our success depends, in part, on our ability to differentiate our products in a way that justifies a premium price.

Recurring Diagnostic Revenue. Revenues from our proprietary IDEXX VetLab consumable products, our SNAP rapid assay test kits, outside reference laboratory and consulting services, and extended maintenance agreements and

accessories related to our CAG Diagnostics instruments are considered recurring in nature. For the year ended December 31, 2017, recurring diagnostic revenue, which is both highly durable and profitable, accounted for approximately 74 percent of our consolidated revenue.

Our in-clinic diagnostic solutions, consisting of our IDEXX VetLab consumable products and SNAP rapid assay test kits, provide real-time reference lab quality diagnostic results for a variety of companion animal diseases and health conditions. Our outside reference laboratories provide veterinarians with the benefits of a more comprehensive list of diagnostic tests and access to consultations with board-certified veterinary specialists and pathologists, combined with the benefit of same-day or next-day turnaround times.

We derive substantial revenues and margins from the sale of consumables that are used in IDEXX VetLab instruments and the multi-year consumable revenue stream is significantly more valuable than the placement of the instrument. Our strategy is to increase diagnostic testing within veterinary practices by placing IDEXX VetLab instruments and increasing instrument utilization of consumables. Utilization can increase due to a greater number of patient samples being run or to an increase in the number of tests being run per patient sample. Our strategy is to increase both drivers. To increase utilization, we seek to educate veterinarians about best medical practices that emphasize the importance of chemistry, hematology and urinalysis testing for a variety of diagnostic purposes, as well as by introducing new testing capabilities that were previously not available to veterinarians. Additionally, we

have found that veterinarian adoption of VetConnect PLUS drives utilization by spurring testing across all IDEXX diagnostic modalities. In connection with the purchase of instruments, we also offer protocol-based rebate incentives when customers utilize the broad testing functionality of our analyzers.

Our in-clinic diagnostic solutions also include SNAP rapid assay tests that address important medical needs for particular diseases prevalent in the companion animal population. We seek to differentiate these tests from those of other in-clinic test providers and reference laboratory diagnostic service providers based on critically important sensitivity and specificity, as well as overall superior performance and ease of use by providing our customers with combination tests that test a single sample for up to six diseases at once, including the ability to utilize our SNAP Pro mobile device. We further augment our product development and customer service efforts with sales and marketing programs that enhance medical awareness and understanding regarding certain diseases and the importance of diagnostic testing.

The expiration of a third party's U.S. lateral flow patent in early 2015 enabled competitors to launch single use tests that competed with several of our early generation SNAP rapid assay products, including Heartworm RT, FIV/FeLV Combo Test, Feline Triple, Parvo, and Giardia. These companies partnered with several of our former national distributors to gain market share by competing primarily on price. In the second half of 2015, we stabilized our market share on these products in part by communicating the significant superiority in test sensitivity for both our Canine and Feline lines over competing tests using the lateral flow platform, and in part with more effective marketing and promotion programs. Our higher sensitivity in the detection of infectious diseases is due in part to our SNAP platform, which is unique in using enzyme-linked immunosorbent assays ("ELISA") technology. Test accuracy through specificity and sensitivity is a primary factor that customers value with these in-house tests, given the importance of detecting the presence of serious infectious diseases in the practice.

We believe approximately half of all diagnostic testing by U.S. veterinarians is provided by outside reference laboratories such as IDEXX Reference Laboratories. In several markets outside the U.S., in-clinic testing is less prevalent and an even greater percentage of diagnostic testing is done in reference laboratories. We attempt to differentiate our reference laboratory testing services from those of competitive reference laboratories and competitive in-clinic offerings primarily on the basis of a unique and proprietary test menu, technology employed, quality, turnaround time, customer service and tools such as VetConnect PLUS that demonstrate the complementary manner in which our laboratory services work with our in-clinic offerings.

Profitability in our lab business is supported, in part, by our expanding business scale globally. Profit improvements also reflect benefits from price increases and our ability to achieve efficiencies. When possible, we utilize core reference laboratories to service samples from other states or countries, expanding our customer reach without an associated expansion in our reference laboratory footprint. New laboratories that we open typically will operate at a loss until testing volumes achieve sufficient scale. Acquired laboratories frequently operate less profitably than our existing laboratories and acquired laboratories may not achieve the profitability of our existing laboratory network for several years until we complete the implementation of operating improvements and efficiencies. Therefore, in the

short term, new and acquired reference laboratories generally will have a negative effect on our operating margin. Recurring reference lab revenue growth is achieved both through increased sales to existing customers and through the acquisition of new customers. We believe the increased number of customer visits by our sales professionals as a result of the implementation of our all-direct sales strategy in the U.S. and the subsequent growth in our field sales organization has led to increased reference laboratory opportunities with customers who already use one of our in-clinic diagnostic modalities. In recent years, recurring reference laboratory diagnostic and consulting revenues have also been increased through reference laboratory acquisitions, customer list acquisitions, the opening of new reference laboratories, including laboratories that are co-located with large practice customers, and as a result of our up-front customer loyalty programs. Our up-front customer loyalty programs associated with customer acquisitions and retention provide incentives to customers in the form of cash payments or IDEXX Points upon entering multi-year agreements to purchase annual minimum amounts of products or services, including reference laboratory services.

Health Monitoring and Biological Materials Testing. We believe the acquisition of the research and diagnostic laboratory business of the College of Veterinary Medicine from the University of Missouri has allowed us to leverage our expertise in veterinary diagnostics and expand our integrated offering of reference laboratory diagnostic and consulting services and in-clinic testing solutions in the adjacent bioresearch market.

Veterinary Software, Services and Diagnostic Imaging Systems. Our portfolio of practice management offerings is designed to serve the full range of customers within the North American, Australian, and European markets. Cornerstone, DVMAX, Animana and IDEXX Neo practice management systems provide superior integrated information solutions, backed by exceptional customer support and education. These practice management systems allow the veterinarian to practice better medicine and achieve the practice's business objectives, including a quality client experience, staff efficiency and practice profitability. We market Cornerstone, DVMAX and IDEXX Neo practice management systems to customers primarily in North America and Australia. We market our Animana offering to customers primarily throughout Europe.

Animana and IDEXX Neo practice management systems are subscription-based SaaS offerings designed to provide flexible pricing and a durable, recurring revenue stream, while utilizing cloud technology instead of a client server platform. While we continue to develop, sell, and support our licensed-based Cornerstone and DVMAX software, we are growing our installed base of subscription-based practice management offerings for new customers of IDEXX practice management systems. We believe that once established, this subscription-based model will provide higher profitability as compared to the historical license-based placements. Our Cornerstone and DVMAX customer base continues to be an important driver of growth through enhanced diagnostic integrations and high value add-on subscription services, such as Pet Health Network Pro, Petly Plans, and credit card processing, and we continue to make investments to enhance the customer experience of all of our license-based software offerings. We also offer rVetLink, a comprehensive referral management solution for specialty care hospitals that streamlines the referral process between primary care and specialty care veterinarians. rVetLink's cloud technology integrates with major specialty hospital management systems, including Cornerstone Software and DVMAX Software.

We differentiate our practice management systems through enhanced functionality, ease of use and connectivity with in-clinic IDEXX VetLab instruments and outside reference laboratory test results. Our client communication services create more meaningful pet owner experiences through personalized communication. Pet Health Network Pro online client communication and education service complements the entire IDEXX product offering by educating pet owners and building loyalty through engaging the pet owner before, during and after the visit, thereby building client loyalty and driving more patient visits.

Our diagnostic imaging systems offer a convenient radiographic solution that provides superior image quality and the ability to share images with clients virtually anywhere. IDEXX imaging software enables enhanced diagnostic features and streamlined integration with our other products and services. Our newest digital radiography systems, the ImageVue DR50 Digital Imaging System enables low-dose radiation image capture without sacrificing clear, high-quality diagnostic images, reducing the risk posed by excess radiation exposure for veterinary professionals. Placements of imaging systems are important to the growth of revenue streams that are recurring in nature, including extended maintenance agreements and IDEXX Web PACS, which is our cloud-based SaaS offering for viewing, accessing, storing, and sharing multi-modality diagnostic images. We derive relatively higher margins from our subscription-based products. IDEXX Web PACS is integrated with Cornerstone, IDEXX Neo and IDEXX VetConnect PLUS to provide centralized access to diagnostic imaging results alongside patient diagnostic results from any internet connected device.

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Water

Our strategy in the water testing business is to develop, manufacture, market and sell proprietary products that test primarily for the presence of microbial contamination in water matrices, including drinking water supplies, with superior performance, supported by exceptional customer service. Our customers primarily consist of water utilities, government laboratories and private certified laboratories that highly value strong relationships and customer support. We expect that future growth in this business will be significantly dependent on our ability to increase international sales. Growth also will be dependent on our ability to enhance and broaden our product line. Most water microbiological testing is driven by regulation, and, in many countries, a test may not be used for compliance testing unless it has been approved by the applicable regulatory body and integrated into customers' testing protocols. As a result, we maintain an active regulatory program that involves applying for a growing number of regulatory approvals in a number of countries, primarily in Europe. Further, we seek to receive regulatory approvals from governing agencies as a means to differentiate our products from the competition.

Livestock, Poultry and Dairy

We develop, manufacture, market and sell a broad range of tests and perform services for various livestock diseases and conditions, and have active research and development and in-licensing programs in this area. Our strategy is to offer proprietary tests with superior performance characteristics for use in government programs to control or eradicate disease and disease outbreaks and in livestock and poultry producers' disease, reproductive, and herd health and production management programs. Disease outbreaks are episodic and unpredictable, and certain diseases that are prevalent at one time may be substantially contained or eradicated at a later time. In response to outbreaks, testing initiatives may lead to exceptional demand for certain products in certain periods. Conversely, successful eradication programs may result in significantly decreased demand for certain products. In addition, increases in government funding may lead to increased demand for certain products and budgetary constraints may lead to decreased demand for certain products. As result, the performance in certain sectors of this business can fluctuate.

Our strategy in the dairy testing business is to develop, manufacture and sell antibiotic residue and contaminant testing products that satisfy applicable regulatory requirements or dairy processor standards for testing of milk and provide reliable field performance. The manufacture of these testing products leverages the SNAP platform and production assets that also support our rapid assay business, which also leverages the SNAP platform. The dairy SNAP products, incorporate customized reagents for antibiotic and contaminant detection. To successfully increase sales of dairy testing products, we believe that we need to increase penetration in dairy processors and develop product line

enhancements and extensions. Our Rapid Visual Pregnancy Test for cattle can detect pregnancy 28 days after breeding. This test provides a quick and accurate identifier using whole blood samples.

The performance of the business is particularly subject to the various risks that are associated with doing business internationally. See “Part I, Item 1A. Risk Factors.”

Other

OPTI Medical. Our strategy in the OPTI Medical business for the human market is to develop, manufacture, and sell electrolyte and blood gas analyzers and related consumable products for the medical point-of-care diagnostics market worldwide, with a focus on small to mid-sized hospitals. We seek to differentiate our products based on ease of use, convenience, international distribution and service and instrument reliability. Similar to our veterinary instruments and consumables strategy, a substantial portion of the revenues from this product line is derived from the sale of consumables for use on the installed base of electrolyte and blood gas analyzers. During the early stage of an instrument's life cycle, relatively greater revenues are derived from instrument placements, while consumable sales become relatively more significant in later stages as the installed base of instruments increases and instrument placement revenues begin to decline. Our long-term success in this area of our business is dependent upon new customer acquisition, customer retention and increased customer utilization of existing and new assays introduced on these instruments.

Our facility in Roswell, Georgia develops and manufactures the OPTI product lines using the same or similar technology to support the electrolyte needs of the veterinary market. We leverage this facility's know-how, intellectual property, and manufacturing capability to continue to expand the menu and instrument capability of the VetStat and Catalyst platforms for veterinary applications while reducing our cost of consumables by leveraging experience and economies of scale.

During the first half of 2016, management reviewed the OPTI Medical product offerings. As a result of this review, in March 2016 we discontinued certain development activities in the human point-of-care medical diagnostics market that were devoted to a new platform and focused our efforts on supporting our current generation OPTI CCA-TS2 Blood Gas and Electrolyte analyzer.

The performance of the business is particularly subject to the various risks that are associated with doing business internationally. See "Part I, Item 1A. Risk Factors."

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. We evaluate our estimates on an ongoing basis. We base our estimates on historical experience and on various assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates. Note 2 to the consolidated financial statements included in this Annual Report on Form 10-K describes the significant accounting policies used in preparation of these consolidated financial statements.

We believe the following critical accounting estimates and assumptions may have a material impact on reported financial condition and operating performance and involve significant levels of judgment to account for highly uncertain matters or are susceptible to significant change.

Revenue Recognition

We recognize revenue when four criteria are met: (i) persuasive evidence of an arrangement exists; (ii) delivery has occurred or services have been rendered; (iii) the sales price is fixed or determinable; and (iv) collectability is reasonably assured. See Note 2(j) to the consolidated financial statements for the year ended December 31, 2017, included in this Annual Report on Form 10-K for additional information about our revenue recognition policy and criteria for recognizing revenue.

Multiple Element Arrangements (“MEAs”). Arrangements to sell products to customers frequently include multiple deliverables. Our most significant MEAs include the sale of one or more of the instruments from the IDEXX VetLab suite of analyzers, diagnostic imaging systems or practice management software, combined with one or more of the following products: extended maintenance agreements (“EMAs”), consumables, rapid assay kits and reference laboratory diagnostic and consulting services. Practice management software is frequently sold with post-contract customer support and implementation services. Delivery of the various products or performance of services within the arrangement may or may not coincide. Delivery of our IDEXX VetLab instruments, diagnostic imaging systems and practice management software generally occurs at the onset of the arrangement. EMAs, consumables, rapid assay kits, and reference laboratory diagnostic and consulting services typically are delivered over future periods, generally one to six years. In certain arrangements, revenue recognized is limited to the amount invoiced or received that is not contingent on the delivery of products and services in the future.

We allocate revenue to each element based on the relative selling price and recognize revenue when the elements have standalone value and the four criteria for revenue recognition, as discussed above, have been met for each element. If available, we establish the selling price of each element based on vendor-specific objective evidence ("VSOE"), which represents the price charged for a deliverable when it is sold separately. We use third-party evidence ("TPE") if VSOE is not available, or best estimate of selling price if neither VSOE nor TPE is available. When these arrangements include a separately-priced EMA, we recognize revenue related to the EMA at the stated contractual price on a straight-line basis over the life of the agreement to the extent the separately stated price is substantive. If there is no stated contractual price for an EMA, or the separately stated price is not substantive, we allocate revenue to each element based on the relative selling price and recognize revenue when the elements have standalone value and the four criteria for revenue recognition, as discussed above, have been met for each element.

When arrangements within the scope of software revenue recognition guidance include multiple elements, we allocate revenue to each element based on relative fair value, when VSOE exists for all elements, or by using the residual method when there is VSOE for the undelivered elements but no such evidence for the delivered elements. Under the residual method, the fair value of the undelivered elements is deferred and the residual revenue is allocated to the delivered elements. Revenue is recognized on any delivered elements when the four criteria for revenue recognition have been met for each element. If VSOE does not exist for the undelivered element, all revenue from the arrangement is deferred until the earlier of the point at which such sufficient VSOE does exist or all elements of the arrangement have been delivered. We determine fair value based on amounts charged separately for the delivered and undelivered elements to similar customers in standalone sales of the specific elements.

Certain arrangements with customers include discounts on future sales of products and services. We apply judgment in determining whether future discounts are significant and incremental. When the future discount offered is not considered significant and incremental, we do not account for the discount as an element of the original arrangement. If the future discount is significant and incremental, we recognize that discount as an element of the original arrangement and allocate the discount to the other elements of the arrangement based on relative selling price. To determine whether a discount is significant and incremental, we look to the discount provided in comparison to standalone sales of the same product or service to similar customers, the level of discount provided on other elements in the arrangement and the significance of the discount to the overall arrangement. If the discount in the MEA approximates the discount typically provided in standalone sales, that discount is not considered incremental.

Customer Programs. We record reductions to revenue related to customer marketing and incentive programs, which include end-user rebates and other volume-based incentives. Incentives may be provided in the form of IDEXX Points, credits or cash and are earned by end users upon achieving defined volume purchases or utilization levels or upon entering an agreement to purchase products or services in future periods. The summary of revenue reductions presented in the tables below reflects all revenue reductions recorded for the year for each particular program. These amounts are presented on a net basis when applicable, which accounts for any differences between estimates and actual incentives earned for the relevant customer marketing or incentive program. These differences have been insignificant in all quarterly or annual periods. Our most significant customer programs are categorized as follows:

Customer Loyalty Programs. Our customer loyalty programs offer customers the opportunity to earn incentives on a variety of IDEXX products and services as those products and services are purchased and utilized. Revenue reductions related to customer loyalty programs are recorded based on the actual issuance of incentives, incentives earned but not yet issued and estimates of incentives to be earned in the future.

Up-Front Customer Loyalty Programs. Our up-front loyalty programs provide incentives to customers in the form of cash payments or IDEXX Points upon entering multi-year agreements to purchase annual minimum amounts of future products or services. We predominately offer up-front loyalty incentives in response to competitive offerings. If a customer breaches its agreement, they are required to refund all or a portion of the up-front cash or IDEXX Points, or make other repayments, remedial actions, or both. These incentives are considered to be customer acquisition costs

and are capitalized within other current assets and other long-term assets and are subsequently recognized as a reduction to revenue over the term of the customer agreement. If these up-front incentives are subsequently utilized to purchase IDEXX VetLab instruments, diagnostic imaging systems or Cornerstone practice management systems, product revenue and cost is deferred and recognized over the term of the customer agreement as products and services are provided to the customer. We monitor customer purchases over the term of their agreement to assess the realizability of our capitalized customer acquisition costs. For the years ended December 31, 2017, 2016 and 2015, impairments of customer acquisition costs were immaterial.

IDEXX Instrument Marketing Programs. Our instrument marketing programs require the customer to enroll at the time of instrument purchase and offer customers the opportunity to earn incentives in future periods based on the volume of the products they purchase and utilize over the term of the program. These arrangements are considered MEAs in accordance with our revenue recognition policy stated above. Revenue reductions related to instrument marketing programs are recorded based on an estimate of customer purchase and utilization levels and the incentive the customer will earn over the term of the program. Our estimates are based on historical experience and the specific terms and conditions of the marketing program, requiring us to apply judgment to estimate future product purchases and utilization. Differences between our estimates and actual incentives earned are accounted for as a change in estimate. These differences were not material for the years ended December 31, 2017, 2016 and 2015. At December 31, 2017, a 5 percent change in our estimate of future customer utilization would increase or reduce revenue by approximately $0.4 million.

Reagent Rental Programs. Our reagent rental programs provide customers the right to use our instruments in consideration for multi-year agreements to purchase annual minimum amounts of consumables. No instrument revenue is recognized at the time of instrument installation. We recognize a portion of the revenue allocated to the instrument concurrent with the future sale of consumables. We determine the amount of revenue allocated from the consumable to the instrument based on relative selling prices and determine the rate of instrument revenue recognition in proportion to the customer’s minimum volume commitment. The cost of the instrument is capitalized within property and equipment or deferred within other assets, and is charged to the cost of product revenue on a straight-line basis over the term of the minimum purchase agreement.

IDEXX Points are considered the same as cash and may be applied against the purchase price of IDEXX products and services or applied to trade receivables due to us. IDEXX Points that have not yet been used by customers are classified as a liability until use or expiration occurs. We estimate the amount of IDEXX Points expected to expire, or breakage, based on historical expirations and we recognize the estimated benefit of breakage in proportion to actual redemptions of IDEXX Points by customers. On November 30 of each year, unused IDEXX Points earned before January 1 of the prior year generally expire and any variance from the breakage estimate is accounted for as a change in estimate. This variance was not material for the years ended December 31, 2017, 2016 and 2015.

Future market conditions and changes in product offerings may cause us to change marketing strategies to increase or decrease customer incentive offerings, possibly resulting in incremental reductions of revenue in future periods as compared to reductions in the current or prior periods. Additionally, certain customer programs require us to estimate, based on historical experience, and apply judgment to predict the number of customers who will actually redeem the incentive. In determining estimated revenue reductions, we utilize data collected directly from end users, which includes the volume of qualifying products purchased and the number of qualifying tests run as reported to us by end users via IDEXX SmartService. Differences between estimated and actual customer participation in programs may impact the amount and timing of revenue recognition.

Following is a summary of revenue reductions, net recorded in connection with our customer programs for the years ended December 31, 2017, 2016 and 2015 (in thousands):

	For the Years Ended December 31,		
	2017	2016	2015
Revenue Reductions Recorded, Net			
Customer Loyalty Programs, Net (1)	$ 22,106	$ 18,226	$ 16,742
Up-Front Customer Loyalty Programs	28,881	24,595	19,972
IDEXX Instrument Marketing Programs, Net (1)	43,939	37,012	31,112
Other Customer Programs, Net (1)	384	417	664
Total revenue reductions, Net	$ 95,310	$ 80,250	$ 68,490

(1) Revenue reduction is provided on a net basis, which accounts for any differences between estimates and actual incentives earned.

Accrued customer programs are included within accrued liabilities and other long-term liabilities, depending on the anticipated settlement date, in the consolidated balance sheets included in this Annual Report on Form 10-K. Following is a summary of changes in the accrual for estimated revenue reductions attributable to customer programs and the ending accrued customer programs balance for the years ended December 31, 2017 and 2016 (in thousands):

	For the Years Ended December 31,	
	2017	2016
Accrued Customer Programs:		
Balance, beginning of the year	$ 59,432	$ 55,133
Revenue reductions for Customer Loyalty Programs, Net (1)	22,106	18,227
Up-Front Customer Loyalty Program Awards issued as IDEXX Points	50,902	31,407
Revenue reductions for IDEXX Instrument Marketing Programs, Net (1)	43,939	37,011
Revenue reductions for Other Customer Programs, Net (1)	384	417
IDEXX Points redeemed and credits issued	(107,867)	(81,733)
Breakage	(471)	(722)
Exchange impact on balances denominated in foreign currency	1,186	(308)
Balance, end of the year	$ 69,611	$ 59,432

(1) Revenue reduction is provided on a net basis, which accounts for any differences between estimates and actual incentives earned.

New Revenue Standard. We will adopt ASU 2014-09, Revenue from Contracts with Customers (Topic 606) (the "New Revenue Standard") in the first quarter of 2018 on a modified-retrospective basis. ASU 2014-09 will replace most of the existing revenue recognition guidance within U.S. GAAP. See Note 2(x) to the consolidated financial statements for the year ended December 31, 2017, included in this Annual Report on Form 10-K for additional information about ASU 2014-09. While ASU 2014-09 will not impact the overall economics of our products and services sold under customer marketing and incentive programs, we expect the New Revenue Standard will require us to accelerate revenue recognition related to certain of our customer programs and to delay revenue recognition for certain other customer programs. We expect to accelerate revenue recognition on instruments and systems placed through programs where customers are committed to purchase future goods and services, including our up-front customer loyalty and volume commitment programs. This change is the result of the New Revenue Standard no longer limiting revenue recognition to the amount of customer consideration received upon placement. Conversely, we expect to defer an increased portion of revenue related to instrument placements under programs that provide rebate incentives on future purchases, including certain of our IDEXX instrument marketing programs. Under the New Revenue Standard, future purchases that are optional and not subject to a customer commitment, are not considered part of the customer arrangement, resulting in the instrument absorbing a higher relative allocation of rebate incentives. We expect this change to result in lower instrument revenue upon placement and higher recurring revenues over the term of the rebate incentive program. We believe these will be the most significant impacts related to our adoption of the New Revenue Standard and we estimate a net increase in revenue of approximately $10 million for the year ending December 31, 2018, in connection with such adoption. The estimated net increase in revenue is the result of anticipated earlier recognition on 2018 activity, which is expected to be partially offset by the net impact of the modified-retrospective cumulative adjustments on 2018. These impacts are expected to increase CAG Diagnostics recurring revenues related to the modified-retrospective cumulative adjustments, which is expected to be partially offset by a net decrease in both CAG Diagnostics capital instrument revenue and Veterinary software, services and imaging systems revenue. This assessment is based on the anticipated volume, mix and

design of our customer marketing and incentive programs, which may change in response to future customer and competitive demands. Furthermore, the New Revenue Standard requires the deferral of incremental costs to obtain a customer contract over the term of the customer arrangement, such as sales commissions. Based on the current design of our sales commission plans, the impact of implementing this element of the New Revenue Standard is not expected to be material to our results for the year ending December 31, 2018.

Inventory Valuation

We write down the carrying value of inventory for estimated obsolescence by an amount equal to the difference between the cost of inventory and the estimated market value when warranted based on assumptions of future demand, market conditions, remaining shelf life or product functionality. If actual market conditions or results of estimated functionality are less favorable than those we estimated, additional inventory write-downs may be required, which would have a negative effect on results of operations.

Valuation of Goodwill and Other Intangible Assets

A significant portion of the purchase price for acquired businesses is generally assigned to intangible assets. Intangible assets other than goodwill are initially valued at fair value. If a quoted price in an active market for the identical asset is not readily available at the measurement date, the fair value of the intangible asset is estimated based on discounted cash flows using market participant assumptions, which are assumptions that are not specific to IDEXX. The selection of appropriate valuation methodologies and the estimation of discounted cash flows require significant assumptions about the timing and amounts of future cash flows, risks, appropriate discount rates, and the useful lives of intangible assets. When material, we utilize independent valuation experts to advise and assist us in determining the fair values of the identified intangible assets acquired in connection with a business acquisition and in determining appropriate amortization methods and periods for those intangible assets. Goodwill is initially valued based on the excess of the purchase price of a business combination over the fair value of acquired net assets recognized and represents the future economic benefits arising from other assets acquired that could not be individually identified and separately recognized.

We assess goodwill for impairment annually, at the reporting unit level, in the fourth quarter and whenever events or circumstances indicate impairment may exist. An impairment charge is recorded for the amount, if any, by which the carrying amount of goodwill exceeds its implied fair value. Our reporting units are the individual product and service categories that comprise our CAG operating segment, our Water and LPD operating segments and goodwill remaining from the restructuring of our pharmaceutical business in the fourth quarter of 2008. A substantial portion of the goodwill remaining from the pharmaceutical business, included in our “Other Segment”, is associated with intellectual property that has been, or that we expect to be, licensed to third parties. Realization of this goodwill is dependent upon the success of those third parties in developing and commercializing products, which will result in our receipt of

royalties and other payments.

In evaluating goodwill for impairment, we have the option to first assess the qualitative factors to determine whether it is more likely than not that the fair value of the reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the two-step goodwill impairment test. The more likely than not threshold is defined as having a likelihood of more than 50 percent. If, after assessing the totality of events or circumstances, we determine that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, we would then perform step one of the two-step impairment test; otherwise, no further impairment test would be required. In contrast, we can opt to bypass the qualitative assessment for any reporting unit in any period and proceed directly to step one of the two-step impairment test. Doing so does not preclude us from performing the qualitative assessment in any subsequent period.

As part of our goodwill testing process, we evaluate factors specific to a reporting unit as well as industry and macroeconomic factors that are reasonably likely to have a material impact on the fair value of a reporting unit. Examples of the factors considered in assessing the fair value of a reporting unit include: the results of the most recent impairment test, the competitive environment, the regulatory environment, anticipated changes in product or labor costs, revenue growth trends, the consistency of operating margins and cash flows and current and long-range financial forecasts. The long-range financial forecasts of the reporting units, which are based upon management’s long-term view of our markets, are used by senior management and the Board of Directors to evaluate operating performance.

In the fourth quarters of 2017 and 2016, we elected to bypass the qualitative approach and instead proceeded directly to step one of the two-step impairment test to assess the fair value of all of our reporting units.

As part of step one of the two-step impairment test, we estimate the fair values of applicable reporting units using an income approach based on discounted forecasted cash flows. We make significant assumptions about the extent and timing of future cash flows, growth rates and discount rates. Model assumptions are based on our projections and best estimates, using appropriate and customary market participant assumptions. In addition, we make certain assumptions in allocating shared assets and liabilities to individual reporting units in determining the carrying value of each reporting unit. To validate the reasonableness of our reporting units' estimated fair values, we reconcile the aggregate fair values of our reporting units to our total market capitalization. Valuation assumptions reflect our projections and best estimates, based on significant assumptions about the extent and timing of future cash flows, growth rates and discount rates.

We maintain approximately $6.5 million of goodwill associated with our remaining pharmaceutical intellectual property, out-licensing arrangements, and certain retained drug delivery technologies (collectively “Pharmaceutical Activities”) that we seek to commercialize through arrangements with third parties. Currently, our primary support for the carrying value of this goodwill is royalty revenue associated with the commercialization of certain intellectual property. There is no guarantee that we will be able to maintain or increase revenues from our remaining Pharmaceutical Activities. The results of our goodwill impairment test for these Pharmaceutical Activities indicate an excess of estimated fair value over the carrying amount of this reporting unit by approximately $3.1 million and 47 percent of the reporting unit’s carrying value. Excluding these Pharmaceutical Activities, the results of our goodwill impairment test indicate an excess of estimated fair value over the carrying amount for each of our reporting units with a minimum of 150 percent and an average of approximately 550 percent.

While we believe that the assumptions used to determine the estimated fair values of each of our reporting units are reasonable, a change in assumptions underlying these estimates could result in a material negative effect on the estimated fair value of the reporting units. Our fair value estimate assumes the achievement of future financial results contemplated in our forecasted cash flows, and there can be no assurance that we will realize that value. We use forecasts to estimate future cash flows and include an estimate of long-term future growth rates based on our most recent views of the long-term outlooks for our reporting units. Actual results may differ from those assumed in our forecasts. The discount rate is based on a weighted average cost of capital derived from industry peers. Changes in market conditions, interest rates, growth rates, tax rates, costs, pricing, or the discount rate would affect the estimated fair values of our reporting units and could result in a goodwill impairment charge in a future period. No goodwill impairments were identified during the years ended December 31, 2017, 2016 or 2015.

A prolonged economic downturn in the U.S. or internationally resulting in lower long-term growth rates and reduced long-term profitability may reduce the fair value of our reporting units. Industry specific events or circumstances

could have a negative impact on our reporting units and may also reduce the fair value of our reporting units. Should such events occur and it becomes more likely than not that a reporting unit's fair value has fallen below its carrying value, we will perform an interim goodwill impairment test, in addition to the annual impairment test. Future impairment tests may result in an impairment of goodwill, depending on the outcome of future impairment tests. An impairment of goodwill would be reported as a non-cash charge to earnings.

We assess the realizability of intangible assets whenever events or changes in circumstances indicate that the carrying value may not be recoverable. If an impairment review is triggered, we evaluate the carrying value of intangible assets based on estimated undiscounted future cash flows over the remaining useful life of the primary asset of the asset group and compare that value to the carrying value of the asset group. The cash flows that are used contain our best estimates, using appropriate and customary assumptions and projections at the time. If the net carrying value of an intangible asset exceeds the related estimated undiscounted future cash flows, an impairment to adjust the intangible asset to its fair value would be reported as a non-cash charge to earnings. If necessary, we would calculate the fair value of an intangible asset using the present value of the estimated future cash flows to be generated by the intangible asset and applying a risk-adjusted discount rate.

We had no impairments of our intangible assets during the year ended December 31, 2017. During the first half of 2016, management reviewed our OPTI Medical product offering, which resulted in the discontinuance of our instrument development activities in the human point-of-care medical diagnostics market and a decision to focus our commercial and development efforts to support our latest generation OPTI CCA-TS2 Blood Gas and Electrolyte analyzer. Management identified unfavorable trends in our OPTI Medical business resulting from this change in strategy. We revised our forecasts downward, causing us to assess the realizability of the related tangible and intangible assets and determined the expected future cash flows were less than the carrying value of the OPTI Medical asset group. Non-cash intangible asset impairments of $2.2 million were recognized during the six months ended June 30, 2016. The intangibles associated with our OPTI Medical human point-of-care medical diagnostics market are fully written off. Intangible assets impairments during the years ended December 31, 2015 were not material.

Our business combinations regularly include contingent consideration arrangements that require additional consideration to be paid based on the achievement of established objectives, most commonly related to the retention or growth of the customer base during the post-combination period. We assess contingent consideration to determine if it is part of the business combination or if it should be accounted for separately from the business combination in the post-combination period. Contingent consideration is recognized at its fair value on the acquisition date. A liability resulting from contingent consideration is remeasured to fair value at each reporting date until the contingency is resolved, with changes in fair value recognized in earnings. Changes in fair value of contingent consideration and differences arising upon settlement were not material during the years ended December 31, 2017, 2016 and 2015. See Note 3 to the consolidated financial statements included in this Annual Report on Form 10-K for additional information regarding contingent consideration arising from business acquisitions.

Share-Based Compensation

Effective January 1, 2017, we adopted the FASB Accounting Standard Update (“ASU”) 2016-09, Compensation-Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting which simplifies several aspects of the accounting for share-based payment transactions, including income tax consequences, recognition of stock compensation award forfeitures, classification of awards as either equity or liabilities, the calculation of diluted shares outstanding and classification on the statement of cash flows. The tax benefits related to share-based payments reduced income tax expense by approximately $28 million for the year ended December 31, 2017, primarily through a reduction in our effective income tax rate. We do not estimate that the level of share-based payment activity in 2017 will continue in future periods. We believe that the historical range of $11 million to $14 million of annual tax benefits reflects a reasonable estimate for 2018, based on current settlement trends and stock price levels. These impacts may vary significantly based on the timing of actual settlement activity. For more information regarding the adoption of the new share-based compensation guidance, ASU 2016-09, see Note 2 to the consolidated financial statements included in this Annual Report on Form 10-K.

Our share-based compensation programs provide for grants of stock options, restricted stock units and deferred stock units, along with the issuance of employee stock purchase rights. The total fair value of future awards may vary significantly from past awards based on a number of factors, including our share-based award practices. Therefore, share-based compensation expense is likely to fluctuate, possibly significantly, from year to year.

We use the Black-Scholes-Merton option-pricing model to determine the fair value of options granted. Option-pricing models require the input of highly subjective assumptions, particularly for the expected stock price volatility and the expected term of options. The risk-free interest rate is based on the U.S. Treasury yield for a duration similar to the expected term at the date of grant. We have never paid any cash dividends on our common stock and we have no intention to pay a dividend at this time; therefore, we assume that no dividends will be paid over the expected terms of option awards. We determine the assumptions to be used in the valuation of option grants as of the date of grant. As such, we use different assumptions during the year if we grant options at different dates. Substantially all our options granted during the years ended December 31, 2017, 2016 and 2015 were granted in the first quarter of each year. The weighted average of each of the valuation assumptions used to determine the fair value of each option grant during each of the previous three years is as follows:

	For the Years Ended December 31,		
	2017	2016	2015
Expected stock price volatility	26 %	25 %	23 %
Expected term, in years (1)	5.8	5.7	5.6
Risk-free interest rate	2.0 %	1.2 %	1.5 %

(1) Options granted have a contractual term of ten years.

Changes in these subjective assumptions, particularly for the expected stock price volatility and the expected term of options, can materially affect the fair value estimate. Our expected stock price volatility assumption is based on the historical volatility of our stock over a period similar to the expected term and other relevant factors. Higher estimated volatility increases the fair value of a stock option, while lower estimated volatility has the opposite effect. The total fair value of stock options granted during the year ended December 31, 2017, was $15.7 million. If the weighted average of the stock price volatility assumption was increased or decreased by 1 percent, the total fair value of stock options awarded during the year ended December 31, 2017, would have increased or decreased by approximately $0.5 million and the total expense recognized for the year ended December 31, 2017, for options awarded during the same period would have increased or decreased by less than $0.1 million.

We derive the expected term assumption for stock options based on historical experience and other relevant factors concerning expected behavior with regard to option exercises. The expected term is determined using a consistent method at each grant date. A longer expected term assumption increases the fair value of stock option awards, while a shorter expected term assumption has the opposite effect. If the weighted average of the expected term was increased or decreased by one year, the total fair value of stock options awarded during the year ended December 31, 2017, would have increased or decreased by approximately $1.5 million, and the total expense recognized for the year ended December 31, 2017, for options awarded during 2017 would have increased or decreased by approximately $0.3 million.

For a significant majority of our awards, share-based compensation expense is recognized on a straight-line basis over the requisite service period, which ranges from one to five years, depending on the award. Share-based compensation expense is recognized on a grade-vesting methodology for performance-based restricted stock units. Share-based compensation expense is based on the number of awards expected to vest and is, therefore, reduced for an estimate of the number of awards that are expected to be forfeited. The forfeiture estimates are based on historical data and other factors; share-based compensation expense is adjusted annually for actual results. Total share-based compensation expense for the year ended December 31, 2017, was $23.5 million, which is net of a reduction of approximately $2.2 million for actual and estimated forfeitures. Fluctuations in our overall employee turnover rate may result in changes in estimated forfeiture rates and differences between estimated forfeiture rates and actual experience and, therefore could have a significant unanticipated impact on share-based compensation expense.

Modifications of the terms of outstanding awards may result in significant increases or decreases in share-based compensation. There were no material modifications to the terms of outstanding options, restricted stock units or deferred stock units during 2017, 2016 or 2015.

The fair value of stock options, restricted stock units, deferred stock units and employee stock purchase rights issued totaled $31.4 million for the year ended December 31, 2017, $27.0 million for the year ended December 31, 2016, and $25.6 million for the year ended December 31, 2015. The total unrecognized compensation expense, net of estimated forfeitures, for unvested share-based compensation awards outstanding at December 31, 2017, was $45.2 million, which will be recognized over a weighted average period of approximately 1.6 years.

Income Taxes

The Tax Act was enacted on December 22, 2017, and includes significant changes to the U.S. corporate tax system. Effective January 1, 2018, the Tax Act reduced the U.S. federal corporate tax rate from 35 percent to 21 percent, and transitioned from a worldwide tax system to a territorial tax system, and eliminated or reduced certain domestic deductions among other changes. The Tax Act introduced new provisions including the Global Intangible Low-Taxed Income ("GILTI"), Foreign Derived Intangible Income ("FDII"), Base Erosion Anti-Abuse Tax ("BEAT'), expanded bonus depreciation and changed deductions for executive compensation and interest expense. We continue to assess the impact of the new provisions which become effective beginning in 2018. See Note 12 – Income Taxes, in the accompanying Notes to the consolidated financial statements for more information regarding the impact of the Tax Act.

We estimate our future effective tax rate will be reduced as a result of the corporate tax rate reduction and the new provisions provided in the Tax Act. The outlook for our 2018 effective tax rate is 20 - 21 percent, which includes the estimated impact of the Tax Act.

The provision for income taxes is determined using the asset and liability approach of accounting for income taxes. Under this approach, deferred taxes represent the estimated future tax effects of temporary differences between book and tax treatment of assets and liabilities and carryforwards to the extent they are realizable.

On a quarterly basis, we assess our current and projected earnings by jurisdiction to determine whether or not our earnings during the periods when the temporary differences become deductible will be sufficient to realize the related future tax benefits. Should we determine that we would not be able to realize all or part of our net deferred tax asset in a particular jurisdiction in the future, an adjustment to the deferred tax asset would be charged to income in the period such determination was made. A reduction of net income before taxes in each subsidiary equal to 5 percent of revenue, compared to the corresponding reported amounts for the year ended December 31, 2017, would not result in the recognition of material incremental valuation allowances.

For those jurisdictions where tax carryforwards are likely to expire unused or the projected operating results indicate that realization is not more likely than not, a valuation allowance is recorded to offset the deferred tax asset within that jurisdiction. In assessing the need for a valuation allowance, we consider future taxable income and ongoing prudent and feasible tax planning strategies. In the event that we determine that we would be able to realize our deferred tax assets in the future in excess of the net recorded amount, a reduction of the valuation allowance would increase income in the period such determination was made. Likewise, should we determine that we would not be able to realize all or part of our net deferred tax asset in the future, a reduction to the deferred tax asset would be charged to income in the period such determination was made.

Our net taxable temporary differences and tax carryforwards are recorded using the enacted tax rates expected to apply to taxable income in the periods in which the deferred tax liability or asset is expected to be settled or realized. Should the expected applicable tax rates change in the future, an adjustment to our deferred taxes would be credited or charged, as appropriate, to income in the period such determination was made. To illustrate the impact, the reduction in the U.S. federal income tax rate from 35 percent to 21 percent from the passage of the Tax Act resulted in a reduction to our net deferred tax liability of approximately $17 million. This decrease in the deferred tax liability increased our net income in the fourth quarter of 2017.

We periodically assess our exposures related to our worldwide provision for income taxes and believe that we have appropriately accrued taxes for contingencies. Any reduction of these contingent liabilities or additional assessment would increase or decrease income, respectively, in the period such determination was made.

As a result of the Tax Act we are no longer asserting indefinite reversal under ASC 740-30-25 for undistributed earnings of non-U.S. subsidiaries earned prior to December 31, 2017. We have recorded a provisional amount of $48.8 million for the deemed repatriation tax liability related to these earnings. For operating earnings generated after December 31, 2017, we are still analyzing the effects of the change in position as allowed under U.S. GAAP.

We record a liability for uncertain tax positions that do not meet the more likely than not standard as prescribed by the authoritative guidance for income tax accounting. We record tax benefits for only those positions that we believe will more likely than not be sustained. For positions that we believe that it is more likely than not that we will prevail, we record a benefit considering the amounts and probabilities that could be realized upon ultimate settlement. If our judgment as to the likely resolution of the uncertainty changes, if the uncertainty is ultimately settled or if the statute of limitation related to the uncertainty expires, the effects of the change would be recognized in the period in which the change, resolution or expiration occurs. Our net liability for uncertain tax positions was $21.8 million as of December 31, 2017, and $18.8 million as of December 31, 2016, which includes estimated interest expense and penalties. See Note 12 – Income Taxes, in the accompanying Notes to the consolidated financial statements for more information.

RECENT ACCOUNTING PRONOUNCEMENTS

In addition to the impacts from new accounting pronouncements included above, see Note 2(w) and (x) to the consolidated financial statements for the year ended December 31, 2017, included in this Annual Report on Form 10-K for a complete discussion of recent accounting pronouncement adopted and not adopted.

RESULTS OF OPERATIONS AND TRENDS

Effects of Certain Factors on Results of Operations

Distributor Purchasing and Inventories. When selling our products through distributors, changes in distributors' inventory levels can impact our reported sales, and these changes may be affected by many factors, which may not be directly related to underlying demand for our products by veterinary practices, which are the end users. Therefore, we believe it is important to track sales to end users in the relevant periods by our significant distributors in order to distinguish between the impact of end-user demand and the impact of distributor purchasing dynamics on our reported revenue in those periods. In addition, where growth rates are affected by changes in end-user demand, we refer to this as the impact of practice-level sales on growth. Where growth rates are affected by distributor purchasing dynamics, we refer to this as the impact of changes in distributors' inventories on growth. If during the current year, distributors' inventories grew by less than those inventories grew in the comparable period of the prior year, then changes in distributors' inventories would have an unfavorable impact on our reported sales growth in the current period. Conversely, if during the current year, distributors' inventories grew by more than those inventories grew in the comparable period of the prior year, then changes in distributors' inventories would have a favorable impact on our reported sales growth in the current period.

In the U.S., effective January 1, 2015, we fully transitioned to an all-direct sales strategy. Under this approach, we take orders, ship product, invoice and receive payment for all rapid assay test kits and VetLab consumables, instruments, reference laboratory services, and other CAG products and services. While changes in prior year U.S. distributors' inventory levels impacted 2015 reported growth results, distributor inventory levels had an immaterial impact on our reported U.S. sales and growth results in later years. In certain other countries, we continue to sell our products through third-party distributors. Although we are unable to obtain data for sales to end users from certain less significant non-U.S. third party distributors, we do not believe the impact of changes in these distributors' inventories had or would have a material impact on our growth rates in the relevant periods.

Currency Impact. For the year ended December 31, 2017, approximately 21 percent of our consolidated revenue was derived from products manufactured or sourced in U.S. dollars and sold internationally in local currencies, as compared to 21 percent for the year ended December 31, 2016, and 20 percent for the year ended December 31, 2015. Strengthening of the rate of exchange for the U.S. dollar relative to other currencies has a negative impact on our revenues derived in currencies other than the U.S. dollar and on profits of products manufactured or purchased in U.S. dollars and sold internationally, and a weakening of the U.S. dollar has the opposite effect. Similarly, to the extent that the U.S. dollar is stronger in current or future periods relative to the exchange rates in effect in the corresponding prior periods, our growth rate will be negatively affected. The impact of foreign currency denominated operating expenses and foreign currency denominated supply contracts partly offsets this exposure. Additionally, our designated hedges of intercompany inventory purchases and sales help delay the impact of certain exchange rate fluctuations on non-U.S. denominated revenues. See "Part II, Item 7A. Quantitative and Qualitative Disclosure About Market Risks" included in this Annual Report on Form 10-K for additional information regarding currency impact. Our future income tax

expense could also be affected by changes in the mix of earnings, including as a result of changes in the rate of exchange for the U.S. dollar relative to currencies in countries with differing statutory tax rates. See “Part I, Item 1A. Risk Factors” included in this Annual Report on Form 10-K for additional information regarding tax impacts.

Effects of Economic Conditions. Demand for our products and services is vulnerable to changes in the economic environment, including slow economic growth, high unemployment, and credit availability. Negative or cautious consumer sentiment can lead to reduced or delayed consumer spending, resulting in a decreased number of patient visits to veterinary clinics. Unfavorable economic conditions can impact sales of instruments, diagnostic imaging, and practice management systems, which are larger capital purchases for veterinarians. Additionally, economic turmoil can cause our customers to remain sensitive to the pricing of our products and services. In the U.S., we monitor patient visits and clinic revenue data provided by a subset of our CAG customers. Although this data is a limited sample and susceptible to short-term impacts such as weather, which may affect the number of patient visits in a given period, we believe that this data provides a fair and meaningful long-term representation of the trend in patient visit activity in the U.S., providing us insight regarding demand for our products and services.

Economic conditions can also affect the purchasing decisions of our Water and LPD business customers. Water testing volumes may be susceptible to declines in discretionary testing for existing home and commercial sales and in mandated testing as a result of decreases in home and commercial construction. Testing volumes may also be impacted by severe weather conditions such as drought. In addition, fiscal difficulties can also reduce government funding for water and herd health screening services.

We believe that the diversity of our products and services and the geographic diversity of our markets partially mitigate the potential effects of the economic environment and negative consumer sentiment on our revenue growth rates.

Effects of Patent Expiration. Although we have several patents and licenses of patents and technologies from third parties that expired during 2017, and several that are expected to expire in 2018 and beyond, the expiration of these patents or licenses, individually or in the aggregate, is not expected to have a material effect on our financial position or future operations due to a range of factors as described in Item 1. “Business - Patents and Licenses”.

Non-GAAP Financial Measures. The following revenue analysis and discussion focuses on organic revenue growth, and references in this analysis and discussion to “revenue,” “revenues” or “revenue growth” are references to “organic revenue growth.” Organic revenue growth is a non-GAAP financial measure and represents the percentage change in revenue during the current year, as compared to the same period for the prior year, net of the effect of changes in foreign currency exchange rates, business acquisitions, and divestitures. Organic revenue growth should be considered in addition to, and not as a replacement for, or as a superior measure to, revenues reported in accordance with U.S. GAAP, and may not be comparable to similarly titled measures reported by other companies. Management believes that reporting organic revenue growth provides useful information to investors by facilitating easier comparisons of our revenue performance with prior and future periods and to the performance of our peers.

We exclude from organic revenue growth the effect of changes in foreign currency exchange rates because changes in foreign currency exchange rates are not under management’s control, are subject to volatility and can obscure underlying business trends. We calculate the impact on revenue resulting from changes in foreign currency exchange rates by applying the difference between the weighted average exchange rates during the current year period and the comparable prior year period to foreign currency denominated revenues for the prior year period.

We also exclude from organic revenue growth the effect of business acquisitions and divestitures because the nature, size and number of these transactions can vary dramatically from period to period, require or generate cash as an inherent consequence of the transaction, and therefore can also obscure underlying business and operating trends.

We also use Adjusted EBITDA, gross debt, net debt, gross debt to Adjusted EBITDA ratio and net debt to Adjusted EBITDA ratio, all of which are non-GAAP financial measures that should be considered in addition to, and not as a replacement for, financial measures presented according to U.S. GAAP. Management believes that reporting these non-GAAP financial measures provides supplemental analysis to help investors further evaluate our business performance and available borrowing capacity under our Credit Facility.

Comparisons to Prior Periods. Our fiscal years end on December 31. Unless otherwise stated, the analysis and discussion of our financial condition, results of operations and liquidity, including references to growth and organic growth and increases and decreases, are being compared to the equivalent prior year period.

Twelve Months Ended December 31, 2017, Compared to Twelve Months Ended December 31, 2016

Total Company

The following table presents revenue by operating segment by U.S. markets and non-U.S., or international markets:

Net Revenue (dollars in thousands)	For the Year Ended December 31, 2017	For the Year Ended December 31, 2016	Dollar Change	Percentage Change	Percentage Change from Currency	Percentage Change from Acquisitions	Organic Revenue Growth (1)
CAG	$ 1,703,377	$ 1,522,689	$ 180,688	11.9%	0.3%	0.2%	11.4%
United States	1,125,364	1,017,065	108,299	10.6%	-	0.2%	10.5%
International	578,013	505,624	72,389	14.3%	0.8%	0.4%	13.2%
Water	114,395	103,579	10,816	10.4%	0.3%	-	10.2%
United States	55,482	52,852	2,630	5.0%	-	-	5.0%
International	58,913	50,727	8,186	16.1%	0.6%	-	15.6%
LPD	128,481	126,491	1,990	1.6%	1.1%	-	0.5%
United States	14,108	13,253	855	6.5%	-	-	6.5%
International	114,373	113,238	1,135	1.0%	1.2%	-	(0.2%)
Other	22,805	22,664	141	0.6%	0.1%	-	0.5%
Total Company	$ 1,969,058	$ 1,775,423	$ 193,635	10.9%	0.3%	0.2%	10.4%
United States	1,203,547	1,089,595	113,952	10.5%	-	0.2%	10.3%
International	765,511	685,828	79,683	11.6%	0.8%	0.3%	10.5%

(1) Amounts presented may not recalculate to organic revenue growth rates due to rounding.

U.S. and international organic revenue growth both reflect strong volume gains in CAG Diagnostics recurring revenue, supported by our differentiated diagnostic technologies that are driving increased volumes from new and existing customers in our reference laboratory business, and continued strong growth in CAG Diagnostics instrument installed base, including growth in our SediVue analyzer installed base. International organic growth was strong in Europe and Asia Pacific, reflecting the aforementioned CAG Diagnostics recurring volume-driven growth. Our Water business also contributed to our international growth, primarily from higher sales volumes of our Colilert test products and related accessories in Europe, the Asia-Pacific region, and increases from our go-direct initiative in Brazil.

The following table presents our total Company results of operations:

Total Company - Results of Operations (dollars in thousands)	For the Year Ended December 31, 2017	Percent of Revenue	2016	Percent of Revenue	Change Amount	Percentage
Revenues	$ 1,969,058		$ 1,775,423		$ 193,635	10.9%
Cost of revenue	871,676		799,987		71,689	9.0%
Gross profit	1,097,382	55.7%	975,436	54.9%	121,946	12.5%
Operating Expenses:						
Sales and marketing	354,294	18.0%	317,058	17.9%	37,236	11.7%
General and administrative	220,878	11.2%	207,017	11.7%	13,861	6.7%
Research and development	109,182	5.5%	101,122	5.7%	8,060	8.0%
Total operating expenses	684,354	34.8%	625,197	35.2%	59,157	9.5%
Income from operations	$ 413,028	21.0%	$ 350,239	19.7%	$ 62,789	17.9%

Total Company gross profit increase was due to higher sales volumes and an 80 basis point increase in the gross profit percentage. The increase in the gross profit percentage was supported by the net benefit of price increases in our CAG Diagnostics recurring revenue portfolio, the favorable impact of lower product and manufacturing costs, and favorable mix benefits from high growth CAG Diagnostic recurring revenues. These favorable impacts were slightly offset by a reduction of approximately 20 basis points from currency movements, including the combined impact of comparisons to hedge gains in the prior year and hedge losses in the current year.

The increase in total Company sales and marketing expense was due primarily to increases in personnel-related costs as we continued to invest in and grow our global commercial infrastructure. The increase in general and administrative expense resulted primarily from information technology investments, including ongoing depreciation and maintenance associated with prior year projects and higher personnel-related costs, offset by a prior year non-cash intangible asset impairment within our OPTI Medical business. Research and development expense increased primarily due to higher personnel-related and consultant costs.

Companion Animal Group

The following table presents revenue by product and service category for CAG:

Net Revenue (dollars in thousands)	For the Year Ended December 31, 2017	For the Year Ended December 31, 2016	Dollar Change	Percentage Change	Percentage Change from Currency	Percentage Change from Acquisitions	Organic Revenue Growth(1)
CAG Diagnostics recurring revenue:	$ 1,451,701	$ 1,281,262	$ 170,439	13.3%	0.2%	0.3%	12.8%
IDEXX VetLab consumables	518,774	451,456	67,318	14.9%	0.3%	-	14.6%
Rapid assay products	205,309	189,122	16,187	8.6%	0.1%	-	8.5%
Reference laboratory diagnostic and consulting services	660,142	581,067	79,075	13.6%	0.2%	0.6%	12.8%
CAG Diagnostics service and accessories	67,476	59,617	7,859	13.2%	0.3%	-	12.9%
CAG Diagnostics capital - instruments	119,963	121,191	(1,228)	(1.0%)	0.6%	-	(1.6%)
Veterinary software, services and diagnostic imaging systems	131,713	120,236	11,477	9.5%	0.2%	0.5%	8.9%
Net CAG revenue	$ 1,703,377	$ 1,522,689	$ 180,688	11.9%	0.3%	0.2%	11.4%

(1) Amounts presented may not recalculate to organic revenue growth rates due to rounding.

CAG Diagnostics Recurring Revenue. The increase in CAG Diagnostics recurring revenue was due primarily to increased volumes in reference laboratory diagnostic services and IDEXX VetLab consumables and, to a lesser extent, higher realized prices.

IDEXX VetLab consumables revenue growth was due primarily to higher sales volumes in the U.S., Europe, and the Asia-Pacific region from our Catalyst consumables and, to a lesser extent, ProCyte Dx consumables and Sedivue Dx analyzer pay-per-run sales, resulting from growth in testing by existing and new customers, and an expanded menu of available tests, as well as higher average unit sales prices.

The increase in rapid assay revenue resulted from higher sales volumes and average unit price of canine SNAP 4Dx Plus tests and higher sales volumes of single analyte SNAP products.

The increase in reference laboratory diagnostic and consulting services revenue was primarily due to the impact of higher testing volumes throughout our worldwide network of laboratories, most prominently in the U.S., resulting from increased testing from existing customers, supported by our differentiated diagnostic technologies, such as IDEXX SDMA and fecal antigen testing. Additionally, the increase in revenue was the result of higher average unit sales prices.

CAG Diagnostic services and accessories revenue growth was primarily a result of the increase in our active installed base of instruments.

CAG Diagnostics Capital – Instruments Revenue. The decrease in CAG Diagnostics capital instruments revenue reflects our shift to focus sales incentives on the long-term economic value of instrument placements during 2017, partially offset by our sales of SediVue Dx, introduced in the second quarter of 2016. Our focus on long-term economic value continues to drive new and competitive Catalyst placements, which are the highest economic value placements due to the incremental CAG Diagnostic recurring revenue. As part of this focus, we continue to see declines in the lower relative long-term economic value second Catalyst placements, as well as growth of our customer commitment programs, including up-front customer loyalty programs in the U.S. and reagent rental programs internationally. These customer commitment programs result in lower up-front instrument revenue recognized at the time of placement, and instead the recognition of revenue for these programs occurs over the term of the customer agreement.

Veterinary Software, Services, and Diagnostic Imaging Systems Revenue. The increase in customer information management and diagnostic imaging systems revenue was primarily due to increasing veterinary subscription service revenue, growth in diagnostic imaging placements, and higher support revenue resulting from an increase in our installed base. These favorable factors were partially offset by lower relative diagnostic imaging system prices.

The following table presents the CAG segment results of operations:

	For the Year Ended December 31,				Change	
Results of Operations (dollars in thousands)	2017	Percent of Revenue	2016	Percent of Revenue	Amount	Percentage
Revenues	$ 1,703,377		$ 1,522,689		$ 180,688	11.9%
Cost of revenue	766,579		702,367		64,212	9.1%
Gross profit	936,798	55.0%	820,322	53.9%	116,476	14.2%
Operating Expenses:						
Sales and marketing	312,497	18.3%	277,377	18.2%	35,120	12.7%
General and administrative	180,907	10.6%	168,637	11.1%	12,270	7.3%
Research and development	79,837	4.7%	72,966	4.8%	6,871	9.4%
Total operating expenses	573,241	33.7%	518,980	34.1%	54,261	10.5%
Income from operations	$ 363,557	21.3%	$ 301,342	19.8%	$ 62,215	20.6%

CAG Gross Profit. Gross profit for CAG increased due to higher sales volumes, along with a 110 basis point increase in the gross profit percentage. The unfavorable impact of currency reduced the gross profit percentage by approximately 20 basis points, resulting primarily from lower hedging gains in 2017. Excluding currency impacts, the increase in gross margins was supported by the net benefit of price increases in our CAG Diagnostic recurring

portfolio, the favorable impact of lower product and manufacturing costs, and favorable mix benefits from high growth in IDEXX VetLab consumables and rapid assay revenues, offset by incremental investments in reference laboratory capacity and relatively lower IDEXX VetLab instrument prices reflecting strong international growth.

CAG Operating Expenses. The increase in sales and marketing expense was due primarily to increased personnel-related costs as we continue to invest in and grow our global commercial infrastructure. The increase in general and administrative expense resulted primarily from information technology investments, including ongoing depreciation and maintenance associated with prior year projects and higher personnel-related costs. The increase in research and development expense was primarily due to increased personnel-related costs.

Water

The following table presents the Water segment results of operations:

Results of Operations (dollars in thousands)	For the Year Ended December 31, 2017	Percent of Revenue	2016	Percent of Revenue	Change Amount	Percentage
Revenues	$ 114,395		$ 103,579		$ 10,816	10.4%
Cost of revenue	35,030		31,701		3,329	10.5%
Gross profit	79,365	69.4%	71,878	69.4%	7,487	10.4%
Operating Expenses:						
Sales and marketing	14,482	12.7%	13,201	12.7%	1,281	9.7%
General and administrative	11,803	10.3%	10,426	10.1%	1,377	13.2%
Research and development	2,464	2.2%	2,549	2.5%	(85)	(3.3%)
Total operating expenses	28,749	25.1%	26,176	25.3%	2,573	9.8%
Income from operations	$ 50,616	44.2%	$ 45,702	44.1%	$ 4,914	10.8%

Revenue. The increase in Water revenue was attributable to higher sales volumes of our Colilert test products and related accessories, used in coliform and E. coli testing in the Asia-Pacific region and North America, and the benefits of price increases in Latin America. Revenue growth in Latin America was driven by our go-direct initiative in Brazil, which contributed approximately 4 percent to revenue growth, including the impact of reductions in distributor inventories in 2016 and the benefits of price increases in 2017. The favorable impact of currency increased revenue by approximately 30 basis points.

Gross Profit. Gross profit for Water increased due to higher sale volumes. The gross profit percentage was flat, year over year, primarily due to the net benefit of price increases, which were largely driven by our go-direct initiative in Brazil, offset by higher manufacturing and distribution costs, and the overall change in currency exchange rates which decreased the gross profit percentage by approximately 70 basis points. The change in exchange rates was primarily due to lower relative hedge gains in 2017.

Operating Expenses. The increase in sales and marketing expense was primarily due to higher personnel-related costs related to increased head count. The increase in general and administrative expense resulted primarily from investments in Brazil and higher personnel-related costs. Research and development expense was lower primarily due to allocation of project costs and certain higher project costs that were incurred in 2016, partially offset by increases in personnel-related costs due to increased headcount.

Livestock, Poultry and Dairy

The following table presents the LPD segment results of operations:

Results of Operations (dollars in thousands)	For the Year Ended December 31, 2017	Percent of Revenue	2016	Percent of Revenue	Change Amount	Percentage
Revenues	$ 128,481		$ 126,491		$ 1,990	1.6%
Cost of revenue	56,341		52,690		3,651	6.9%
Gross profit	72,140	56.1%	73,801	58.3%	(1,661)	(2.3%)
Operating Expenses:						
Sales and marketing	24,801	19.3%	22,723	18.0%	2,078	9.1%
General and administrative	18,723	14.6%	20,193	16.0%	(1,470)	(7.3%)
Research and development	12,152	9.5%	11,971	9.5%	181	1.5%
Total operating expenses	55,676	43.3%	54,887	43.4%	789	1.4%
Income from operations	$ 16,464	12.8%	$ 18,914	15.0%	$ (2,450)	(13.0%)

Revenue. The increase in LPD revenue resulted from an increase in swine testing, primarily in China, expanded pregnancy testing primarily in Europe and North America, and moderate growth in European bovine program revenues. These increases were partially offset by lower dairy producer demand for diagnostic testing particularly in China and Brazil, and lower herd health screening, primarily driven by lower global milk prices. The favorable impact of currency increased revenue 110 basis points.

Gross Profit. The decrease in LPD gross profit was due to higher sales volume offset by a 220 basis point reduction in the gross profit percentage reflecting higher product costs. The overall change in currency exchange rates had no impact on the gross profit percentage, primarily due to increased hedge losses in the current year compared to the prior year.

Operating Expenses. Overall, LPD operating expenses increased by less than 2 percent. Sales and marketing expenses were higher due to increases in commercial infrastructure investments in emerging markets. General and administrative expenses were lower due to a lower LPD allocation of overall overhead costs reflecting the higher relative growth in our CAG business as compared to LPD. Research and development expenses were relatively consistent.

Other

The following table presents the Other results of operations:

Results of Operations (dollars in thousands)	For the Year Ended December 31, 2017	Percent of Revenue	2016	Percent of Revenue	Change Amount	Percentage
Revenues	$ 22,805		$ 22,664		$ 141	0.6%
Cost of revenue	11,417		11,103		314	2.8%
Gross profit	11,388	49.9%	11,561	51.0%	(173)	(1.5%)
Operating Expenses:						
Sales and marketing	2,093	9.2%	2,870	12.7%	(777)	(27.1%)
General and administrative	3,359	14.7%	4,908	21.7%	(1,549)	(31.6%)
Research and development	1,099	4.8%	2,899	12.8%	(1,800)	(62.1%)
Total operating expenses	6,551	28.7%	10,677	47.1%	(4,126)	(38.6%)
Income from operations	$ 4,837	21.2%	$ 884	3.9%	$ 3,953	447.2%

Revenue. The increase in Other was primarily due to higher realized prices on our OPTI Medical products and services, partially offset by lower sales volumes of our OPTI Medical blood gas analyzers and related consumables as a result of temporary product availability constraints during the first half of 2017.

Gross Profit. Gross profit for Other decreased due to a 110 basis point decrease in the gross profit percentage as a result of higher manufacturing costs, partially offset by higher realized pricing on overall OPTI Medical products and services. The overall change in currency exchange rates resulted in a decrease in the gross profit percentage of less than 10 basis points.

Operating Expenses. The decrease in operating expense was due primarily to an intangible asset impairment within our OPTI Medical business during the first half of 2016 and lower personnel cost in research and development as a result of discontinuing certain product development activities in the human point-of-care medical diagnostics market.

During the first half of 2016, management reviewed our OPTI Medical product offering, which resulted in the discontinuance of our instrument development activities in the human point-of-care medical diagnostics market and a decision to focus our commercial and development efforts to support our latest generation OPTI CCA-TS2 Blood Gas and Electrolyte analyzer. Management identified unfavorable trends in our OPTI Medical business resulting from this change in strategy. We revised our forecasts downward, causing us to assess the realizability of the related tangible and intangible assets and determined the expected future cash flows were less than the carrying value of the OPTI Medical asset group. Non-cash intangible asset impairments of $2.2 million were recognized during the six months ended June 30, 2016.

Unallocated Amounts

We estimate certain personnel-related costs and allocate these budgeted expenses to the operating segments. This allocation differs from actual expense and consequently yields a difference that is reported under the caption "Unallocated Amounts."

The following table presents the Unallocated Amounts results of operations:

	For the Year Ended December 31,		Change	
Results of Operations (dollars in thousands)	2017	2016	Amount	Percentage
Revenues	$ -	$ -	$ -	N/A
Cost of revenue	2,309	2,126	183	8.6%
Gross profit	(2,309)	(2,126)	(183)	8.6%
Operating Expenses:				
Sales and marketing	421	887	(466)	(52.5%)
General and administrative	6,086	2,853	3,233	113.3%
Research and development	13,630	10,737	2,893	26.9%
Total operating expenses	20,137	14,477	5,660	39.1%
Income from operations	$ (22,446)	$ (16,603)	$ (5,843)	35.2%

Gross Profit. Costs of revenues that were not allocated to segments were relatively consistent.

Operating Expenses. The increase in operating expenses was primarily due to higher than budgeted corporate function spending in research and development, information technology, facilities management, human resources, and higher than budgeted employee incentive costs. The overall increase in operating expenses was partially offset by favorable foreign exchange gains on monetary assets, as compared to losses in the prior year, as well as increased benefits from customer interest payments on overdue accounts.

Non-Operating Items

Interest Income. Interest income was $5.3 million for the year ended December 31, 2017, as compared to $3.7 million for the same period in the prior year. The increase in interest income was due primarily to a larger relative portfolio of marketable securities during the year ended December 31, 2017, and, to a lesser extent, higher interest rates, as compared to the prior year.

Interest Expense. Interest expense was $37.2 million for the year ended December 31, 2017, as compared to $32.0 million for the prior year. The increase in interest expense was due to higher outstanding balances and higher floating interest rates on our Credit Facility. See Note 11 to the consolidated financial statements included in this Annual Report on Form 10-K for additional information regarding our senior notes and Credit Facility.

Provisions for Income Taxes. Our effective income tax rate was 30.9 percent for the year ended December 31, 2017, and 31.0 percent for the year ended December 31, 2016. Our effective income tax rate for the year ended December 31, 2017, was lower as a result of the adoption of ASU 2016-09 related to share-based compensation, which decreased our effective tax rate by approximately 7 percent (see Note 2 to the consolidated financial statements included in this Annual Report on Form 10-K for more information regarding the adoption of ASU 2016-09) and the utilization of foreign tax credits, which reduced our effective tax rate by approximately 1 percent. These decreases were offset by the following non-recurring items: A deemed repatriation tax, net of the remeasurement of our deferred tax assets and liabilities resulting from the Tax Act and a tax benefit related to state tax credit carryforwards, which combined, increased our tax rate by approximately 8 percent.

Twelve Months Ended December 31, 2016, Compared to Twelve Months Ended December 31, 2015

Total Company

The following table presents revenue by operating segment, by U.S. markets and non-U.S., or international markets:

Net Revenue (dollars in thousands)	For the Year Ended December 31, 2016	For the Year Ended December 31, 2015	Dollar Change	Percentage Change	Percentage Change from Currency	Percentage Change from Acquisitions	Organic Revenue Growth (1)
CAG	$ 1,522,689	$ 1,356,287	$ 166,402	12.3%	(0.6%)	0.3%	12.6%
United States	1,017,065	912,822	104,243	11.4%	-	0.2%	11.2%
International	505,624	443,465	62,159	14.0%	(2.0%)	0.5%	15.5%
Water	103,579	96,884	6,695	6.9%	(1.8%)	-	8.7%
United States	52,852	48,677	4,175	8.6%	-	-	8.6%
International	50,727	48,207	2,520	5.2%	(3.7%)	-	8.9%
LPD	126,491	127,143	(652)	(0.5%)	(1.6%)	-	1.1%
United States	13,253	14,041	(788)	(5.6%)	-	-	(5.6%)
International	113,238	113,102	136	0.1%	(1.8%)	-	1.9%
Other	22,664	21,578	1,086	5.0%	(0.1%)	-	5.1%
Total Company	$ 1,775,423	$ 1,601,892	$ 173,531	10.8%	(0.8%)	0.2%	11.4%
United States	1,089,595	980,321	109,274	11.1%	0.1%	0.2%	10.8%
International	685,828	621,571	64,257	10.3%	(2.1%)	0.4%	12.0%

(1) Amounts presented may not recalculate to organic revenue growth rates due to rounding.

U.S. and international organic revenue growth both reflect very strong volume gains in CAG Diagnostics recurring revenue, supported by our differentiated diagnostic technologies that are driving increased volumes from new and existing customers in our reference laboratory business, and continued strong growth in CAG Diagnostics capital instrument placements that are driving IDEXX VetLab consumable volume growth. International organic growth across Europe, Asia Pacific and Latin America outpaced U.S. growth, reflecting the aforementioned CAG Diagnostics

recurring volume driven growth, continued growth of Colilert testing products in our Water business and LPD emerging market growth, offset by declines in LPD bovine disease eradication testing in Europe. To a lesser extent, U.S. and international LPD organic growth also reflects pressure on our dairy testing business due to a decline in worldwide milk prices.

The following table presents the total Company results of operations:

Total Company - Results of Operations (dollars in thousands)	For the Year Ended December 31, 2016	Percent of Revenue	2015	Percent of Revenue	Change Amount	Percentage
Revenues	$ 1,775,423		$ 1,601,892		$ 173,531	10.8%
Cost of revenue	799,987		711,622		88,365	12.4%
Gross profit	975,436	54.9%	890,270	55.6%	85,166	9.6%
Operating Expenses:						
Sales and marketing	317,058	17.9%	299,955	18.7%	17,103	5.7%
General and administrative	207,017	11.7%	182,510	11.4%	24,507	13.4%
Research and development	101,122	5.7%	99,681	6.2%	1,441	1.4%
Impairment charge	-	0.0%	8,212	0.5%	(8,212)	N/A
Total operating expenses	625,197	35.2%	590,358	36.9%	34,839	5.9%
Income from operations	$ 350,239	19.7%	$ 299,912	18.7%	$ 50,327	16.8%

Total Company gross profit increased due to higher sales volumes, partly offset by a 70 basis point reduction in the gross profit percentage during the year ended December 31, 2016. Excluding currency impacts of approximately 118 basis points, gross margins increased moderately, supported by improvements in our CAG business.

During the year ended December 31, 2015, we recorded an $8.2 million impairment charge related to internally-developed software not yet placed into service within Unallocated Amounts as a result of a strategic shift to refocus our development efforts within our information management business. For the year ended December 31, 2015, adjusted operating income, which is total Company operating income adjusted for the aforementioned software impairment charge was approximately $308.1 million and 19.2 percent of revenue. Adjusted operating income increased by $42.1 million or 13.7 percent for the year ended December 31, 2016. Adjusted operating income is a non-GAAP financial measure and should be considered in addition to, and not as a replacement for or as a superior measure to, operating income reported in accordance with U.S. GAAP. Management believes that reporting adjusted operating income provides useful information to investors by facilitating easier comparisons of our operating income performance with prior and future periods and to the performance of our peers.

Companion Animal Group

The following table presents revenue by product and service category for CAG:

Net Revenue (dollars in thousands)	For the Year Ended December 31, 2016	For the Year Ended December 31, 2015	Dollar Change	Percentage Change	Percentage Change from Currency	Percentage Change from Acquisitions	Organic Revenue Growth (1)
CAG Diagnostics recurring revenue:	$ 1,281,262	$ 1,147,026	$ 134,236	11.7%	(0.7%)	0.4%	12.0%
IDEXX VetLab consumables	451,456	396,526	54,930	13.9%	(0.8%)	-	14.7%
Rapid assay products	189,122	182,670	6,452	3.5%	-	-	3.5%
Reference laboratory diagnostic and consulting services	581,067	512,155	68,912	13.5%	(0.9%)	0.8%	13.6%
CAG Diagnostics service and accessories	59,617	55,675	3,942	7.1%	(0.3%)	-	7.4%
CAG Diagnostics capital instruments	121,191	98,502	22,689	23.0%	(0.7%)	-	23.7%
Veterinary software, services and diagnostic imaging systems	120,236	110,759	9,477	8.6%	(0.2%)	-	8.8%
Net CAG revenue	$ 1,522,689	$ 1,356,287	$ 166,402	12.3%	(0.6%)	0.3%	12.6%

(1) Amounts presented may not recalculate to organic revenue growth rates due to rounding.

CAG Diagnostics Recurring Revenue. The increase in CAG Diagnostics recurring revenue was due primarily to higher sales of our IDEXX VetLab consumables and reference laboratory diagnostic and consulting services resulting from increased volumes and, to a lesser extent, higher realized prices.

IDEXX VetLab consumables revenue growth was due primarily to higher sales volumes in the U.S., Europe, and the Asia-Pacific region from our Catalyst consumables and, to a lesser extent, ProCyte DX consumables, resulting from growth in testing by existing customers, the acquisition of new customers and an expanded menu of available tests. These favorable impacts were partly offset by lower consumables volumes from our VetTest chemistry instrument due to customer upgrades from our previous generation VetTest to our Catalyst analyzers. IDEXX VetLab consumables

revenue also benefited from higher average unit sales prices.

The increase in rapid assay revenue resulted from higher average unit price and sales volumes of SNAP 4Dx and higher sales volumes of single analyte SNAP products. These favorable factors were partly offset by the unfavorable impact of lower average unit sales prices in the U.S. for certain earlier generation rapid assay products.

The increase in reference laboratory diagnostic and consulting services revenue was due primarily to the impact of higher testing volumes throughout our worldwide network of laboratories, most prominently in the U.S., resulting from increased testing from existing customers and the net acquisition of new customers, supported by our differentiated diagnostic technologies, such as the IDEXX SDMA test. Also, revenue increased, to a lesser extent, from higher average unit sales prices due to price increases. Testing volumes benefited slightly from favorable weather trends experienced during the first quarter of 2016.

CAG Diagnostic services and accessories revenue growth was primarily a result of the increase in our active installed base of instruments.

CAG Diagnostics Capital – Instruments Revenue. The increase in CAG Diagnostics capital instruments revenue resulted from the launch of our SediVue Dx analyzer in the second quarter of 2016, which contributed approximately 23 percent to reported and organic instrument revenue growth, and higher ProCyte Dx revenues, partly offset by lower Catalyst revenues resulting from a shift in placements from our Catalyst Dx

analyzer to our lower priced Catalyst One analyzer and the prior year benefit of recognizing previously deferred revenues associated with pre-orders of our Catalyst One analyzer in the U.S. in 2014.

Veterinary Software, Services and Diagnostic Imaging Systems Revenue. The increase in veterinary software, services and diagnostic imaging systems revenue was due primarily to increasing diagnostic imaging systems revenue, higher veterinary subscription service revenue, including increases in our Pet Health Network Pro subscriber base and higher support revenue resulting from an increase in our active installed base of diagnostic imaging and practice management systems. Revenues from diagnostic imaging systems were higher due to the timing of revenue recognized from fewer deferred revenue placements under up-front customer loyalty programs, and the recognition of previously deferred revenues. These favorable factors were partially offset by fewer licensed-based Cornerstone placements as we evolve to a subscription-based model for new practice management customer acquisitions, as well as lower average unit sale prices on diagnostic imaging system placements.

The following table presents the CAG segment results of operations:

	For the Year Ended December 31,				Change	
Results of Operations (dollars in thousands)	2016	Percent of Revenue	2015	Percent of Revenue	Amount	Percentage
Revenues	$ 1,522,689		$ 1,356,287		$ 166,402	12.3%
Cost of revenue	702,367		626,984		75,383	12.0%
Gross profit	820,322	53.9%	729,303	53.8%	91,019	12.5%
Operating Expenses:						
Sales and marketing	277,377	18.2%	263,907	19.5%	13,470	5.1%
General and administrative	168,637	11.1%	159,851	11.8%	8,786	5.5%
Research and development	72,966	4.8%	72,226	5.3%	740	1.0%
Total operating expenses	518,980	34.1%	495,984	36.6%	22,996	4.6%
Income from operations	$ 301,342	19.8%	$ 233,319	17.2%	$ 68,023	29.2%

CAG Gross Profit. Gross profit for CAG increased due to higher sales volumes, along with a 10 basis point increase in the gross profit percentage. The unfavorable impact of currency reduced the gross profit percentage by approximately 90 basis points, resulting primarily from lower hedging gains. Excluding currency impacts, gross margins increased moderately, supported by the net benefit of price increases for our reference laboratory diagnostic services and IDEXX VetLab consumables and profitability improvements from higher relative revenue of our expanded subscription service offerings, and within our worldwide network of reference laboratories.

CAG Operating Expenses. The increase in sales and marketing expense was due primarily to increased personnel-related costs, including investments in our global commercial infrastructure and sales performance incentives, partly offset by the favorable impact of changes in foreign currency exchange rates. The increase in general and administrative expense resulted primarily from information technology investments, including ongoing depreciation and maintenance associated with prior year projects, and higher personnel-related costs. These increases were partly offset by the favorable impact of changes in foreign currency exchange rates. Research and development expense was generally consistent.

Water

The following table presents the Water segment results of operations:

Results of Operations (dollars in thousands)	For the Year Ended December 31, 2016	Percent of Revenue	2015	Percent of Revenue	Change Amount	Percentage
Revenues	$ 103,579		$ 96,884		$ 6,695	6.9%
Cost of revenue	31,701		27,931		3,770	13.5%
Gross profit	71,878	69.4%	68,953	71.2%	2,925	4.2%
Operating Expenses:						
Sales and marketing	13,201	12.7%	12,204	12.6%	997	8.2%
General and administrative	10,426	10.1%	9,058	9.3%	1,368	15.1%
Research and development	2,549	2.5%	2,939	3.0%	(390)	(13.3%)
Total operating expenses	26,176	25.3%	24,201	25.0%	1,975	8.2%
Income from operations	$ 45,702	44.1%	$ 44,752	46.2%	$ 950	2.1%

Revenue. The increase in Water revenue was attributable to all regions in which we operate, most notably from strong performance in North America, Europe, and the Asia-Pacific region. Higher revenues resulted primarily from increased sales volumes and price increases of our Colilert test products and related accessories used in coliform and E. coli testing, placements of our Quanti-Tray Sealer PLUS instrument, which we launched in June 2015, several large project orders during the first half of 2016, and to a lesser extent, from higher sales volumes of our products designed to detect cryptosporidium related to an outbreak in the United Kingdom beginning in mid-2015 through the first half of 2016. Testing volumes also benefited slightly from favorable weather trends experienced during the first quarter of 2016.

Gross Profit. Gross profit for Water increased due to higher sales volumes, offset by a 180 basis point reduction in the gross profit percentage. The unfavorable impact of currency reduced the gross profit percentage by approximately 210 basis points, resulting from lower hedging gains and changes in foreign currency exchange rates. Excluding currency impacts, the gross profit percentage increased slightly due to the net benefit of price increases on our Colilert testing products and related accessories.

Operating Expenses. The increase in sales and marketing was due primarily to higher personnel-related costs and increased advertising and marketing materials. The increase in general and administrative expense was due primarily to higher personnel-related costs. The decrease in research and development expense was a result of lower product development costs during the year ended December 31, 2016.

Livestock, Poultry and Dairy

The following table presents the LPD segment results of operations:

Results of Operations (dollars in thousands)	For the Year Ended December 31, 2016	Percent of Revenue	2015	Percent of Revenue	Change Amount	Percentage
Revenues	$ 126,491		$ 127,143		$ (652)	(0.5%)
Cost of revenue	52,690		47,156		5,534	11.7%
Gross profit	73,801	58.3%	79,987	62.9%	(6,186)	(7.7%)
Operating Expenses:						
Sales and marketing	22,723	18.0%	22,307	17.5%	416	1.9%
General and administrative	20,193	16.0%	18,655	14.7%	1,538	8.2%
Research and development	11,971	9.5%	11,868	9.3%	103	0.9%
Total operating expenses	54,887	43.4%	52,830	41.6%	2,057	3.9%
Income from operations	$ 18,914	15.0%	$ 27,157	21.4%	$ (8,243)	(30.4%)

Revenue. The overall change in exchange rates reduced revenue growth by approximately 160 basis points. The increase in LPD organic revenue resulted from strong performance in emerging markets, most notably resulting from higher sales volumes of swine, poultry and bovine pregnancy products and services in various regions. This increase was partially offset by a decrease in sales volumes of bovine testing products within Western Europe in large part due to the success of certain disease eradication programs in the region, as well as pressure on our dairy testing business due to a decline in worldwide milk prices.

Gross Profit. Gross profit for LPD decreased due to a reduction in the gross profit percentage of 460 basis points. The decrease in the gross profit percentage resulted primarily from approximately 360 basis points of unfavorable currency impact, primarily due to lower relative hedging gains. Additionally, higher overall manufacturing costs, which were partially offset by the expiration of royalties on certain of our swine testing products, resulted in an overall lower gross profit.

Operating Expenses. The increase in sales and marketing expense for the year ended December 31, 2016, was due to higher commercial infrastructure investments within emerging markets. The increase in general and administrative expense resulted primarily from higher investments in emerging markets including Brazil. The increase in research and development expense resulted primarily from higher external product development and material costs. All the increases above were partially offset by the favorable impact of changes in foreign currency exchange rates.

Other

The following table presents the Other results of operations:

Results of Operations (dollars in thousands)	For the Year Ended December 31, 2016	Percent of Revenue	2015	Percent of Revenue	Change Amount	Percentage
Revenues	$ 22,664		$ 21,578		$ 1,086	5.0%
Cost of revenue	11,103		11,297		(194)	(1.7%)
Gross profit	11,561	51.0%	10,281	47.6%	1,280	12.5%
Operating Expenses:						
Sales and marketing	2,870	12.7%	3,466	16.1%	(596)	(17.2%)
General and administrative	4,908	21.7%	3,326	15.4%	1,582	47.6%
Research and development	2,899	12.8%	3,626	16.8%	(727)	(20.0%)
Total operating expenses	10,677	47.1%	10,418	48.3%	259	2.5%
Income from operations	$ 884	3.9%	$ (137)	(0.6%)	$ 1,021	(745.3%)

Revenue. The increase in Other revenue was due primarily to royalty revenue associated with the commercialization of certain intellectual property related to our former pharmaceutical product line, partially offset by lower sales volumes of our OPTI Medical blood gas analyzers and related consumables.

Gross Profit. Gross profit for Other increased due to higher sales and an increase in the gross profit percentage of 340 basis points. The increase in the gross profit percentage resulted primarily from higher relative royalty revenue associated with the commercialization of certain intellectual property related to our former pharmaceutical product line, partly offset by an increase in overall OPTI Medical product costs.

Operating Expenses. Operating expenses for Other, which totaled $10.7 million for the year ended December 31, 2016, increased $0.3 million, due primarily to intangible impairments within our OPTI Medical business, partly offset by lower amortization expense on the aforementioned intangible assets and a reduction in personnel-related costs.

During the first half of 2016, management reviewed the OPTI Medical product offerings. As a result of this review, we discontinued our product development activities in the human point-of-care medical diagnostics market during March 2016 and focused our commercial efforts in this market on supporting our latest generation OPTI CCA-TS2 Blood Gas and Electrolyte analyzer. Management identified unfavorable trends in our OPTI Medical line of business resulting from this change in strategy. We revised our forecasts downward, causing us to assess the realizability of the related tangible and intangible assets and determined the expected future cash flows were less than the carrying value of the OPTI Medical asset group. Non-cash intangible asset impairments of $2.2 million were recorded during the year ended December 31, 2016.

Unallocated Amounts

We estimate certain personnel-related costs and allocate these budgeted expenses to the operating segments. This allocation differs from actual expense and consequently yields a difference that is reported under the caption "Unallocated Amounts."

The following table presents the Unallocated Amounts results of operations:

	For the Year Ended December 31,		Change	
Results of Operations (dollars in thousands)	2016	2015	Amount	Percentage
Revenues	$ -	$ -	$ -	N/A
Cost of revenue	2,126	(1,746)	3,872	(221.8%)
Gross profit	(2,126)	1,746	(3,872)	(221.8%)
Operating Expenses:				
Sales and marketing	887	(1,929)	2,816	(146.0%)
General and administrative	2,853	(8,380)	11,233	(134.0%)
Research and development	10,737	9,022	1,715	19.0%
Impairment charge	-	8,212	(8,212)	N/A
Total operating expenses	14,477	6,925	7,552	109.1%
Income from operations	$ (16,603)	$ (5,179)	$ (11,424)	220.6%

Gross Profit. Gross profit for Unallocated Amounts decreased due primarily to higher personnel-related costs as compared to budget. The increase in personnel-related costs was due primarily to higher self-insured healthcare costs and higher than budgeted employee incentives reported within Unallocated Amounts during the year ended December 31, 2016.

Operating Expenses. Operating expenses that are not allocated to our operating segments increased $7.6 million to $14.5 million for the year ended December 31, 2016, due primarily to higher personnel-related costs as compared to budget, reflecting increased employee incentives and higher self-insured health claim expenses, as well as certain foreign exchange losses on monetary assets due to strengthening of the U.S. dollar. This compares to prior period cost control initiatives that resulted in lower than budgeted costs. Partially offsetting these increases was the

aforementioned $8.2 million impairment charge recorded in 2015, related to internally-developed software not yet placed into service as a result of a strategic shift to refocus our development efforts within our veterinary software and services business.

Non-Operating Items

Interest Income. Interest income was $3.7 million for the year ended December 31, 2016, as compared to $2.5 million for the prior year. The increase in interest income was due primarily to a larger relative portfolio of marketable securities during the year ended December 31, 2016, and, to a lesser extent, higher interest rates.

Interest Expense. Interest expense was $32.0 million for the year ended December 31, 2016, as compared to $29.2 million for the prior year. The increase in interest expense resulted from higher relative interest incurred in 2016 as a result of approximately $250 million in senior notes that we issued and sold through private placements during the first half of 2015, for which fixed interest rates range from 1.785 percent to 3.72 percent. Additionally, the increase in interest expense was due to higher relative interest rates on our Credit Facility. See Note 11 to the consolidated financial statements included in this Annual Report on Form 10-K for additional information regarding our senior notes and Credit Facility.

Provision for Income Taxes. Our effective income tax rate was 31.0 percent for the year ended December 31, 2016, as compared to 29.7 percent for the year ended December 31, 2015. The increase in our effective tax rate for the year ended December 31, 2016, as compared to the year ended December 31, 2015, was primarily related to a change in earnings mix in 2016, with relatively higher earnings subject to domestic tax rates as opposed to lower international tax rates including the impact of foreign currency exchange rates.

LIQUIDITY AND CAPITAL RESOURCES

We fund the capital needs of our business through cash on hand, funds generated from operations, and amounts available under our Credit Facility. In addition, we issued $150 million of senior notes in February 2015 and €88.9 million of euro-denominated senior notes in June 2015. During the twelve months ended December 31, 2015, we purchased marketable debt securities using a portion of our cash balances. We generate cash primarily through the payments made by customers for our diagnostic products and services, consumables, consulting services, and other various systems and services provided to the animal veterinary, livestock, poultry, dairy, and water testing markets. Our cash disbursements are primarily related to compensation and benefits for our employees, inventory and supplies, taxes, research and development, capital expenditures, rents, occupancy-related charges, interest expense, and acquisitions. At December 31, 2017, we had $471.9 million of cash, cash equivalents and marketable securities, as compared to $391.8 million on December 31, 2016, and $342.6 million on December 31, 2015. Working capital, including our Credit Facility, totaled negative $32.6 million at December 31, 2017, as compared to negative $89.0 million at December 31, 2016, and negative $35.1 million at December 31, 2015. Additionally, at December 31, 2017, we had remaining borrowing availability of $194.0 million under our $850 million Credit Facility. We believe that, if necessary, we could obtain additional borrowings at similar rates to our existing borrowings to fund our growth objectives. We further believe that current cash and cash equivalents, our portfolio of short-duration marketable securities, funds generated from operations, and committed borrowing availability will be sufficient to fund our operations, capital purchase requirements, and anticipated growth needs for the next twelve months. We believe that these resources, coupled with our ability, as needed, to obtain additional financing on favorable terms will also be sufficient for the foreseeable future to fund our business as currently conducted.

The Tax Act was enacted on December 22, 2017, and includes significant changes to the U.S. corporate tax system. The Tax Act reduced the U.S. federal corporate tax rate from 35 percent to 21 percent, effective as of January 1, 2018, and transitioned the U.S. federal tax system from a worldwide tax system to a territorial tax system. In converting to the new territorial tax system, a deemed repatriation tax on previously tax-deferred earnings of certain foreign subsidiaries was required to be recognized as of December 31, 2017, and will be payable over eight years.

As a result of the Tax Act, we are no longer asserting indefinite investment for undistributed earnings of non-U.S. subsidiaries earned prior to December 31, 2017. We have recorded a provisional amount of $48.8 million for the deemed repatriation tax liability related to these earnings which will be paid over eight years.

The following table presents cash, cash equivalents and marketable securities held domestically, and by our foreign subsidiaries:

Cash, cash equivalents and marketable securities	For the Years Ended December 31,		
(dollars in millions)	2017	2016	2015
U.S.	$ 5.9	$ 4.8	$ 1.4
Foreign	466.0	387.0	341.2
Total	$ 471.9	$ 391.8	$ 342.6
Total cash, cash equivalents and marketable securities held in U.S. dollars	$ 334.3	$ 285.8	$ 239.2
Percentage of total cash, cash equivalents and marketable securities held in U.S. dollars	70.8%	72.9%	69.8%

During 2018, in connection with the passage of the Tax Act in the fourth quarter of 2017, we intend to liquidate our marketable securities and use the cash to partially pay down our Credit Facility. We held marketable securities with effective maturities of two years or less that had an average AA- credit rating as of December 31, 2017.

The following table presents marketable securities at fair value for the years ended December 31, 2017 and 2016:

Marketable securities (dollars in millions)	For the Year Ended December 31, 2017	Percent of Total	For the Year Ended December 31, 2016	Percent of Total
Corporate bonds	$ 140.9	49.6%	$ 130.8	55.2%
Certificates of deposit	58.5	20.6%	40.4	17.1%
Commercial paper	29.2	10.3%	20.2	8.5%
Asset backed securities	22.2	7.8%	27.3	11.5%
U.S. government bonds	15.6	5.5%	12.2	5.1%
Agency bonds	10.9	3.8%	4.6	1.9%

Treasury bills	7.0	2.5%	-	0.0%
All other	-	0.0%	1.4	0.6%
Total marketable securities	$ 284.3		$ 236.9	

Of the $187.7 million of cash and cash equivalents held as of December 31, 2017, approximately 82 percent was held as bank deposits, approximately 18 percent was invested in money market funds restricted to U.S. government and agency securities, and the remainder consisted of commercial paper and other securities with original maturities of less than ninety days. Of the $154.9 million of cash and cash equivalents held as of December 31, 2016, 76 percent was held as bank deposits, 22 percent was invested in money market funds restricted to U.S. government and agency securities, and the remainder consisted of commercial paper and other securities with original maturities of less than ninety days.

Should we require more capital than is generated by our operations, for example to fund significant discretionary activities, we could raise capital through debt or equity issuances. These alternatives could result in increased interest expense and dilution of our earnings. We have borrowed funds domestically and continue to have the ability to borrow funds domestically at reasonable interest rates.

The following table presents additional key information concerning working capital:

	For the Three Months Ended				
	December 31, 2017	September 30, 2017	June 30, 2017	March 31, 2017	December 31, 2016
Days sales outstanding (1)	41.7	43.4	41.7	42.4	42.1
Inventory turns (2)	2.2	1.9	2.0	1.9	2.0

(1) Days sales outstanding represents the average of the accounts receivable balances at the beginning and end of each quarter divided by revenue for that quarter, the result of which is then multiplied by 91.25 days.

(2) Inventory turns represent inventory-related cost of product revenue for the 12 months preceding each quarter-end divided by the inventory balance at the end of the quarter.

Sources and Uses of Cash

The following table presents cash provided (used):

	For the Years Ended December 31,		
(dollars in thousands)	2017	2016	2015
Net cash provided by operating activities	$ 373,276	$ 338,943	$ 221,802
Net cash used by investing activities	(138,688)	(90,786)	(308,406)
Net cash used by financing activities	(208,016)	(222,196)	(100,990)
Net effect of changes in exchange rates on cash	6,202	(54)	(5,948)
Net increase (decrease) in cash and cash equivalents	$ 32,774	$ 25,907	$ (193,542)

Operating Activities. The increase in cash provided by operating activities of $34.3 million during 2017 as compared to 2016 was primarily due to an increase in net income, including the impact of adopting the new accounting guidance for share-based compensation. The increase in cash provided by operating activities of $117.1 million during 2016 as compared to 2015 was due primarily to changes in operating assets and liabilities, as well as an increase in net income

including increases in non-cash charges.

The following table presents cash flows from changes in operating assets and liabilities and the tax benefit from share-based compensation arrangements for the years ended December 31, 2017, 2016 and 2015:

	For the Years Ended December 31,		
(dollars in thousands)	2017	2016	2015
Accounts receivable	$ (24,918)	$ (22,554)	$ (50,142)
Inventories	(19,062)	7,648	(34,969)
Accounts payable	1,391	2,117	(2,468)
Deferred revenue	3,551	7,672	(319)
Other assets and liabilities	47,418	12,491	23,525
Tax benefit from share-based compensation arrangements	-	(14,702)	(11,315)
Total change in cash due to changes in operating assets and liabilities and the tax benefit from share-based compensation arrangements	$ 8,380	$ (7,328)	$ (75,688)

The cash used by accounts receivable during 2017 as compared to 2016 was relatively consistent with revenue growth. The reduction in cash used by accounts receivable during 2016 as compared to 2015 was primarily due to the absence of the impacts related to our change in U.S. commercial strategy impacting the first quarter of 2015. The incremental cash used by accounts receivable for the year ended December 31, 2015, was primarily due to our transition to an all-direct strategy in the U.S., including the establishment of accounts receivable directly with our U.S. end-users that previously purchased from our U.S. distribution partners, which take a longer elapsed time to collect. Additionally, accounts receivable was impacted by revenue growth for the years ended December 31, 2016 and 2015, relative to the respective prior periods, including the margin capture associated with the aforementioned all-direct strategy.

The net incremental cash used by inventories during 2017 as compared to cash provided by inventories in 2016 was primarily due to our operational initiatives to optimize inventory levels that were implemented in the first

half of 2016, which followed a period of inventory growth to support new products and increasing demand. Cash used by inventories for 2015 was primarily due to growth in our volume commitment rental programs in international markets and relatively higher inventory levels to support new instrument and diagnostic test launches.

The decrease in cash provided by deferred revenue during 2017 as compared to 2016 was primarily due to customer program mix. The increase in cash provided by deferred revenue during 2016 as compared to cash used by deferred revenue for 2015 was primarily due to the recognition in 2015 of deferred revenues related to our 2014 Catalyst One introductory offer, where we pre-sold the instrument and provided customers with temporary use of a Catalyst Dx instrument.

The increase in cash provided by other assets and liabilities during 2017 as compared to cash provided by assets and liabilities during 2016 was primarily due to the deemed repatriation tax on foreign profits from the enactment of the Tax Act, which was recorded in the fourth quarter of 2017 and is payable over eight years, as well as higher relative employee incentive compensation payments. The decrease in cash provided by other assets and liabilities during 2016 as compared to 2015 was the result of higher taxable income in 2015. Income tax payments were lower during 2015 resulting from one-time impacts of implementing our U.S. all-direct strategy and the benefit from the Tax Increase Prevention Act enactment late in the fourth quarter of 2014. The net incremental cash provided by other assets and liabilities for 2015 was also due to the recognition of previously deferred Catalyst instrument costs under the Catalyst One introductory offer during 2015.

We have historically experienced proportionally lower net cash flows from operating activities during the first quarter and proportionally higher cash flows from operating activities for the remainder of the year and for the annual period driven primarily by payments related to annual employee incentive programs in the first quarter following the year for which the bonuses were earned and the seasonality of vector-borne disease testing, which has historically resulted in significant increases in accounts receivable balances during the first quarter of the year.

Investing Activities. Cash used by investing activities was $138.7 million during 2017 as compared to $90.8 million used during 2016, and $308.4 million used during 2015. The increase in cash used by investing activities during 2017 as compared to 2016 was primarily due to the increase in net purchases of marketable securities, as well as increases in acquisitions of businesses and intangible assets and capital spending. The decrease in cash used by investing activities during 2016 as compared to 2015 was due primarily to the initial purchase of marketable securities that began in 2015. During 2018, in connection with the passage of the Tax Act in the fourth quarter of 2017, we intend to liquidate our marketable securities and use the cash to partially pay down our Credit Facility.

Our total capital expenditure plan for 2018 is estimated to be approximately $140 million, which includes the expansion of our headquarters, the relocation and expansion of our German core reference laboratory, other capital investments in manufacturing and reference laboratory equipment, investments in internal use software and

information technology infrastructure, and the renovation and expansion of our facilities and reference laboratories.

Financing Activities. Cash used by financing activities was $208.0 million during 2017 as compared to $222.2 million used during 2016, and $101.0 million used during 2015. The decrease in cash used by financing activities during 2017 as compared to 2016 was primarily due to fewer repurchases of our common stock. The increase in cash used by financing activities during 2016 as compared to 2015 was due to the issuance of senior notes in 2015, as well as a decrease in cash used to repurchase our common stock.

In June 2015, we entered into an Amended and Restated Multi-Currency Note Purchase and Private Shelf Agreement (the “2015 Amended Agreement”), among the Company, Prudential Investment Management, Inc. (“Prudential”) and the accredited institutional purchasers named therein, which amends and restates the Note Purchase and Private Shelf Agreement dated July 21, 2014. Pursuant to the 2015 Amended Agreement, we issued and sold through a private placement a principal amount of €88.9 million of 1.785% Series C Senior Notes due June 18, 2025 (the “2025 Series C Notes”). We used the net proceeds from this issuance and sale of the 2025 Series C Notes for general corporate purposes, including repaying amounts outstanding under our Credit Facility.

In December 2014, we entered into a Multi-Currency Note Purchase and Private Shelf Agreement (the “MetLife Agreement”) with accredited institutional purchasers named therein pursuant to which we agreed to issue and sell $75 million of 3.25% Series A Senior Notes having a seven-year term (the “2022 Notes”) and $75 million

of 3.72% Series B Senior Notes having a twelve-year term (the "2027 Notes"). In February 2015, we issued and sold the 2022 Notes and the 2027 Notes pursuant to the MetLife Agreement. We used the net proceeds from these issuance and sales for general corporate purposes, including repaying amounts outstanding under our Credit Facility.

Cash used to repurchase shares of our common stock decreased by $21.5 million during the year ended December 31, 2017, as compared to 2016. Cash used to repurchase shares of our common stock decreased by $97.9 million during the year ended December 31, 2016, as compared to 2015. From the inception of our share repurchase program in August 1999 to December 31, 2017, we have repurchased 63.0 million shares. During the year ended December 31, 2017, we purchased 1.75 million shares for an aggregate cost of $270.3 million, as compared to purchases of 3.1 million shares for an aggregate cost of $313.1 million during 2016 and purchases of 5.7 million shares for an aggregate cost of $406.4 million during 2015. We believe that the repurchase of our common stock is a favorable means of returning value to our shareholders and we also repurchase our stock to offset the dilutive effect of our share-based compensation programs. Repurchases of our common stock may vary depending upon the level of other investing activities and the share price. See Note 18 to the consolidated financial statements included in this Annual Report on Form 10-K for additional information about our share repurchases.

As noted above, we refinanced our existing $700 million Credit Facility during December 2015, increasing the principal amount thereunder to $850 million. The Credit Facility matures on December 4, 2020 and requires no scheduled prepayments before that date. Although the Credit Facility does not mature until December 2020, all amounts borrowed under the terms of the Credit Facility are reflected in the current liabilities section in the accompanying consolidated balance sheets because the Credit Facility contains a subjective material adverse event clause, which allows the debt holders to call the loans under the Credit Facility if we fail to notify the syndicate of such an event. Applicable interest rates on borrowings under the Credit Facility generally range from 1.250 to 1.375 percentage points above the London interbank offered rate or the Canadian dollar-denominated bankers' acceptance rate, based on our leverage ratio, or the prevailing prime rate plus a maximum spread of up to 0.375 percent, based on our leverage ratio.

Net borrowing and repayment activity under the Credit Facility resulted in more cash provided of $6.0 million during the year ended December 31, 2017, as compared to 2016. At December 31, 2017, we had $655.0 million outstanding under the Credit Facility. Net borrowing and repayment activity under the Credit Facility resulted in more cash provided of $14.0 million during the year ended December 31, 2016, compared to 2015. At December 31, 2016, we had $611.0 million outstanding under the Credit Facility. The general availability of funds under the Credit Facility was further reduced by $1.0 million for a letter of credit that was issued in connection with claims under our workers' compensation policy. The Credit Facility contains affirmative, negative, and financial covenants customary for financings of this type. The negative covenants include restrictions on liens, indebtedness of subsidiaries of the Company, fundamental changes, investments, transactions with affiliates, and certain restrictive agreements and violations of laws and regulations. The financial covenant is a consolidated leverage ratio test that requires our ratio of debt to earnings before interest, taxes, depreciation, amortization, and share-based compensation not to exceed 3.5-to-1. At December 31, 2017, we were in compliance with the covenants of the Credit Facility. The obligations under the Credit Facility may be accelerated upon the occurrence of an event of default under the Credit Facility, which includes customary events of default including payment defaults, defaults in the performance of the affirmative,

negative and financial covenants, the inaccuracy of representations or warranties, bankruptcy and insolvency related defaults, defaults relating to judgments, certain events related to employee pension benefit plans under the Employee Retirement Income Security Act of 1974, the failure to pay specified indebtedness, cross-acceleration to specified indebtedness and a change of control default.

Since December 2013, we have issued and sold through private placements senior notes having an aggregate principal amount of approximately $600 million pursuant to certain note purchase agreements (collectively, the “Senior Note Agreements”). The Senior Note Agreements contain affirmative, negative, and financial covenants customary for agreements of this type. The negative covenants include restrictions on liens, indebtedness of our subsidiaries, priority indebtedness, fundamental changes, investments, transactions with affiliates, certain restrictive agreements and violations of laws and regulations. See Note 11 to the consolidated financial statements included in this Annual Report on Form 10-K for additional information regarding our senior notes.

Should we elect to prepay the Senior Notes, such aggregate prepayment will include the applicable make-whole amount(s), as defined within the applicable Senior Note Agreements. Additionally, in the event of a change in

control of the Company, or upon the disposition of certain assets of the Company the proceeds of which are not reinvested (as defined in the Senior Note Agreements), we may be required to prepay all or a portion of the Senior Notes. The obligations under the Senior Notes may be accelerated upon the occurrence of an event of default under the applicable Senior Note Agreement, each of which includes customary events of default including payment defaults, defaults in the performance of the affirmative, negative and financial covenants, the inaccuracy of representations or warranties, bankruptcy and insolvency related defaults, defaults relating to judgments, certain events related to employee pension benefit plans under the Employee Retirement Income Security Act of 1974, the failure to pay specified indebtedness and cross-acceleration to specified indebtedness.

Effect of currency translation on cash. The net effect of changes in foreign currency exchange rates are related to changes in exchange rates between the U.S. dollar and the functional currencies of our foreign subsidiaries. These changes will fluctuate each year as the value of the U.S. dollar relative to the value of the foreign currencies change. A currency's value depends on many factors, including interest rates, the country's debt levels and strength of economy.

Off Balance Sheet Arrangements. We have no off-balance sheet arrangements or variable interest entities except for letters of credit and third party guarantees, as reflected in Note 11 and Note 14 to the consolidated financial statements for the year ended December 31, 2017, included in this Annual Report on Form 10-K, respectively.

Financial Covenant. The financial covenant is a consolidated leverage ratio test that requires our ratio of debt to earnings before interest, taxes, depreciation, amortization, and share-based compensation, as defined in the Senior Note Agreements, not to exceed 3.5-to-1. At December 31, 2017, we were in compliance with the covenants of the Senior Note Agreements. The following details our consolidated leverage ratio calculation as of December 31, 2017 (in thousands):

Trailing 12 Months Adjusted EBITDA:	December 2017
Net income attributable to stockholders	$ 263,144
Interest expense	37,225
Provision for income taxes	117,788
Depreciation and amortization	83,140
Share-based compensation expense	23,517
Adjusted EBITDA	$ 524,814

Debt to Adjusted EBITDA Ratio:	December 2017

Line of credit	$ 655,000
Long-term debt	606,075
Total debt	1,261,075
Acquisition-related consideration payable	3,537
Capitalized leases	419
U.S. GAAP change - deferred financing costs	492
Gross debt	1,265,523
Gross debt to Adjusted EBITDA ratio	2.41
Cash and cash equivalents	(187,675)
Marketable securities	(284,255)
Net debt	$ 793,593
Net debt to Adjusted EBITDA ratio	1.51

Other Commitments, Contingencies and Guarantees

Under our workers' compensation insurance policies for U.S. employees, we have retained the first $0.3 million for the years ended December 31, 2017, 2016 and 2015, in claim liability per incident with aggregate maximum claim liabilities per year of $2.5 million, $2.6 million, and $3.5 million for the years ended December 31, 2017, 2016 and 2015, respectively. Workers' compensation expense recognized during the years ended December 31, 2017, 2016 and 2015 and our respective liability for such claims as of December 31, 2017, 2016 and 2015 was not material. Claims incurred during the years ended December 31, 2017 and 2016, are relatively undeveloped as of December 31, 2017. Therefore, it is possible that we could incur additional healthcare and wage indemnification costs beyond those previously recognized up to our aggregate liability for each of the respective claim years. For the years ended on or prior to December 31, 2015, based on our retained claim liability per incident and our aggregate claim liability per year, our maximum liability in excess of the amounts deemed probable and previously recognized, is not material as of December 31, 2017. As of December 31, 2017, we had outstanding letters of credit totaling $1.0 million to the insurance companies as security for these claims in connection with these policies.

Under our current employee healthcare insurance policy for U.S. employees, we retained claims liability risk per incident up to $1 million per year in 2017, $0.45 million per year in 2016 and $0.43 million per year in 2015. We recognized employee healthcare claim expense of $47.2 million during the year ended December 31, 2017, $40.4 million during the year ended December 31, 2016, and $34.6 million during the year ended December 31, 2015, which represents actual claims paid and an estimate of our liability for the uninsured portion of employee healthcare obligations that have been incurred but not paid. Should employee health insurance claims exceed our estimated liability, we would have further obligations. Our estimated liability for healthcare claims that have been incurred but not paid were $4.2 million as of December 31, 2017, $4.0 million as of December 31, 2016, and $4.8 million as of December 31, 2015.

We have total acquisition-related contingent consideration liabilities outstanding primarily related to the achievement of certain revenue milestones of $3.0 million at December 31, 2017, as compared to $0.9 million at December 31, 2016, and $5.9 million at December 31, 2015. These contractual obligations are not reflected in the table below.

We are contractually obligated to make the following payments in the years below:

Contractual obligations (in thousands)	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Long-term debt obligations (1)	$ 747,461	$ 20,385	$ 40,769	$ 161,387	$524,920
Operating leases	95,929	19,233	27,661	16,600	32,435
Purchase obligations (2)	214,539	184,564	24,003	3,872	2,100

Minimum royalty payments	1,736	528	439	187	582
U.S. deemed repatriation tax	48,783	3,903	7,805	7,805	29,270
Total contractual cash obligations	$ 1,108,448	$ 228,613	$ 100,677	$ 189,851	$589,307

(1) Long-term debt amounts include interest payments associated with long-term debt.
(2) Purchase obligations include agreements and purchase orders to purchase goods or services that are enforceable and legally binding and that specify all significant terms, including fixed or minimum quantities, pricing, and approximate timing of purchase transactions.

These commitments do not reflect unrecognized tax benefits of $21.4 million and $2.2 million of deferred compensation liabilities as of December 31, 2017, as the timing of recognition is uncertain. See Note 12 to the consolidated financial statements included in this Annual Report on Form 10-K for additional discussion of unrecognized tax benefits.

Not reflected in the contractual obligation table above are agreements with third parties that we have entered into in the ordinary course of business under which we are obligated to indemnify such third parties for and against various risks and losses. The precise terms of such indemnities vary with the nature of the agreement. In many cases, we limit the maximum amount of our indemnification obligations, but in some cases those obligations may be theoretically unlimited. We have not incurred material expenses in discharging any of these indemnification obligations, and based on our analysis of the nature of the risks involved, we believe that the fair value of these agreements is minimal. Accordingly, we did not record any liabilities for these obligations at December 31, 2017 and 2016, and do not anticipate any future payments for these guarantees.

ITEM 7A.QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

Our market risk consists primarily of foreign currency exchange risk and interest rate risk. Our functional currency is the U.S. dollar and our primary manufacturing operations and inventory supply contracts are in the U.S. or in U.S. dollars, but we distribute our products worldwide both through direct export and through our foreign subsidiaries. Our primary foreign currency transaction risk consists of intercompany purchases and sales of products and we attempt to mitigate this risk through our hedging program described below. For the year ended December 31, 2017, approximately 21 percent of our consolidated revenue was derived from products manufactured or sourced in U.S. dollars and sold internationally in local currencies, as compared to 21 percent for the year ended December 31, 2016, and 20 percent for the year ended December 31, 2015. The functional currency of most of our subsidiaries is their local currency. For three of our subsidiaries located in the Netherlands, Singapore and Dubai, the functional currency is the U.S. dollar.

Our foreign currency exchange impacts are comprised of three components: 1) local currency revenues and expenses; 2) the impact of hedge contracts; and 3) intercompany and monetary balances for our subsidiaries that are denominated in a currency that is different from the functional currency used by each subsidiary. Based on projected revenues and expenses for 2018, excluding the impact of intercompany and trade balances denominated in currencies other than the functional subsidiary currencies, a 1 percent strengthening of the U.S. dollar would reduce revenue by approximately $8 million and operating income by approximately $4 million. Additionally, our foreign currency hedge contracts in place as of December 31, 2017, would provide incremental offsetting gains of approximately $2 million. The impact of the intercompany and monetary balances referred to in the third component above have been excluded, as they are transacted at multiple times during the year and we are not able to reliably forecast the impact that changes in exchange rates would have.

At our current foreign exchange rate assumptions, we anticipate that the effect of a weaker U.S. dollar will have a favorable effect on our operating results by increasing our revenues, operating profit, and diluted earnings per share in the year ending December 31, 2018, by approximately $46 million, $14 million, and $0.12 per share, respectively. This favorable impact includes foreign currency hedging activity, which is expected to decrease total company operating profit by approximately $7 million and diluted earnings per share by $0.06 in the year ending December 31, 2018. The actual impact of changes in the value of the U.S. dollar against foreign currencies in which we transact may materially differ from our expectations described above. The above estimate assumes that the value of the U.S. dollar relative to other currencies will reflect the euro at $1.22, the British pound at $1.40, the Canadian dollar at $0.79, and the Australian dollar at $0.78; and the Japanese yen at ¥111, the Chinese renminbi at RMB 6.45, and the Brazilian real at R$3.21 to the U.S. dollar for the full year of 2018.

The following table presents the foreign currency exchange impacts on our revenues, operating profit, and diluted earnings per share for the years December 31, 2017, 2016 and 2015, as compared to the respective prior periods:

(dollars in thousands)	For the Years Ended December 31, 2017	2016	2015
Revenue impact	$ 6,615	$ (14,105)	$ (89,692)
Operating profit impact, excluding hedge activity	$ 2,542	$ (6,921)	$ (38,286)
Hedge gains - prior year	(3,620)	(20,879)	(3,821)
Hedge gains - current year	27	3,620	20,879
Hedging activity impact	(3,593)	(17,259)	17,058
Operating profit impact, including hedge activity	$ (1,051)	$ (24,180)	$ (21,228)
Diluted earnings per share impact, including hedge activity	$ (0.01)	$ (0.20)	$ (0.16)

The primary purpose of our foreign currency hedging activities is to protect against the volatility associated with foreign currency transactions. We also utilize natural hedges to mitigate our transaction and commitment exposures. Our corporate policy prescribes the range of allowable hedging activity. We enter into foreign currency exchange contracts with large multinational financial institutions and we do not hold or engage in transactions involving derivative instruments for purposes other than risk management. Our accounting policies for these contracts are based on our designation of such instruments as hedging transactions. If a hedging instrument qualifies

for hedge accounting, changes in the fair value of the derivative instrument from the effective portion of the hedge are deferred in accumulated other comprehensive income, net of tax, and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. We immediately record in earnings the extent to which a hedge instrument is not effective in achieving offsetting changes in fair value. We primarily utilize foreign currency exchange contracts with durations of less than 24 months.

Our subsidiaries enter into foreign currency exchange contracts to manage the exchange risk associated with their forecasted intercompany inventory purchases and sales for the next year. From time to time, we may also enter into other foreign currency exchange contracts or foreign-denominated debt issuances to minimize the impact of foreign currency fluctuations associated with specific balance sheet exposures, including net investments in certain foreign subsidiaries. See Note 17 to the consolidated financial statements of this Annual Report on Form 10-K for details regarding euro-denominated notes that we designated as a hedge of our euro net investment in certain foreign subsidiaries.

Our foreign currency hedging strategy is consistent with prior periods and there were no material changes in our market risk exposure during the year ended December 31, 2017. We enter into foreign currency exchange contracts designated as cash flow hedges for amounts that are less than the full value of forecasted intercompany purchases and sales and for amounts that are equivalent to, or less than, other significant transactions. As a result, no significant ineffectiveness has resulted or been recorded through the statements of operations for the years ended December 31, 2017, 2016 and 2015. Our hedging strategy related to intercompany inventory purchases and sales is to employ the full amount of our hedges for the succeeding year at the conclusion of our budgeting process for that year. Quarterly, we enter into contracts to hedge incremental portions of anticipated foreign currency transactions for the current and following year. Accordingly, our risk with respect to foreign currency exchange rate fluctuations may vary throughout each annual cycle.

We enter into hedge agreements where we believe we have meaningful exposure to foreign currency exchange risk, with the exception of certain emerging markets where it is not practical to hedge our exposure. We hedge approximately 85 percent of the estimated exposure from intercompany product purchases and sales denominated in the euro, British pound, Canadian dollar, Japanese yen, Australian dollar, and Swiss franc. We have additional unhedged foreign currency exposures related to foreign services and emerging markets where it is not practical to hedge. The notional amount of foreign currency exchange contracts to hedge forecasted intercompany purchases and sales totaled $176.5 million at December 31, 2017, and $175.9 million at December 31, 2016. At December 31, 2017, we had $5.2 million of net unrealized losses on foreign currency exchange contracts recorded in accumulated other comprehensive income, net of related tax expense.

We have a Credit Facility with a syndicate of multinational banks, which matures on December 4, 2020, and requires no scheduled prepayments before that date. Although the Credit Facility does not mature until December 4, 2020, all individual borrowings under the terms of the Credit Facility have a stated term between 30 and 180 days. Borrowings outstanding under the Credit Facility at December 31, 2017, were $655 million at a weighted-average effective

interest rate of 2.81 percent. Based on amounts outstanding under our Credit Facility as of December 31, 2017, an increase in the LIBOR or the CDOR of 1 percent would increase interest expense by approximately $6.6 million on an annualized basis.

During the year ended December 31, 2017, we purchased marketable debt securities, which are classified as available-for-sale and carried at fair value in the accompanying consolidated balance sheet included in this Annual Report on Form 10-K. The fair value of our cash equivalents and marketable securities is subject to changes in market interest rates. As of December 31, 2017, we estimate that a 1 percent increase in market interest rates would decrease the fair value of our marketable securities portfolio by approximately $1.5 million.

ITEM 8.FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The response to this item is submitted as a separate section of this report commencing on page F-1.

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

Not applicable.

ITEM 9A.CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management is responsible for establishing and maintaining disclosure controls and procedures, as defined by the SEC in its Rules 13a-15(e) and 15d-15(e) under the Exchange Act. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of an issuer that are designed to ensure that information required to be disclosed by the issuer in the reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures at December 31, 2017, our chief executive officer and chief financial officer have concluded that, as of such date, the Company’s disclosure controls and procedures were effective at the reasonable assurance level.

Report of Management on Internal Control Over Financial Reporting

We are responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. The Company’s internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP and includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company;

- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and

- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company’s assets that could have a material effect on the financial statements.

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

We conducted an evaluation of the effectiveness of internal control over financial reporting based on the framework in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, we concluded that, at December 31, 2017, our internal control over financial reporting was effective.

The effectiveness of the Company's internal control over financial reporting at December 31, 2017, has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears herein.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the three months ended December 31, 2017, that materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting. During 2017, we implemented internal controls to ensure we have adequately evaluated our contracts and properly assessed the impact of the new accounting standard related to revenue recognition on our financial statements to facilitate the adoption on January 1, 2018. Beyond these new implementation controls, we do not expect significant changes to our internal controls over financial reporting due to the adoption of the new revenue recognition accounting standard, as we plan to utilize our existing systems and similar processes and procedures in 2018.

Certifications

The certifications with respect to disclosure controls and procedures and internal control over financial reporting of the Company's chief executive officer and chief financial officer are attached as Exhibits 31.1 and 31.2 to this Annual Report on Form 10-K.

ITEM 9B.OTHER INFORMATION

Not applicable.

PART III

ITEM 10.DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item with respect to Directors, executive officers, compliance with Section 16(a) of the Exchange Act, our code of ethics and corporate governance is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the sections entitled "Corporate Governance - Proposal One - Election of Directors," "Executive Officers," "Stock Ownership Information -

Section 16(a) Beneficial Ownership Reporting Compliance," "Corporate Governance – Corporate Governance Guidelines and Code of Ethics" and "Corporate Governance –Board Committees" in the Company's definitive Proxy Statement with respect to its 2018 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

ITEM 11.EXECUTIVE COMPENSATION

The information required by this Item is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the sections entitled "Executive Compensation – Compensation Discussion and Analysis," "Executive Compensation – Executive Compensation Tables," "Executive Compensation – Potential Payments Upon Termination or Change-in-Control," "Corporate Governance –Board Committees – Compensation Committee – Compensation Committee Interlocks and Insider Participation" and "Compensation Committee Report" in the Company's definitive Proxy Statement with respect to its 2018 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

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

The information required by this Item with respect to Item 201(d) of Regulation S-K is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the section entitled “Equity Compensation Plan Information” in the Company’s definitive Proxy Statement with respect to its 2018 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K. The information required by this Item with respect to Item 403 of Regulation S-K is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the sections entitled “Stock Ownership Information” in the Company’s definitive Proxy Statement with respect to its 2018 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

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

The information required by this Item is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the sections entitled “Corporate Governance – Related Person Transactions” and “Corporate Governance – Director Independence” in the Company’s definitive Proxy Statement with respect to its 2018 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

ITEM 14.PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this Item is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the section entitled “Audit Committee Matters - Independent Auditors’ Fees” in the Company’s definitive Proxy Statement with respect to its 2018 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this report.

PART IV

ITEM 15.EXHIBITS, FINANCIAL STATEMENT SCHEDULES

The following documents are filed as part of this Form 10-K:

(a)(1) The financial statements set forth in the Index to Consolidated Financial Statements and the Consolidated Financial Statement Schedule are filed as a part of this Annual Report on Form 10-K commencing on page F-1.

(a)(2) and (b) The exhibits listed in the accompanying Exhibit Index are filed as part of this Annual Report on Form 10-K and either filed herewith or incorporated by reference herein, as applicable.

ITEM 16.FORM 10-K SUMMARY

None.

FINANCIAL STATEMENTS AND SUPPLEMENTAL DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

AND

CONSOLIDATED FINANCIAL STATEMENT SCHEDULE

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of IDEXX Laboratories, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of IDEXX Laboratories, Inc. and its subsidiaries as of December 31, 2017 and 2016, and the related consolidated statements of income, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2017, including the related notes and financial statement schedule listed in the accompanying index (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2017 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in accounting principle

As noted in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for share-based compensation.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the Report of Management on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered

with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts

February 16, 2018

We have served as the Company's auditor since 2002.

IDEXX LABORATORIES, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(in thousands, except per share amounts)

	December 31, 2017	December 31, 2016
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 187,675	$ 154,901
Marketable securities	284,255	236,949
Accounts receivable, net of reserves of $4,576 in 2017 and $4,523 in 2016	234,597	204,494
Inventories	164,318	158,034
Other current assets	101,140	91,206
Total current assets	971,985	845,584
Long-Term Assets:		
Property and equipment, net	379,096	357,422
Goodwill	199,873	178,228
Intangible assets, net	43,846	46,155
Other long-term assets	118,616	103,315
Total long-term assets	741,431	685,120
TOTAL ASSETS	$ 1,713,416	$ 1,530,704
LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)		
Current Liabilities:		
Accounts payable	$ 66,968	$ 60,057
Accrued liabilities	253,418	236,131
Line of credit	655,000	611,000
Current portion of deferred revenue	29,181	27,380
Total current liabilities	1,004,567	934,568
Long-Term Liabilities:		
Deferred income tax liabilities	25,353	39,287
Long-term debt	606,075	593,110
Long-term deferred revenue, net of current portion	35,545	33,015
Other long-term liabilities	95,718	38,937
Total long-term liabilities	762,691	704,349
Total liabilities	1,767,258	1,638,917

Commitments and Contingencies (Note 14)

Stockholders' Equity (Deficit):		
Common stock, $0.10 par value: Authorized: 120,000 shares; Issued: 104,275 shares in 2017 and 103,341 shares in 2016	10,428	10,334
Additional paid-in capital	1,073,931	1,011,895
Deferred stock units: Outstanding: 229 units in 2017 and 231 units in 2016	5,988	5,514
Retained earnings	803,545	540,401
Accumulated other comprehensive loss	(36,470)	(43,053)
Treasury stock, at cost: 17,171 shares in 2017 and 15,367 shares in 2016	(1,911,528)	(1,633,443)
Total IDEXX Laboratories, Inc. stockholders' equity (deficit)	(54,106)	(108,352)
Noncontrolling interest	264	139
Total stockholders' equity (deficit)	(53,842)	(108,213)
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)	$ 1,713,416	$ 1,530,704

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

IDEXX LABORATORIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF INCOME

(in thousands, except per share amounts)

	For the Years Ended December 31,		
	2017	2016	2015
Revenue:			
Product revenue	$ 1,176,115	$ 1,070,973	$ 974,933
Service revenue	792,943	704,450	626,959
Total revenue	1,969,058	1,775,423	1,601,892
Cost of Revenue:			
Cost of product revenue	446,449	416,810	360,208
Cost of service revenue	425,227	383,177	351,414
Total cost of revenue	871,676	799,987	711,622
Gross profit	1,097,382	975,436	890,270
Expenses:			
Sales and marketing	354,294	317,058	299,955
General and administrative	220,878	207,017	182,510
Research and development	109,182	101,122	99,681
Impairment charge	-	-	8,212
Income from operations	413,028	350,239	299,912
Interest expense	(37,225)	(32,049)	(29,239)
Interest income	5,254	3,656	2,468
Income before provision for income taxes	381,057	321,846	273,141
Provision for income taxes	117,788	99,792	81,006
Net income	263,269	222,054	192,135
Less: Net income attributable to noncontrolling interest	125	9	57
Net income attributable to IDEXX Laboratories, Inc. stockholders	$ 263,144	$ 222,045	$ 192,078
Earnings per Share:			
Basic	$ 3.00	$ 2.47	$ 2.07
Diluted	$ 2.94	$ 2.44	$ 2.05
Weighted Average Shares Outstanding:			
Basic	87,769	89,732	92,601
Diluted	89,567	90,884	93,649

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

IDEXX LABORATORIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(in thousands)

	For the Years Ended December 31,		
	2017	2016	2015
Net income	$ 263,269	$ 222,054	$ 192,135
Other comprehensive income, net of tax:			
Foreign currency translation adjustments	25,107	(5,874)	(30,718)
Unrealized gain (loss) on net investment hedge	(8,347)	2,142	1,894
Unrealized gain (loss) on investments, net of tax expense (benefit) of $- in 2017, $113 in 2016 and ($93) in 2015	(42)	245	(226)
Unrealized gain (loss) on derivative instruments:			
Unrealized (loss) gain, net of tax (benefit) expense of ($5,304) in 2017, $2,174 in 2016 and $3,736 in 2015	(10,332)	4,950	8,839
Less: reclassification adjustment for losses (gains) included in net income, net of tax expense of $224 in 2017, $949 in 2016 and $5,853 in 2015	197	(2,251)	(13,983)
Unrealized gain (loss) on derivative instruments	(10,135)	2,699	(5,143)
Other comprehensive income (loss), net of tax	6,583	(788)	(34,194)
Comprehensive income	269,852	221,266	157,941
Less: comprehensive income attributable to noncontrolling interest	125	9	57
Comprehensive income attributable to IDEXX Laboratories, Inc.	$ 269,727	$ 221,257	$ 157,884

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

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IDEXX LABORATORIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)

(in thousands, except per share amounts)

	Common Stock		Additional	Deferred		Accumulated Other		
	Number of Shares	$0.10 Par Value	Paid-in Capital	Stock Units	Retained Earnings	Comprehensive Income (Loss)	Treasury Stock	Non Inte
Balance January 1, 2015	101,947	$ 10,195	$ 888,293	$ 5,066	$ 1,675,299	$ (8,071)	$ (2,453,266)	$ 73
Net income	-	-	-	-	192,078	-	-	57
Other comprehensive loss, net	-	-	-	-	-	(34,194)	-	-
Repurchases of common stock	-	-	-	-	-	-	(412,172)	-
Stock split enacted through stock dividend	-	-	-	-	(1,518,264)	-	1,518,264	-
Shares retired	(346)	-	-	-	(30,757)	-	30,757	-
Common stock issued under stock plans, including excess tax benefit	636	63	32,700	-	-	-	-	-
Deferred stock units activity	-	-	(258)	258	-	-	-	-
Share-based compensation cost	-	-	19,799	85	-	-	-	-
Balance December 31, 2015	102,237	$ 10,258	$ 940,534	$ 5,409	$ 318,356	$ (42,265)	$ (1,316,417)	$ 130
Net income	-	-	-	-	222,045	-	-	9

Other comprehensive loss, net	-	-	-	-	-	(788)	-	-
Repurchases of common stock	-	-	-	-	-	-	(317,026)	-
Common stock issued under stock plans, including excess tax benefit	1,104	76	51,904	-	-	-	-	-
Deferred stock units activity	-	-	(343)	14	-	-	-	-
Share-based compensation cost	-	-	19,800	91	-	-	-	-
Balance December 31, 2016	103,341	$ 10,334	$ 1,011,895	$ 5,514	$ 540,401	$ (43,053)	$ (1,633,443)	$ 139
Net income	-	-	-	-	263,144	-	-	125
Other comprehensive income, net	-	-	-	-	-	6,583	-	-
Repurchases of common stock	-	-	-	-	-	-	(278,085)	-