IDEXX LABORATORIES INC /DE
Form 10-K
February 17, 2017

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, 2016

or

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

For the transition period from _____ to _____.

COMMISSION FILE NUMBER: 0-19271

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

DELAWARE	01-0393723
(State or other jurisdiction of incorporation	(I.R.S. Employer Identification No.)
04092	
(ZIP Code)	

or
organization)

ONE
IDEXX
DRIVE,
WESTBROOK,
MAINE

(Address
of
principal
executive
offices)

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
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, 2016 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 $8,215,859,816. 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 88,005,221 on February 6, 2017.

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 2017 annual meeting of stockholders (the "2017 Annual Meeting"), to be held on May 3, 2017, 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 and the 2014 adjustment for the all-direct sales strategy transition impacts. 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
BSE	Bovine spongiform encephalopathy
CAG	Companion Animal Group, reporting segment that provides to veterinarians' diagnostic capabilities 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	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, reporting segment that provides diagnostic products and services for livestock and poultry health and to ensure the quality and safety of milk
MEA	Multiple element arrangements, contracts with customers that include multiple deliverables
MetLife Agreement	Multi-Currency Note Purchase and Private Shelf Agreement
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, is a supplier of dry slide electrolyte consumables and instruments for the human point-of-care medical diagnostics 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
SaaS	Software-as-a-service
SEC	U.S. Securities Exchange Commission
Senior Notes Agreement	Private placement senior notes having an aggregate principal amount of approximately $600 million, referred to as senior notes
T_4	Thyroxine, a hormone produced by the thyroid gland, tested to indicate thyroid health
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 quality products, reporting segment that provides water quality products around the world

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 Generally Accepted Accounting Principles.

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, 2016, 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, earnings and other measures of financial performance; the effect of economic downturns on our business performance; 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; 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,” and similar words and expressions. These forward-looki 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;
- Point-of-care electrolytes and blood gas analyzers used in the human point-of-care medical diagnostics market.

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, 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, 2016, sales of products and services to customers outside the U.S.

accounted for approximately 39 percent of our overall revenue. See “Part 1, Item 1A. Risk Factors.”, 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, 2016, included in this Annual Report on Form 10-K for more information about our segments and revenue from customers outside of the U.S.

COMPANION ANIMAL GROUP

CAG provides veterinarians with the diagnostic capabilities and information management solutions that enhance the health and well-being of pets. 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. VetConnect PLUS is currently available in North America, Australia, New Zealand, Japan, Israel and in numerous countries throughout Europe.

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 Dx Chemistry Analyzer, the Catalyst One 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 Dx and the Catalyst One 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 Dx and Catalyst One 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, offering an attractive in-house chemistry option when a single sample drawer is sufficient for a clinic's work-flow requirements. The Catalyst One analyzer currently offers an expanding menu of 30 tests, including tests for thyroid disease, kidney disease, diabetes and therapeutic drug monitoring.

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 SediVue Dx in North America. In the fourth quarter of 2016 we launched Sedivue Dx in the UK and Australia. 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 Dx, Catalyst One, 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.

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 large 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 IDEXX SDMA in North America, a new 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, IDEXX SDMA was included in every chemistry panel submitted by our customers at no incremental charge. During the first quarter of 2016, we launched IDEXX SDMA in all of the major European countries and Australia, followed by a full international launch of IDEXX SDMA 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 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, Cornerstone Coach, Practice Profile 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. Using these services in the exam room improves client communication and facilitates adherence to veterinarian recommendations. 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.

Diagnostic Imaging Systems. Previously named IDEXX VetLab service and accessories, 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, 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, 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.

WATER

We provide innovative testing solutions for easy, rapid and accurate detection and quantification of various microbiological parameters in water, helping to ensure water safety for billions of people around the world.

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.

LIVESTOCK, POULTRY and dairy

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 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 areas. Our research and development expenses, which consist of salaries, employee benefits, materials and external consulting and development costs, were $101.1 million for the year ended December 31, 2016, or 5.7 percent of our consolidated revenue, $99.7 million for the year ended December 31, 2015, or 6.2 percent of our consolidated revenue and $98.3 million for the year ended December 31, 2014, or 6.6 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:

- Exclusive licenses from the University of Texas and Tulane University to patents that expire in 2017 and 2019, respectively, relating to reagents and methods 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 expire beginning in 2017 and continuing into 2022;
- Patents relating to reagents and methods for the detection of Anaplasma phagocytophilum utilized in certain of our SNAP products that expire beginning in 2017 and continuing 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 2036;
- Patents concerning Catalyst instruments that expire in 2026;
- 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 a pending U.S. patent application concerning methods for detecting SDMA. If this patent is granted, we expect that it would expire in 2036.

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 2016, and are expected to expire during 2017, 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 to supply us 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.

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 and T_4 slides), VetLyte consumables, LaserCyte and LaserCyte Dx consumables, VetTest, VetAutoread and ProCyte Dx analyzers and consumables, SediVue Dx urinalysis instrument 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., 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. Results of Operations and Trends” for more information. We also compete in international markets with Fujifilm Holdings Corporation, 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.

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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, manufacturing, 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 as part of their separate regulatory approvals. However, compliance with an extensive regulatory process is required in connection with marketing diagnostic products in Japan, Germany, 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 U.S. Food and Drug Administration ("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.

These instrument systems also are subject to the European Medical Device Directives, which create a single set of medical device regulations for all European Union ("EU") member countries and require companies that wish to manufacture and distribute medical devices in EU member countries to obtain European Conformity marking for their products.

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, and 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. 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, 2017, we had approximately 7,365 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

Our future operating results involve a number of risks and uncertainties. Actual events or results may differ materially from those discussed in this report. 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 in this report.

Our Business Lines are Highly Competitive and Our Failure to Successfully Execute Certain Strategies Could Have a Material Negative Impact on Our 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. 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 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;

- Providing our veterinary customers with the medical and business tools, information and resources that enable them to grow their practices 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;

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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. in support of, among other things, our all-direct sales strategy for our rapid assay kits and instrument consumables ("kits and consumables") in the U.S.;

· Attracting, developing and retaining key leadership and talent necessary to support all elements of our strategy;

· 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; and

· Developing and implementing new technology and licensing strategies.

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, inconsistent or inadequate quality control, relocation of supplier facilities, supplier work stoppages and suppliers' failure to comply with applicable regulations or their contractual obligations. Problems with suppliers could materially negatively impact our ability to supply the market, substantially decrease sales, lead to higher costs or damage our reputation with our customers.

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, VetTest chemistry analyzers and related consumables and accessories; SediVue Dx urine sediment analyzer; 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. To mitigate risks associated with sole and single source suppliers, we seek when possible to enter 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 required to purchase products with short term contracts or on a purchase order basis. There can be no assurance that suppliers with which we do not have contracts will continue to supply our requirements for products, that suppliers with which we do have contracts will always fulfill their obligations under these 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, we may be unable to supply the market, which could have a material adverse effect on our results of operations.

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 to 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. 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, and 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 and have an adverse effect on our results of operations.

Increased Competition 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. Our competitors in the veterinary diagnostic market include companies that develop, manufacture and sell veterinary diagnostic tests and commercial veterinary reference laboratories, as well as corporate hospital chains that operate reference laboratories that serve both their hospitals and unaffiliated hospitals, such as VCA Inc. (formerly named VCA Antech, Inc.). In January 2017, Mars, Incorporated and VCA announced that Mars, Incorporated agreed to acquire VCA, with the acquisition expected to close in the third quarter of 2017. If this acquisition closes, it could result in the combination of two large U.S. veterinary hospital chains into a vertically integrated corporate hospital chain providing reference laboratory services to its hospitals and unaffiliated hospitals. 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. 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 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 and competitive products and services, which could be superior to our products and services. 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. With our transition to an all-direct sales strategy for our kits and consumables in the U.S. effective January 1, 2015, we did not renew our distribution agreements with our former key U.S. distribution partners after their expiration at the end of 2014, including exclusive distribution agreements with some of the largest U.S. distributors of companion animal veterinary products. Our former U.S. distribution partners currently promote and sell competitive instruments, consumables and rapid assay products. which may adversely affect the retention of our customers for our kits and consumables and the sales and distribution of our products, which could have an adverse effect on our results of operations. Some of our competitors and potential competitors, including large diagnostic and pharmaceutical companies, also have substantially greater financial resources than us, and greater experience in manufacturing, marketing, research and development and obtaining regulatory approvals than we do.

Various Government Regulations Could Limit or Delay Our Ability to Market and Sell Our Products or Otherwise Negatively Impact Our Business

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 require approval by the FDA prior to sale in the U.S. Our water testing products must be approved by the EPA before they can be used by customers in the U.S. as a part of a water quality monitoring program required by the EPA. 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. In addition, delays in obtaining regulatory approvals for new products or product upgrades could have a negative impact on our growth and profitability.

The manufacture 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, and 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. 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.

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

Any failure to comply with applicable legal and regulatory requirements 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.

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 U.S. veterinary industry has been consolidating in recent years. The number of owners of veterinary hospitals has been declining, and an increasing percentage of veterinary hospitals in the U.S. 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 and Pet Partners), National Veterinary Associates and VCA Inc. (formerly named VCA Antech, Inc.). In January 2017, Mars, Incorporated and VCA announced that Mars, Incorporated agreed to acquire VCA, with the acquisition expected to close in the third quarter of 2017. A similar trend exists in other countries, such as in the U.K. and the Nordic countries, and may in the future also develop 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 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, most notably VCA, our primary competitor in the U.S. and Canadian markets for veterinary reference laboratory diagnostic services, 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.

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.

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. For example, the demand for our bovine spongiform encephalopathy (“BSE”) testing products has been negatively impacted as a result of regulatory changes in the European Union, including the European Union’s Standing Committee on the Food Chain and Animal Health agreement to allow European Union member states the option to eliminate BSE testing of healthy cattle at slaughter. In addition, 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. Declines in testing for any of the reasons described, along with lost opportunities associated with a reduction in veterinary visits, could have an adverse effect on our results of 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

We offer products and services that collect and use data provided by client practices and individuals, including practice management systems for veterinary practices (e.g., Cornerstone and 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 IDEXX 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 IDEXX websites and collect contact and other personally identifiable information from our customers and visitors to our websites.

Federal, state and international laws and regulations govern the collection, use, retention, sharing and security of personally identifiable information, including data that we receive from our employees, customers, vendors and visitors to our websites and data collected by our customers and others when using our products and services. In many cases, these laws 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. Several jurisdictions have passed laws in this area, and other jurisdictions are considering imposing additional restrictions, including requiring local storage and processing of data. These laws and regulations 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.

For example, on October 6, 2015, the Court of Justice of the European Union decided that the EU-U.S. Safe Harbor framework that had been in place since 2000, which allowed transfers of personal data to the U.S. in compliance with applicable EU data protection laws, was invalid. On February 2, 2016, U.S. and European Commission officials announced they had agreed upon a framework for a new data sharing agreement, called the EU-U.S. Privacy Shield, to replace the EU-U.S. Safe Harbor framework. The European Commission and the U.S. Department of Commerce issued the final text for the Privacy Shield framework in July 2016, and it became operational when the U.S. Department of Commerce began accepting applications for Privacy Shield certification on August 1, 2016. We submitted our self-certification under the Privacy Shield in September 2016 and adopted this framework to transfer personal data to the U.S. in compliance with EU data protection laws. Effective as of January 10, 2017, the U.S. Department of Commerce completed its review of our self-certification, and we joined the Privacy Shield list of participating organizations.

Additionally, in April 2016, the EU Parliament adopted the General Data Protection Regulation, or GDPR, which, among other things, imposes more stringent data protection requirements and provides for greater penalties for noncompliance and is expected to take effect in 2018. 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 or require us to change our business practices in a manner adverse to our business. In addition, we have and post on our website our own privacy policy concerning the collection, use and disclosure of user data. Any failure, or perceived failure, by us or our products and services to protect employee or customer 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.

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, 2016, 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, 2016, 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 20 percent and 22 percent for the years ended December 31, 2015 and 2014, 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 Risks” 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 the 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.

Risks Associated with Doing Business Internationally Could Negatively Affect Our Operating Results

For the year ended December 31, 2016, approximately 39 percent of our revenue was attributable to sales of products and services to customers outside the U.S., compared to 39 percent for the year ended December 31, 2015, and 43 percent for the year ended December 31, 2014. 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 disruptions in transportation of our products, fluctuations in oil prices, increased border protection and restriction on travel, the differing product and service needs of foreign customers, difficulties in building and managing foreign operations, import/export restrictions, duties and licensing requirements, natural disasters, unexpected regulatory and economic or political changes in foreign markets, 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. In addition, foreign government regulations may restrict our ability to repatriate funds currently held in foreign jurisdictions, and any repatriation of such funds to the U.S. may result in higher effective tax rates for us. 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.

Our Business Sells Many Products through Distributors, which Present Risks that Could Negatively Affect Our Operating Results

We sell many of our products outside of the U.S. through distributors. As a result, we are dependent on these distributors to sell our products and assist us in promoting and creating a demand for our products outside the U.S. 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. 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 any termination of a distributor relationship may result in increased competition in the applicable jurisdiction. Failing 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, which could have a negative effect on our operating results.

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.

Our Operations are Vulnerable to Interruption as a Result of Natural and Man-Made Disasters, System Disruptions and Security Breaches, and Disruptions, Attacks or Breaches of Information Systems Could Adversely Affect Our Business

The operation of all of our facilities, as well as those of our third party business partners on which we rely, may be vulnerable to interruption as a result of natural and man-made disasters, interruptions in power supply or other system failures. 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 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; Leipzig, Germany; 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 could have an adverse effect on our results of operations.

We rely on several information systems throughout our company, as well as our business partners' information systems, to 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, our current disaster recovery plan may be ineffective or inadequate to address all eventualities. Further, our information systems and our business partners' information systems may be vulnerable to attacks by hackers and other security breaches, including computer viruses, through the Internet (including via devices and applications connected to the Internet), email attachments and persons with

access to these information systems. We process credit card payments electronically over secure networks. Any such attack or breach could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. While we have implemented network security and internal control measures 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. In addition, we 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). While we have implemented security measures to protect our connected products and services from cyberattacks, the risk of system disruptions and security breaches from a cyberattack remains.

If we or our business partners 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. Furthermore, any access to, public disclosure of, or other loss of information (including any of our confidential or proprietary 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.

We 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.

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.

If Our Quarterly or Annual Results of Operations Fluctuate, This Fluctuation 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 market analysts or investors in future periods, our stock price may fall.

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

We are subject to local, state, regional and federal tax laws in the U.S. and many other international jurisdictions. Due to economic and political conditions, the various tax rates applied to the earnings of our activities are subject to significant change. 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. Also, 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. See Note 12 to the consolidated financial statements for the year ended December 31, 2016, included in this Annual Report on Form 10-K for more information.

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.

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 unsecured revolving 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.

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
- 23,000 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:

- 537,000 total square feet of laboratory, office and warehousing space located throughout the U.S., Europe, Canada, Australia, New Zealand, Asia and South Africa, primarily used for our Reference Laboratory Diagnostic and Consulting Services line of business of CAG
- 114,400 square feet of industrial space in Tennessee for distribution and warehousing related to various lines of business
- 100,100 square feet of distribution, warehousing and office space in the Netherlands, which serves as our European headquarters
- 84,300 square feet of office, manufacturing and warehousing space in Georgia related to our OPTI Medical 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
- 52,800 total square feet of office and manufacturing space in France, Switzerland and Brazil related to our Livestock, Poultry and Dairy line of business
- 7,600 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 (1) of our common stock as reported on the NASDAQ Global Select Market for the years 2015 and 2016.

For the Quarter Ended	High	Low
March 31, 2015	$ 84.26	$ 72.38
June 30, 2015	82.24	61.37
September 30, 2015	79.62	61.58
December 31, 2015	77.27	65.03
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

(1) 2015 Prices have been adjusted to reflect a two-for-one stock split on June 15, 2015.

Holders of Common Stock

As of February 6, 2017, there were 494 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.

Purchases of Equity Securities by the Issuer

During the three months ended December 31, 2016, 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, 2016 to October 31, 2016	67,500	$ 110.66	67,500	5,619,425
November 1, 2016 to November 30, 2016	1,000,947	108.65	1,000,947	4,618,478
December 1, 2016 to December 31, 2016	886,672	117.24	882,970	3,735,508
Total	1,955,119	(2) $ 115.00	1,951,417	3,735,508

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(1) As of December 31, 2016, our Board of Directors had approved the repurchase of up to 65 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 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 and again on July 16, 2014. Effective June 15, 2015, an additional 8 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 57 million to 65 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, 2016, and no repurchase programs expired during the period. Repurchases of 1,951,417 shares were made during the three months ended December 31, 2016, in transactions made pursuant to our repurchase program.

(2) During the three months ended December 31, 2016, we received 3,702 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, 2016, we repurchased 3,070,644 shares of our common stock in transactions made pursuant to our repurchase program and received 59,860 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, 2016, 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, 2011, 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 2011 to 2016.

	12/31/2011	12/31/2012	12/30/2013	12/31/2014	12/31/2015	12/31/2016
IDEXX Laboratories, Inc.	$ 100.00	$ 120.58	$ 138.23	$ 192.66	$ 189.50	$ 304.76
NASDAQ Index	100.00	117.45	164.57	188.84	201.98	219.89
S&P 500 Health Care Index	100.00	117.89	166.76	209.02	223.42	217.41
S&P 500 Index	100.00	116.00	153.57	174.60	177.01	198.18

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)				
	2016	2015	2014	2013	2012
INCOME STATEMENT DATA:					
Revenue	$ 1,775,423	$ 1,601,892	$ 1,485,807	$ 1,377,058	$ 1,293,338
Cost of revenue	799,987	711,622	669,691	620,940	594,190
Gross profit	975,436	890,270	816,116	756,118	699,148
Expenses:					
Sales and marketing	317,058	299,955	283,708	243,492	216,962
General and administrative	207,017	182,510	173,890	157,861	137,609
Research and development	101,122	99,681	98,263	88,003	82,014
Impairment charge	-	8,212	-	-	-
Income from operations	350,239	299,912	260,255	266,762	262,563
Interest expense, net	(28,393)	(26,771)	(13,700)	(3,501)	(1,946)
Income before provision for income taxes	321,846	273,141	246,555	263,261	260,617
Provision for income taxes	99,792	81,006	64,604	75,467	82,330
Net income	222,054	192,135	181,951	187,794	178,287
Less: Net income (loss) attributable to noncontrolling interest	9	57	45	(6)	20
Net income attributable to IDEXX Laboratories, Inc. stockholders	$ 222,045	$ 192,078	$ 181,906	$ 187,800	$ 178,267
Earnings per share:					
Basic	$ 2.47	$ 2.07	$ 1.82	$ 1.77	$ 1.62
Diluted	$ 2.44	$ 2.05	$ 1.79	$ 1.74	$ 1.59
Weighted average shares outstanding:					
Basic	89,732	92,601	100,094	106,318	109,969

Diluted	90,884	93,649	101,503	107,970	112,311
BALANCE SHEET DATA:					
Cash and cash equivalents	$ 154,901	$ 128,994	$ 322,536	$ 279,058	$ 223,986
Marketable securities(1)	236,949	213,591	-	-	-
Cash and cash equivalents and marketable securities	$ 391,850	$ 342,585	$ 322,536	$ 279,058	$ 223,986
Working capital	$ (88,984)	$ (35,127)	$ (61,508)	$ 174,353	$ 163,204
Total assets	$ 1,530,704	$ 1,474,993	$ 1,384,211	$ 1,230,516	$ 1,103,602
Total long-term debt(2)	$ 593,110	$ 597,085	$ 350,000	$ 150,359	$ 1,394
Total stockholders' equity (deficit)	$ (108,213)	$ (83,995)	$ 117,589	$ 518,214	$ 636,257

(1) During the years ended December 31, 2015 and 2016, we purchased marketable debt securities, which are classified as available-for-sale and carried at fair value in the accompanying consolidated balance sheets on a trade date basis. 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) Between December 2013 and June 2015, we issued and sold approximately $600 million in senior notes through private placements at fixed interest rates ranging from 1.785 percent to 4.04 percent. 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, 2016, 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.

During the second quarter of 2016, we renamed our customer information management and diagnostic imaging systems line of business in the CAG segment to veterinary software, services and diagnostic imaging systems. Financial results were not adjusted as a result of this name change.

During the fourth quarter of 2016, we modified our management reporting to rename IDEXX VetLab service and accessories to CAG Diagnostics service and accessories and reclassified the location of SNAP Pro service plans previously located in CAG Diagnostics capital - instruments to CAG Diagnostics service and accessories. The amount of revenue reclassified was $0.5 million during the year ended December 31, 2015, and $1.4 million during the year ended December 31, 2016. The amount reclassified was less than $0.1 million during the year ended December 31, 2014.

Certain costs 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.

Effective January 1, 2016, we modified our management reporting to the Chief Operating Decision Maker to provide a more comprehensive view of the performance of our operating segments by including the capitalization and subsequent recognition of variances between standard and actual manufacturing costs, which adjusts the timing of cost recognition from when the variance is created to the period in which the related inventory is sold. Prior to January 1, 2016, the capitalization and subsequent recognition of these variances were not allocated to our operating segments and were instead reported under the caption "Unallocated Amounts".

The segment gross profit and income (loss) from operations within this Annual Report on Form 10-K for the years ended December 31, 2015 and 2014, has been retrospectively revised to reflect the changes to our segment performance metrics described above. The following is a summary of revised segment gross profit from operations for the years ended December 31, 2015 and 2014:

Gross Profit (dollars in thousands)	For the Year Ended December 31, 2015 As Previously Reported	Percent of Revenue	Net Impact of Standard Cost Variance Capitalization and Subsequent Recognition to the Operating Segments	For the Year Ended December 31, 2015 As Adjusted	Adjusted Percent of Revenue
CAG	$ 727,626	53.6%	$ 1,677	$ 729,303	53.8%
Water	68,785	71.0%	168	68,953	71.2%
LPD	77,227	60.7%	2,760	79,987	62.9%
Other	10,574	49.0%	(293)	10,281	47.6%
Unallocated Amounts	6,058	N/A	(4,312)	1,746	N/A
Total Company	$ 890,270	55.6%	$ -	$ 890,270	55.6%

Gross Profit (dollars in thousands)	For the Year Ended December 31, 2014 As Previously Reported	Percent of Revenue	Net Impact of Standard Cost Variance Capitalization and Subsequent Recognition to the Operating Segments	For the Year Ended December 31, 2014 As Adjusted	Adjusted Percent of Revenue
CAG	$ 655,197	53.6%	$ (3,002)	$ 652,195	53.3%
Water	62,924	66.4%	(348)	62,576	66.1%
LPD	89,519	63.4%	(4,461)	85,058	60.2%
Other	14,236	53.0%	178	14,414	53.7%
Unallocated Amounts	(5,760)	N/A	7,633	1,873	N/A
Total Company	$ 816,116	54.9%	$ -	$ 816,116	54.9%

The following is a summary of revised segment operating income (loss) from operations for the years ended December 31, 2015 and 2014:

Operating Income (Loss) (dollars in thousands)	For the Year Ended December 31, 2015 As Previously Reported		Percent of Revenue	Net Impact of Standard Cost Variance Capitalization and Subsequent Recognition to the Operating Segments		For the Year Ended December 31, 2015 As Adjusted	Adjusted Percent of Revenue
CAG	$	231,642	17.1%	$	1,677	$ 233,319	17.2%
Water		44,584	46.0%		168	44,752	46.2%
LPD		24,397	19.2%		2,760	27,157	21.4%
Other		156	0.7%		(293)	(137)	(0.6%)
Unallocated Amounts		(867)	N/A		(4,312)	(5,179)	N/A
Total Company	$	299,912	18.7%	$	-	$ 299,912	18.7%

Operating Income (Loss) (dollars in thousands)	For the Year Ended December 31, 2014 As Previously Reported		Percent of Revenue	Net Impact of Standard Cost Variance Capitalization and Subsequent Recognition to the Operating Segments		For the Year Ended December 31, 2014 As Adjusted	Adjusted Percent of Revenue
CAG	$	203,536	16.6%	$	(3,002)	$ 200,534	16.4%
Water		39,262	41.4%		(348)	38,914	41.1%
LPD		33,788	23.9%		(4,461)	29,327	20.8%
Other		2,479	9.2%		178	2,657	9.9%
Unallocated Amounts		(18,810)	N/A		7,633	(11,177)	N/A
Total Company	$	260,255	17.5%	$	-	$ 260,255	17.5%

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 partnership 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 long-term 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, 2016, these three chemistry analyzers provided for a combined active installed base of approximately 43,000 units globally, as compared to 40,000 units globally in 2015. Approximately 50 percent of 2016 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 LaserCyte Dx analyzer is our latest generation hematology analyzer, which we launched in 2013. In addition, we sell the ProCyte Dx LaserCyte and VetAutoread analyzers. As of December 31, 2016, these four hematology analyzers provided for a combined active installed base of approximately 31,000 units, as compared to 29,000 units in 2015 and 27,000 units in 2014. A substantial portion of ProCyte Dx analyzer placements continue to be made at veterinary clinics that elect to upgrade from their LaserCyte analyzer to a ProCyte Dx analyzer. In 2016, approximately 50 percent of ProCyte placements were made at competitive accounts. We also continue to place a substantial number of LaserCyte Dx and LaserCyte 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 and VetAutoread analyzers and a decrease in the associated recurring revenue stream.

Our SediVue Dx instrument, which we launched in North America early in 2016 and in the U.K. and Australia in the fourth quarter of 2016, is the first and only in-clinic analyzer to provide urine sediment analysis. This instrument and single-use consumable system provides an entirely new automated and 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 reported total revenues of $24.2 million from SediVue Dx instrument and pay-per-run sales during the year ended December 31, 2016.

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 will interpret 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.

Prior to 2014, the SNAPshot Dx was our primary in-clinic solution for screening thyroid disease, cortisol, bile acids and interpreting SNAP rapid assay tests. Upon the launch of the total thyroxine ("T_4") slide for use with our Catalyst analyzers during 2015, we experienced a decline in SNAPshot Dx placements. We reported revenues of $1.1 million from SNAPshot DX placements during the year ended December 31, 2016, which reflects approximately a $0.4 million decrease in revenue relative to the prior year. We reported revenues of $1.5 million from SNAPshot Dx during the year ended December 31, 2015, which reflects approximately a $1 million decrease in revenue relative to the prior year. We will continue to service the existing SNAPshot Dx install base.

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, 2016, recurring diagnostic revenue, which is both highly durable and profitable, accounts for approximately 72 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 that more than 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 provides 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 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 Neo to customers primarily in North America and Australia. We market Animana to customers primarily throughout Europe.

Animana and Neo are subscription-based SaaS practice management 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. In time, we expect that demand for Neo, our subscription-based SaaS practice management offering in North America, will moderate customer growth of license-based Cornerstone placements. We also 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 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, Neo and IDEXX VetConnect PLUS to provide centralized access to diagnostic imaging results alongside patient diagnostic results from any internet connected device.

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 and reproductive 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.

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 accounting principles generally accepted in the United States of America ("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, 2016, 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 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. Our transition to an all-direct sales model in the U.S. and the subsequent increase in competitive activity resulted in an increase in the rate of new up-front customer loyalty incentives, predominantly in response to competitive offerings during the fourth quarter of 2014 and in 2015. We saw a slowing in the rate of increase for new

up-front customer loyalty incentives beginning in the fourth quarter of 2015 and continuing through 2016.

If a customer breaches its agreement, it is 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, 2016, 2015 and 2014, 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, 2016, 2015 and 2014. At December 31, 2016, 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 our 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 cost of product revenue on a straight-line basis over the term of the minimum purchase agreement.

IDEXX Points 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, 2016, 2015 and 2014.

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, 2016, 2015 and 2014 (in thousands):

	For the Years Ended December 31,		
	2016	2015	2014
Revenue Reductions Recorded, Net			
Customer Loyalty Programs, net (1)	$ 18,226	$ 16,742	$ 14,800
Up-Front Customer Loyalty Programs	24,595	19,972	13,089
IDEXX Instrument Marketing Programs, net (1)	37,012	31,112	24,158
Other Customer Programs, net (1)	417	664	2,796
Total revenue reductions, net	$ 80,250	$ 68,490	$ 54,843

(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, 2016, 2015 and 2014 (in thousands):

	For the Years Ended December 31,		
	2016	2015	2014
Accrued Customer Programs:			
Balance, beginning of the year	$ 55,133	$ 48,153	$ 39,345
Revenue reductions for Customer Loyalty Programs, net (1)	18,227	16,742	14,800
Up-Front Customer Loyalty Program Awards issued as IDEXX Points	31,407	40,689	20,315
Revenue reductions for IDEXX Instrument Marketing Programs, net (1)	37,011	31,112	24,158
Revenue reductions for Other Customer Programs, net (1)	417	664	2,796
IDEXX Points redeemed and credits issued	(81,733)	(81,172)	(52,035)
Breakage	(722)	(230)	(421)
Exchange impact on balances denominated in foreign currency	(308)	(825)	(805)
Balance, end of year	$ 59,432	$ 55,133	$ 48,153

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

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, referred to herein as the Technology reporting unit. A substantial portion of the goodwill remaining from the pharmaceutical business, included in our “Other Segment”, is associated with products that have 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 2016 and 2015, 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. As of our fourth quarter assessment, the total aggregate fair value of the reporting units approximated the Company's 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 product line, 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 under licensing agreements that expire in 2025. 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 $7.6 million and 117 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 by a range of approximately $80.0 million to $2.0 billion and 260 percent to 1220 percent of the reporting unit’s carrying value.

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, 2016, 2015 or 2014.

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 write 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.

During 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 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. Non-cash intangible asset impairments of $2.2 million were recorded within our condensed consolidated statement of operations within general and administration expenses during 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 and 2014, 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 surrounding the retention of customers 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, 2016, 2015 and 2014. 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

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 of our options granted during the years ended December 31, 2016, 2015 and 2014 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,		
	2016	2015	2014
Expected stock price volatility	25 %	23 %	28 %
Expected term, in years (1)	5.7	5.6	5.7
Risk-free interest rate	1.2 %	1.5 %	1.5 %

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

Changes in the subjective input 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, 2016, was $13.3 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, 2016, would have increased or decreased by approximately $0.4 million and the total expense recognized for the year ended December 31, 2016, 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, 2016, would have increased or decreased by approximately $1.2 million, and the total expense recognized for the year ended December 31, 2016, for options awarded during 2016 would have increased or decreased by approximately $0.2 million.

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 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, 2016, was $19.9 million, which is net of a reduction of $3.0 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 2016, 2015 or 2014.

The fair value of stock options, restricted stock units, deferred stock units and employee stock purchase rights issued totaled $27.0 million for the year ended December 31, 2016, $25.6 million for the year ended December 31, 2015, and $24.0 million for the year ended December 31, 2014. The total unrecognized compensation expense, net of estimated forfeitures, for unvested share-based compensation awards outstanding at December 31, 2016, was $38.0 million, which will be recognized over a weighted average period of approximately 1.6 years.

Income Taxes

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, 2016, 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. Alternatively, in the event that we were to 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 the net deferred tax liability would be credited or charged, as appropriate, to income in the period such determination was made. For example, an increase of one percentage point in our anticipated U.S. state income tax rate would cause us to decrease our net deferred tax liability balance by $0.3 million. This decrease in the net deferred liability would increase net income in the period that our rate was adjusted. Likewise, a decrease of one percentage point to our anticipated U.S. state income tax rate would have the opposite effect.

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.

We consider the majority of the operating earnings of non-U.S. subsidiaries to be indefinitely invested outside the U.S. At December 31, 2016, the cumulative earnings of these subsidiaries were $546.7 million, of which approximately $387.0 million was held in cash and cash equivalents. No provision has been made for the payment of U.S. federal and state or international taxes that may result from future remittances of these undistributed earnings of non-U.S. subsidiaries. Should we repatriate these earnings in the future, we would have to adjust the income tax provision in the period in which the decision to repatriate earnings is made. A determination of the related tax liability that would be paid on these undistributed earnings if repatriated is not practicable for several reasons including the complexity of laws and regulations in the various jurisdictions where we operate, the varying tax treatment of potential repatriation scenarios and the timing of any future repatriation. For the operating earnings not considered to be indefinitely invested outside the U.S. we have accounted for the tax impact on a current basis.

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 $18.8 million as of December 31, 2016, and $7.4 million as of December 31, 2015, which includes estimated interest expense and penalties. The increase in net liability is primarily related to two uncertain tax positions taken during the year. The first relates to our claiming certain tax deductions under a recent court case, but one that the IRS has vowed to appeal. The second relates to certain changes we made in our transfer pricing policies to better align statutory accounting with business operations. See Note 12 to the consolidated financial statements for the year ended December 31, 2016, included in this Annual Report on Form 10-K for more information.

Future changes in tax law could impact our provision for income taxes, the amount of taxes payable, and our U.S. deferred tax liability balances. Any enacted legislation to reduce the U.S. corporate tax rate would reduce our income tax expense and payments in subsequent periods, but could also have a one-time impact in the period of enactment. Potential one-time impacts could include adjustments to our net U.S. deferred tax liability and increased tax expense resulting from the taxation of operating earnings of non-U.S. subsidiaries that have been indefinitely invested outside the U.S. and for which we have not recorded a U.S. tax liability.

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. Effective January 1, 2015, we fully transitioned to an all-direct sales strategy in the U.S., however changes in prior year U.S. distributors' inventory levels impacted 2015 reported growth results. In certain countries internationally, 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. Following our transition to an all direct U.S. distribution approach, we anticipate that changes in distributor inventory levels will have an immaterial impact on our growth in future years.

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.

Effective January 1, 2015, we fully transitioned to an all-direct sales strategy in the U.S. and did not renew our existing contracts with our former key U.S. distribution partners after their expiration at the end of 2014. Under this approach, we take orders, ship product, invoice and receive payment for all rapid assay test kits and VetLab consumables in the U.S., aligning with our direct model for instruments, reference laboratory services, and other CAG products and services.

We incurred transition costs to implement this all-direct sales strategy in the U.S., including approximately $5 million in incremental expense during the year ended December 31, 2014, resulting from the ramp up of sales and operating resources. We also incurred $9.5 million in non-recurring expenses during the year ended December 31, 2014, associated with project management and other one-time costs required to implement this new strategy. Further, we incurred one-time transitional impacts related to the drawdown of distributor inventory in the fourth quarter of 2014, resulting in a reduction in revenue and operating profit of $25 million and $21 million, respectively, in such period.

During the three months ended December 31, 2014, we began recognizing revenue on rapid assay kits and VetLab consumables upon delivery to end users in the U.S., instead of at distribution. We also began to capture additional revenue that was previously earned by our distribution partners, net of other changes related to this all-direct strategy, such as free next-day shipping and a new returns policy for expired product. We refer to this net additional revenue as distributor margin capture. This net incremental revenue allowed us to expand our sales, marketing and customer support resources, which we expect will drive future revenue growth, and to build out our distribution capability. We expect investments in these areas will scale over time based on our expected future growth rates and provide accretive benefits to operating profit. Also as a result of the transition to an all-direct sales strategy in the U.S., we incurred additional working capital demands, including inventory costs previously borne by our distributors, and incremental accounts receivable resulting from a longer elapsed time to collect our receivables.

Currency Impact. For the year ended December 31, 2016, 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 20 percent for the year ended December 31, 2015, and 22 percent for the year ended December 31, 2014. 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.

The impact on revenue resulting from changes in foreign currency exchange rates is not a measure defined by accounting principles generally accepted in the United States of America (“U.S. GAAP”), otherwise referred to herein as a non-GAAP financial measure. As exchange rates are an important factor in understanding period-to-period comparisons, we believe the presentation of results normalized for changes in currency in addition to reported results helps improve investors’ ability to understand our operating results and evaluate our performance in comparison to prior periods. 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 previous year period to foreign currency denominated revenues for the prior year period.

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 2016 and are expected to expire during 2017, 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. “Patents and Licenses”.

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

Revenue

The following revenue analysis and discussion focuses on organic revenue growth. Organic revenue growth is a non-GAAP financial measure and represents the percentage change in revenue during the twelve months ended December 31, 2016, 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. We exclude 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 exclude the effect of 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.

The percentage changes in revenue from foreign currency exchange rates and acquisitions are non-GAAP financial measures. See the subsection above titled “Effects of Certain Factors on Results of Operations – Currency Impact” for a

description of the calculation of the percentage change in revenue resulting from changes in foreign currency exchange rates. The percentage change in revenue resulting from acquisitions represents incremental revenues attributable to acquisitions that have occurred since the beginning of the prior year period.

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
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%