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, 2021**

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

For the transition period from _____ to _____.
COMMISSION FILE NUMBER: 0-19271

IDEXX LABORATORIES, INC.

(Exact name of registrant as specified in its charter)

Delaware		**01-0393723**
(State or other jurisdiction of incorporation or organization)		(IRS Employer Identification No.)
One IDEXX Drive	**Westbrook, Maine**	**04092**
(Address of principal executive offices)		*(ZIP Code)*

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

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.10 par value per share	IDXX	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 every Interactive Data File required to be submitted 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 such files). Yes ☒ No ☐

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

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, 2021 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 $53,417,914,936. 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 84,249,085 on February 11, 2022.

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 2022 annual meeting of stockholders (the "2022 Annual Meeting"), to be held on May 11, 2022, are incorporated herein by reference.

GLOSSARY OF TERMS AND SELECTED ABBREVIATIONS

Term/Abbreviation	Definition
AOCI	Accumulated other comprehensive income or loss
ASC	Accounting Standards Codification
CAG	Companion Animal Group, a reporting segment that provides veterinarians diagnostic products and services and information management solutions that enhance the health and well-being of pets.
cGMP	The FDA's current Good Manufacturing Practice regulations.
Clinical visits	The reason for the visit involves an interaction between a clinician and a pet.
Credit Facility	Our $1 billion five-year unsecured revolving credit facility under an amended and restated credit agreement that was executed in December 2021, also referred to as line of credit.
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
EURIBOR	Interest rate used in lending between banks on the European Union interbank market and also used as a reference for setting the interest rate on other loans.
FASB	U.S. Financial Accounting Standards Board
FDA	U.S. Food and Drug Administration
Instrument rebate programs	Our customer instrument rebate programs, previously referred to as IDEXX Instrument Marketing Programs, which require an instrument purchase and provide customers the opportunity to earn future rebates based on the volume of products and services they purchase over the term of the program.
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
LIBOR	London Interbank Offered Rate, a benchmark interest rate used between banks and used to set interest rates on loans.
LPD	Livestock, Poultry and Dairy, a reporting segment that provides diagnostic products and services for livestock and poultry health and ensures the quality and safety of milk and improves producer efficiency.
OCI	Other comprehensive income or loss
OPTI Medical	OPTI Medical Systems, Inc., a wholly-owned subsidiary of IDEXX Laboratories Inc., located in Roswell, Georgia. This business provides point-of-care and laboratory diagnostics (including electrolyte and blood gas analyzers and related consumable products) for the human medical diagnostics sector, as well as COVID-19 testing products and services. The Roswell facility also manufactures electrolytes slides (instrument consumables) to run Catalyst One®, Catalyst Dx®, and blood gas analyzers and consumables for the veterinary market; also referred to as OPTI.
Organic revenue growth	A non-GAAP financial measure that 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, certain business acquisitions and divestitures. Organic revenue growth should be considered in addition to, and not as a replacement for or as a superior measure to, revenues reported in accordance with U.S. GAAP, and may not be comparable to similarly titled measures reported by other companies.
Ortho	Ortho Clinical Diagnostics, Inc., a supplier of dry slide consumables used in our Catalyst One and Catalyst Dx Chemistry Analyzers and VetTest Chemistry Analyzer.
Prime rate	The prime rate is an interest rate determined by individual banks. It is often used as a reference rate for many types of loans.
Up-Front customer loyalty programs	Our up-front loyalty programs provide customers with incentives in the form of cash payments or IDEXX Points upon entering into multi-year agreements to purchase annual minimum amounts of future products or services.
PACS	Picture archiving and communication software, our software solution for accessing, storing, and sharing diagnostic images.
PCR	Polymerase chain reaction, a technique used to amplify small segments of DNA.
R&D	Research and Development
Reagent rentals	Instruments being placed at customer sites at little or no cost in exchange for a long-term customer commitment to purchase instrument consumables.
Reported revenue growth	The percentage change in revenue reported in accordance with U.S. GAAP, as compared to the same period in the prior year.
S&P	Standard & Poor's

S&P 500 Health Care Index	The index for the S&P 500 Health Care (U.S. companies) measures the performance of companies that are classified as members in the Global Industry Classification Standard of health care services sub-industry.
S&P 500 Index	The S&P 500 Index is a U.S. stock market index based on the market capitalization of 500 large companies having common stock listed on the New York Stock Exchange or NASDAQ, including IDEXX.
SaaS	Software-as-a-service
SDMA	Symmetrical dimethyl arginine, a biomarker that detects kidney disease.
SEC	U.S. Securities and Exchange Commission
Senior Note Agreements	Note purchase agreements for the private placement of senior notes, referred to as senior notes or long-term debt.
T4	Thyroxine, a hormone produced by the thyroid gland, tested to indicate thyroid health.
U.S. GAAP	Accounting principles generally accepted in the United States of America
USDA	U.S. Department of Agriculture
Volume commitment programs	Programs that provide customers with a free or discounted instrument or system upon entering into multi-year agreements to purchase annual minimum amounts of products and services, such as our IDEXX 360 program.
Water	Water, a reporting segment that provides water microbiology testing products.

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

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

Our name, logo and the following terms used in this Annual Report on Form 10-K are either registered trademarks or trademarks of IDEXX Laboratories, Inc. in the United States and/or other countries: 4Dx®, Alertys®, Animana® Veterinary Software, Catalyst Dx®, Catalyst One®, Coag Dx™, Colilert®, Colisure®, Cornerstone®, DVMAX®, Enterolert®, ezyVet®, 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 SDMA®, IDEXX VetLab®, LaserCyte®, LaserCyte® Dx, OPTI®, Pet Health Network®, Petly® Plans, Practice Profile™, ProCyte Dx®, Pseudalert®, Quanti-Tray®, rVetLink®, SediVue Dx®, SNAP®, SNAPduo®, SNAP Pro®, SNAP® cPL™, SNAP® fPL™, SNAPshot Dx®, IDEXX VetAutoread™, VetConnect®, IDEXX VetLab® UA™, VetLINK®, VetLyte®, Vet Radar®, VetStat®, and VetTest®. VetAutoread is a trademark of QBC Diagnostics.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

This Annual Report on Form 10-K for the year ended December 31, 2021, 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 the impact of the COVID-19 pandemic; our expectations regarding supply chain and logistics disruptions; our expectations regarding the labor supply; future revenue growth rates; future tax benefits; the impact of tax legislation and regulatory action; revenue recognition timing and amounts; business trends, earnings and other measures of financial performance; the effect of economic downturns on our business performance; the projected effect of patent and license expirations; the projected impact of foreign currency exchange rates and hedging activities; demand for our products; realizability of assets; future cash flow and uses of cash; future repurchases of common stock; future levels of indebtedness and capital spending; interest expense; warranty expense; share-based compensation expense; the adoption and projected impact of new accounting standards; critical accounting estimates; future commercial and operational efforts; future product launches; projected cost and completion of capital investments; and competition. Forward-looking statements can be identified by the use of words such as “expects,” “may,” “anticipates,” “intends,” “would,” “will,” “plans,” “believes,” “estimates,” “should,” “project,” and similar words and expressions. These forward-looking statements are intended to provide our current expectations or forecasts of future events, are based on current estimates, projections, beliefs, and assumptions, and are not guarantees of future performance. Actual events or results may differ materially from those described in the forward-looking statements. These forward-looking statements involve a number of risks and uncertainties, including, among other things, the matters described under the headings "Business," "Risk Factors," "Legal Proceedings," "Management's Discussion and Analysis of Financial Condition and Results of Operations," and "Quantitative and Qualitative Disclosures About Market Risk" 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 industries. We also provide human medical point-of-care and laboratory diagnostics. Our primary products and services are:

- Point-of-care veterinary diagnostic products, comprised of 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;
- Health monitoring, biological materials testing, laboratory diagnostic instruments, and services used by the biomedical research community;
- Diagnostic, health-monitoring products for livestock, poultry, and dairy;
- Products that test water for certain microbiological contaminants; and
- Point-of-care electrolytes and blood gas analyzers and SARS-CoV-2 RT-PCR (COVID-19 test) used in the human diagnostics sector.

Our Purpose is to be a great company that creates exceptional long-term value for our customers, employees, and stockholders by enhancing the health and well-being of pets, people, and livestock.

DESCRIPTION OF BUSINESS BY SEGMENT

We operate primarily through three business segments: Companion Animal Group, Water quality products, and Livestock, Poultry and Dairy. Our Other operating segment combines and presents our human medical diagnostic products and services business with our out-licensing arrangements because they do not meet the quantitative or qualitative thresholds for reportable segments.

Companion Animal Group ("CAG") - Diagnostic and information management-based products and services for the companion animal veterinary industry, including in-clinic diagnostic solutions, outside reference laboratory services, and veterinary software and services.

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-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, as well as associated consumable products that provide real-time reference lab quality diagnostic results. Our in-clinic diagnostic solutions also include a broad range of single-use, IDEXX SNAP rapid assay test kits that provide quick, accurate, and convenient point-of-care diagnostic test results for a variety of companion animal disease causing pathogens and health conditions. Additionally, we offer extended maintenance agreements in connection with the sale of our instruments.

Blood and Urine Chemistry. We have three blood and urine chemistry analyzers 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. We actively sell the Catalyst One Chemistry analyzer. We continue to support our Catalyst Dx and VetTest Chemistry analyzers. We also support the VetStat Electrolyte and Blood Gas analyzer. 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 three 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 One and ProCyte Dx hematology analyzers. We introduced the ProCyte One analyzer in 2020 and began delivery of these analyzers in 2021. We also sell the Coag Dx analyzer, which permits the detection and diagnosis of blood clotting disorders. While we currently do not sell the LaserCyte Dx hematology analyzer and the IDEXX VetAutoread hematology analyzer, we continue to support these analyzers.

Rapid Assay. The SNAP rapid assays are single-use, handheld test kits that can work without the use of instrumentation, although many kits may also be activated with results automatically captured and interpreted by the SNAP Pro Analyzer. This device improves medical care by allowing veterinarians to share the test results with the pet owner on the SNAP Pro Analyzer screen, or via VetConnect PLUS. Our SNAPshot Dx analyzer can run multiple patient samples at once. The principal canine SNAP rapid assay tests include SNAP 4Dx Plus, which tests for the six vector-borne diseases causing pathogens, including Lyme disease as well as canine heartworm, and SNAP Heartworm RT, which tests for heartworm. Sales of our canine vector-borne disease tests are greater in the first half of our fiscal year due to seasonality of disease testing in the veterinary practices in the Northern Hemisphere. The principal feline SNAP rapid assay tests include SNAP Feline Triple, which tests for feline immunodeficiency virus (“FIV”) (which is similar to the virus that leads to AIDS in humans), and SNAP FIV/FeLV Combo Test, which tests for FIV and Feline leukemia virus ("FeLV").

Urinalysis. The SediVue Dx analyzer is designed to provide automated real-time results in a fraction of the time of manual microscope analysis, which allows veterinary staff to perform a urine sediment analysis in approximately 3 minutes. The IDEXX VetLab UA analyzer provides rapid, automated capture of semi-quantitative chemical urinalysis from IDEXX UA strips 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 also sends all results created on connected instruments instantly to VetConnect PLUS. We sell IVLS as an integral component for our in-clinic analyzer suite.

Outside Reference Laboratory Diagnostic and Consulting Services. We offer commercial reference laboratory diagnostic and consulting services to veterinarians in many developed geographies worldwide, including customers in the U.S., Europe, Canada, Australia, Japan, New Zealand, South Africa, South Korea, and Brazil, through a network of approximately 80 laboratories. 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 diagnostic laboratory business also provides health monitoring and diagnostic testing services to biomedical research customers in North America, Europe, and Asia.

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 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, renal disease, and infectious diseases.

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.

Veterinary Software and Services & Diagnostic Imaging Systems

Veterinary Software and Services. We develop, market, and sell a portfolio of software and services for independent veterinary clinics and corporate groups. This portfolio includes:

Practice management systems. Software, hardware, and integrated services that run key functions of veterinary clinics, including managing patient electronic health records, scheduling, client communication, billing, and inventory management. Our practice information management systems offerings include cloud-based ezyVet, Animana, IDEXX Neo, and Cornerstone Cloud, and on-premise Cornerstone and DVMAX. To support the software system needs of practices, IDEXX provides integrated services including: Payment Solutions, Data Backup & Recovery, and Practice Supplies.

Software applications that extend workflow capabilities for practices and groups. We are able to improve overall patient management and workflow optimization through coordination and tracking of every step of a patient during a hospital stay. Our SmartFlow cloud offering works in conjunction with major veterinary practice management systems, including Cornerstone, Animana, IDEXX Neo, DVMAX, and certain third-party practice management systems, and VetRadar provides workflow capability for ezyVet.

Client marketing and wellness plan management. In addition, we offer cloud-based client communication (Pet Health Network Pro and Pet Health Network 3D) and preventive care plan management software (Petly Plans) designed to strengthen the relationship between the veterinarian and the pet owner. To support the communication needs between general practices and specialty referral practices, IDEXX offers rVetLink software. Lastly, IDEXX Enterprise provides centralized management and reporting capabilities for groups of veterinary practices.

Diagnostic Imaging Systems. Our diagnostic imaging systems capture radiographic images in digital form, replacing traditional x-ray film and the film development process, which generally requires the use of hazardous chemicals and darkrooms. We market and sell two diagnostic imaging systems primarily used in small animal veterinary applications: the IDEXX ImageVue DR50 and the IDEXX ImageVue DR30.

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, ezyVet, IDEXX Neo, DVMAX, and IDEXX VetConnect PLUS to provide centralized access to diagnostic imaging results alongside patient diagnostic results from any internet connected device.

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® mobile tablet. This application integrates with our IDEXX-PACS software.

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, provide a differentiated competitive advantage by giving veterinarians 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 better 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 effectiveness and financial health of the veterinary practice.

Water quality products ("Water") - Water provides innovative testing solutions for easy, rapid, and accurate detection and quantification of various microbiological parameters in water.

Water testing. Our principal products are the Colilert, Colilert-18, and Colisure tests, which 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. Our 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. We also sell consumables, parts, and accessories to be used with many of our water testing products.

Enterolert. 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.

Pseudalert. 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.

Filta-Max and Filta-Max*xpress*. 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.

Legiolert. Our Legiolert product is 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.

Quanti-Tray products. Our Quanti-Tray products, when used in conjunction with our Colilert, Colilert-18, Colisure, Enterolert, Pseudalert, Heterotrophic Plate Count ("HPC") or Legiolert products, provide users quantitative measurements of microbial contamination rather than a presence/absence indication. Our Quanti-Tray Sealer PLUS, and Quanti-Tray Sealer 2X 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.

Livestock, Poultry and Dairy ("LPD") - LPD provides diagnostic tests, services, and related instrumentation that are used to manage the health status of livestock and poultry, to improve producer efficiency, and to ensure the quality and safety of milk and food.

Livestock, Poultry, Heard Health Screening and Production Management. We sell diagnostic tests, services and related instrumentation that are used to manage the health status of livestock and poultry, to improve producer efficiency, and to ensure the quality and safety of milk. 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"), Porcine Reproductive and Respiratory Syndrome ("PRRS"), and African Swine Fever ("ASFV"). 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 RealPCR ASFV Test is a real-time polymerase chain reaction ("PCR") assay that provides early and accurate detection of ASFV supporting prevention, control, and eradication programs by veterinarians and producers. We also sell our Rapid Visual Pregnancy Test and Alertys On-Farm Pregnancy Test for cattle, which can detect pregnancy 28 days after breeding using whole blood samples.

Dairy products. Our principal dairy products use our SNAP test platform 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.

Other - Our Other operating segment combines and presents our human medical diagnostic products and services business ("OPTI Medical") with our out-licensing arrangements because they do not meet the quantitative or qualitative thresholds for reportable segments.

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 OPTI CCA-TS2 Blood Gas and Electrolyte analyzer contains many new features relative to previous generation blood gas analyzers including customized workflows, 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 analyzer runs whole blood, plasma, and serum samples on single-use disposable cassettes that contain various configurations of analytes.

Through OPTI Medical we also provide human COVID-19 testing products and laboratory services. On May 7, 2020, we announced that OPTI Medical was granted by the United States Food and Drug Administration ("FDA") an Emergency Use Authorization ("EUA") for the OPTI SARS-CoV-2 RT-PCR laboratory test kit for the detection of SARS-CoV-2, the virus that causes COVID-19. On June 5, 2020 OPTI Medical announced that it had received the CE mark certification in the European Union for its OPTI SARS-CoV-2 RT-PCR laboratory test kit. Additionally, the FDA has granted EUA for the OPTI DNA/RNA Magnetic Bead Kit for nucleic acid extraction from respiratory samples to be used with the OPTI SARS-CoV-2 RT-PCR test kit, which enables OPTI Medical Systems to provide laboratories with a complete OPTI Medical Systems-manufactured workflow solution for COVID-19 testing. We also provide human COVID-19 testing laboratories services to the Maine Center for Disease Control and Prevention in support of their COVID-19 testing program.

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, which are included in the Other segment.

Additional information about our products and services can be found on our website. Information contained on or connected to our website is not incorporated by reference into this Annual Report on Form 10-K and should not be considered part of this annual report or any other filing we make with the SEC.

MARKETING AND DISTRIBUTION

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

Generally, we select the appropriate distribution channel for our products based on the type of product, technical service requirements, number and concentration of customers, regulatory requirements, and other factors. We market our companion animal diagnostic products to veterinarians directly in the U.S. 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 our direct sales force and, in certain countries, through selected independent distributors. We sell our OPTI products and services both directly and through independent human medical product distributors.

RESEARCH AND DEVELOPMENT

Our business includes the development and introduction of new products and services and may involve entry into new business areas. We maintain active research and development programs in each of our business segments. Our research and development expenses, which consist of salaries, employee benefits, materials and external consulting and development costs, were $161.0 million for the year ended December 31, 2021, or 5.0% of our consolidated revenue, $141.2 million for the year ended December 31, 2020, or 5.2% of our consolidated revenue and $133.2 million for the year ended December 31, 2019, or 5.5% 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 us based on a variety of factors, including providing protection for our inventions and other intellectual property; affording protection from competitors in certain sectors; 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 those related to:

- Methods for detecting BVDV that started to expire in 2017 and will continue into 2022;
- Reagents and methods for the detection of *Anaplasma phagocytophilum* that started to expire in 2017 and will continue into 2022;
- Reagents and methods for the detection of *Ehrlichia canis* that began to expire in 2019 and will continue into 2022;
- Catalyst consumables that began to expire in 2020 and will continue into 2035;
- Catalyst instruments that expire beginning in 2026 and will continue into 2032;
- 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 beginning in 2029 and will continue into 2037.

While we consider these 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 publications, including peer-reviewed third-party studies, that demonstrate the accuracy of our products; 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-clinic instruments and/or reference laboratory business; and 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 certain patents and licenses of patents and technologies from third parties that are expected to expire in 2022 and beyond, the expiration of these patents and licenses, individually or in the aggregate, is not expected to have a material effect on our financial position or future operations. In addition, we already face robust competition as other companies have been successful in bringing competitive products to market, despite the protections afforded by these 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. Refer to "Part I, Item 1A. Risk Factors."

PRODUCTION AND SUPPLY

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

Instruments and consumables. Significant products supplied by sole and single-source providers include certain Catalyst Dx and Catalyst One consumables (other than electrolyte consumables and the fructosamine, T4, CRP, progesterone, and SDMA slides), VetTest slides, VetLyte consumables, LaserCyte Dx consumables, VetAutoread and ProCyte Dx analyzers and consumables, SediVue Dx urinalysis instruments and consumables, and certain components of our internally manufactured analyzers.

VetTest and certain Catalyst chemistry slides are supplied by Ortho under supply agreements that are currently set to expire in December of 2031. We are required to purchase all of our requirements for our current menu of Catalyst and VetTest 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 sector, excluding the EU, other than to IDEXX.

We purchase other analyzers and consumables under supply agreements with terms extending through 2034, 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. Refer to "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.

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. Refer to "Part I, Item 1A. Risk Factors."

BACKLOG

We do not generally maintain a significant backlog of 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 sectors. In some sectors, 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 financial and managerial resources than us, as well as greater experience in manufacturing, marketing, research and development, and obtaining regulatory approvals than we do. For more information on risks related to our competition, refer to "Part I, Item 1A. Risk Factors."

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, differentiated product innovations, fully integrated technology, information management capability, enhancement of veterinary practice efficiency, availability of medical consultation, effectiveness of our sales and distribution channels, quality of our technical and customer service, and our pricing relative to the value of our products and services in comparison with competitive products and services. Our major competitors in most geographic locations in North America are Antech Diagnostics, a unit of VCA Inc., a division of Mars, Incorporated; Zoetis Inc. (including its wholly-owned subsidiary Abaxis, Inc.); Heska Corporation, and Samsung Electronics Co., Ltd. We also compete in certain international geographies with Zoetis, Fujifilm Holdings Corporation, Samsung Electronics, Arkray, Inc., Heska, Mindray 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 differentiated 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 multibillion-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, enhancement of veterinary practice efficiency, 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 in North America and the U.K. is Covetrus, Inc., which offers several systems and leverages its animal health distribution business in sales and service. We also compete with numerous focused smaller companies throughout the geographies in which we offer veterinary software, including those offering cloud-based solutions. Our competitors in the diagnostic imaging systems sector include Sound-Eklin, Antech Diagnostics, FUJIFILM, and Heska.
- Human point-of-care medical diagnostic products. 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. We also compete with a number of companies around the world that produce human COVID-19 testing.

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, product registrations, manufacturing, import, export, distribution, marketing and promotion, labeling, recordkeeping, testing, quality, storage, product disposal, environmental compliance, and workplace safety. The following is a description of the principal regulations affecting our businesses.

Veterinary diagnostic products. These products include our diagnostic test kits for companion and food animal infectious diseases, including most of our livestock and poultry products and many of our rapid assay products. These products are licensed and 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 and from the U.S. The APHIS regulatory approval process involves the submission of product validation data, including manufacturing process and facility documentation. Following regulatory licensure to market a product, APHIS requires that each lot of product be submitted for test 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 to support product registration for sale, distribution, and use within their countries. However, compliance with extensive country-specific regulatory processes is required in connection with importing and marketing diagnostic products in Japan, Germany, Canada, Brazil, the Netherlands, China, 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 which also covers 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 one LPD product manufactured in Montpellier, France to the U.S. for distribution.

Our veterinary diagnostic slide and instrument systems, including T4, fructosamine, progesterone, CRP, and SDMA, are veterinary medical devices regulated by the FDA under the Food, Drug and Cosmetics Act (the "FDC Act"). Other FDA regulated products include our non-licensed rapid assay products such as SNAP Pancreatic Lipase, Cortisol, Bile Acid, Foal IgG, and ProBNP. While the sale of these products does not require premarket approval by the FDA and does not subject us to FDA inspections or the FDA's current Good Manufacturing Practices regulations ("cGMP"), the FDC Act specifies that these products must not be adulterated, mislabeled, or misbranded.

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 method 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 Chemists Research Institute ("AOAC RI"). Following approval of a product by the FDA, the product must also be accepted by NCIMS, an oversight body that includes state, federal, and industry representatives. Our SNAP Beta-Lactam antibiotic residue test product has been accepted by the FDA, NCIMS, and AOAC RI for sale in the U.S. While some foreign countries accept AOAC RI certification 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. These OPTI products are also subject to the regulations governing the manufacture and marketing of medical devices in other countries in which they are sold, including the EU Regulations on Medical Devices and In Vitro Diagnostic Devices.

Human COVID-19 test products. OPTI manufactures, sells and distributes PCR and antibody ELISA test kits for the detection of the virus that causes COVID-19. These test kits are subject to regulation by the FDA pursuant to the FDC Act, and more specifically, are sold and distributed pursuant to FDA Emergency Use Authorization. These products are also subject to the regulations governing the manufacturing and marketing of medical devices in other countries in which they are sold, including the EU Regulations on Medical Devices and In Vitro Diagnostic Devices.

Other Chemical, Environmental, and Human Health Safety Regulations. All IDEXX products must comply with applicable global product regulations, including those governing consumer product safety and materials requirements such as the Europeans Union's Electromagnetic Compatibility ("EMC") Directive, the European Regulation for Registration, Evaluation, Authorization and Restriction of Chemical Substances ("REACH"), the Restriction of Hazardous Substances ("RoHS") Directive, and the Waste Electrical and Electronic Equipment ("WEEE") Directive. These complex regulatory requirements create risk to IDEXX's ability to market and sell our products, our business, and our financial performance. For more information about the risks associated with various U.S. and foreign government regulation, refer to *"Various U.S. and foreign government regulations could limit or delay our ability to market and sell our products or otherwise negatively impact our business*" under "Part I, Item 1A. Risk Factors."

In the European Union, our analyzers and certain associated equipment are subject to the requirements of the RoHS Directive, which regulates and restricts certain hazardous substances in electrical and electronic equipment. Other countries, including China, Russia, the United Arab Emirates, and Turkey have implemented or anticipate implementing regulatory regimes similar to the RoHS Directive. Our veterinary diagnostic instrument systems are not subject to regulation under the European Medical Device Directive or the In Vitro Diagnostic Directive, which are both strictly applicable to human use products. However, these systems are required to meet CE certification, which require compliance with the RoHS Directive, the EMC Directive, and other safety requirements. Most countries in which we sell our products impose similar registrations and/or certification requirements.

The European Union was among the first to regulate and restrict the use of certain substances that we currently use in our products. These requirements include the Biocidal Products Regulation, which requires the use of only approved biocides in our products imported to or used in the European Union, and REACH, which regulates and restricts the use of certain chemicals in the European Union. Compliance with these regulations (and similar regulations that have been or may be adopted elsewhere, such as Australia, China, Russia, Turkey, Korea, and other countries) may require registration, notification, or certification regarding regulated substances, imposition of import restrictions, or in certain cases the redesign or reformulation of our products. Some of our products, including some of our Companion Animal products, may be subject to pending restriction of microplastics pursuant to REACH.

In the U.S., the EPA regulates chemical use similarly to the EU. In addition, certain states have their own chemical regulations, such as California's Proposition 65, which requires businesses to provide warnings to California residents about significant risk of exposures to chemicals in products that are known to cause cancer, birth defects, or other reproductive harm; and Maine's pending 2023 restrictions on PFAS (per- and polyfluoroalkyl substances) used in all 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. Development or acquisition 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.

HUMAN CAPITAL

As innovation and customer focus are important parts of our strategy to create long-term value, we aim to attract, motivate, develop, and retain talented employees at all levels who are aligned with and passionate about our Purpose by:

- Building and sustaining an inclusive, ethical culture that values diversity, equity and inclusion ("DEI");
- Offering competitive and locally relevant compensation and benefits; and
- Providing growth and development opportunities.

Because our strategy includes developing strong, deep relationships with our veterinary customers, we have focused on growing our global companion animal diagnostics field-based organization.

Diversity, Equity, and Inclusion. We believe that DEI among our employees helps drive both innovation and a better understanding of our increasingly global customer base. We employ inclusive recruitment practices to source diverse candidates and mitigate potential bias. Our global recruiting team connects our sourcing strategies with diversified talent channels and adopts core competencies that focus on valuing differences, to attract candidates with different backgrounds, ideas, and experiences who will help enrich our culture.

As of December 31, 2021, we had approximately 10,350 regular full-time and part-time employees, with underrepresented minorities representing an estimated 22.5% of our U.S. employees, as follows:

Self-Identified Racial or Ethnic Background [1]	Percentage of our U.S. Employees
Black/African American	8.6 %
Asian	6.4 %
Hispanic/Latinx	5.4 %
Other [2]	2.1 %
White	76.3 %

(1) Data regarding racial and ethnic background are based on self-identification by our U.S. employees; underrepresented minorities is defined as Black/African American, Asian, Hispanic/Latinx and Other. The percentages provided do not add up to 100% because some U.S. employees declined to specify race and/or ethnicity.
(2) Other is defined as American Indian, Alaska Native, Native Hawaiian/Other Pacific Islander, and two or more races.

In addition, as of December 31, 2021, women represented 58% of our global employees and were represented in leadership as follows:

	Percentage who self- identify as women
Global Senior Leadership Team [1]	34.5 %
Global Senior Executive Team [2]	23.8 %

(1) Global Senior Leaders are employees in compensation grades considered Director or above.
(2) Global Senior Executives are employees in compensation grades considered Senior Vice President or above.

Compensation, Benefits and Well-being. We offer fair, competitive compensation and a wide array of competitive and locally relevant benefits (which vary by country and region) that support our employees' overall well-being, including comprehensive health and welfare insurance, generous time-off and leave, and retirement and financial support. We provide emotional well-being services through our Employee Assistance Program and a variety of interactive resources as well as lifestyle coaching, a global well-being speaker series, and ergonomic programs that help support employees' physical well-being. In addition, a majority of our employees have access to financial education and our U.S. employees can engage with a financial wellness coach for further tools and resources to reach their personal financial goals.

As the COVID-19 pandemic spread globally in early 2020, we implemented significant changes that we determined were in the best interest of our employees as well as the communities in which we operate. These included having the majority of our employees work from home, while implementing additional safety measures for employees continuing critical on-site work. We also provided a work-from-home fund to assist employees and added paid time off and caregiving support to enhance employee health and well-being. While many of our employees have continued to work from home since March 2020, we have re-opened some of our offices, consistent with public health guidance and protocols, and support flexible work options. We continue to monitor the state of the pandemic to ensure the continued safety and health of our employees.

Growth and Development. We are steadfast in our focus on cultivating the diverse leaders of tomorrow and making career development opportunities more accessible across the global organization. Our training is 100% virtual and available in multiple languages. Our career development programs are designed to build capabilities and enable career progression. We also encourage our employees to enhance their career development through job-related courses and degree programs.

Employee Turnover and Engagement. We monitor employee turnover and engagement to identify opportunities to strengthen our approach to human capital management.

During 2021, our voluntary employee turnover rate was approximately 12%. Our voluntary turnover among managerial and professional staff was approximately 6%. With the contraction of the labor force as a result of the global pandemic, we have recently experienced the effects of the labor shortage in our staffing. We expect the labor shortage to continue in 2022 and will continue to monitor and analyze retention closely to identify any areas of concern.

We regularly conduct company-wide employee surveys conducted by a third party to collect employee input on our culture, their experiences, and workplace conditions. These survey results provide insights that help us to improve employee engagement. Our most recent global employee survey received a high level of response and indicated an 82% engagement level. Given the pandemic-related impacts on our front-line workers' engagement, we are actively working to better understand what matters the most to them and what drives their engagement and retention. Some of the actions taken in 2021 as a result of this increased focus include increasing the frequency of bonus payments to twice per year for our U.S. operations workers and advancing market competitive pay increases, as appropriate.

In 2022, we plan to further leverage the insights gained to develop a roadmap for improving front-line worker engagement and retention. We are also monitoring the current landscape of wage inflation and labor shortages in connection with our employees' overall compensation.

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.

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

ITEM 1A. RISK FACTORS

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

RISK RELATED TO THE COVID-19 PANDEMIC

The effects of the ongoing COVID-19 pandemic could have a material adverse impact on our business, results of operations, liquidity, financial condition, and stock price.

The duration, extent, and impacts of the ongoing COVID-19 pandemic remain uncertain and could have a material adverse impact on our business, results of operations, liquidity, financial condition, and stock price. The spread of COVID-19 has caused us to modify aspects of our business practices (including the management of and access to our facilities, employee remote work locations, and employee travel), and we may take further actions, as may be required by federal, state, and local governments or as we determine to be in the best interests of our employees and customers. Such actions may disrupt our supply chain, logistics network, operations, facilities, and employee workforce, which could negatively affect our employees' efficiency and productivity; our development and introduction of innovative new products and services; our ability to manufacture, market, sell, and distribute our products and services; and our financial performance. In addition, public health-related guidance and directives, including stay-at-home orders that may be further deployed to combat the spread of COVID-19, including variants (such as Delta and Omicron), and possible higher infection rates could result in a decrease in companion animal clinical visits, labor shortages, the delay of elective procedures and wellness visits, and disruption of veterinary clinic operations, all of which would have a negative effect on veterinary service providers and result in declines in demand for our CAG products and services, which represented 90% of our 2021 consolidated revenues. If stay-at-home orders or other similar public health-related directives are re-implemented periodically to combat the spread of COVID-19, particularly in the United States, the negative impact on veterinary service providers and their businesses, and correspondingly on demand for our CAG products and services, may be material.

Business lockdowns, pool and beach closures and weakened economic conditions related to the COVID-19 pandemic reduced demand for our water testing products in 2020. While our water testing volumes have been recovering during 2021, public health-related guidance and directives that may be further deployed to combat the spread of COVID-19, including variants, may significantly reduce demand. In addition, the ongoing pandemic has increased economic uncertainty and caused economic slowdowns that may continue or recur. Economic weakness in our key geographies related to the COVID-19 pandemic may also reduce demand for our companion animal, water, livestock, poultry and dairy products and services, which could have an adverse impact on our results of operations.

While demand for our CAG products and services remained strong in 2021, the degree to which the COVID-19 pandemic ultimately impacts us depends on future developments that are unpredictable and most of which are outside of our control, including the duration, scope, and severity of the COVID-19 pandemic, the emergence of new variants, changes in infection rates, the vaccine participation rate, the effectiveness of vaccines, the availability of testing kits, as well as regulations and requirements impacting the ability of veterinarians to treat patients, the return to our offices, and/or our ability to visit customer sites. There can be no assurance that we will be able to prevent or mitigate any or all of the COVID-19 near or long-term adverse impacts. Any of the foregoing factors, or other cascading effects of the COVID-19 pandemic that are not currently foreseeable, could have a material adverse effect on our business, results of operations, liquidity, financial conditions, and stock price.

RISKS RELATED TO OUR BUSINESS AND INDUSTRY

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

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

- Developing, manufacturing, and marketing innovative new or improved and cost competitive in-clinic laboratory analyzers that drive sales of IDEXX VetLab instruments, grow our installed base of instruments, and increase demand for related recurring sales of consumable products, services, and accessories;
- Developing and introducing new innovative diagnostic tests and services for both our reference laboratories and in-clinic applications that provide valuable medical information to our customers and effectively differentiate our products and services from those of our competitors;
- Developing and introducing innovative, data-insightful software solutions that increase the value to our customers of our companion animal products and services by enhancing the integration of the information and transactions of these products and the management of diagnostic information derived from our products;
- Maintaining premium pricing, including by effectively implementing price increases, for our differentiated products and services through, among other things, effective communication and promotion of the value of our products and services in an environment where many of our competitors promote, market, and sell lesser offerings at prices lower than ours;
- Providing our veterinary customers with the medical and business tools, information, and resources that enable them to grow their practices and the utilization of our diagnostic products and services, through increased pet visits, use of preventive care protocols, enhanced practice of real-time care, and improved practice efficiency;
- Achieving cost improvements in our worldwide network of reference laboratories by implementing global best practices, including lean processing techniques, incorporating technological enhancements, including laboratory automation and a global laboratory information management system, employing purchasing strategies to maximize leverage of our global scale, increasing the leverage of existing infrastructure and consolidating testing in high volume laboratory hubs;
- Achieving cost improvements in the manufacture and service of our in-clinic laboratory analyzers by employing the benefits of economies of scale in both negotiating supply contracts and leveraging manufacturing overhead, and by improving reliability of our instruments;
- Continuing to expand, develop, and advance the productivity of our companion animal diagnostic sales, marketing, customer support, and logistics organizations in the U.S. and international regions in support of, among other things, our all-direct sales strategies;
- Attracting, developing, and retaining key leadership and talent necessary to support all elements of our strategy, which is challenging due to the increasingly competitive and tight labor markets in which we operate, as well as COVID-19-related impacts on the workforce;
- Strengthening our sales and marketing activities to continue to grow our profitability both in the U.S. and in geographies outside of the U.S.;
- Identifying, completing, and integrating acquisitions that enhance our existing businesses or create new business or geographic areas for us;
- Developing and implementing new technology and licensing strategies; and
- Continuing to effectively manage our growth and expansion on a global scale through, among other things, designing and implementing cost-effective improvements to our processes, procedures, and infrastructure.

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

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

We rely on third-party suppliers to provide components and raw materials (including biological materials) for our manufactured products, manufacture some of the products that we sell, and perform certain services, including package-delivery services. Actions taken by third-party suppliers in operating their business, as well as any disruptions to their business operations (or their supplier's business operations), could disrupt our supply chain or operations and materially negatively impact our ability to supply the market, substantially decrease sales, lead to higher costs, and damage our reputation with our customers. Longer-term disruptions could potentially result in the permanent loss of our customers, which could reduce our recurring revenues and long-term profitability.

Our supply chain and our cost of goods also may be adversely impacted by unanticipated price increases due to factors such as inflation, including wage inflation, or to supply restrictions beyond our control or the control of our suppliers. If current suppliers fail to supply sufficient goods or materials to us on a timely basis, or at all, we could experience inventory shortages and disruptions in our supply of goods or materials.

For examples of some of the events that could result in disruption to our supply chain or operations, and negatively impact our operating results, refer to "We are increasingly dependent on the continuous and reliable operation of our information technology systems, and a disruption of these systems or significant security breaches could adversely affect our business" and "Factors and events beyond our control could disrupt our operations, supply chain, and logistics network and adversely affect our business" below.

In addition, we currently purchase many products, components, and materials from sole or single sources. Some of these products are proprietary and, therefore, cannot be readily or easily replaced by alternative sources. These products, components, and materials are used in a majority of our instruments, including our Catalyst Dx, Catalyst One, ProCyte Dx, and ProCyte One analyzers; consumables and accessories used in our instruments; livestock and poultry diagnostic tests, dairy testing products, and water testing products. Even if products, components, and materials were to become available to us from alternative suppliers, we likely would incur additional costs and delays in identifying or qualifying replacement materials, and there can be no assurance that replacements would be available to us on acceptable terms, or at all. In certain cases, we may be required to obtain regulatory approval to use alternative suppliers, and this process of approval could delay production of our products or development of product candidates indefinitely.

We seek to mitigate sole and single-source suppliers risks on a risk-prioritized basis and in a variety of ways, including, when possible, by identifying and qualifying alternative suppliers, developing applicable in-house manufacturing capabilities and expertise, and entering into escrow arrangements for manufacturing information for certain single or sole-sourced products. We also seek to enter into long-term contracts that provide for an uninterrupted supply of products at predictable or fixed prices. However, there can be no assurance that we will successfully implement any of these mitigating activities or that, if implemented, any of them will be effective in preventing any delay or other disruption in our ability to supply our customers. In addition, suppliers may decline to enter into long-term contracts for any number of reasons, which would require us to purchase products, components, or raw materials via short-term contracts or on a purchase order basis. There can be no assurance that suppliers with which we do not have long-term contracts will continue to supply our requirements, will always fulfill their obligations under those contracts, or will not experience disruptions in their ability to supply our requirements. In cases where we purchase sole and single-source products, components, or raw materials 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, components, or raw materials in the future from sole and single-source suppliers, or if such sole and single-source suppliers are unable to obtain the components or other materials required to manufacture the products, we may be unable to supply our customers, which could have a material adverse effect on our results of operations, and any longer-term disruptions could potentially result in the permanent loss of customers, which could reduce our recurring revenues and long-term profitability.

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

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

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

As a global business, we sell products and services in more than 175 countries and operate in an increasingly complex legal and regulatory environment. In the U.S., the manufacture and sale of certain of our products are regulated by agencies such as the USDA, the FDA, and the EPA. Our diagnostic tests for animal health applications that involve the detection of infectious diseases, including most rapid assay canine and feline SNAP tests and livestock and poultry diagnostic tests, must be approved by the USDA prior to sale in the U.S. Our dairy testing products as well as the manufacture and sale of our OPTI line of human point-of-care electrolytes and blood gas analyzers require approval by the FDA before they may be sold commercially in the U.S., and our OPTI PCR test kits for the detection of the virus that causes COVID-19, are subject to regulation by the FDA and sold and distributed pursuant to Emergency Use Authorizations issued by the FDA. The methods used by our water testing products must be approved by the EPA, as a part of its water quality monitoring program, before they can be used by customers in the U.S. Delays in obtaining regulatory approvals for new products or product upgrades, or any termination, revision, or revocation of an Emergency Use Authorization for our OPTI test kits, could have a negative impact on our growth and profitability.

The manufacture, import, and sale of our products, as well as our research and development processes, are subject to similar and sometimes more stringent laws in many foreign countries. For example, the European Union regulates the use of certain substances that we currently use in our products or processes. These regulations include, but are not limited to, the Biocidal Products Regulation, which requires the use of approved biocides in our products prior to being manufactured, used, or sold in the European Union; the European Regulation for Registration, Evaluation, Authorization and Restriction of Chemical Substances, or REACH, which regulates and restricts the use of chemicals in the European Union; the Restriction of Hazardous Substances ("RoHS") Directive, which regulates and restricts certain hazardous substances in electrical and electronic equipment; the Electromagnetic Compatibility Directive; and the Waste Electrical and Electronic Equipment Directive.

Compliance with these and similar regulations in the U.S. and abroad may require registration of the applicable substances or the redesign or reformulation of our products and may reduce or eliminate the availability of certain parts and components used in our products and services in the event our suppliers are unable to comply with the applicable regulations in a timely and cost-effective manner. Any redesign or reformulation or restricted supply of parts and components may negatively affect the availability or performance of our products and services, add testing lead-times for products and reformulated products, reduce our margins, result in additional costs, or have other similar effects. In addition, the costs to comply with these regulations may be significant. Any of these could adversely affect our business, financial condition, or results of operations. These legal and regulatory requirements are complex and subject to change, and we continue to evaluate their impact.

In addition, some foreign governments require us to register or certify our products before they can be distributed or sold, and these product registration requirements, which vary among the applicable jurisdictions and change from time to time, are often complex and require us to engage in lengthy and costly processes and provide confidential, proprietary information about those products to foreign regulatory agencies. For example, compliance with extensive country-specific regulatory processes is required in connection with importing, marketing, and selling our diagnostic products in Japan, Germany, Canada, Brazil, the Netherlands, China, and many other countries. There can be no assurance that we will be able to obtain or maintain any product registration required by one or more foreign governments. Any inability to obtain or maintain a required product registration in a jurisdiction could adversely affect our ability to market and sell the applicable product in that jurisdiction, which could have a negative effect on our business, financial condition, and results of operations. There can also be no assurance that confidential, proprietary information provided to foreign regulatory agencies may not be accessed by

unauthorized persons or otherwise stolen, which could negatively impact our ability to protect our proprietary rights in our innovative products and our future success. For more information about the risks related to the protection of our proprietary rights in our products and services, refer to "Our success is heavily dependent on our continued differentiated product and service innovation" below.

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

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

Our success is heavily dependent on our continued differentiated product and service innovation

We believe our future success significantly depends on our ability to continue, on a cost-effective and timely basis, to enhance our existing differentiated product and service offerings and to develop and introduce new and innovative differentiated products and services. As a result, we invest substantial funds and efforts into R&D, investigating new products and technologies being developed by third parties and obtaining certain such new products and technologies through licenses or acquisitions. There can be no assurance that our R&D, licensing, or acquisition efforts will achieve expected results, when or whether any of our products or services now under development will be launched, or whether we may be able to develop, license or otherwise acquire new products or technologies. We also cannot predict whether any product or service offering, once launched, will achieve market acceptance or achieve sales and revenue consistent with our expectations.

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 adversely affected by competitors who utilize substantially equivalent technologies to 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 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.

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

We face intense competition, and we expect that future competition will become even more intense as new products, services and technologies become available and new competitors enter the space. Our competitors in the veterinary diagnostic sector in the United States and abroad include companies that develop, manufacture, and sell veterinary diagnostic tests and commercial veterinary reference laboratories, certain large and well-funded animal health pharmaceutical companies, as well as corporate hospital chains that operate reference laboratories that serve both their hospitals and unaffiliated hospitals, such as VCA Inc., which is wholly owned by Mars, Incorporated, another operator of corporate hospital chains. Consolidation among our competitors and our customers may intensify the competition we face. While we believe that our offerings are competitively differentiated due to our innovative products and services (such as the IDEXX SDMA test and VetConnect Plus) that offer an integrated, comprehensive diagnostic solution and the quality of our technical and customer service, there can be no assurance

that increased consolidation among our competitors or customers (as well as any resulting reference laboratory vertical integration among our customers) would not have a negative impact on our ability to compete successfully. For more information regarding the risks presented by consolidation and reference laboratory vertical integration among our customers, refer to "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 emerge through the development of innovative new technology, the acquisition of rights to use existing technologies or the use of existing technologies when patents protecting such existing technologies expire. New or existing competitors may introduce new, innovative, and competitive products and services, which could be superior, or be perceived by our customers to be superior, to our products and services or lead to the obsolescence of one or more of our products or services. Business combinations and mergers among our competitors may result in competitors that are better positioned to create, market, and sell more compelling product and service offerings. While an important aspect of our strategy is to continue, on a cost-effective and timely basis, to enhance our existing products and services and to develop and introduce new and innovative products and services, there can be no assurance that we will be able to successfully develop such products and services or that those products or services will be superior to our competitors' products or services or otherwise achieve customer acceptance. Some of our competitors and potential competitors may choose to differentiate themselves by offering products and services perceived in the eyes of customers as similar, at substantially lower sales prices, which could have an adverse effect on our results of operations through loss of sales and/or revenues or a decision to lower our own sales prices to remain competitive. In addition, our ability to attract and retain customers depends on the effectiveness of our customer marketing and incentive programs and multiple competitors could bundle product and service offerings through co-marketing or other arrangements, which could enhance their ability to compete with our broad product and service offering. Certain of our competitors and potential competitors, including large diagnostic and pharmaceutical companies, also have substantially greater financial and managerial resources than us, as well as greater experience in manufacturing, marketing, research and development, and obtaining regulatory approvals than we do.

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

Veterinarians are our primary customers for our CAG products and services, and the veterinary services industry in the U.S. and abroad has been consolidating at an accelerating rate in recent years. In the United States, the number of owners of veterinary hospitals has been declining, and an increasing percentage of veterinary hospitals are owned by corporations that are in the business of acquiring veterinary hospitals and/or opening new veterinary hospitals nationally or regionally. Major corporate hospital owners in the U.S. include Mars, Incorporated (owner of Banfield Pet Hospitals, Blue Pearl Veterinary Partners, Pet Partners and VCA Inc.), and National Veterinary Associates, and are joined by dozens of other consolidators. A similar trend exists in other regions such as Canada, Europe, Australia, New Zealand, China, and Brazil. Furthermore, an increasing percentage of individually-owned veterinary hospitals in the U.S. are participating in buying consortiums. Corporate owners of veterinary hospitals and buying consortiums often seek to improve profitability by leveraging the buying power they derive from their scale to obtain favorable pricing from suppliers, which could have a negative impact on our profitability and results of operations. While we have strong supplier relationships with several corporate hospital groups and buying consortiums, decisions by larger corporate owners and buying consortiums to shift their purchasing of products and services away from us and to a competitor would have a negative impact on our results of operations. In addition, certain corporate owners also operate reference laboratories that serve both their hospitals and unaffiliated hospitals. Any hospitals acquired by these companies generally attempt to shift all or a large portion of their testing to the reference laboratories operated by these companies, and there can be no assurance that hospitals that otherwise become affiliated with these companies would not shift all or a portion of their testing to such reference laboratories. Furthermore, because these companies compete with us in the reference laboratory services marketplace, hospitals acquired by these companies or those that establish other affiliations with these companies may cease to be customers or potential customers of our other companion animal products and services, which would cause our sales of these products and services to decline.

Changes in testing patterns could negatively affect our operating results

Demand 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. The outbreak of certain diseases (such as African swine fever) among livestock or poultry, or the adverse impact of climate change-related events (such as hurricanes, earthquakes, fires, and floods), could lead to the widespread death or precautionary destruction of such animals in the affected regions, reducing herd or flock sizes, which could reduce the demand for our testing products for such animals. Changes in government regulations or in the availability of government funds available for monitoring programs could negatively affect sales of our products that are driven by compliance testing, such as our livestock and poultry, dairy and water products. In addition, changes and trends in local dairy, poultry, or other food sectors around the world could negatively affect the related production markets resulting in a decline in demand for our testing products. Economic weakness (whether or not related to the COVID-19 pandemic) may also reduce demand for our companion animal, water, livestock, poultry, and dairy products and services, and public health-related guidance and directives, including stay-at-home orders that may be further deployed to combat the spread of COVID-19, and possible higher infection rates could result in a decrease in companion animal clinical visits, the delay of elective procedures and wellness visits and disruption of veterinary clinic operations, all of which would have a negative effect on veterinary service providers and result in declines in demand for our CAG products and services. Declines in testing for any reason, including the reasons described above, along with lost opportunities associated with a reduction in veterinary visits, could have an adverse effect on our results of operations.

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

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

Our limited experience and small scale in the human point-of-care and related human laboratory diagnostics sector could inhibit our success in this sector

We have limited experience in the human point-of-care and related human laboratory medical diagnostics sector, and we operate at a small scale in this area. This sector differs in many respects from the veterinary diagnostic sector. 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 and laboratory medical diagnostics sector could negatively affect our ability to successfully manage the risks and features of this sector that differ from the veterinary diagnostic sector. There can be no assurance that we will be successful in achieving growth and profitability in the human point-of-care and laboratory medical diagnostics sector comparable to the results we have achieved in the veterinary diagnostic sector.

GENERAL RISKS

We depend on key leadership and talent to succeed and compete effectively

Our continued success is substantially dependent on our ability to attract, develop, and retain highly capable, skilled and diverse employees and leaders. As we continue to grow our business, expand our geographic scope, and develop and offer innovative, new products and services, we require an engaged, qualified workforce and the organizational talent necessary to ensure effective succession for our senior leadership and other key personnel. Competition for experienced leaders and employees, particularly for persons with specialized skills, can be intense. Our ability to recruit and retain such talent will depend on a number of factors, including compensation and benefits, work location, work environment and development opportunities. Furthermore, the recent pandemic-related labor force shortages have made it more difficult and costly to attract qualified labor, and prolonged shortages could adversely affect our ability to achieve our business objectives.

The loss of the services of, or our failure to recruit or develop and implement effective succession plans for, our senior leadership or other key personnel may significantly delay or prevent the achievement of our strategic objectives, disrupt our operations, and adversely affect our business and our future success. In addition, even if we effectively develop and implement succession plans and make key leadership transitions, we cannot provide assurances as to whether we may experience management or other challenges in connection with any of those leadership transitions that could adversely affect our future success.

We are increasingly dependent on the continuous and reliable operation of our information technology systems, and a disruption of these systems or significant security breaches could adversely affect our business.

We rely on our information systems, as well as our third-party business partners' and suppliers' information systems, to provide access to our web-based products and services, keep financial records, analyze results of operations, process customer orders, manage inventory, process shipments to customers, store confidential or proprietary information and operate other critical functions. Although we maintain security policies, employ system backup measures and engage in redundancy planning and processes, such policies, measures, planning and processes, as well as our current disaster recovery plans, may be ineffective or inadequate to address all eventualities. Further, our information systems and our business partners' and suppliers' information systems may be vulnerable to attacks by hackers and other security breaches, including, among other things, computer viruses and malware, ransomware, denial of service actions, misappropriation of data and similar events through the internet (including via devices and applications connected to the internet), and through email attachments and persons with access to these information systems, such as our employees or third parties with whom we do business. Due to governmental mandates and recommended safety measures to control the spread of COVID-19, we modified aspects of our business practices. This has resulted in a greater number of our employees working remotely for extended periods of time, which may result in some increased risk of vulnerability or attacks associated with additional individuals accessing our data and systems remotely. In addition, security industry experts and government officials have warned about the risks of hackers and cybersecurity attacks targeting U.S. organizations conducting COVID-19-related research, such as IDEXX.

As information systems and the use of software and related applications by us, our business partners, suppliers, and customers become more cloud-based and connected to the "Internet of Things," which is inherently susceptible to cyberattacks, there has been an increase in global cybersecurity vulnerabilities and threats, including more sophisticated and targeted cyber-related attacks that pose a risk to the security of our information systems and networks and the confidentiality, availability and integrity of data and information. We process credit card payments electronically over secure networks and also offer products and services that connect to and are part of the "Internet of Things," such as our connected devices (e.g., IDEXX VetLab instruments). Any such attack or breach could compromise our networks and the information stored thereon could be accessed, publicly disclosed, lost, or stolen. While we have implemented network security and internal control measures, especially for the purpose of protecting our connected products and services from cyberattacks, and invested in our data and information technology infrastructure, there can be no assurance that these efforts will prevent a system disruption, attack, or security breach and, as such, the risk of system disruptions and security breaches from a cyberattack remains.

We, and some of our third-party vendors, have experienced cybersecurity attacks in the past and may experience further attacks in the future, potentially with more frequency. To our knowledge, most of these attacks have been unsuccessful, and none have resulted in any material adverse impact to our business or operations. We have adopted measures to mitigate potential risks associated with information technology disruptions and cybersecurity threats; however, given the unpredictability of the timing, nature and scope of such disruptions and the evolving nature of cybersecurity threats, which vary in technique and sources, if we or our business partners or suppliers were to experience a system disruption, attack or security breach that impacts any of our critical functions, or our customers were to experience a system disruption, attack or security breach via any of our connected products and services, we could potentially be subject to production downtimes, operational delays, other detrimental impacts on our operations or ability to provide products and services to our customers, the compromising of confidential or otherwise protected information, destruction or corruption of data, security breaches, other manipulation or improper use of our systems or networks, financial losses and additional costs from remedial actions, repairs to infrastructure, physical systems or data processing systems, increased cybersecurity and information technology protection costs, loss of business or potential liability, and/or damage to our reputation, any of which could have a material adverse effect on our competitive position, results of operations, cash flows or financial condition. Our customers could also face negative consequences such as the compromises of sensitive or critical information or systems. Furthermore, any access to, public disclosure of, or other loss of data or information (including any of our confidential or proprietary information or personal data or information) as a result of an attack or security breach could result in governmental actions or private claims or proceedings, which could damage our reputation, cause a loss of confidence in our products and services, damage our ability to develop (and protect our rights to) our differentiated technologies and have a material adverse effect on our business, financial condition,

results of operations or prospects. For more information regarding data and information privacy and protection risks, refer to "Our operations and reputation may be impaired if we, our products, or our services do not comply with our global privacy policy or evolving laws and regulations regarding data privacy and protection" below.

Factors and events beyond our control could disrupt our operations, supply chain, and logistics network and adversely affect our business

Our business and results of operations could be negatively affected by certain factors and events beyond our control, such as natural disasters, severe weather conditions and/or climate change-related events (such as hurricanes, earthquakes, fires, and floods); public health issues (such as outbreaks, epidemics, or pandemics, including the ongoing COVID-19 pandemic); civil unrest; geopolitical conditions and developments; war, terrorism, or other man-made disasters; increases in wages that drive up prices; workforce disruptions; labor shortages or stoppages; the imposition of regulations, trade protection measures, tariffs, duties, import/export restrictions, quotas or embargoes on key components; transportation failures affecting the supply and shipment of materials and finished goods; and the unavailability of raw materials. Any of these events could result in, among other things, damage to or the temporary closure of one or more of our manufacturing or distribution facilities or reference laboratories (damage to one of our facilities or the manufacturing equipment we use could be costly and may require substantial lead-time to repair or replace); damage to or closure of one or more facilities of our third-party business partners or suppliers on which we rely; a temporary lack of an adequate work force in one or more markets; an interruption in power supply; a temporary or long-term disruption in our supply chain or logistics network (including a disruption to our ability to obtain critical components for the manufacture of our products); a temporary disruption in our ability to deliver (or delays in the delivery of) our products or services; and short- or long-term damage to our customers' businesses (which would adversely impact customer demand for our products and services). For more information regarding the risks presented by disruption to our suppliers' operations and supply chain, refer to "Our dependence on third-party suppliers could limit our ability to sell certain products or negatively affect our operating results" above.

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

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

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

For the year ended December 31, 2021, approximately 38% of our overall revenue and approximately 35%, 89% and 52% of our CAG, LPD, and Water revenues, respectively, were attributable to sales of products and services to customers outside the U.S. Although we intend to continue to expand our international operations and business, we may not be able to successfully promote, market, import, export, sell, or distribute our products and services outside the U.S. Various risks associated with foreign operations may impact our international sales, including, but not limited to, disruptions in transportation of our products or our supply chain; fluctuations in oil prices; increased border protection and restriction on travel; the differing product and service needs of foreign customers; difficulties in building, staffing, and managing foreign operations (including a geographically dispersed workforce); differing protection of intellectual property; trade protection measures, quotas, embargoes, import/export restrictions, tariffs, duties, and regulatory and licensing requirements; natural and other disasters; public health issues (such as outbreaks, epidemics, the ongoing COVID-19 pandemic, or the prospect of a pandemic); ongoing instability or changes in a country's or region's regulatory, economic, or political conditions; other unfavorable geopolitical conditions; security concerns; and local business and cultural factors that differ from our normal standards and practices, including business practices prohibited by the Foreign Corrupt Practices Act and other anti-corruption laws and regulations.

In addition, to market and sell many of our products outside the U.S., we are subject to product approval and registration requirements that often require us to provide confidential, proprietary information about those products to foreign regulatory agencies. There can be no assurance that the confidential, proprietary information provided to foreign regulatory agencies to comply with product approval and registration requirements may not be accessed by unauthorized persons or otherwise stolen, which could negatively affect our ability to protect our proprietary rights in our innovative products and our future success. We also may forgo marketing and selling some of our products in certain foreign jurisdictions due to the risk of intellectual property theft, which could negatively affect our ability to expand our international operations and business. For more information about the risks related to the protection of our proprietary rights in our products and services, refer to "Our success is heavily dependent on our continued differentiated product and service innovation" above.

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

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

The nature of our business involves the receipt, storage and use of information, including personal data, about our customers, pet owners, suppliers, and employees. We collect and use personal data in a variety of ways. We offer products and services that collect and use personal data, including veterinary practice management systems, online customer communication tools and services, VetConnect PLUS, and two-way integration technology. Some of these products and services rely on third-party providers for cloud storage. We also engage in e-commerce through various websites and collect contact and other personal data from our customers and website visitors. In addition, we transfer information, including personal data, among IDEXX, our subsidiaries and third parties with which we have commercial relations for business purposes. Our collection, protection, security, retention, storage, disclosure, sharing and use of personal data described above are subject to expanding and increasingly complex laws and regulations in the U.S. and abroad. In addition, these laws and regulations continue to develop and are subject to frequent revisions (and generally have become more stringent over time), are subject to differing interpretations, may be applied inconsistently from jurisdiction to jurisdiction and may be inconsistent with our current global privacy policy and data protection practices. Compliance with these evolving requirements can be costly, require us to change our business practices in a manner adverse to our business or delay or impede the development and offering of innovative products and services. Additionally, public perception and standards related to the privacy of personal data can shift rapidly, in ways that may affect our reputation or influence regulators in the U.S. and abroad to expand or adopt more stringent regulations and laws. Examples of laws and regulations that have impacted or could impact our business include:

- The California Consumer Privacy Act (“CCPA”), which became effective in January 2020, gives California residents, among other things, expanded rights to access and delete their personal information, opt out of certain personal information sharing, and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches. Moreover, a new privacy law, the California Privacy Rights Act ("CPRA"), which is scheduled to take effect on January 1, 2023 (with a lookback to January 1, 2022), will significantly modify the CCPA, and will impose additional data protection obligations on companies such as ours doing business in California. Similarly, other states such as Virginia and Colorado, have instituted privacy and data security laws, rules, and regulations, and many similar laws have been proposed at the federal and state level, all of which may have potentially conflicting requirements that would make compliance challenging. The effects of the CCPA, CRPA, and other similar laws may require us to modify our data processing practices and policies and to incur substantial costs and expenses to comply.

- The European Union's General Data Protection Regulation ("GDPR"), which became effective in May 2018, imposes stringent operational requirements for controllers and processors of personal data of individuals in the European Economic Area ("EEA"), and noncompliance can trigger fines of up to the greater of €20 million or 4% of global annual revenues.

- Following the United Kingdom’s ("UK") withdrawal from the EEA and the EU on December 31, 2020, we became subject to the GDPR as incorporated into the United Kingdom law "UK GDPR"), and noncompliance can trigger fines of up to the greater of £17.5 million or 4% of global turnover. The European Commission adopted a UK adequacy decision in June 2021 which organizations can rely on for EEA to UK personal data transfers. This decision will automatically expire four years after its entry into force, but it might be renewed provided the UK maintains an adequate level of data protection. The relationship between the UK and the EU in relation to certain aspects of data

protection law remains unclear, however, and it is unclear how UK data protection laws and regulations will develop in the medium to longer term, and how data transfers to and from the UK will be regulated in the long term. Any changes to these laws may require us to modify our data processing practices and policies and to incur substantial costs and expenses to comply.

- In July 2020, the Court of Justice of the European Union invalidated the EU-U.S. and Swiss-U.S. Privacy Shields calling into question data transfers carried out under the European Commission's Standard Contractual Clauses ("SCCs"), which has created compliance challenges for our transfer of personal data from the EEA and/or Switzerland to the U.S. and other third countries. The European Commission updated the SCCs on June 4, 2021, and additional regulatory guidance has been released that seeks to impose additional obligations on companies seeking to rely on the SCCs for such transfers. Parties transferring personal data from the EEA to third countries with "inadequate data protection" such as the U.S. will have until December 27, 2022 to update any existing agreements, or any new agreements executed before September 27, 2021, that rely on SCCs. The new SCCs apply only to the transfer of data outside of the EEA and not the UK, though on January 31, 2022, the UK's Information Commissioner's Officer announced that proposals for the U.K.'s own form of agreement and addendum to the E.U. SCCs (the "U.K. SCCs") which could be used for transfers for data from the U.K., have been laid before Parliament. If no objections are raised in Parliament and the proposals are approved, the U.K. SCCs will come into force on March 21, 2022 (subject to a grace period for implementation). Any transfers by us or our vendors of personal data from the EEA/UK may not comply with EEA/UK data protection laws, may increase our exposure to the GDPR's/UK GDPR's heightened sanctions for violations of its cross-border data transfer restrictions and may reduce demand for our products from companies subject to European/United Kingdom data protection laws. Similar laws have been proposed or passed in other countries, which may create additional compliance challenges for cross-border transfers of personal data.

- In August 2021, China passed the new China Personal Information Protection Law ("PIPL"), which became effective November 2021. The PIPL provides a comprehensive set of data privacy and protection requirements that apply to the processing of personal information and expands data protection compliance obligations to cover the processing of personal information of persons by organizations and individuals in China, and the processing of personal information of persons in China outside of China if such processing is for purposes of providing products and services to, or analyzing and evaluating the behavior of, persons in China. Several PIPL requirements (such as data localization requirements and international cross border transfer restrictions) remain unclear as the processing amount thresholds for these requirements have not been implemented by the Chinese authorities yet. These thresholds could result in data localization practices that may complicate our operations and create additional compliance challenges for cross-border transfers of personal information. This may require us to modify our data processing practices and policies and to incur substantial costs and expenses to comply. The PIPL provides a comprehensive set of data privacy and protection requirements that apply to the processing of personal information and expands data protection compliance obligations to cover the processing of personal information of persons by organizations and individuals in China, and the processing of personal information of persons in China outside of China if such processing is for purposes of providing products and services to, or analyzing and evaluating the behavior of, persons in China.

- The Brazilian General Data Protection Law ("LGPD"), which became effective in September 2020, and the South African Protection of Personal Information Act ("POPIA"), which became effective in July 2020 (with a one-year grace period until June 30, 2021), and the Amendments to the Japanese Act on the Protection of Personal Information ("APPI") which will enter into full effect in April 2022, are examples of other non-U.S. data privacy-related laws to which we are subject.

Any failure or perceived failure by us, the third parties with whom we work or our products and services to comply with all applicable privacy-related laws and regulations, as well as our contractual obligations, could result in damage to our reputation or legal proceedings or actions against us by governmental entities or others, any of which could have an adverse effect on our business. In addition, concerns about our practices with regard to the collection, use, retention, disclosure, or security of personal data or other privacy-related matters, even if unfounded and even if we are in compliance with applicable laws and regulations, could damage our reputation and harm our business.

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

The nature of our global operations subjects us to local, state, regional and federal tax laws in jurisdictions around the world. Our future tax expense could be affected by changes in the mix of earnings in countries with differing statutory tax rates, changes in the valuation of deferred tax assets and liabilities or changes in tax laws or their interpretation. Additionally, tax

rules governing cross-border activities are continually subject to modification as a result of coordinated actions by governments and organizations such as the Organization for Economic Cooperation and Development ("OECD") and unilateral measures designed by individual countries, both intended to tackle concerns over base erosion and profit shifting ("BEPS") and perceived international tax avoidance techniques.

In April 2021, the current U.S. administration proposed comprehensive corporate tax reforms, including (among other things) an increased tax rate and the promotion of a global minimum tax rate. In addition, in June 2021, finance leaders of the Group of Seven countries agreed to back a new global minimum tax rate that would apply regardless of the location of headquarters or physical presence, and in October 2021, 136 countries (including all Group of Twenty countries) agreed to the OECD's global corporate tax reform plan, which would aim to modify the determination of taxable presence for digital activities and provide for a global minimum tax rate. Furthermore, in December 2021, the Dutch Government modified its tax laws and regulations, eliminating the benefits under our Dutch tax ruling for fiscal years beginning after December 31, 2021.

While we have taken, and may take further, actions intended to align our corporate structure and intercompany relationships with supporting our growth in international markets and maintaining operational and tax efficiency and continue to consider all of these developments within our overall tax strategy, changes in tax law in the U.S. and other countries in which we operate or have a presence may materially and adversely impact our income tax liability, provision for income taxes, effective tax rate and results of operation, and there can be no assurance that any actions we take to maintain operational and tax efficiency will effectively mitigate these impacts. Moreover, these actions may increase our operating costs, and if ineffectual, could increase our income tax liabilities and our global effective tax rate.

Our income tax filings are regularly under audit by various tax authorities, and the final determination of tax audits could be materially different from 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.

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 industry. 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. Pet owners generally pay cash out of pocket for health care services for their pets from veterinary practices. The ongoing COVID-19 global pandemic has increased economic uncertainty and caused economic slowdowns that may continue or recur. Economic weakness in our significant geographies 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 diagnostic products and services. Economic weakness related to the ongoing COVID-19 global pandemic 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.

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.

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

We are a global business, with 38% of our revenue during the year ended December 31, 2021, 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, 2021, approximately 23% of our consolidated revenue was derived from products manufactured or sourced in U.S. dollars and sold internationally in local currencies, as compared to 21% for the year ended December 31, 2020, and 22% for the year ended December 31, 2019. 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. Refer to “Part II, Item 7A. Quantitative and Qualitative Disclosures About Market Risk” included in this Annual Report on Form 10-K for additional information regarding currency impact.

Our foreign currency hedging activities (refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 19. Hedging Instruments" in the accompanying Notes to 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, and Australian dollar. Other foreign currency exposures related to foreign sourced services and emerging markets may not be practical to hedge. In certain cases, these exposures are not offset by foreign currency denominated costs. As we primarily use foreign currency exchange contracts with durations of less than 24 months and enter into contracts to hedge incremental portions of anticipated foreign currency transactions on a quarterly basis for the current and following year, the effectiveness of our foreign currency hedging activities to offset longer-term appreciation in the value of the U.S. dollar against non-U.S. currencies may be limited. Factors that could affect the effectiveness of our hedging activities include accuracy of sales and other forecasts, volatility of currency markets, and the cost and availability of hedging instruments. Since our hedging activities are designed to minimize volatility, they not only temporarily reduce the negative impact of a stronger U.S. dollar, but they also temporarily reduce the positive impact of a weaker U.S. dollar. Our future financial results could be significantly affected by a strengthening value of the U.S. dollar in relation to the foreign currencies in which we conduct business. The degree to which our financial results are affected for any given time period will depend in part upon our hedging activities.

Restrictions in our debt agreements or our inability to obtain financing on favorable terms may increase our cost of borrowing and limit our activities

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

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.

Borrowings under our Credit Facility bear interest at variable rates, including rates based on the London Interbank Offered Rate (LIBOR), exposing us to interest rate risk. If interest rates were to increase, our debt service obligations under our variable-rate Credit Facility would increase even if the principal amount borrowed remained the same. Our Credit Facility includes a provision for the determination of one or more benchmark replacement rates (including based on the secured overnight financing rate ("SOFR")) as a successor to the LIBOR rate.

RISKS RELATED TO AN INVESTMENT IN OUR SECURITIES

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

Our prior operating results have fluctuated due to a number of factors, many of which are beyond our control, including seasonality of certain product lines; changes in our accounting estimates; the impact of acquisitions; timing of distributor purchases product launches, operating expenditures, and customer marketing and incentive programs; changes in the number and type of competitors and their 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. If our operating results or projections of future operating results do not meet the expectations of securities analysts or investors in future periods, our stock price may fall.

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

The trading price of our common stock may be volatile. Securities markets worldwide experience significant price and volume fluctuations. This market volatility, as well as other general economic, market or political conditions, could reduce the market price of our common stock rapidly and unexpectedly, in spite of our operating performance. Factors that may impact the market price of our common stock include the factors described in this “Risk Factors” section and elsewhere in this Form 10-K, as well as:

- Our stock repurchase program and changes in our capital structure, including the issuance of additional debt;
- Public announcements (including the timing of these announcements) regarding our business, financial performance and prospects or new products or services, product enhancements or technological advances by our competitors or us;
- Trading activity in our stock, including portfolio transactions in our stock by us, our executive officers and directors, and significant stockholders; trading activity that results from the ordinary course rebalancing of stock indices in which we may be included, such as the S&P 500 Index; trading activity related to our inclusion in, or removal from, any stock indices; and short interest in our common stock, which could be significant from time to time;
- Investor perception of us and the industry and sectors in which we operate, including changes in earnings estimates or buy/sell recommendations by securities analysts; and whether or not we meet earnings estimates of securities analysts who follow us; and
- General financial, domestic, international, economic, and market conditions, including overall fluctuations in the U.S. equity markets, which may experience extreme volatility that, in some cases, is unrelated or disproportionate to the operating performance of particular companies.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

Our worldwide headquarters and principal executive offices are located in Westbrook, Maine where we engage in manufacturing, research and development, marketing, sales, and general and administrative support functions.

Primary Facility Locations

Location	Functions	Own/Lease
Westbrook, Maine	Worldwide Headquarters, principal executive offices	Own
Hoofddorp, Netherlands	Distribution center, warehousing, International administrative offices	Lease
Memphis, Tennessee	Distribution Center and Reference Lab	Lease
Kornwestheim, Germany	Reference Lab	Own
Wetherby, United Kingdom	Reference Lab	Lease
Newmarket, United Kingdom	Water manufacturing	Lease
Bern, Switzerland	LPD manufacturing	Lease
Montpellier, France	LPD manufacturing	Lease
Roswell, Georgia	OPTI Medical manufacturing	Lease

Including the locations above, we have over 50 reference laboratories throughout the United States and over 25 reference laboratories internationally, including locations in Europe, Canada, Australia, New Zealand, Brazil, Asia, and South Africa. The majority of our reference laboratories are leased, with the remainder being owned. We also lease space in various locations worldwide for administrative support, manufacturing, sales, distribution, and storage. We believe that our leased and owned properties are generally in good condition, are well-maintained, and are generally suitable and adequate to carry on our business. A detailed listing of all our locations can be found on our website.

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 or threatened 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.

Holders of Common Stock

As of February 11, 2022, there were 390 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, 2021, we repurchased shares of common stock as described below:

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 [1] (d)
October 1, 2021 to October 31, 2021	101,855	$ 632.26	101,855	5,280,968
November 1, 2021 to November 30, 2021	129,176	$ 629.38	129,174	5,151,794
December 1, 2021 to December 31, 2021	159,662	$ 619.88	159,563	4,992,231
Total	390,693 [2]		390,592	4,992,231

(1) As of December 31, 2021, our Board of Directors had approved the repurchase of up to 73 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 has been increased by the Board of Directors on numerous occasions. There is no specified expiration date for this repurchase program. There were no other repurchase programs outstanding during the three months ended December 31, 2021, and no repurchase programs expired during the period.

(2) During the three months ended December 31, 2021, we received 101 shares of our common stock that were surrendered by employees in payment for the 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.

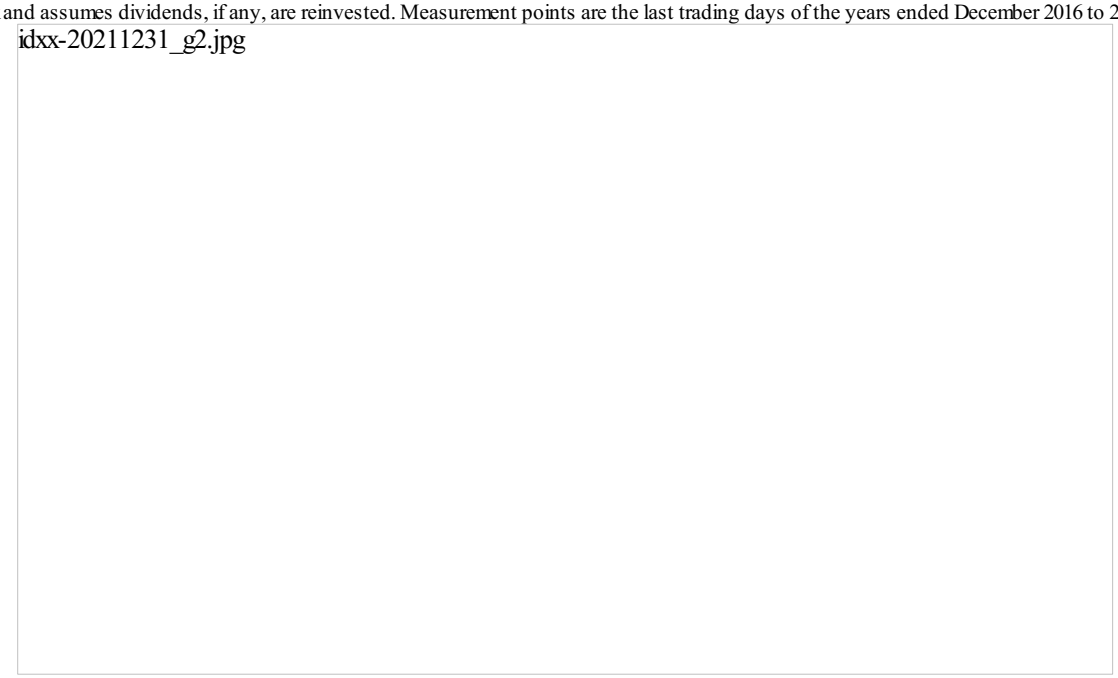
During the year ended December 31, 2021, we repurchased approximately 1.3 million shares of our common stock in transactions made pursuant to our repurchase program and received approximately 0.03 million shares of our common stock that were surrendered by employees in payment for the minimum required withholding taxes due on the vesting of restricted stock units and settlement of deferred stock units. Refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 20. Repurchases of Common Stock" to the consolidated financial statements for the year ended December 31, 2021, 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) (the "NASDAQ Index") prepared by the Center for Research in Security Prices. This graph assumes the investment of $100 on December 31, 2016, 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 2016 to 2021.



	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
IDEXX Laboratories, Inc.	$100.00	$133.35	$158.63	$222.67	$426.26	$561.49
NASDAQ Index	$100.00	$129.64	$125.96	$172.18	$249.51	$304.85
S&P 500 Index	$100.00	$121.83	$116.49	$153.17	$181.35	$233.41
S&P 500 Health Care Index	$100.00	$122.08	$129.97	$157.04	$178.15	$224.71

ITEM 6. [RESERVED]

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 the consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. The discussion of our financial condition and results of operations and liquidity and capital resources for the year ended December 31, 2019, and year-over-year comparisons between 2020 and 2019, is included in our Annual Report on Form 10-K for the year ended December 31, 2020, within Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, and is incorporated by reference herein.

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 management-based products and services for the companion animal veterinary industry, 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 improve producer efficiency, which we refer to as Livestock, Poultry and Dairy ("LPD"). Our Other operating segment combines and presents our human medical diagnostic products and services business ("OPTI Medical") with our out-licensing arrangements because they do not meet the quantitative or qualitative thresholds for reportable segments. Refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 3. Revenue Recognition and Note 17. Segment Reporting" to the consolidated financial statements for the year ended December 31, 2021, 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.

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 the highest quality diagnostic information, software products and services, and medical evidence to support more advanced medical care and information management solutions that help demonstrate the value of diagnostics to pet owners and enable efficient and effective practice management. By doing so, we are able to build a mutually successful relationship with our veterinarian customers based on healthy pets, loyal customers, staff efficiency, 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.

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 Analyzer are non-recurring in nature in that they are sold to a particular customer only once. Revenues from the associated 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 Analyzer 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 demand for the product matures, an increasing percentage of placements are made in transactions, sometimes referred to as

volume commitments, such as our IDEXX 360 program, or reagent rentals, in which instruments are placed at customer sites at little or no cost in exchange for a multi-year customer commitment to purchase recurring products and services.

Below is a table showing active installed base units of our diagnostic instruments as of the years ended December 31, 2021, 2020, and 2019:

(units in thousands)	Installed Base		
Instrument	**December 31, 2021**	**December 31, 2020**	**December 31, 2019**
Catalyst	56.5	49.6	43.9
Premium Hematology	38.2	34.6	31.5
SediVue	13.2	10.7	8.9

We place our Catalyst chemistry analyzers through sales, leases, rental, and other programs. A majority of our Catalyst chemistry 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 has the highest economic value as the entire consumable stream associated with that placement represents incremental recurring revenue. We also place additional chemistry analyzers at existing large customers where utilization supports multiple analyzers.

We place our premium hematology analyzers through multiple sales programs as well. A majority of our ProCyte analyzer placements were made to new or competitive accounts. During the second half of 2020, we began selling our new ProCyte One analyzer. As we continue to experience growth in placements of ProCyte analyzers and in sales of related consumables, we expect this growth to be partly offset by a decline in placements of LaserCyte Dx and VetAutoread analyzers and a decrease in the associated recurring revenue stream. With our ProCyte One analyzer, we provide customers with consumables that are charged upon utilization, which we refer to as pay-per-run, as compared to the ProCyte Dx analyzer, where we charge upon shipment of consumables.

Our premium SediVue Dx analyzer and single-use consumable system provides a highly accurate way to automate the process of examining urine under a microscope. We provide customers with SediVue Dx consumables that are charged upon utilization, similar to the ProCyte One analyzer. Other than our ProCyte One and SediVue analyzers, we charge upon shipment of consumables for all our other analyzers.

We seek to enhance the attractiveness and customer loyalty of our SNAP rapid assay tests, including by providing the SNAP Pro Analyzer, 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. Our ProRead software interprets results of the SNAP Pro Analyzer. 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 Analyzer results can be shared with pet owners on the SNAP Pro screen or, in conjunction with IVLS, via VetConnect PLUS. We also sell the SNAPshot Dx, which automatically reads certain SNAP test results and, in conjunction with IVLS, records those results in the electronic medical record. We continue to work on enhancing the functionality of our analyzers to read the results of additional tests from our canine and feline family of rapid assay products.

Our long-term success in the continuing growth of our CAG recurring diagnostic product and services is dependent upon: growing volumes at existing customers by increasing their utilization of existing and new test offerings, acquiring new customers, maintaining high customer loyalty and retention, and realizing modest annual price increases based on our differentiated products and the growing value of our diagnostic offering. 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 workflows, which is performing tests and sharing test results with the client at the time of the patient visit. Our latest generation of chemistry, hematology, and urinalysis 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 diagnostics software, integration with the IVLS 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 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, 2021, recurring diagnostic revenue, which is both highly durable and profitable, accounted for approximately 79% 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.

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 demonstrated by peer-reviewed third-party research, 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 Analyzer. 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 prevalence of in-clinic testing, as opposed to outside reference laboratories such as IDEXX Reference Laboratories, may vary by region. 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 differentiated 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 operational 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 may 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 may have a negative effect on our operating margin.

Recurring reference lab revenue growth is achieved both through increased testing volumes with existing customers and through the acquisition of new customers, net of customer losses. We believe the increased number of customer visits by our sales professionals as a result of the 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 and our volume commitment programs. Our up-front customer loyalty programs are associated with customer acquisitions and retention and provide incentives to customers in the form of cash payments or IDEXX Points upon entering multi-year contractual agreements to purchase annual minimum amounts of products or services, including reference laboratory services. Our volume commitment programs, such as IDEXX 360, provide

customers with a free or discounted instrument or system upon entering into multi-year agreements to purchase annual minimum amounts of products and services.

Veterinary Software, Services and Diagnostic Imaging Systems. Our portfolio of practice management offerings is designed to serve the full range of customers primarily within the North American, Australian, and European regions. Cornerstone, ezyVet, Animana, IDEXX Neo, and DVMAX 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 effectiveness and profitability. We market Cornerstone, ezyVet, IDEXX Neo, and DVMAX practice management systems to customers primarily in North America and Australia. We market our Animana offering to customers primarily throughout Europe.

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

We differentiate our practice management systems through enhanced functionality, ease of use, and embedded integration 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. With our SmartFlow and Vet Radar cloud technology, we are able to improve overall patient management through coordination and tracking of every step in a patient workflow. 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 digital radiography systems, 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, ezyVet, IDEXX Neo, DVMAX, 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 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 partially 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 differentiated tests with superior performance characteristics for use in government programs to control or eradicate disease and disease outbreaks and in livestock and poultry producers' disease, reproductive, and herd health and production management programs. Our Rapid Visual Pregnancy Test and Alertys On-Farm Pregnancy Test for cattle can detect pregnancy 28 days after breeding. These tests provide a quick and accurate identifier using whole blood samples.

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.

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 sector 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.

During 2020, we introduced the OPTI SARS-CoV-2 RT-PCR test kit for human COVID-19 testing. A significant portion of the growth in our OPTI Medical business was from revenue generated from the test kits and related laboratory services. The future demand for this product is difficult to project given the uncertain nature of the COVID-19 pandemic, including short-term project commitments, available PCR testing capacity, alternative suppliers, and the potential impact of vaccinations and other treatments.

Our facility in Roswell, Georgia develops and manufactures the OPTI product lines using the same or similar technology to support the electrolyte requirements of certain CAG products. 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.

CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS

The discussion and analysis of our financial condition and results of operations is based upon the consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. We evaluate our estimates on an ongoing basis. We base our estimates on historical experience and on various assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates. Refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 2. Summary of Significant Accounting Policies" to the consolidated financial statements included in this Annual Report on Form 10-K for a description of 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

Refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 3. Revenue Recognition" to the consolidated financial statements for the year ended December 31, 2021, included in this Annual Report on Form 10-K for additional information about our revenue recognition policy and criteria for recognizing revenue.

We enter into contracts with multiple performance obligations where customers purchase a combination of IDEXX products and services. Determining whether products and services are considered distinct performance obligations that should be accounted for separately requires judgment. We determine the transaction price for a contract based on the total consideration we expect to receive in exchange for the transferred goods or services. To the extent the transaction price includes variable consideration, such as volume rebates or expected price adjustments, we apply judgment in constraining the estimated variable consideration due to factors that may cause reversal of revenue recognized. We evaluate constraints based on our historical and projected experience with similar customer contracts.

We allocate revenue to each performance obligation in proportion to the relative standalone selling prices and recognize revenue when control of the related goods or services is transferred for each obligation. We utilize the observable standalone selling price when available, which represents the price charged for the performance obligation when sold separately. When standalone selling prices for our products or services are not directly observable, we determine the standalone selling prices using relevant information available and apply suitable estimation methods including, but not limited to, the cost plus a margin approach.

Our up-front loyalty programs provide customers with incentives in the form of cash payments or IDEXX Points upon entering into multi-year agreements to purchase annual minimum amounts of future products or services. If a customer breaches its agreement, they are required to refund all or a portion of the up-front cash or IDEXX Points, or make other repayments, remedial actions, or both. Up-front incentives to customers in the form of cash or IDEXX Points are not made in exchange for distinct goods or services and are capitalized as customer acquisition costs within other current and long-term assets, which 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 instruments, we allocate total consideration, including future committed purchases less up-front incentives and estimates of expected price adjustments, based on relative standalone selling prices to identified performance obligations and recognize instrument revenue and cost at the time of installation and customer acceptance. We estimate, based on historical experience, and apply judgment to predict the amounts of future customer purchases and expected price adjustments related to these multi-year agreements. Differences between estimated and actual customer purchases may impact the timing and amount of revenue recognition during the term of the customer contract, and a 10% change in these estimates would have increased or reduced deferred revenue and cumulative revenue related to these programs by approximately $1.3 million at December 31, 2021.

Our volume commitment programs, such as our IDEXX 360 program, provide customers with free or discounted instruments or systems upon entering into multi-year agreements to purchase annual minimum amounts of products and services. We allocate total consideration, including future committed purchases and expected price adjustments, based on relative standalone selling prices to identified performance obligations and recognize instrument revenue and cost at the time of installation and customer acceptance in advance of billing the customer, which is also when the customer obtains control of the

instrument based on legal title transfer. Our right to future consideration related to instrument revenue is recorded as a contract asset within other current and long-term assets. The contract asset is transferred to accounts receivable when customers are billed for future products and services over the term of the contract. We estimate, based on historical experience, and apply judgment to predict the amounts of future customer purchases and expected price adjustments related to these multi-year agreements. Differences between estimated and actual customer purchases may impact the timing and amount of revenue recognition during the term of the customer contract, and a 10% change in these estimates would have increased or reduced contract assets and cumulative revenue related to these programs by approximately $4.0 million at December 31, 2021.

Our instrument rebate programs require an instrument purchase and provide customers the opportunity to earn future rebates based on the volume of products and services they purchase over the term of the program. We account for the customer's right to earn rebates on future purchases as a separate performance obligation and determine the standalone selling price based on an estimate of rebates the customer will earn over the term of the program. Total consideration allocated to identified performance obligations is limited to goods and services that the customer is presently obligated to purchase and does not include estimates of future purchases that are optional. We allocate total consideration to identified performance obligations, including a customer's right to earn rebates on future purchases, which is deferred and recognized upon the purchase of future products and services, partly offsetting future rebates as they are earned. We estimate, based on historical experience, and apply judgment to predict the amounts of future customer rebates related to these multi-year agreements. Differences between estimated and actual customer rebates may impact the timing and amount of revenue recognition during the term of the customer contract, and a 10% change in these estimates would have increased or reduced deferred revenue and cumulative revenue related to these programs by approximately $2.0 million at December 31, 2021.

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 amounts of future customer purchases, customer rebates and other incentive payments, and price adjustments related to multi-year agreements. Differences between estimated and actual customer purchases may impact the timing and amount of revenue recognition as described above.

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 significant, we typically 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 separately identified and recognized.

We assess goodwill for impairment annually, at the reporting unit level, in the fourth quarter and whenever events or circumstances indicate impairment may exist. An impairment charge is recorded for the amount, if any, by which the carrying amount of goodwill exceeds its implied fair value. Our reporting units are the individual product and service categories that comprise our CAG operating segment, our Water and LPD operating segments and goodwill remaining from the restructuring of our pharmaceutical business in the fourth quarter of 2008. A substantial portion of the goodwill remaining from the pharmaceutical business, included in our "Other Segment", is associated with intellectual property that has been, or may 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.

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; the effects of the ongoing COVID-19 pandemic; anticipated changes in product, supply chain, 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 2021 and 2020, we elected to bypass the qualitative approach that allows the assessment of qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount and instead proceeded directly to assessing the fair value of all of our reporting units and comparing the fair value of each reporting unit to the carrying value to determine if any impairment exists.

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

The results of our most recent goodwill impairment test in the fourth quarter of 2021 indicated an excess of estimated fair value over the carrying amount for each of our reporting units with a minimum of approximately 65% and a weighted average of approximately 1,375% in total. The majority of our goodwill is related to our CAG Diagnostics reporting units with a weighted average of approximately 1,550% excess of estimated fair value over the carrying amount, including our Reference Laboratory Diagnostic and Consulting Services, Rapid Assay Products, and IDEXX VetLab Consumables, Instruments, Services and Accessories.

We also maintain approximately $94 million of goodwill associated with our Veterinary Software and Services reporting unit, which is primarily comprised of recent acquisitions of early-stage software companies that expand our suite of technology applications for the veterinary profession, including SaaS-based practice management systems, applications that extend workflow capabilities, client marketing, wellness plan management and other connectivity and communication needs. These software applications are in various stages of commercial development, and therefore our Veterinary Software and Services reporting unit has a relatively lower excess of estimated fair value over the carrying amount, as indicated by the results of our most recent goodwill impairment test, which indicated approximately $385 million and 210% of the reporting unit's carrying value. Realization of this goodwill is dependent on our successful commercialization of these software applications.

Additionally, we maintain approximately $6.5 million of goodwill associated with our remaining pharmaceutical intellectual property, out-licensing arrangements, and certain retained drug delivery technologies (collectively "Pharmaceutical Activities") that we seek to commercialize through arrangements with third parties. Currently, our primary support for the carrying value of this goodwill is royalty revenue associated with the commercialization of certain intellectual property. There is no guarantee that we will be able to maintain or increase revenues from our remaining Pharmaceutical Activities. The results of our goodwill impairment test for these Pharmaceutical Activities indicate an excess of estimated fair value over the carrying amount of this reporting unit by approximately $4.2 million and approximately 65% 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, 2021, 2020, and 2019.

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, other than goodwill, 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 asset group is the lowest level for which identifiable cash flows associated with the intangible asset are largely independent. 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 the asset group exceeds the related estimated undiscounted future cash flows, an impairment to adjust the intangible asset to its fair value would be reported as a non-cash charge to earnings. If necessary, we would calculate the fair value of an intangible asset using the present value of the estimated future cash flows to be generated by the intangible asset and applying a risk-adjusted discount rate. We had no impairments of our intangible assets during the years ended December 31, 2021, and December 31, 2019. The amount of impairment for the year ended December 31, 2020, was immaterial.

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.

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

Our net taxable temporary differences and tax carryforwards are recorded using the enacted tax rates expected to apply to taxable income in the periods in which the deferred tax liability or asset is expected to be settled or realized. Should the expected applicable tax rates change in the future, an adjustment to our deferred taxes would be credited or charged, as appropriate, to income in the period such determination was made.

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 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 $25.5 million as of December 31, 2021, and $26.0 million as of December 31, 2020, which includes estimated interest expense and penalties. Refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 14. Income Taxes" in the accompanying Notes to consolidated financial statements for more information.

RECENT ACCOUNTING PRONOUNCEMENTS

Refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 2. Summary of Significant Accounting Policies (v) and (w)" to the consolidated financial statements for the year ended December 31, 2021, included in this Annual Report on Form 10-K for a complete discussion of recent accounting pronouncements adopted and not adopted.

RESULTS OF OPERATIONS AND TRENDS

Effects of Certain Factors on Results of Operations

Sector Trends and COVID-19 Pandemic Impact. The primary impacts of the COVID-19 pandemic have been seen in our CAG business. While veterinary care is widely recognized as an "essential" service, stay-at-home policies deployed to combat the spread of COVID-19 constrained visits to veterinary practices significantly in late March 2020 through early April 2020, pressuring diagnostic testing volumes. Restrictions on sales professionals' access to veterinary clinics also contributed to deferrals on new CAG instrument placements.

As stay-at-home policies were relaxed, there was a sharp rebound in clinical visit activity which accelerated through the second quarter of 2020 and continued through the second half of 2020. Weekly U.S. companion animal practice data showed improvement in same-store clinical visits trends since mid-April 2020 and solid CAG market momentum continued in early 2021.

Companion animal sector improvement trends globally have supported a strong recovery in demand for CAG diagnostic products and services. Global CAG Diagnostics recurring revenues declined approximately 16% in April 2020, followed by increases of approximately 8% in May 2020, 30% in June 2020, 24% in July 2020, and approximately 20% for the remainder of the third and fourth quarters of 2020.

During 2021, positive trends in companion animal healthcare continued to support strong growth for CAG diagnostic products and services across regions. U.S. same-store clinical visit growth at veterinary practices was 12% in the first quarter of 2021, 13% in the second quarter, and 2% in both the third and fourth quarters of 2021. These clinical visit gains in the second half of 2021 are compared to strong prior year period clinical visit growth, which included benefits from pent-up demand from delayed veterinary visits during the COVID-19 pandemic as policies and restrictions were relaxed.

While these trends are encouraging, potential effects related to ongoing COVID-19 case management efforts are challenging to predict and may pressure future revenues should enhanced social distancing policies and higher infection rates impact veterinary clinic operations in certain regions. At the beginning of 2022, we are monitoring the increase in Omicron cases globally, including impacts on factors like veterinary practice staffing levels, which may impact clinic level growth.

We have also seen impacts from the COVID-19 pandemic on Water testing volumes. There was some disruption to compliance Water testing early in the second quarter of 2020 related to business lockdown effects, as well as beach and pool closures, which has since had a solid recovery. Approximately 20% of our Water revenues are related to non-compliance testing, which declined due to reduced overall business activity and prioritization of laboratory spending. During 2021, our Water testing volumes continued to recover for both compliance and non-compliance testing.

LPD revenues, which expanded 10% in 2020 and contracted by 7% in 2021, were impacted by reduced demand for African Swine fever testing in China, reflecting the relaxation of local African Swine Fever disease management programs, as well as additional impacts in China from lower pork prices and changing government requirements related to live animal imports and livestock infectious disease programs, beginning in the second quarter of 2021. We anticipate continued pressure on LPD revenues in the first half of 2022 related to these factors.

Human COVID-19 Testing. On May 7, 2020, we announced that OPTI Medical was granted by the United States Food and Drug Administration ("FDA") an Emergency Use Authorization ("EUA") for the OPTI SARS-CoV-2 RT-PCR laboratory test kit for the detection of SARS-CoV-2, the virus that causes COVID-19. On June 5, 2020 OPTI Medical announced that it has received the CE mark certification in the European Union for its OPTI SARS-CoV-2 RT-PCR laboratory test kit. Additionally, the FDA has granted EUA for the new OPTI DNA/RNA Magnetic Bead Kit for nucleic acid extraction from respiratory samples to be used with the OPTI SARS-CoV-2 RT-PCR test kit, which enables OPTI Medical Systems to provide laboratories with a complete OPTI Medical Systems-manufactured workflow solution for COVID-19 testing. We also provide human COVID-19 testing laboratories services to the Maine Center for Disease Control and Prevention in support of their COVID-19 testing program. These products and services are included within our OPTI Medical business in our Other segment

and are the primary driver of growth in that segment. We anticipate that revenues from these products will decline in 2022, as we focus our growth efforts on IDEXX core businesses.

In managing our businesses, we continue to provide high levels of service delivery and product support for customers during this time and maintain high health and safety standards to protect the health and safety of our employees and their families and our communities and ensure business continuity. Many of our employees continue to work remotely. For our laboratory and warehouse employees that are required to work on-site, we have enhanced safety procedures and protocols to help protect the health of our employees.

Supply Chain and Logistics Challenges. We believe that building and maintaining a well-managed and disciplined infrastructure have helped minimize impacts of the COVID-19 pandemic-related supply chain constraints, including product and component availability issues, logistics challenges, including extended shipping periods and delays, and inflationary pressures that are currently occurring worldwide. Our proactive approach to managing our operational processes, including forward planning with a focus on working closely with our suppliers and logistics partners, has enabled us to maintain continued high levels of product and service availability, and customer service. Although we expect the current supply chain and logistics challenges to continue in 2022, we believe we are well positioned to enable sustained high growth in our businesses going forward, and to effectively manage the impacts of potentially relatively higher costs in certain areas to support these growth plans. However, there can be no assurance as to the duration or severity of the supply chain and logistics challenges or the effectiveness of our mitigating activities.

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. If during the current year, distributors' inventories grew by less than those inventories grew in the comparable period of the prior year, then changes in distributors' inventories would have an unfavorable impact on our reported sales growth in the current period. Conversely, if during the current year, distributors' inventories grew by more than those inventories grew in the comparable period of the prior year, then changes in distributors' inventories would have a favorable impact on our reported sales growth in the current period.

In certain countries, we sell our products through third-party distributors and may be unable to obtain data for sales to end users. We do not believe the impact of changes in these distributors' inventories had or would have a material impact on our growth rates. Refer to "Part I, Item 1. Business, Marketing and Distribution" included in this Annual Report on Form 10-K for additional information regarding distribution channels.

Currency Impact. For the year ended December 31, 2021, approximately 23% of our consolidated revenue was derived from products manufactured or sourced in U.S. dollars and sold internationally in local currencies, as compared to 21% for the year ended December 31, 2020 and 22% for the year ended December 31, 2019. 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. Refer to "Part II, Item 7A. Quantitative and Qualitative Disclosures About Market Risk" 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. Refer to "Part I, Item 1A. Risk Factors" included in this Annual Report on Form 10-K for additional information regarding tax impacts.

Effects of Economic Conditions. Demand for our products and services is vulnerable to changes in the economic environment, including slow economic growth, high unemployment, and credit availability. Negative or cautious consumer sentiment can lead to reduced or delayed consumer spending, resulting in a decreased number of patient visits to veterinary clinics. Unfavorable economic conditions can impact sales of instruments, diagnostic imaging and practice management systems, which are larger capital purchases for veterinarians. Additionally, economic turmoil and inflationary pressure 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 customers 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 2021, and several that are expected to expire in 2022 and beyond, the expiration of these patents or licenses, individually or in the aggregate, is not expected to have a material effect on our financial position or future operations due to a range of factors as described in "Part I, Item 1. Business, Patents and Licenses".

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

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

We also exclude from organic revenue growth the effect of certain business acquisitions and divestitures because the nature, size and number of these transactions can vary dramatically from period to period, and because they either require or generate cash as an inherent consequence of the transaction, and therefore can also obscure underlying business and operating trends. We consider acquisitions to be a business when all three elements of inputs, processes and outputs are present, consistent with ASU 2017-01, "*Business Combinations: (Topic 805) Clarifying the Definition of a Business.*" In a business combination, if substantially all the fair value of the assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets, we do not consider these assets to be a business. A typical acquisition that we do not consider a business is a customer list asset acquisition, which does not have all elements necessary to operate a business, such as employees or infrastructure. We believe the efforts required to convert and retain these acquired customers are similar in nature to our existing customer base and therefore are included in organic revenue growth.

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

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

Twelve Months Ended December 31, 2021, Compared to Twelve Months Ended December 31, 2020

Total Company

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

Net Revenue *(dollars in thousands)*	For the Years Ended December 31, 2021	2020	Dollar Change	Reported Revenue Growth[1]	Percentage Change from Currency	Percentage Change from Acquisitions	Organic Revenue Growth[1]
CAG	**$ 2,889,960**	**$ 2,385,765**	**$ 504,195**	**21.1 %**	**1.5 %**	**0.9 %**	**18.7 %**
United States	*1,881,887*	*1,593,855*	*288,032*	*18.1 %*	*—*	*1.2 %*	*16.9 %*
International	*1,008,073*	*791,910*	*216,163*	*27.3 %*	*4.8 %*	*0.4 %*	*22.1 %*
Water	**$ 146,505**	**$ 128,625**	**$ 17,880**	**13.9 %**	**2.2 %**	**—**	**11.7 %**
United States	*70,654*	*62,083*	*8,571*	*13.8 %*	*—*	*—*	*13.8 %*
International	*75,851*	*66,542*	*9,309*	*14.0 %*	*4.2 %*	*—*	*9.8 %*
LPD	**$ 135,887**	**$ 145,845**	**$ (9,958)**	**(6.8 %)**	**2.3 %**	**—**	**(9.2 %)**
United States	*15,626*	*14,533*	*1,093*	*7.5 %*	*—*	*—*	*7.5 %*
International	*120,261*	*131,312*	*(11,051)*	*(8.4 %)*	*2.5 %*	*—*	*(11.0 %)*
Other	**$ 43,008**	**$ 46,420**	**$ (3,412)**	**(7.4 %)**	**0.9 %**	**—**	**(8.2 %)**
Total Company	**$ 3,215,360**	**$ 2,706,655**	**$ 508,705**	**18.8 %**	**1.6 %**	**0.8 %**	**16.4 %**
United States	*1,995,683*	*1,691,224*	*304,459*	*18.0 %*	*—*	*1.1 %*	*16.9 %*
International	*1,219,677*	*1,015,431*	*204,246*	*20.1 %*	*4.3 %*	*0.3 %*	*15.5 %*

(1) Reported revenue growth and organic revenue growth may not recalculate due to rounding.

Total Company Revenue. The increase in both U.S. and international organic revenues was driven by strong volume gains in CAG Diagnostics recurring revenue, reflecting continued high demand for companion animal diagnostics globally, supported by an increase in clinical visits and diagnostic utilization per clinical visit, as compared to 2020. Our CAG Diagnostics instrument revenue reflects high placement volumes compared to the prior year, which was impacted by the global pandemic. The higher revenue in our Water business was primarily a result of the continued improvement in non-compliance testing that has been constrained since the beginning of the pandemic and disruptions in certain compliance testing during the prior year. The decline in our LPD business was primarily due to the lower demand for African Swine Fever testing in China. The impact of currency movements on revenue was immaterial.

The following table presents our total Company results of operations:

Total Company - Results of Operations *(dollars in thousands)*	**For the Years Ended December 31,**				**Change**	
	2021	**Percent of Revenue**	**2020**	**Percent of Revenue**	**Amount**	**Percentage**
Revenues	$ 3,215,360		$ 2,706,655		$ 508,705	18.8 %
Cost of revenue	1,325,928		1,135,615		190,313	16.8 %
Gross profit	1,889,432	58.8 %	1,571,040	58.0 %	318,392	20.3 %
Operating Expenses:						
Sales and marketing	486,735	15.1 %	434,435	16.1 %	52,300	12.0 %
General and administrative	309,660	9.6 %	300,832	11.1 %	8,828	2.9 %
Research and development	161,009	5.0 %	141,249	5.2 %	19,760	14.0 %
Total operating expenses	957,404	29.8 %	876,516	32.4 %	80,888	9.2 %
Income from operations	$ 932,028	29.0 %	$ 694,524	25.7 %	$ 237,504	34.2 %

Gross Profit. Gross profit increased due to higher sales volumes and an 80 basis point increase in the gross profit margin. The increase in the gross profit margin was primarily due to volume leverage in our CAG Diagnostics recurring revenue portfolio following the initial pandemic impacts in the first half of the prior year, price increases, and strong growth in veterinary software, services, and diagnostic imaging recurring revenues. These increases were partially offset by product mix, with higher CAG Diagnostics instrument revenue, and higher freight and distribution costs. The impact from foreign currency movements did not have a material impact on gross profit.

Operating Expenses. Overall operating expenses were higher compared to 2020, during which cost containment efforts were implemented in response to the COVID-19 pandemic, including temporary reductions to compensation and benefits and travel costs. Sales and marketing expense increased primarily due to higher personnel-related costs, including investments in our global commercial capability. General and administrative expense increased primarily due to higher personnel-related costs and costs associated with acquisitions. These increases were partially offset by an accrual related to an ongoing litigation matter and higher charitable donations in the prior year. Research and development expense increased primarily due to increased project and personnel-related costs. The overall change in currency exchange rates resulted in an increase in operating expenses by approximately 1%.

Companion Animal Group

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

Net Revenue *(dollars in thousands)*	For the Years Ended December 31, 2021	2020	Dollar Change	Reported Revenue Growth (1)	Percentage Change from Currency	Percentage Change from Acquisitions	Organic Revenue Growth (1)
CAG Diagnostics recurring revenue:	$ 2,534,562	$ 2,113,839	$ 420,723	19.9 %	1.6 %	0.2 %	18.1 %
IDEXX VetLab consumables	*1,006,781*	*824,376*	*182,405*	*22.1 %*	*2.1 %*	*—*	*20.0 %*
Rapid assay products	*296,852*	*253,018*	*43,834*	*17.3 %*	*0.7 %*	*—*	*16.6 %*
Reference laboratory diagnostic and consulting services	*1,123,656*	*946,268*	*177,388*	*18.7 %*	*1.4 %*	*0.5 %*	*16.8 %*
CAG Diagnostics services and accessories	*107,273*	*90,177*	*17,096*	*19.0 %*	*1.8 %*	*—*	*17.1 %*
CAG Diagnostics capital - instruments	149,140	108,950	40,190	*36.9 %*	*1.2 %*	—	35.7 %
Veterinary software, services and diagnostic imaging systems	206,258	162,976	43,282	26.6 %	0.7 %	10.5 %	15.4 %
Net CAG revenue	$ 2,889,960	$ 2,385,765	$ 504,195	21.1 %	1.5 %	0.9 %	18.7 %

(1) Reported revenue growth and organic revenue growth may not recalculate due to rounding.

CAG Diagnostics Recurring Revenue. Strong demand for companion animal diagnostics globally across modalities, including higher levels of growth in testing volumes following the initial pandemic impacts, which constrained volumes beginning in mid-March 2020 through May 2020 resulted in higher volume growth. This volume growth includes an increase in clinical visits and diagnostic utilization per clinical visit. The increase in CAG Diagnostics recurring revenue was primarily due to volume growth in IDEXX VetLab consumables, reference laboratory diagnostic services, and rapid assay products and, to a lesser extent, higher realized prices.

The increase in IDEXX VetLab consumables revenue was primarily due to higher sales volumes for our Catalyst consumables and, to a lesser extent, ProCyte consumables. These increases were supported by an increase in testing utilization across regions, high customer retention levels, and expansion of our global premium instrument installed base.

The increase in rapid assay revenue resulted primarily from higher clinic testing levels, primarily from SNAP® 4Dx Plus, as well as higher realized prices. Results reflected strong growth in all major regions.

The increase in reference laboratory diagnostic and consulting services revenue was primarily due to higher testing volumes globally, particularly in the U.S., as well as higher average unit sales prices. Acquisitions increased revenue by 0.5%.

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

CAG Diagnostics Capital – Instruments Revenue. The increase in instrument revenue was primarily due to strong premium instrument placements globally, including our new ProCyte One analyzer, as compared to constrained placements in 2020, as a result of the global pandemic, due to restrictions on our sales professionals' access to clinics and certain customers' deferral of new instrument purchases.

Veterinary Software, Services, and Diagnostic Imaging Systems Revenue. Acquisitions increased revenue 10.5%. Excluding the impact of acquisitions, the increase in veterinary software and services revenue was primarily due to increases in our active installed base, higher veterinary software system placements, and higher realized prices on these service offerings. The increase in our diagnostic imaging systems revenues was primarily due to higher imaging systems placements, specifically our ImageVue DR 30 platform, as compared to 2020 when diagnostic imaging placements were lower due to restrictions on our

sales professionals' access to clinics and certain customers deferring purchase decisions as a result of the COVID-19 pandemic, partially offset by a decrease in diagnostic imaging instrument revenue impacted by a reduction in earlier generation instrument platform sales.

The following table presents the CAG segment results of operations:

Results of Operations *(dollars in thousands)*	For the Years Ended December 31, 2021	Percent of Revenue	2020	Percent of Revenue	Change Amount	Change Percentage
Revenues	$ 2,889,960		$ 2,385,765		$ 504,195	21.1 %
Cost of revenue	1,206,156		1,022,579		183,577	18.0 %
Gross profit	1,683,804	58.3 %	1,363,186	57.1 %	320,618	23.5 %
Operating Expenses:						
Sales and marketing	444,694	15.4 %	396,792	16.6 %	47,902	12.1 %
General and administrative	274,470	9.5 %	269,464	11.3 %	5,006	1.9 %
Research and development	140,618	4.9 %	122,043	5.1 %	18,575	15.2 %
Total operating expenses	859,782	29.8 %	788,299	33.0 %	71,483	9.1 %
Income from operations	$ 824,022	28.5 %	$ 574,887	24.1 %	$ 249,135	43.3 %

Gross Profit. Gross profit increased primarily due to higher sales volumes, as well as a 120 basis point increase in the gross profit margin. The increase in the gross profit margin was primarily due to the benefit of volume leverage and price increases in our CAG Diagnostics recurring revenue portfolio and higher veterinary software, services, and diagnostic imaging systems revenues. These favorable factors were partially offset by product mix, with higher CAG Diagnostics instrument revenue, and higher product, freight and distribution costs. The impact from foreign currency movements had an immaterial impact on our gross profit.

Operating Expenses. Overall operating expenses were higher compared to 2020, during which cost containment efforts were implemented in response to the COVID-19 pandemic, including temporary reductions to compensation and benefits and travel costs. Sales and marketing expense increased primarily due to higher personnel-related costs, including investments in our global commercial capability, partially offset by lower travel costs. General and administrative expense increased primarily due to higher personnel-related costs and costs associated with acquisitions. These increases were partially offset by an accrual related to an ongoing litigation matter and a charitable donation in the prior year. Research and development expense increased primarily due to increased project and personnel-related costs. The overall change in currency exchange rates resulted in an increase in operating expenses by approximately 1%.

Water

The following table presents the Water segment results of operations:

Results of Operations *(dollars in thousands)*	For the Years Ended December 31, 2021	Percent of Revenue	2020	Percent of Revenue	Change Amount	Percentage
Revenues	$ 146,505		$ 128,625		$ 17,880	13.9 %
Cost of revenue	45,561		38,245		7,316	19.1 %
Gross profit	100,944	68.9 %	90,380	70.3 %	10,564	11.7 %
Operating Expenses:						
Sales and marketing	17,814	12.2 %	15,046	11.7 %	2,768	18.4 %
General and administrative	13,442	9.2 %	12,595	9.8 %	847	6.7 %
Research and development	4,244	2.9 %	3,872	3.0 %	372	9.6 %
Total operating expenses	35,500	24.2 %	31,513	24.5 %	3,987	12.7 %
Income from operations	$ 65,444	44.7 %	$ 58,867	45.8 %	$ 6,577	11.2 %

Revenue. The increase in our Water business was primarily a result of the recovery in overall testing volumes, including continued improvement in non-compliance testing volume that has been constrained since the beginning of the COVID-19 pandemic and disruptions in certain compliance testing areas due to social distancing policies. The increase in revenue, to a lesser extent, was also due to the benefit of price increases in our Colilert test products and related accessories used in coliform and E. coli testing. The impact of currency movements increased revenue by approximately 2.2%.

Gross Profit. Gross profit for Water increased due to higher sales volumes despite a 140 basis point decrease in the gross profit margin, which reflected a 50 basis point reduction due to foreign currency movements, including the impact of hedge losses in the current year compared to hedge gains in the prior year. The gross profit margin was further reduced by higher product, distribution, and freight costs, partially offset by the net benefit of price increases.

Operating Expenses. Overall operating expenses were higher compared to 2020, during which cost containment efforts were implemented in response to the COVID-19 pandemic, including temporary reductions to compensation and benefits and travel costs. Sales and marketing increased primarily due to higher personnel-related costs, including sales incentive compensation. General and administration and research and development expenses increased primarily due to higher personnel-related costs. The overall change in currency exchange rates resulted in an increase in operating expenses of approximately 1%.

Livestock, Poultry and Dairy

The following table presents the LPD segment results of operations:

Results of Operations *(dollars in thousands)*	For the Years Ended December 31, 2021	Percent of Revenue	2020	Percent of Revenue	Change Amount	Change Percentage
Revenues	$ 135,887		$ 145,845		$ (9,958)	(6.8 %)
Cost of revenue	54,323		56,643		(2,320)	(4.1 %)
Gross profit	81,564	60.0 %	89,202	61.2 %	(7,638)	(8.6 %)
Operating Expenses:						
Sales and marketing	21,681	16.0 %	20,655	14.2 %	1,026	5.0 %
General and administrative	17,606	13.0 %	17,061	11.7 %	545	3.2 %
Research and development	13,641	10.0 %	11,478	7.9 %	2,163	18.8 %
Total operating expenses	52,928	39.0 %	49,194	33.7 %	3,734	7.6 %
Income from operations	$ 28,636	21.1 %	$ 40,008	27.4 %	$ (11,372)	(28.4 %)

Revenue. The favorable impact of foreign currency movements increased revenue by 2.3%. Excluding the impact of currency, overall revenues decreased primarily due to lower demand for diagnostic testing in China, partially offset by higher testing volumes and realized prices in Europe and the Americas, as compared to pandemic impacts in the prior year. Beginning in the second quarter of 2021, and continuing through the fourth quarter, we experienced lower livestock test volumes in China, as changes in disease management approaches, lower pork prices, and changes in government requirements related to live animal imports and livestock infectious disease programs unfavorably impacted test volumes, in comparison to high prior-year demand for African Swine Fever testing.

Gross Profit. The decrease in LPD gross profit was primarily due to lower sales volumes and a 120 basis point decrease in the gross profit margin. The decrease in the gross profit margin is primarily due to higher distribution and freight costs, and lower realized prices, partially offset by lower product costs. The impact from foreign currency movements was immaterial for the year.

Operating Expenses. Overall operating expenses were higher compared to 2020, during which cost containment efforts were implemented in response to the COVID-19 pandemic, including temporary reductions to compensation and benefits, and travel costs. Sales and marketing expense increased primarily due to higher personnel-related costs, as well as higher marketing and promotional materials costs, partially offset by lower sales incentive compensation. General and administrative expenses increased primarily due to higher personnel-related costs, partially offset by an impairment of an intangible asset associated with our food safety and dairy business in the fourth quarter of 2020 and an increase in the bad debt reserve during the first half of 2020. Research and development expense increased primarily due to higher personnel-related costs as we leveraged LPD personnel to support our human COVID-19 testing initiatives in the prior year, and software development costs. The overall change in currency exchange rates resulted in an increase in operating expenses of approximately 1.5%.

Other

The following table presents the Other results of operations:

Results of Operations *(dollars in thousands)*	For the Years Ended December 31, 2021	Percent of Revenue	2020	Percent of Revenue	Change Amount	Change Percentage
Revenues	$ 43,008		$ 46,420		$ (3,412)	(7.4 %)
Cost of revenue	19,888		18,148		1,740	9.6 %
Gross profit	23,120	53.8 %	28,272	60.9 %	(5,152)	(18.2 %)
Operating Expenses:						
Sales and marketing	2,546	5.9 %	1,942	4.2 %	604	31.1 %
General and administrative	4,142	9.6 %	1,712	3.7 %	2,430	141.9 %
Research and development	2,506	5.8 %	3,856	8.3 %	(1,350)	(35.0 %)
Total operating expenses	9,194	21.4 %	7,510	16.2 %	1,684	22.4 %
Income from operations	$ 13,926	32.4 %	$ 20,762	44.7 %	$ (6,836)	(32.9 %)

Revenue. The decrease in Other revenue was primarily due to lower OPTI COVID-19 PCR testing products and services, primarily due to lower international volume, as well as lower royalty revenue associated with intellectual property related to our former pharmaceutical product line. These decreases were partially offset by higher OPTI Medical consumables sales. We currently estimate that future demand for our OPTI COVID-19 PCR testing products and services will continue to be lower than prior periods, although it is difficult to project given the uncertain nature of the COVID-19 pandemic. The impact of currency movements increased revenues by 0.9%.

Gross Profit. The decrease in gross profit was primarily due to lower sales volumes and a gross profit margin decrease of 780 basis points. The decrease in the gross profit margin was primarily due to higher product costs associated with write-downs of excess COVID-19 testing inventory in the current year and lower mix benefits, primarily from lower royalty revenue associated with our former pharmaceutical product line. The overall change in currency exchange rates had an immaterial impact on gross profit.

Operating Expenses. Sales and marketing expense increased primarily due to higher personnel-related costs associated with our OPTI COVID-19 PCR product and services. General and administrative expense increased primarily due to higher foreign exchange losses on settlements of foreign currency denominated transactions, as compared to the prior year, for all operating segments, which are reported within our Other segment. Research and development expense decreased primarily due to lower project costs associated with the development of the OPTI COVID-19 PCR test in the prior year.

Non-Operating Items

Interest Expense. Interest expense was $29.8 million for the year ended December 31, 2021, as compared to $33.1 million for the prior year. The decrease in interest expense was primarily the result of lower average debt levels.

Our effective income tax rate was 17.5% for the year ended December 31, 2021, and 12.1% for the year ended December 31, 2020. The increase in our effective tax rate during 2021 was primarily due to the prior year one-time positive impact related to the enactment of tax reform in Switzerland related to the transitional benefits, as well as higher tax benefits in the prior year related to share-based compensation. Our projected effective tax rate for 2022 is approximately 22%. This projected increase in the effective tax rate is primarily due to lower estimated tax benefits from share-based compensation as well as the estimated impacts of international tax changes.

LIQUIDITY AND CAPITAL RESOURCES

We fund the capital needs of our business through cash on hand, funds generated from operations, proceeds from long-term senior note financings, and amounts available under our Credit Facility. We generate cash primarily through the payments made by customers for our companion animal veterinary, livestock, poultry, dairy, and water products and services, consulting services, and other various systems and services. Our cash disbursements are primarily related to compensation and benefits for our employees, inventory and supplies, taxes, research and development, capital expenditures, rents, occupancy-related charges, interest expense, and business acquisitions. At December 31, 2021, we had $144.5 million of cash and cash equivalents, as compared to $383.9 million on December 31, 2020. Working capital, including our Credit Facility, totaled $192.1 million at December 31, 2021, as compared to $480.0 million at December 31, 2020. Additionally, at December 31, 2021, we had a remaining borrowing availability of $925.1 million under our $1 billion Credit Facility, which in December 2021 was amended and extended to December 2026. We believe that, if necessary, we could obtain additional borrowings to fund our growth objectives. We further believe that current cash and cash equivalents, funds generated from operations, and committed borrowing availability will be sufficient to fund our operations, capital purchase requirements, and anticipated growth needs for the next twelve months. We believe that these resources, coupled with our ability, as needed, to obtain additional financing, will also be sufficient to fund our business as currently conducted for the foreseeable future. We may enter into new financing arrangements or refinance or retire existing debt in the future depending on market conditions. Should we require more capital in the U.S. than is generated by our operations, for example to fund significant discretionary activities, we could elect to raise capital in the U.S. through the incurrence of debt or equity issuances, which we may not be able to complete on favorable terms or at all. In addition, these alternatives could result in increased interest expense or other dilution of our earnings.

We manage our worldwide cash requirements considering available funds among all of our subsidiaries. Our foreign cash and cash equivalents are generally available without restrictions to fund ordinary business operations outside the U.S.

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

Cash and cash equivalents *(in thousands)*	For the Years Ended December 31, 2021	2020
U.S.	$ 2,632	$ 248,374
Foreign	141,822	135,554
Total	$ 144,454	$ 383,928
Total cash, cash equivalents and marketable securities held in U.S. dollars by our foreign subsidiaries	$ 6,245	$ 18,042

As of December 31, 2021 and 2020, more than 99% of the cash and cash equivalents held was as bank deposits.

The following table presents additional key information concerning working capital:

	For the Three Months Ended				
	December 31, 2021	September 30, 2021	June 30, 2021	March 31, 2021	December 31, 2020
Days sales outstanding (1)	42.4	42.7	42.2	41.8	42.2
Inventory turns (2)	2.0	1.9	2.1	2.0	2.1

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

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

Sources and Uses of Cash

The following table presents cash provided (used):

(in thousands)	For the Years Ended December 31,		
	2021	2020	Dollar Change
Net cash provided by operating activities	$ 755,546	$ 648,063	$ 107,483
Net cash used by investing activities	(292,967)	(109,376)	(183,591)
Net cash used by financing activities	(697,414)	(248,416)	(448,998)
Net effect of changes in exchange rates on cash	(4,639)	3,331	(7,970)
Net change in cash and cash equivalents	$ (239,474)	$ 293,602	$ (533,076)

Operating Activities. The increase in cash provided by operating activities of $107.5 million during 2021 as compared to 2020, was primarily due to the increase in net income partially offset by changes in other assets and liabilities. The increase in adjustments to reconcile net income to net cash provided by operating activities was primarily due to lower deferred tax benefits in the current year, as related to the enactment of tax reform in Switzerland in the prior year, as well as higher depreciation and amortization expense in the current year, primarily related to the completion of our major facilities projects early in 2020 and amortization of intangible assets from current year acquisitions, as well as higher share-based compensation expense.

The following table presents cash flows (used) provided from changes in operating assets and liabilities:

(in thousands)	For the Years Ended December 31,		
	2021	2020	Dollar Change
Accounts receivable	$ (33,141)	$ (60,722)	$ 27,581
Inventories	(52,919)	(18,885)	(34,034)
Accounts payable	11,233	981	10,252
Deferred revenue	(7,551)	(13,373)	5,822
Other assets and liabilities	(55,145)	60,238	(115,383)
Total change in cash due to changes in operating assets and liabilities	$ (137,523)	$ (31,761)	$ (105,762)

Cash used due to changes in operating assets and liabilities during the year ended December 31, 2021, as compared to the same period in the prior year, decreased approximately $105.8 million. The change in other assets and liabilities was due to higher payroll and income tax payments, as compared to the prior year when the timing of these payments was deferred under COVID-19 stimulus guidance, as well as higher incentive payments, and higher investments in customer commitment programs to support instrument placements. Additionally, the prior year included a non-cash operating expense related to an ongoing litigation matter. The increase in cash used for inventory, as compared to the prior year, was primarily due to higher inventory levels to support increasing demand and to mitigate potential supply-chain disruptions. The change in accounts receivable was primarily due to an acceleration of sales in the later part of 2020 related to pent-up demand resulting from the COVID-19 pandemic, resulting in high levels of growth in our accounts receivable during the prior year. The change in accounts payable was primarily due to timing of payments at the end of the year, as well as increases in activity to support infrastructure and capacity growth.

We have historically experienced proportionally lower net cash flows from operating activities during the first quarter and proportionally higher cash flows from operating activities for the remainder of the year and for the annual period driven primarily by payments related to annual employee incentive programs in the first quarter following the year for which the bonuses were earned.

Investing Activities. Cash used by investing activities was $293.0 million during 2021 as compared to $109.4 million used during 2020. The increase in cash used by investing activities during 2021 as compared to 2020 was primarily due to business acquisitions completed during 2021, including a cloud-based veterinary software business.

Our total capital expenditure plan for 2022 is estimated to be approximately $180 million, which includes capital investments in a new warehouse and manufacturing site expansion to support growth.

Financing Activities. Cash used by financing activities was $697.4 million during 2021, as compared to $248.4 million used during 2020. The increase in cash used by financing activities was primarily due to the increase in repurchases of our common stock, as compared to the prior year during which we suspended repurchases due to the COVID-19 pandemic. Cash was also used to pay off our $50 million 2021 Series A Notes when due and payable on July 21, 2021. We also generated cash from outstanding borrowings on our revolving credit facility of $73.5 million on December 31, 2021. During 2020, we repaid borrowings under our Credit Facility in the amount of $289.6 million, and borrowed $200.0 million through the issuance and sale of 10-year, 2.50% fixed-rate senior notes. As of December 31, 2020, we had no outstanding borrowings on our Credit Facility.

Cash used to repurchase shares of our common stock increased by $564.0 million during 2021, as compared to 2020. Due to the uncertainty of the duration and magnitude of the COVID-19 pandemic and its impacts during 2020, we suspended our open market share repurchase activity beginning in the first quarter of 2020. We resumed share repurchases during the first quarter of 2021. From the inception of our share repurchase program in August 1999 to December 31, 2021, we have repurchased 68.0 million shares for $5.0 billion. During 2021, we purchased 1.3 million shares for an aggregate cost of $755.5 million, as compared to purchases of 0.7 million shares for an aggregate cost of $179.6 million during 2020. We believe that the repurchase of our common stock is a favorable means of returning value to our stockholders and we also repurchase our stock to offset the dilutive effect of our share-based compensation programs. Repurchases of our common stock may vary depending upon the level of other investing activities and the share price. We primarily fund our share repurchases with cash generated from operations, as well as from various capital market activities, including the committed available financing through our Credit Facility. Refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 20. Repurchases of Common Stock" to the consolidated financial statements included in this Annual Report on Form 10-K for additional information about our share repurchases.

The $1.0 billion unsecured revolving Credit Facility matures on December 9, 2026 and requires no scheduled prepayments before that date. Amounts borrowed under the terms of the Credit Facility are reflected in the current liabilities section in the accompanying consolidated balance sheets. Currently, the applicable interest rates on borrowings under the Credit Facility are based on the prevailing LIBOR, plus a credit spread of 0.875%, depending upon our gross leverage ratio. Refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 13, Debt" for additional information about our applicable interest rates on our Credit Facility. Under the Credit Facility, we also pay quarterly commitment fees ranging from 0.075% to 0.25%, based on our leverage ratio, on any unused commitment. Our Credit Facility includes a provision for the determination of a benchmark replacement rate as a successor to the LIBOR rate.

Under the Credit Facility, the net repayment and borrowing activity resulted in increased cash used of $363.1 million during 2021, as compared to 2020. At December 31, 2021, we had $73.5 million outstanding under the Credit Facility. At December 31, 2020, we had no borrowings outstanding under the Credit Facility. The general availability of funds under the Credit Facility was further reduced by $1.4 million for letters of credit that were issued in connection with our workers' compensation policy at December 31, 2021 and 2020, respectively. The Credit Facility contains affirmative, negative, and financial covenants customary for financings of this type. The negative covenants include restrictions on liens, indebtedness of subsidiaries of the Company, fundamental changes, investments, transactions with affiliates, and certain restrictive agreements and violations of laws and regulations. The financial covenant is a consolidated leverage ratio test that requires our ratio of debt to earnings before interest, taxes, depreciation, amortization, and share-based compensation not to exceed 3.5-to-1. At December 31, 2021, we were in compliance with the covenants of the Credit Facility. The obligations under the Credit Facility may be accelerated upon the occurrence of an event of default under the Credit Facility, which includes customary events of default including payment defaults, defaults in the performance of the affirmative, negative and financial covenants, the inaccuracy of representations or warranties, bankruptcy and insolvency related defaults, defaults relating to judgments, certain events related to employee pension benefit plans under the Employee Retirement Income Security Act of 1974, ("ERISA"), the failure to pay specified indebtedness, cross-acceleration to specified indebtedness and a change of control default.

On July 21, 2021, we repaid our $50.0 million 2021 Series A Notes in full with cash provided by operations. The aggregate principal amounts of our 2022 Series A Notes for $75.0 million will become due and payable on February 14, 2022. We anticipate paying off our 2022 Series A Notes when due with cash provided by borrowings under our Credit Facility and cash provided by operations. Should we elect to prepay any of our senior notes, such aggregate prepayment will include the applicable make-whole amount(s), as defined within the applicable Senior Note Agreements. Additionally, in the event of a change in control of the Company or upon the disposition of certain assets of the Company, the proceeds of which are not reinvested (as defined in the Senior Note Agreements), we may be required to prepay all or a portion of the senior notes. The obligations under the senior notes may be accelerated upon the occurrence of an event of default under the applicable Senior Note Agreements, each of which includes customary events of default including payment defaults, defaults in the performance of the affirmative, negative and financial covenants, the inaccuracy of representations or warranties, bankruptcy and

insolvency-related defaults, defaults relating to judgments, certain events related to employee pension benefit plans under ERISA, the failure to pay specified indebtedness, and cross-acceleration to specified indebtedness.

Refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 13, Debt" for additional information about our Credit Facility, Senior Notes, and Senior Note Agreements.

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

Off-Balance Sheet Arrangements. We have no off-balance sheet arrangements or variable interest entities except for letters of credit and third-party guarantees, as reflected in "Part II, Item 8. Financial Statements and Supplementary Data, Note 13 Debt" and "Part II, Item 8. Financial Statements and Supplementary Data. Note 16. Commitments, Contingencies and Guarantees" to the consolidated financial statements for the year ended December 31, 2021, included in this Annual Report on Form 10-K, respectively.

Financial Covenant. The financial covenant is a consolidated leverage ratio test that requires our ratio of debt to earnings before interest, taxes, depreciation, amortization, and share-based compensation, as defined in the Senior Note Agreements and Credit Facility, not to exceed 3.5-to-1. At December 31, 2021, we were in compliance with the covenants of the Senior Note Agreements. The following details our consolidated leverage ratio calculation:

(in thousands) **Trailing 12 Months Adjusted EBITDA:**		**Twelve months ended December 31, 2021**
Net income attributable to stockholders	$	744,845
Interest expense		29,808
Provision for income taxes		157,810
Depreciation and amortization		104,596
Acquisition-related expense		4,127
Share-based compensation expense		37,755
Extraordinary and other non-recurring non-cash charges		5,148
Adjusted EBITDA	$	1,084,089

(dollars in thousands) **Debt to Adjusted EBITDA Ratio:**		**Twelve months ended December 31, 2021**
Line of credit	$	73,500
Current and long-term portion of long-term debt		850,201
Total debt		923,701
Acquisition-related consideration payable		10,708
Financing leases		14
Deferred financing costs		510
Gross debt	$	934,933
Gross debt to Adjusted EBITDA ratio		0.86
Cash and cash equivalents	$	(144,454)
Net debt	$	790,479
Net debt to Adjusted EBITDA ratio		0.73

Commitments, Contingencies and Guarantees

For more information regarding our commitments, contingencies and guarantees, refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 16. Commitments, Contingencies and Guarantees".

For more information on our future lease payments, refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 8. Leases" for our minimum lease payment schedule. The expected timing of payments of our leases may be different in future years, depending on decisions to extend lease terms and/or enter into additional leases in the preceding years.

For more information on our repayment of our Senior Notes, refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 13. Debt".

We also have purchase obligations that including agreements and purchase orders to purchase goods or services that are contractually enforceable and that specify all significant terms, including fixed or minimum quantities, pricing and approximate timing of purchases. As of December 31, 2021, we have approximately $377.1 million in purchase obligations due in 2022. Our purchase obligations beyond 2022 are approximately $44.3 million. Expected timing of payments of our purchase obligations is estimated based on current information. Timing of payments and actual amounts paid may be different, depending on the time of receipt of goods or services, or changes to agreed-upon amounts for some obligations.

Additionally, we have agreements with third parties that we have entered into in the ordinary course of business under which we are obligated to indemnify such third parties for and against various risks and losses. The precise terms of such indemnities vary with the nature of the agreement. In many cases, we limit the maximum amount of our indemnification obligations, but in some cases those obligations may be theoretically unlimited. We have not incurred material expenses in discharging any of these indemnification obligations and, based on our analysis of the nature of the risks involved, we believe that the fair value of these agreements is minimal. Accordingly, we did not record any liabilities for these obligations at December 31, 2021 and 2020, and do not anticipate any future payments for these guarantees.

As of December 31, 2021, our remaining obligation associated with the deemed repatriation tax resulting from the Tax Cut and Jobs Act of 2017 is $27.0 million. Our prior overpayments continue to satisfy our installment obligations through 2022. In 2023, our installment obligation will exceed our remaining overpayment and we will be required to remit the balance due on the installment. Our final installment will be paid in 2025. For information on our unrecognized tax benefits, refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 14. Income Taxes".

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our market risk consists primarily of foreign currency exchange risk, interest rate risk, and effects of inflation. Our functional currency is the U.S. dollar and our primary manufacturing operations and inventory supply contracts are in the U.S. or in U.S. dollars, but we distribute our products worldwide both through direct export and through our foreign subsidiaries. Our primary foreign currency transaction risk consists of intercompany purchases and sales of products and we attempt to mitigate this risk through our hedging program described below. For the year ended December 31, 2021, approximately 23% of our consolidated revenue was derived from products manufactured or sourced in U.S. dollars and sold internationally in local currencies, as compared to 21% and 22% for the years ended December 31, 2020, and 2019, respectively. The functional currency of most of our subsidiaries is their local currency, except four of our foreign subsidiaries where the functional currency is the U.S. dollar.

Our foreign currency exchange impacts are comprised of three components: 1) local currency revenues and expenses; 2) the impact of hedge contracts; and 3) intercompany and monetary balances for our subsidiaries that are denominated in a currency that is different from the functional currency used by each subsidiary.

The following table presents the estimated foreign currency exchange impact on our revenues, operating profit, and diluted earnings per share for the current period and as compared to the respective prior-year period:

	For the Year Ended		
(in thousands, except per share amounts)	**2021**	**2020**	**2019**
Revenue increase (decrease)	**$ 46,001**	**$ 1,301**	**$ (38,624)**
Operating profit increase (decrease), excluding hedge activity and exchange impacts on settlement of foreign currency denominated transactions	$ 28,557	$ 887	$ (18,989)
Hedge gains (losses) - current period	(7,121)	829	10,628
Exchange gains (losses) on settlements of foreign currency denominated transactions - current period	(2,111)	699	(1,116)
Operating profit increase (decrease) - current period	**$ 19,325**	**$ 2,415**	**$ (9,477)**
Hedge (gains) losses - prior period	(829)	(10,628)	976
Exchange (gains) losses on settlement of foreign currency denominated transactions - prior period	(699)	1,116	3,158
Operating profit increase (decrease) - as compared to prior period	**$ 17,797**	**$ (7,097)**	**$ (5,343)**
Diluted earnings per share increase (decrease) - as compared to prior period	**$ 0.16**	**$ (0.06)**	**$ (0.05)**

Based on projected revenues and expenses for 2022, excluding the impact of intercompany and trade balances denominated in currencies other than the functional subsidiary currencies, a 1% strengthening of the U.S. dollar would reduce revenue by approximately $12 million and operating income by approximately $7 million. Additionally, we project our foreign currency hedge contracts in place as of December 31, 2021, would provide incremental offsetting gains of approximately $3 million. The impact of the intercompany and monetary balances referred to in the third component above have been excluded, as they are transacted at multiple times during the year and we are not able to reliably forecast the impact that changes in exchange rates would have.

At our current foreign exchange rate assumptions, we anticipate the effect of a stronger U.S. dollar will have a unfavorable effect on our operating results by decreasing our revenues, operating profit, and diluted earnings per share in the year ended December 31, 2022, by approximately $55 million, $9 million, and $0.08 per share, respectively. This unfavorable impact includes foreign currency hedging activity, which is expected to increase total company operating profit by approximately $18 million and diluted earnings per share by $0.16 during the year ending December 31, 2022. The actual impact of changes in the value of the U.S. dollar against foreign currencies in which we transact may materially differ from our expectations described above. The above estimate assumes that the value of the U.S. dollar relative to other currencies will reflect the euro at $1.12, the British pound at $1.34, the Canadian dollar at $0.78, and the Australian dollar at $0.71; and the

Japanese yen at ¥117, the Chinese renminbi at RMB 6.47, and the Brazilian real at R$5.74 to the U.S. dollar for the full year of 2022.

The primary purpose of our foreign currency hedging activities is to protect against the volatility associated with foreign currency transactions. We also utilize natural hedges to mitigate our transaction and commitment exposures. Our corporate policy prescribes the range of allowable hedging activity. We enter into foreign currency exchange contracts with large multinational financial institutions and we do not hold or engage in transactions involving derivative instruments for purposes other than risk management. Our accounting policies for these contracts are based on our designation of such instruments as hedging transactions. If a hedging instrument qualifies for hedge accounting, changes in the fair value of the derivative instrument from the effective portion of the hedge are deferred in accumulated other comprehensive income, net of tax, and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. We immediately record in earnings the extent to which a hedge instrument is not effective in achieving offsetting changes in fair value. We primarily utilize foreign currency exchange contracts with durations of less than 24 months.

Our subsidiaries enter into foreign currency exchange contracts to manage the exchange risk associated with their forecasted intercompany inventory purchases and sales for the next year. From time to time, we may also enter into other foreign currency exchange contracts or foreign-denominated debt issuances to minimize the impact of foreign currency fluctuations associated with specific balance sheet exposures, including net investments in certain foreign subsidiaries. Refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 19. Hedging Instruments" to the consolidated financial statements of this Annual Report on Form 10-K for details regarding euro-denominated notes that we designated as a hedge of our euro net investment in certain foreign subsidiaries.

Our foreign currency hedging strategy is consistent with prior periods and there were no material changes in our market risk exposure during the year ended December 31, 2021. We enter into foreign currency exchange contracts designated as cash flow hedges for amounts that are less than the full value of forecasted intercompany purchases and sales and for amounts that are equivalent to, or less than, other significant transactions. As a result, no significant ineffectiveness has resulted or been recorded through the statements of income for the years ended December 31, 2021, 2020, and 2019. Our hedging strategy related to intercompany inventory purchases and sales is to employ the full amount of our hedges for the succeeding year at the conclusion of our budgeting process for that year. Quarterly, we enter into contracts to hedge incremental portions of anticipated foreign currency transactions for the current and following year. Accordingly, our risk with respect to foreign currency exchange rate fluctuations may vary throughout each annual cycle.

We enter into hedge agreements where we believe we have meaningful exposure to foreign currency exchange risk, with the exception of certain emerging markets where it is not practical to hedge our exposure. We target to hedge approximately 75% to 85% of the estimated exposure from intercompany product purchases and sales denominated in the euro, British pound, Canadian dollar, Japanese yen, and Australian dollar. We have additional unhedged foreign currency exposures related to foreign services and emerging markets where it is not practical to hedge. The notional amount of foreign currency exchange contracts to hedge forecasted intercompany purchases and sales totaled $286.7 million at December 31, 2021, and $202.7 million at December 31, 2020. At December 31, 2021, we had $8.2 million of net unrealized gains on foreign currency exchange contracts recorded in accumulated other comprehensive loss, net of related tax. For more information on our hedge agreements refer to "Part II, Item 8. Financial Statements and Supplementary Data, Note 19. Hedging Instruments."

For additional information, refer to "Part I, Item 1A. Risk Factors; *Risks associated with doing business internationally could negatively affect our operating results* and *Strengthening of the rate of exchange for the U.S. dollar has a negative effect on our business*," and "Part II, Item 8. Financial Statements and Supplementary Data, Note 2. Summary of Significant Accounting Policies."

Interest Rate Risk and Effects of Inflation

We have a Credit Facility with a syndicate of multinational banks, which matures on December 9, 2026, and requires no scheduled prepayments before that date. Although the Credit Facility does not mature until December 9, 2026, all individual borrowings under the terms of the Credit Facility predominantly have a stated term between 1 and 180 days. At December 31, 2021, we had $73.5 million of borrowings outstanding under the Credit Facility. As of December 31, 2021, based on our gross leverage ratio, our borrowing costs under the Credit Facility were approximately 1.1%.

Inflation generally impacts us by increasing our costs of labor, material, transportation and general overhead costs. The rates of inflation experienced in recent years have not had a material impact on our financial statements as inflationary cost increases have been more than offset by net realized annual price increases and productivity gains. We cannot reasonably estimate our ability to successfully recover any impact of inflation cost increases into the future.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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

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

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management is responsible for establishing and maintaining disclosure controls and procedures, as defined by the SEC in its Rules 13a-15(e) and 15d-15(e) under the Exchange Act. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of an issuer that are designed to ensure that information required to be disclosed by the issuer in the reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures at December 31, 2021, our chief executive officer and chief financial officer have concluded that, as of such date, the Company's disclosure controls and procedures were effective at the reasonable assurance level.

Report of Management on Internal Control Over Financial Reporting

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

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material adverse effect on the financial statements.

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

We conducted an evaluation of the effectiveness of internal control over financial reporting based on the framework in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, we concluded that, at December 31, 2021, our internal control over financial reporting was effective.

The effectiveness of the Company's internal control over financial reporting at December 31, 2021, has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears herein.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the three months ended December 31, 2021, that materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting.

Certifications

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

ITEM 9B. OTHER INFORMATION

Not applicable.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item with respect to Directors, executive officers, compliance with Section 16(a) of the Exchange Act, our code of ethics and corporate governance is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the sections entitled "Corporate Governance - Proposal One - Election of Directors," "Executive Officers," "Stock Ownership Information - Delinquent Section 16(a) Reports," "Corporate Governance – Corporate Governance Guidelines and Code of Ethics," and "Corporate Governance –Board Committees" in the Company's definitive Proxy Statement with respect to its 2022 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the sections entitled "Executive Compensation – Compensation Discussion and Analysis," "Executive Compensation – Executive Compensation Tables," "Executive Compensation – Potential Payments Upon Termination or Change-in-Control," "Corporate Governance – Board Committees – Compensation and Talent Committee – Compensation and Talent Committee Interlocks and Insider Participation," and "Compensation and Talent Committee Report" in the Company's definitive Proxy Statement with respect to its 2022 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

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

The information required by this Item with respect to Item 201(d) of Regulation S-K is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the section entitled "Equity Compensation Plan Information" in the Company's definitive Proxy Statement with respect to its 2022 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K. The information required by this Item with respect to Item 403 of Regulation S-K is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the sections entitled "Stock Ownership Information" in the Company's definitive Proxy Statement with respect to its 2022 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

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

The information required by this Item is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the sections entitled "Corporate Governance – Related Person Transactions" and "Corporate Governance – Director Independence" in the Company's definitive Proxy Statement with respect to its 2022 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this Item is omitted from this Annual Report on Form 10-K and, pursuant to Regulation 14A of the Exchange Act, is incorporated herein by reference from the section entitled "Audit Committee Matters - Independent Auditors' Fees" in the Company's definitive Proxy Statement with respect to its 2022 Annual Meeting, which Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year covered by this report.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

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

(a)(1) and (a)(2)	The financial statements set forth in the Index to Consolidated Financial Statements and the Consolidated Financial Statement Schedule are filed as a part of this Annual Report on Form 10-K commencing on page F-1.
(a)(3) and (b)	The exhibits listed in the accompanying Exhibit Index are filed as part of this Annual Report on Form 10-K and either filed herewith or incorporated by reference herein, as applicable.

ITEM 16. FORM 10-K SUMMARY

None.

FINANCIAL STATEMENTS AND SUPPLEMENTAL DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND CONSOLIDATED FINANCIAL STATEMENT SCHEDULE

Page No.

Report of Independent Registered Public Accounting Firm

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

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of IDEXX Laboratories, Inc. and its subsidiaries (the "Company") as of December 31, 2021 and 2020, and the related consolidated statements of income, of comprehensive income, of stockholders' equity (deficit) and of cash flows for each of the three years in the period ended December 31, 2021, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Report of Management on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition Relating to Customer Commitment Programs

As described in Note 3 to the consolidated financial statements, the Company recognized revenue associated with instruments totaling $149.1 million for the year ended December 31, 2021, the majority of which were sales under customer commitment programs. The Company enters into contracts with multiple performance obligations where customers purchase a combination of the Company's products and services. The Company offers customer incentives through its various customer commitment programs. These customer commitment programs provide customers with a free or discounted instrument or system, upon entering into multi-year agreements to purchase annual minimum amounts of future products or services. Management determines the transaction price for a contract based on the total consideration expected to be received in exchange for the transferred goods or services. To the extent the transaction price includes variable consideration, such as volume rebates or expected price adjustments, management applies judgment in estimating variable consideration based on the Company's historical and projected experience with similar customer contracts. Management monitors customer purchases over the term of the agreement and reviews estimates of variable consideration.

The principal considerations for our determination that performing procedures relating to revenue recognition relating to the customer commitment program is a critical audit matter are the significant judgment by management in estimating the amount of variable consideration included in the transaction price, which in turn led to significant auditor judgment, subjectivity, effort and complexity in assessing audit evidence in performing procedures to evaluate the amount of variable consideration included in the transaction price and significant assumptions related to forecasted product purchases.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the revenue recognition process and customer commitment programs, including controls over the estimation of the amount of variable consideration included in the transaction price. These procedures also included, among others, (i) examining contracts on a test basis, (ii) testing management's process for estimating the amount of variable consideration included in the transaction price, (iii) testing the completeness and accuracy of historical sales data and (iv) evaluating the significant assumptions used by management related to the forecasted purchase of products. Evaluating management's assumptions related to forecasted product purchases involved evaluating whether the assumptions used by management were reasonable by comparing the forecasted product purchases to historical sales data.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
February 16, 2022

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

IDEXX LABORATORIES, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS
(*in thousands, except per share amounts*)

	December 31, 2021	December 31, 2020
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 144,454	$ 383,928
Accounts receivable, net of allowance of $5,668 in 2021 and $6,784 in 2020	368,348	331,429
Inventories	269,030	209,873
Other current assets	173,823	137,508
Total current assets	955,655	1,062,738
Long-Term Assets:		
Property and equipment, net	587,667	555,167
Operating lease right-of-use assets	105,101	91,171
Goodwill	359,345	243,347
Intangible assets, net	99,035	52,543
Other long-term assets	330,400	289,595
Total long-term assets	1,481,548	1,231,823
TOTAL ASSETS	$ 2,437,203	$ 2,294,561
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable	$ 116,140	$ 74,558
Accrued liabilities	458,909	415,648
Line of credit	73,500	—
Current portion of long-term debt	74,996	49,988
Current portion of deferred revenue	40,034	42,567
Total current liabilities	763,579	582,761
Long-Term Liabilities:		
Deferred income tax liabilities	8,935	11,707
Long-term debt, net of current portion	775,205	858,492
Long-term deferred revenue, net of current portion	41,174	46,163
Long-term operating lease liabilities	87,377	77,039
Other long-term liabilities	70,941	85,604
Total long-term liabilities	983,632	1,079,005
Total liabilities	1,747,211	1,661,766
Commitments and Contingencies (Note 16)		
Stockholders' Equity:		
Common stock, $0.10 par value: Authorized: 120,000 shares; Issued: 106,878 shares in 2021 and 106,457 shares in 2020; Outstanding: 84,562 shares in 2021 and 85,449 shares in 2020	10,688	10,646
Additional paid-in capital	1,377,320	1,294,849
Deferred stock units: Outstanding: 90 units in 2021 and 87 units in 2020	5,719	4,503
Retained earnings	2,920,440	2,175,595
Accumulated other comprehensive loss	(53,484)	(53,615)
Treasury stock, at cost: 22,317 shares in 2021 and 21,008 shares in 2020	(3,570,691)	(2,799,890)
Total IDEXX Laboratories, Inc. stockholders' equity	689,992	632,088
Noncontrolling interest	—	707
Total stockholders' equity	689,992	632,795
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 2,437,203	$ 2,294,561

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

IDEXX LABORATORIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF INCOME
(*in thousands, except per share amounts*)

	For the Years Ended December 31,		
	2021	**2020**	**2019**
Revenue:			
Product revenue	$ 1,875,308	$ 1,586,809	$ 1,423,144
Service revenue	1,340,052	1,119,846	983,764
Total revenue	3,215,360	2,706,655	2,406,908
Cost of Revenue:			
Cost of product revenue	656,823	557,795	506,202
Cost of service revenue	669,105	577,820	535,157
Total cost of revenue	1,325,928	1,135,615	1,041,359
Gross profit	1,889,432	1,571,040	1,365,549
Expenses:			
Sales and marketing	486,735	434,435	418,193
General and administrative	309,660	300,832	261,317
Research and development	161,009	141,249	133,193
Income from operations	932,028	694,524	552,846
Interest expense	(29,808)	(33,125)	(31,055)
Interest income	434	586	427
Income before provision for income taxes	902,654	661,985	522,218
Provision for income taxes	157,810	79,854	94,426
Net income	744,844	582,131	427,792
Less: Net (loss) income attributable to noncontrolling interest	(1)	355	72
Net income attributable to IDEXX Laboratories, Inc. stockholders	$ 744,845	$ 581,776	$ 427,720
Earnings per Share:			
Basic	$ 8.74	$ 6.82	$ 4.97
Diluted	$ 8.60	$ 6.71	$ 4.89
Weighted Average Shares Outstanding:			
Basic	85,200	85,342	86,115
Diluted	86,572	86,722	87,542

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

IDEXX LABORATORIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	For the Years Ended December 31,		
	2021	**2020**	**2019**
Net income	$ 744,844	$ 582,131	$ 427,792
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	(26,731)	15,151	(1,590)
Unrealized gain (loss) on Euro-denominated notes, net of tax expense (benefit) of $2,011 in 2021, $(2,325) in 2020 and $564 in 2019	6,404	(7,378)	1,790
Unrealized gain (loss) on investments, net of tax expense (benefit) of $46 in 2021, $(120) in 2020 and $84 in 2019	146	(382)	267
Unrealized gain (loss) on derivative instruments:			
Unrealized gain (loss) on foreign currency exchange contracts, net of tax expense (benefit) of $2,133 in 2021, $(2,013) in 2020 and $362 in 2019	9,139	(8,527)	1,196
Unrealized gain (loss) on cross currency swaps, net of tax expense of $1,699 in 2021, $(1,774) in 2020 and $664 in 2019	5,399	(5,626)	2,107
Reclassification adjustment for (gain) loss included in net income, net of tax (expense) benefit of $1,347 in 2021, $(158) in 2020 and $(2,467) in 2019	5,774	(671)	(8,161)
Unrealized gain (loss) on derivative instruments	20,312	(14,824)	(4,858)
Other comprehensive gain (loss), net of tax	131	(7,433)	(4,391)
Comprehensive income	744,975	574,698	423,401
Less: comprehensive income attributable to noncontrolling interest	(1)	355	72
Comprehensive income attributable to IDEXX Laboratories, Inc.	$ 744,976	$ 574,343	$ 423,329

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

IDEXX LABORATORIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)

(in thousands, except per share amounts)

	Common Stock								
	Number of Shares	$0.10 Par Value	Additional Paid-in Capital	Deferred Stock Units	Retained Earnings	Accumulated Other Comprehensive Loss	Treasury Stock	Noncontrolling Interest	Total Stockholders' Equity (Deficit)
Balance December 31, 2018	105,087	$ 10,509	$ 1,138,216	$ 4,524	$ 1,167,928	$ (41,791)	$ (2,288,899)	$ 280	$ (9,233)
Net income	—	—	—	—	427,720	—	—	72	427,792
Other comprehensive loss, net	—	—	—	—	—	(4,391)	—	—	(4,391)
Repurchases of common stock, net	—	—	—	—	—	—	(311,644)	—	(311,644)
Common stock issued under stock plans, net	624	62	36,551	(590)	—	—	—	—	36,023
Deferred stock units activity	—	—	(324)	324	—	—	—	—	—
Share-based compensation cost	—	—	39,074	204	—	—	—	—	39,278
Balance December 31, 2019	105,711	$ 10,571	$ 1,213,517	$ 4,462	$ 1,595,648	$ (46,182)	$ (2,600,543)	$ 352	$ 177,825
Cumulative effect of accounting changes (Note 2)	—	—	—	—	(1,829)	—	—	—	(1,829)
Net income	—	—	—	—	581,776	—	—	355	582,131
Other comprehensive loss, net	—	—	—	—	—	(7,433)	—	—	(7,433)
Repurchases of common stock, net	—	—	—	—	—	—	(199,347)	—	(199,347)
Common stock issued under stock plans, net	746	75	51,368	(946)	—	—	—	—	50,497
Deferred stock units activity	—	—	(894)	894	—	—	—	—	—
Share-based compensation cost	—	—	30,858	93	—	—	—	—	30,951
Balance December 31, 2020	106,457	$ 10,646	$ 1,294,849	$ 4,503	$ 2,175,595	$ (53,615)	$ (2,799,890)	$ 707	$ 632,795
Net income	—	—	—	—	744,845	—	—	(1)	744,844
Other comprehensive gain, net	—	—	—	—	—	131	—	—	131
Acquisition of noncontrolling interest (Note 4)	—	—	(284)	—	—	—	—	(706)	(990)
Repurchases of common stock, net	—	—	—	—	—	—	(770,801)	—	(770,801)
Common stock issued under stock plans, net	421	42	46,228	(12)	—	—	—	—	46,258
Deferred stock units activity	—	—	(1,035)	1,035	—	—	—	—	—
Share-based compensation cost	—	—	37,562	193	—	—	—	—	37,755
Balance December 31, 2021	106,878	$ 10,688	$ 1,377,320	$ 5,719	$ 2,920,440	$ (53,484)	$ (3,570,691)	$ —	$ 689,992

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

IDEXX LABORATORIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	For the Years Ended December 31,		
	2021	**2020**	**2019**
Cash Flows from Operating Activities:			
Net income	$ 744,844	$ 582,131	$ 427,792
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	104,596	95,998	88,011
Impairment charge	5,148	2,501	968
Provision for uncollectible accounts	1,484	4,946	662
Deferred income taxes	(3,377)	(38,082)	6,162
Share-based compensation expense	37,755	30,951	39,278
Other	2,619	1,379	1,254
Changes in assets and liabilities:			
Accounts receivable	(33,141)	(60,722)	(22,472)
Inventories	(52,919)	(18,885)	(37,306)
Accounts payable	11,233	981	1,957
Deferred revenue	(7,551)	(13,373)	(12,360)
Other assets and liabilities	(55,145)	60,238	(34,788)
Net cash provided by operating activities	755,546	648,063	459,158
Cash Flows from Investing Activities:			
Purchases of property and equipment	(119,549)	(106,958)	(154,969)
Acquisitions of intangible assets and equity investments	—	(918)	(255)
Acquisitions of businesses, net of cash acquired	(173,418)	(1,500)	(50,304)
Net cash used by investing activities	(292,967)	(109,376)	(205,528)
Cash Flows from Financing Activities:			
Borrowings (repayments) on revolving credit facilities, net	73,500	(289,625)	(110,275)
Issuance of senior notes	—	200,000	100,000
Payments of senior notes	(50,000)	—	—
Debt issuance costs	(2,650)	(5,025)	(154)
Purchase of minority interest	(990)	—	—
Repurchases of common stock, net	(746,777)	(182,815)	(301,658)
Proceeds from exercises of stock options and employee stock purchase plans	46,565	51,328	36,106
Payment of acquisition-related contingent consideration and holdbacks	(1,500)	(1,676)	(2,375)
Shares withheld for statutory tax withholding payments on restricted stock	(15,562)	(20,603)	(8,053)
Net cash used by financing activities	(697,414)	(248,416)	(286,409)
Net effect of changes in exchange rates on cash	(4,639)	3,331	(689)
Net (decrease) increase in cash and cash equivalents	(239,474)	293,602	(33,468)
Cash and cash equivalents at beginning of period	383,928	90,326	123,794
Cash and cash equivalents at end of period	$ 144,454	$ 383,928	$ 90,326

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

NOTE 1. NATURE OF BUSINESS, BASIS OF PRESENTATION AND PRINCIPLES OF CONSOLIDATION

The accompanying consolidated financial statements of IDEXX Laboratories, Inc. and its subsidiaries have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") and with the requirements of Regulation S-X.

These statements include the accounts of IDEXX Laboratories, Inc., and our wholly-owned and majority-owned subsidiaries ("IDEXX," the "Company," "we," or "our"). We do not have any variable interest entities for which we are the primary beneficiary. All intercompany transactions and balances have been eliminated in consolidation.

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

We develop, manufacture, and distribute products and provide services primarily for the companion animal veterinary, livestock and poultry, dairy, and water testing industries. We also sell human medical point-of-care products and laboratory diagnostics. Our principal line of business, which we refer to as our Companion Animal Group ("CAG") operating segment, provides diagnostic capabilities and information management solutions for the companion animal veterinary industry, as well as the biomedical research community. Our principal regions for these products and services are the United States ("U.S."), Europe, Japan, China, and Australia, but we also sell to customers and distributors in many other countries around the world. Our Water operating segment provides innovative testing solutions for the quality and safety of water principally in the U.S. and Europe, but we also sell to customers in many other countries around the world. Our Livestock, Poultry and Dairy ("LPD") operating segment provides diagnostic tests and related instrumentation and performs services that are used to manage the health status of livestock and poultry, to improve producer efficiency, and to ensure the quality and safety of milk. Our principal regions for these products and services are Europe, China, and Australia, but we also sell to customers in many other countries around the world. We also operate a smaller operating segment that is comprised of our human medical diagnostic products and services business ("OPTI Medical"). Financial information about our OPTI Medical operating segment is combined and presented with our out-licensing arrangements remaining from our pharmaceutical business in an "Other" category because they do not meet the quantitative or qualitative thresholds for reportable segments. Refer to "Note 3. Revenue Recognition" for additional information regarding disaggregated revenue by segment, major product and service categories, and geographical areas. Refer to "Note 17. Segment Reporting" for additional information regarding our reportable operating segments.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(a) Estimates

The preparation of these consolidated financial statements in accordance with U.S. GAAP requires management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosures. On an ongoing basis, we evaluate these estimates, including those related to reserves for accounts receivable; goodwill and other intangible assets; income taxes; inventory valuation; revenue recognition, product returns, customer programs, and multiple element arrangements; share-based compensation; warranty reserves; self-insurance reserves; fair value measurements and loss contingencies. We accrue contingent liabilities when it is probable that future expenditures will be made and such expenditures can be reasonably estimated. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ materially from these estimates.

(b) Cash and Cash Equivalents

We consider all highly liquid investments with original maturities of ninety days or less to be cash equivalents. Cash and cash equivalents consist primarily of demand deposits, money market funds, and short-duration agency bonds and commercial paper as described above. There is no restricted cash on our consolidated balance sheets for the years ended December 31, 2021 and 2020.

(c) Inventories – Refer to Note 7

(d) Property and Equipment – Refer to Note 9

(e) Goodwill and Other Intangible Assets – Refer to Note 11

(f) Warranty Reserves

We provide a standard twelve-month warranty on all instruments sold. We recognize the cost of instrument warranties in cost of product revenue at the time revenue is recognized based on the estimated cost to repair the instrument over its warranty period. Cost of product revenue reflects not only estimated warranty expense for instruments sold in the current period, but also any changes in estimated warranty expense for the portion of the aggregate installed base that is under warranty. Estimated warranty expense is based on a variety of inputs, including historical instrument performance in the customers' environments, historical and estimated costs incurred in servicing instruments and projected instrument reliability. Should actual service rates or costs differ from our estimates, revisions to the estimated warranty liability would be required. The liability for warranties is included in accrued liabilities in the accompanying consolidated balance sheets. The amount of warranty reserve during the years ended December 31, 2021 and 2020, was not material.

(g) Income Taxes – Refer to Note 14

(h) Taxes Remitted to Governmental Authorities by IDEXX on Behalf of Customer

We calculate, collect from our customers, and remit to governmental authorities, sales, value-added, and excise taxes assessed by governmental authorities in connection with revenue-producing transactions with our customers. We report these taxes on a net basis and do not include these tax amounts in revenue or cost of product or service revenue.

(i) Revenue Recognition – Refer to Note 3

(j) Research and Development Costs

Research and development costs, which consist of employee compensation and benefits, materials and external consulting, and product development costs, are expensed as incurred. We evaluate our research and development costs for capitalization after the technological feasibility has been established for software and products containing software to be sold; however, no costs were capitalized during the years ended December 31, 2021, 2020, and 2019. Software developed to deliver hosted services to our customers has been designated as internal use, and we capitalize certain costs incurred in connection with developing or obtaining software designated for internal use based on three distinct stages of development. Refer to "Note 9. Property and Equipment, Net" for further information on internal use software.

(k) Advertising Costs

Advertising costs, which are recognized as sales and marketing expense in the period in which they are incurred, were $3.3 million, $1.4 million, and $1.5 million for the years ended December 31, 2021, 2020, and 2019, respectively.

(l) Legal Costs

Legal costs are considered period costs and, accordingly, are expensed in the year services are provided.

(m) Share-Based Compensation – Refer to Note 5

(n) Self-Insurance Accruals – Refer to Note 16

(o) Leases – Refer to Note 8

(p) Earnings per Share – Refer to Note 15

(q) Foreign Currency

The functional currency of all except eight of our subsidiaries is their local currency, however, the assets and liabilities of the majority of our foreign subsidiaries are translated to the U.S. dollar using the exchange rate in effect at the balance sheet date. Revenue and expense accounts are translated to the U.S. dollar using the exchange rate at the date which those elements are recognized, and where it is impractical to do so, an average exchange rate in effect during the period is used to translate those elements. Cumulative translation gains and losses are shown in the accompanying consolidated balance sheets as a separate component of accumulated other comprehensive income ("AOCI").

Revenues and expenses denominated in a currency other than the respective subsidiary's functional currency are recorded at the current exchange rate when the transaction is recognized. Monetary assets and liabilities denominated in a currency other than the respective subsidiary's functional currency are remeasured at each balance sheet date using the exchange rate in effect at each balance sheet date. These foreign currency gains and losses are included in general and administrative expenses within our Other segment. We recognized aggregate foreign currency losses of $2.1 million, gains of $0.6 million, and losses of $1.1 million for the years ended December 31, 2021, 2020, and 2019, respectively.

(r) Hedging Instruments – Refer to Note 19

(s) Fair Value Measurements – Refer to Note 18

(t) Comprehensive Income

We report all changes in equity, including net income and transactions or other events and circumstances from non-owner sources during the period in which they are recognized. We have chosen to present comprehensive income, which encompasses net income, foreign currency translation adjustments, gains and losses on our net investment hedges and the difference between the cost and the fair market value of investments in debt and equity securities, and forward currency exchange contracts, in the consolidated statements of comprehensive income. Refer to "Note 21. Accumulated Other Comprehensive Income" for information about the effects on net income of significant amounts reclassified out of each component of AOCI for the years ended December 31, 2021, 2020, and 2019.

(u) Concentrations of Risk

Financial Instruments. Financial instruments that potentially subject us to concentrations of credit risk are principally cash, cash equivalents, accounts receivable, and derivatives. To mitigate such risk with respect to cash and cash equivalents, we place our cash with highly-rated financial institutions, in non-interest bearing accounts that are insured by the U.S. government and money market funds invested in government securities. Concentration of credit risk with respect to accounts receivable is limited to certain customers to whom we make substantial sales. To reduce risk, we routinely assess the financial strength of our most significant customers and monitor the amounts owed to us, taking appropriate action when necessary. As a result, we believe that accounts receivable credit risk exposure is limited. We maintain an allowance for doubtful accounts, but historically have not experienced any material losses related to an individual customer or group of customers in any particular industry or geographic area.

To mitigate concentration of credit risk with respect to derivatives we enter into transactions with highly-rated financial institutions, enter into master netting arrangements with counterparties to our derivative transactions and frequently monitor the creditworthiness of our counterparties. Our master netting arrangements reduce our exposure in that they permit outstanding receivables and payables with the counterparties to our derivative transactions to be offset in the event of default. We have not incurred such losses and consider the risk of counterparty default to be minimal.

Inventory. If we are unable to obtain adequate quantities of the inventory we need to sell our products, we could face cost increases or delays or discontinuations in product shipments, which could have a material adverse effect on our results of operations. Many of the third parties that provide us with the instruments we sell, as well as certain components, raw materials and consumables used in or with our products, are sole or single-source suppliers. Some of the products that we purchase from these sources are proprietary or complex in nature, and, therefore, cannot be readily or easily replaced by alternative sources.

(v) New Accounting Pronouncements Adopted

We adopted ASU 2016-02, "Leases (Topic 842)," as of January 1, 2019, using the optional transition method that allows for a cumulative-effect adjustment in the period of adoption and did not restate prior periods.

We adopted ASU 2018-13, "Fair Value Measurement (Topic 820)," as of January 1, 2020, which modifies the disclosure requirements on fair value measurements under ASC Topic No. 820, Fair Value Measurement, as amended ("ASC 820"). ASU 2018-13 removes (a) the prior requirement to disclose the amount and reason for transfers between Level 1 and Level 2 of the fair value hierarchy contained in ASC 820, (b) the policy for timing of transfers between levels, and (c) the valuation processes used for Level 3 fair value measurements. ASU 2018-13 also adds, among other things, a requirement to disclose the range and weighted average of significant unobservable inputs used in Level 3 fair value measurements. The adoption did not have a material impact on our consolidated financial statements.

We adopted ASU 2016-13, "Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments," effective January 1, 2020, using the modified retrospective transition method. This ASU amends the impairment model to utilize an expected loss methodology in place of the incurred loss methodology for financial instruments, including trade receivables and leased equipment. The amendment requires entities to consider a broader range of information to estimate expected credit losses, which may result in earlier recognition of losses. We recorded a non-cash cumulative effect adjustment to retained earnings of $1.8 million, net of $0.6 million of income taxes, on our opening consolidated balance sheet as of January 1, 2020. This adjustment, before the impact of income taxes, was comprised of $2.3 million related to our contract assets and sales-type leases, and $0.2 million related to accounts receivable. Refer to "Note 6. Credit Losses" for more information on our presentation of credit losses.

Effective January 1, 2021, we adopted ASU 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes." The new guidance is intended to simplify the accounting for income taxes by removing certain exceptions and by updating accounting requirements around goodwill recognized for tax purposes and the allocation of current and deferred tax expense among legal entities, among other minor changes. The adoption of ASU 2019-12 did not have a material impact on our consolidated financial statements.

In July 2021, the FASB issued ASU 2021-05, "Leases (Topic 842); Lessors - Certain Leases with Variable Lease Payments." ASU 2021-05 requires a lessor to classify a lease with variable payments that do not depend on an index or rate as an operating lease if another lease classification (i.e., sales-type or direct financing) would result in recognition of a day-one loss. We have elected to adopt this standard as of the third quarter of 2021, on a prospective basis. The adoption of ASU 2021-05 did not have a material impact on our consolidated financial statements.

(w) New Accounting Pronouncements Not Yet Adopted

In October 2021, the FASB issued ASU 2021-08, "Business Combinations (Topic 805): Accounting for Acquired Contract Assets and Contract Liabilities." ASU 2021-08 is intended to improve comparability for both the recognition and measurement of acquired revenue contracts with customers at the date of and after a business combination by providing consistent recognition guidance. This standard is effective for fiscal years beginning after December 15, 2022. Adoption of the ASU 2021-08 should be applied prospectively. Early adoption is permitted, including in an interim period, for any period for which financial statements have not yet been issued. We are currently evaluating the impact, if any, of ASU 2021-08 on our consolidated financial statements.

In March 2020, the FASB issued ASU 2020-04, "Facilitation of the Effects of Reference Rate Reform on Financial Reporting." ASU 2020-04 is intended to provide optional expedients and exceptions to the U.S. GAAP guidance on contract modifications and hedge accounting to ease the financial reporting burdens related to the discontinuation of the London Interbank Offered Rate ("LIBOR") or by another reference rate expected to be discontinued. The FASB also issued ASU 2021-01, "Reference Rate Reform (Topic 848): Scope," in January 2021. It clarifies that certain optional expedients and exceptions apply to derivatives that are affected by the discounting transition. The amendments in this ASU affect the guidance in ASU No. 2020-04 and are effective in the same timeframe as ASU 2020-04. The relief offered by this guidance, if adopted, is available to companies for the period March 12, 2020 through December 31, 2022. Our Credit Facility includes a provision for the determination of a benchmark replacement rate as a successor to the LIBOR rate, therefore; we do not expect the discontinuation of LIBOR to have an impact on our consolidated financial statements.

NOTE 3. REVENUE RECOGNITION

Our revenue is recognized when, or as, performance obligations under the terms of a contract are satisfied, which occurs when control of the promised products or services is transferred to a customer. We exclude sales, use, value-added, and other taxes we collect on behalf of third parties from revenue. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring products or services to a customer. To accurately present the consideration received in exchange for promised products or services, we apply the five-step model outlined below:

1. Identification of a contract or agreement with a customer
2. Identification of our performance obligations in the contract or agreement
3. Determination of the transaction price
4. Allocation of the transaction price to the performance obligations
5. Recognition of revenue when, or as, we satisfy a performance obligation

We enter into contracts that can include various combinations of products and services, which are generally capable of being distinct and accounted for as separate performance obligations. The timing of revenue recognition, billings, and cash collections results in accounts receivable, lease receivables, and contract assets as a result of revenue recognized in advance of billings (included within other assets), and contract liabilities or deferred revenue as a result of receiving consideration in advance of revenue recognition within our consolidated balance sheet. Our general payment terms range from 30 to 60 days, with exceptions in certain geographies. Below is a listing of our major categories of revenue for our products and services.

Diagnostic Products and Accessories. Diagnostic products and accessories revenues, including IDEXX VetLab® consumables and accessories, rapid assay, LPD, Water, and OPTI testing products, are predominantly recognized and invoiced at the time of shipment, which is when the customer obtains control of the product based on legal title transfer and we have the right to payment. We also provide customers with certain consumables that are recognized upon utilization by the customer, which is when we have the right to payment and the risks and rewards of ownership transfer. Shipping costs reimbursed by the customer are included in revenue and cost of sales. As a practical expedient, we do not account for shipping activities as a separate performance obligation.

Laboratory Diagnostic and Consulting Services. Laboratory diagnostic and consulting services revenues are recognized and invoiced when the laboratory diagnostic service is performed.

Instruments, Software and Systems. CAG Diagnostics capital instruments, veterinary software, and diagnostic imaging systems revenues are recognized and invoiced when the customer obtains control of the products based on legal title transfer and we have the right to payment, which generally occurs at the time of installation and customer acceptance. Our instruments, software, and systems are often included in one of our significant customer programs, as further described below. For veterinary software systems that include multiple performance obligations, such as perpetual software licenses and computer hardware, we allocate revenue to each performance obligation based on estimates of the price that we would charge the customer for each promised product or service if it were sold on a standalone basis.

Lease Revenue. Revenues from instrument rental agreements and reagent rental programs are recognized either as operating leases on a ratable basis over the term of the agreement or as sales-type leases at the time of installation and customer acceptance. Customers typically pay for the right to use instruments under rental agreements in equal monthly amounts over the term of the rental agreement. Our reagent rental programs provide our customers the right to use our instruments upon entering into agreements to purchase specified amounts of consumables, which are considered embedded leases. For some agreements, the customers are provided with the right to purchase the instrument at the end of the lease term. Lease revenues from these agreements are presented in product revenue on our consolidated income statement. Lease revenue was approximately $20.8 million for the year ended December 31, 2021, as compared to $17.5 million for the year ended December 31, 2020, including both operating leases and sales-type leases under ASC 842, *Leases,* for leases entered into after January 1, 2019, and ASC 840, *Leases,* for leases entered into prior to 2019. Refer to below for revenue recognition under our reagent rental programs.

Extended Warranties and Post-Contract Support. CAG Diagnostics capital instruments and diagnostic imaging systems extended warranties typically provide customers with continued coverage for a period of one to five years beyond the first-year standard warranty. Customers can either pay in full for the extended warranty at the time of instrument or system purchase, or can be billed on a quarterly basis over the term of the contract. We recognize revenue associated with extended

warranties over time on a ratable basis using a time-elapsed measure of performance over the contract term, which approximates the expected timing in which applicable services are performed.

Veterinary software post-contract support provides customers with access to technical support when and as needed through access to call centers and online customer assistance. Post-contract support contracts typically have a term of 12 months and customers are billed for post-contract support in equal quarterly amounts over the term. We recognize revenue for post-contract support services over time on a ratable basis using a time elapsed measure of performance over the contract term, which approximates the expected timing in which applicable services are performed.

On December 31, 2020, our deferred revenue related to extended warranties and post-contract support was $35.1 million, of which approximately $23.1 million was recognized during the year ended December 31, 2021. Furthermore, as a result of new agreements, our deferred revenue related to extended warranties and post-contract support was $30.0 million at December 31, 2021. We do not disclose information about remaining performance obligations that are part of contracts with an original expected duration of one year or less, and do not adjust for the effect of the financing components when the period between customer payment and revenue recognition is one year or less. Deferred revenue related to extended warranties and post-contract support with an original duration of more than one year was $16.0 million at December 31, 2021, of which approximately 49%, 29%, 14%, 5%, and 3% are expected to be recognized during 2022, 2023, 2024, 2025, and thereafter, respectively. Additionally, we have determined these agreements do not include a significant financing component.

SaaS Subscriptions. We offer a variety of veterinary software and diagnostic imaging SaaS subscriptions including ezyVet, Animana, Neo, Cornerstone Cloud, Pet Health Network Pro, Petly Plans, Web PACS, rVetLink, and SmartFlow. We recognize revenue for our SaaS subscriptions over time on a ratable basis over the contract term, beginning on the date our service is made available to the customer. Our subscription contracts vary in term from monthly to two years. Customers typically pay for our subscription contracts in equal monthly amounts over the term of the agreement. Deferred revenue related to our SaaS subscriptions is not material.

Contracts with Multiple Performance Obligations. We enter into contracts with multiple performance obligations where customers purchase a combination of IDEXX products and services. Determining whether products and services are considered distinct performance obligations that should be accounted for separately requires significant judgment. We determine the transaction price for a contract based on the total consideration we expect to receive in exchange for the transferred goods or services. To the extent the transaction price includes variable consideration, such as volume rebates or expected price adjustments, we apply judgment in constraining the estimated variable consideration due to factors that may cause reversal of revenue recognized. We evaluate constraints based on our historical and projected experience with similar customer contracts.

We allocate revenue to each performance obligation in proportion to the relative standalone selling prices, and recognize revenue when transfer of the related goods or services has occurred for each obligation. We utilize the observable standalone selling price when available, which represents the price charged for the performance obligation when sold separately. When standalone selling prices for our products or services are not directly observable, we determine the standalone selling prices using relevant information available and apply suitable estimation methods including, but not limited to, the cost plus a margin approach. We recognize revenue as each performance obligation is satisfied, either at a point in time or over time, as described in the revenue categories above. We do not disclose information about remaining performance obligations that are part of contracts with an original expected duration of one year or less.

The following customer programs represent our most significant customer contracts which contain multiple performance obligations:

Customer Commitment Programs. We offer customer incentives upon entering into multi-year agreements to purchase annual minimum amounts of products and services.

Up-Front Customer Loyalty Programs. Our up-front loyalty programs provide customers with incentives in the form of cash payments or IDEXX Points upon entering into multi-year agreements to purchase annual minimum amounts of future products or services. If a customer breaches their agreement, they are required to refund all or a portion of the up-front cash or IDEXX Points, or make other repayments, remedial actions, or both. Up-front incentives to customers in the form of cash or IDEXX Points are not made in exchange for distinct goods or services and are capitalized as customer acquisition costs within other current and long-term assets, which 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 instruments, we

allocate total consideration, including future committed purchases less up-front incentives and estimates of expected price adjustments, based on relative standalone selling prices to identified performance obligations, and recognize instrument revenue and cost at the time of installation and customer acceptance. To the extent invoiced instrument revenue exceeds recognized instrument revenue, we record deferred revenue as a contract liability, which is subsequently recognized upon the purchase of products and services over the term of the contract. We have determined these agreements do not include a significant financing component. Differences between estimated and actual customer purchases may impact the timing and amount of revenue recognition.

On December 31, 2020, our capitalized customer acquisition costs were $148.1 million, of which approximately $43.6 million was recognized as a reduction of revenue during the year ended December 31, 2021. Furthermore, as a result of new up-front customer loyalty payments, net of subsequent recognition, our capitalized customer acquisition costs were $158.3 million at December 31, 2021. We monitor customer purchases over the term of their agreement to assess the realizability of our capitalized customer acquisition costs and review estimates of variable consideration. Impairments, revenue adjustments that relate to performance obligations satisfied in prior periods, and contract modifications during the years ended December 31, 2021 and 2020, were not material.

Volume Commitment Programs. Our volume commitment programs, such as our IDEXX 360 program, provide customers with a free or discounted instrument or system upon entering into multi-year agreements to purchase annual minimum amounts of products and services. We allocate total consideration, including future committed purchases and expected price adjustments, based on relative standalone selling prices to identified performance obligations and recognize instrument revenue and cost at the time of installation and customer acceptance in advance of billing the customer, which is also when the customer obtains control of the instrument based on legal title transfer. Our right to future consideration related to instrument revenue is recorded as a contract asset within other current and long-term assets. The contract asset is transferred to accounts receivable when customers are billed for products and services over the term of the contract. We have determined these agreements do not include a significant financing component. Differences between estimated and actual customer purchases may impact the timing and amount of revenue recognition.

On December 31, 2020, our volume commitment contract assets were $115.5 million, of which approximately $26.3 million was reclassified to accounts receivable when customers were billed for related products and services during the year ended December 31, 2021. Furthermore, as a result of new placements under volume commitment programs, net of subsequent amounts reclassified to accounts receivable, and allowances established for credit losses, our contract assets were $159.9 million at December 31, 2021. We monitor customer purchases over the term of their agreement to assess the realizability of our contract assets and review estimates of variable consideration. Impairments, revenue adjustments that relate to performance obligations satisfied in prior periods, and contract modifications during the years ended December 31, 2021 and 2020, were not material.

For our up-front customer loyalty and volume commitment programs, we estimate future revenues related to multi-year agreements to be approximately $2.9 billion, of which approximately 25%, 24%, 20%, 15%, and 16% are expected to be recognized during 2022, 2023, 2024, 2025, and thereafter, respectively. These future revenues relate to performance obligations not yet satisfied, for which customers have committed to purchase goods and services, net of the expected revenue reductions from customer acquisition costs and expected price adjustments, and as a result, are lower than stated contractual commitments by our customers.

Instrument Rebate Programs. Our instrument rebate programs require an instrument purchase and provide customers the opportunity to earn future rebates based on the volume of products and services they purchase over the term of the program. We account for the customer's right to earn rebates on future purchases as a separate performance obligation and determine the standalone selling price based on an estimate of rebates the customer will earn over the term of the program. Total consideration allocated to identified performance obligations is limited to goods and services that the customer is presently obligated to purchase and does not include estimates of future purchases that are optional. We allocate total consideration to identified performance obligations, including the customer's right to earn rebates on future purchases, which is deferred and recognized upon the purchase of future products and services, partly offsetting future rebates as they are earned.

On December 31, 2020, our deferred revenue related to instrument rebate programs was $39.3 million, of which approximately $14.3 million was recognized when customers purchased eligible products and services and earned rebates during the year ended December 31, 2021. Furthermore, as a result of new instrument purchases under rebate programs, net of subsequent recognition, our deferred revenue was $33.0 million at December 31, 2021, of which approximately 36%, 26%, 17%, 11%, and 10% are expected to be recognized during 2022, 2023, 2024, 2025, and thereafter, respectively.

Reagent Rental Programs. Our reagent rental programs provide our customers the right to use our instruments upon entering into multi-year agreements to purchase annual minimum amounts of consumables. These types of agreements include an embedded lease for the right to use our instrument and we determine the amount of lease revenue allocated to the instrument based on relative standalone selling prices. We evaluate the terms of these embedded leases to determine classification as either a sales-type lease or an operating lease.

Sales-type Reagent Rental Programs. Our reagent rental programs that effectively transfer control of instruments to our customers are classified as sales-type leases and we recognize instrument revenue and cost in advance of billing the customer, at the time of installation and customer acceptance. Our right to future consideration related to instrument revenue is recorded as a lease receivable within other current and long-term assets, and is transferred to accounts receivable when customers are billed for products and services over the term of the contract. On December 31, 2020, our lease receivable assets were $11.1 million, of which approximately $2.2 million was reclassified to accounts receivable when customers were billed for related products and services during the year ended December 31, 2021. Furthermore, as a result of new placements under sales-type reagent rental programs, net of subsequent amounts reclassified to accounts receivable, and allowances established for credit losses, our lease receivable assets were $15.3 million at December 31, 2021. The impacts of discounting and unearned income at December 31, 2021, were not material. Profit and loss recognized at the commencement date and interest income during the year ended December 31, 2021, were not material. We monitor customer purchases over the term of their agreement to assess the realizability of our lease receivable assets. Impairments during the year ended December 31, 2021, were not material.

Operating-type Reagent Rental Programs. Our reagent rental programs that do not effectively transfer control of instruments to our customers are classified as operating leases and we recognize instrument revenue and costs ratably over the term of the agreement. The cost of the instrument is capitalized within property and equipment.

We estimate future revenue to be recognized related to our reagent rental programs of approximately $38.3 million, of which approximately 32%, 26%, 20%, 14%, and 8% are expected to be recognized during 2022, 2023, 2024, 2025, and thereafter, respectively. These future revenues relate to performance obligations not yet satisfied for which customers have committed to future purchases, net of any expected price adjustments, and as a result, may be lower than stated contractual commitments by our customers.

Other Customer Incentive Programs. Certain agreements with customers include discounts or rebates on the sale of products and services applied retrospectively, such as volume rebates achieved by purchasing a specified purchase threshold of goods and services. We account for these discounts as variable consideration and estimate the likelihood of a customer meeting the threshold in order to determine the transaction price using the most predictive approach. We typically use the most-likely-amount method for incentives that are offered to individual customers, and the expected-value method for programs that are offered to a broad group of customers. Revenue adjustments that relate to performance obligations satisfied in prior periods during the years ended December 31, 2021 and 2020, were not material. Refund obligations related to customer incentive programs are recorded in accrued liabilities for the actual issuance of incentives, incentives earned but not yet issued, and estimates of incentives to be earned in the future.

Program Combinations. At times, we combine elements of our significant customer programs within a single customer contract. We separate each significant program element and include the contract assets, customer acquisition costs, deferred revenues, and estimated future revenues within the most relevant program disclosures above. Each customer contract is presented as a net contract asset or net contract liability on our consolidated balance sheet.

IDEXX Points. IDEXX Points may be applied to trade receivables due to us, converted to cash, or applied against the purchase price of IDEXX products and services. We consider IDEXX Points equivalent to cash. IDEXX Points that have not

yet been used by customers are included in accrued liabilities until utilized or expired. Breakage is not material because customers can apply IDEXX Points to trade receivables at any time.

Accounts Receivable. We recognize revenue when it is probable that we will collect substantially all of the consideration to which we will be entitled, based on the customer's intent and ability to pay the promised consideration. We apply judgment in determining the customer's ability and intention to pay, which is based on a variety of factors including the customer's historical payment experience or, in the case of a new customer, published credit and financial information pertaining to the customer. We have no significant customers that accounted for greater than 10% of our consolidated revenues and we have no concentration of credit risk as of December 31, 2021.

Disaggregated Revenues. We present disaggregated revenue for our CAG segment based on major product and service categories. Our Water segment is comprised of a single major product category. Although our LPD segment does not meet the quantitative requirements to be reported as a separate segment, we believe it is important to disaggregate these revenues as a major product and service category separately from our Other reportable segment given its distinct markets, and therefore we have elected to report LPD as a reportable segment.

The following table presents disaggregated revenue by major product and service categories:

(in thousands)	For the Years Ended December 31,		
	2021	**2020**	**2019**
CAG segment revenue:			
CAG Diagnostics recurring revenue:	$ 2,534,562	$ 2,113,839	$ 1,828,329
IDEXX VetLab consumables	*1,006,781*	*824,376*	*693,360*
Rapid assay products	*296,852*	*253,018*	*232,149*
Reference laboratory diagnostic and consulting services	*1,123,656*	*946,268*	*822,497*
CAG Diagnostics services and accessories	*107,273*	*90,177*	*80,323*
CAG Diagnostics capital - instruments	149,140	108,950	132,685
Veterinary software, services and diagnostic imaging systems	206,258	162,976	158,169
CAG segment revenue	2,889,960	2,385,765	2,119,183
Water segment revenue	146,505	128,625	132,850
LPD segment revenue	135,887	145,845	132,635
Other segment revenue	43,008	46,420	22,240
Total revenue	$ 3,215,360	$ 2,706,655	$ 2,406,908

Revenue by principal geographic area, based on customers' domiciles, was as follows:

(in thousands)	For the Years Ended December 31,		
	2021	2020	2019
Americas			
United States	$ 1,995,683	$ 1,691,224	$ 1,495,516
Canada	139,727	107,398	99,550
Latin America & Caribbean	66,623	51,863	56,515
	2,202,033	1,850,485	1,651,581
Europe, the Middle East and Africa			
Germany	146,762	119,353	104,081
United Kingdom	114,955	90,156	90,969
France	90,836	74,814	64,767
Italy	52,062	42,817	39,725
Spain	48,169	39,265	36,439
Switzerland	31,984	24,850	20,855
Netherlands	29,656	23,461	19,397
Other	167,525	148,049	122,206
	681,949	562,765	498,439
Asia Pacific Region			
Australia	94,414	79,629	71,069
Japan	84,275	74,725	67,246
China	63,166	70,845	57,518
Other	89,523	68,206	61,055
	331,378	293,405	256,888
Total	$ 3,215,360	$ 2,706,655	$ 2,406,908

Costs to Obtain a Contract. We capitalize sales commissions and the related fringe benefits earned by our sales force when considered incremental and recoverable costs of obtaining a contract. Our contracts include performance obligations related to various goods and services, some of which are satisfied at a point in time and others over time. Commission costs related to performance obligations satisfied at a point in time are expensed at the time of sale, which is when revenue is recognized. Commission costs related to long-term service contracts and performance obligations satisfied over time, including extended warranties and SaaS subscriptions, are deferred and recognized on a systematic basis that is consistent with the transfer of the goods or services to which the asset relates. We apply judgment in estimating the amortization period, which ranges from 3 to 7 years, by taking into consideration our customer contract terms, history of renewals, and expected length of customer relationship, as well as the useful life of the underlying technology and products. Amortization expense is included in sales and marketing expenses in the accompanying consolidated statements of income. Deferred commission costs are periodically reviewed for impairment.

On December 31, 2020, our deferred commission costs, included within other assets, were $17.5 million, of which approximately $5.7 million of commission expense was recognized during the year ended December 31, 2021. Furthermore, as a result of commissions related to new extended warranties and SaaS subscriptions, net of subsequent recognition, our deferred commission costs were $19.5 million at December 31, 2021. Impairments of deferred commission costs during the years ended December 31, 2021 and 2020, were not material.

NOTE 4. ACQUISITIONS AND INVESTMENTS

We believe that our acquisitions of businesses and other assets enhance our existing businesses by either expanding our geographic range, customer base, or existing product and service lines. From time to time, we may acquire small reference laboratories or radiology practices that we account for as either asset purchases or business combinations.

During the fourth quarter of 2021, we acquired the shares of a reference laboratory located in Finland for approximately $13.4 million in cash, including a holdback of approximately $1.4 million. This acquisition expands our international reference laboratory presence and was accounted for as a business combination. The fair values of the assets acquired consist of customer relationship intangibles of approximately $7.4 million, with a life of 10 years; a non-compete agreement of approximately $0.8 million, with a life of 3 years; approximately $5.3 million of goodwill, representing synergies within our broader CAG portfolio; and approximately $0.1 million in net tangible liabilities. The purchase price allocation is

subject to revision as additional information becomes available regarding review of taxes and the settlement of the working capital adjustment. Goodwill related to this acquisition is not expected to be deductible for tax purposes. Pro forma information has not been presented for this acquisition because such information is not material to the financial statements. The results of operations have been included in our CAG segment since the acquisition date. The acquisition expenses were not material.

During the third quarter of 2021, we acquired the assets of a teleradiology business for approximately $5.4 million, including a contingent payment of $0.3 million. This acquisition expands our current teleradiology capability. The acquired assets primarily consist of a customer relationship intangible of approximately $1.7 million, with a weighted average life of 10 years, and approximately $3.7 million in goodwill. Goodwill related to this acquisition is expected to be deductible for tax purposes. Pro forma information has not been presented for this acquisition because such information is not material to the financial statements. The results of operations have been included in our CAG segment since the acquisition date. The acquisition expenses were not material.

During the second quarter of 2021, we acquired the assets of the ezyVet cloud-based veterinary software businesses and the shares of ezyVet US, Inc., as well as the Vet Radar business assets, for approximately $157.2 million, including an estimated contingent payment of $5.0 million. The acquired assets include the ezyVet cloud-native practice management system software and the Vet Radar cloud-based workflow management software. The acquisition expands our cloud-based software offerings to support our customers with technology solutions that raise the standards of care for patients and improve practice efficiency. The fair values of assets acquired were as follow: approximately $32.0 million in customer-related intangible with a weighted average life of 10 years; approximately $8.4 million in technology-related intangibles with a weighted average life of 6 years; approximately $2.4 million in trademarks with a weighted average life of 14 years; approximately $1.8 million in non-compete agreements with a weighted average life of 5 years; approximately $109.4 million in goodwill, representing synergies within our broader CAG portfolio; and approximately $3.2 million in net tangible assets. Goodwill has been allocated to multiple reporting units based upon the fair value of projected earnings as of the date of the acquisition. The goodwill was allocated as follows: approximately $23.4 million to IDEXX VetLab®, approximately $27.0 million to Reference Laboratories, approximately $11.1 million to Rapid Assay, and approximately $47.9 million to Veterinary Software Services. Goodwill related to this acquisition is expected to be deductible for tax purposes. Pro forma information has not been presented for this acquisition because such information is not material to the financial statements. The results of operations have been included in our CAG segment since the acquisition date. During the fourth quarter, we increased the contingent payable by $2.0 million, for a total expected payment of $7.0 million. This increase to the contingent payment is expensed as the adjustment was made after the measurement period. The acquisition expenses were approximately $2.2 million.

During the first quarter of 2021, we acquired the shares of a reference laboratory located in Switzerland for approximately $5.5 million in cash, including holdback and contingent payments of approximately $1.1 million. This acquisition expands our international reference laboratory presence and was accounted for as a business combination. The fair values of the assets acquired consist of approximately $4.3 million in intangible assets, primarily for customer relationships, which will be amortized over 9 years, approximately $1.8 million for goodwill, representing synergies within our broader CAG portfolio, and approximately $0.6 million of liabilities, including deferred taxes associated with the acquired intangible assets. Goodwill related to this acquisition is not deductible for tax purposes. Pro forma information has not been presented for this acquisition because such information is not material to the financial statements. The results of operations have been included in our CAG segment since the acquisition date. The acquisition expenses were not material.

During the fourth quarter of 2019 we acquired the assets of a multi-site reference laboratory business in the mid-west of the U.S. for $50.0 million in cash. This acquisition expands our national reference laboratory presence in the U.S., and was accounted for as a business combination. We finalized the valuation of the fair value of the assets acquired during the first quarter of 2020. The fair value of the assets acquired consists of $26.9 million in intangible assets, primarily for customer relationships, with a weighted average life of 13.8 years, $0.2 million of tangible assets, and $22.9 million of goodwill, representing synergies within our reference laboratory portfolio. The goodwill is expected to be deductible for income tax purposes. Pro forma information has not been presented for this acquisition because such information is not material to the financial statements. The results of operations have been included in our CAG segment since the acquisition date. The acquisition expenses incurred were not material.

Acquisition of noncontrolling interest

During the fourth quarter of 2021, we acquired the remaining 5% interest of our sole foreign joint venture operation for approximately $1.0 million. As a result, we no longer record any minority interest in the equity section of our consolidated balance sheet. This transaction is recorded as an equity transaction, with no gain or loss reflected in the consolidated statements of income.

NOTE 5. SHARE-BASED COMPENSATION

We provide for various forms of share-based compensation awards to our employees and non-employee directors. Our share-based compensation plans allow for the issuance of a mix of stock options, restricted stock, stock appreciation rights, employee stock purchase rights, and other stock unit awards. With the exception of stock options, the fair value of our awards is equal to the closing stock price of IDEXX common stock on the date of grant. We calculate the fair value of our stock option awards using the Black-Scholes-Merton option-pricing model. For stock options, restricted stock units ("RSUs"), and deferred stock units ("DSUs"), share-based compensation expense is recognized net of estimated forfeitures, on a straight-line basis over the requisite service period of the award for stock options. For performance-based restricted stock units ("PBRSUs"), share-based compensation expense is recognized net of estimated forfeitures, on a grade-vesting methodology over the requisite service period.

Stock options permit a holder to buy IDEXX stock upon vesting at the stock option exercise price set on the day of grant. An RSU is an agreement to issue shares of IDEXX stock at the time of vesting. A PBRSU is an agreement to issue shares of IDEXX stock at the time of vesting upon successful completion of certain performance goals. DSUs are granted under our Executive Deferred Compensation Plan (the "Executive Plan") and non-employee Director Deferred Compensation Plan (the "Director Plan"). DSUs may or may not have vesting conditions depending on the plan under which they are issued. We did not issue any restricted stock or stock appreciation rights during the years ended December 31, 2021, 2020, and 2019, nor were any restricted stock or stock appreciation rights outstanding as of those years ended.

We primarily issue shares of common stock to satisfy stock option exercises and employee stock purchase rights and to settle RSUs, PBRSUs, and DSUs. We issue shares of treasury stock to settle certain RSUs and upon the exercise of certain stock options, which were not material for the years ended December 31, 2021, 2020, and 2019. The number of shares of common stock and treasury stock issued are equivalent to the number of awards exercised or settled.

With the exception of employee stock purchase rights, equity awards are issued to employees and non-employee directors under the 2018 Stock Incentive Plan (the "2018 Stock Plan"). Our Board of Directors has authorized the issuance of 7.5 million shares of our common stock under the 2018 Stock Plan. Any shares that are subject to awards of stock options or stock appreciation rights will be counted against the share limit as one share for every share granted. Any shares that are issued other than stock options and stock appreciation rights will be counted against the share limit as 2.4 shares for every share granted. If any shares issued under our prior plans are forfeited, settled for cash, or expire, these shares, to the extent of such forfeiture, cash settlement, or expiration, will again be available for issuance under the 2018 Stock Plan. As of December 31, 2021, there were approximately 6.5 million remaining shares available for issuance under the 2018 Stock Plan.

Share-Based Compensation

Share-based compensation costs are classified in the consolidated financial statements consistent with the classification of cash compensation paid to the employees receiving such share-based compensation. The following is a summary of share-based compensation costs and related tax benefits recorded in our consolidated statements of income:

(in thousands)	For the Years Ended December 31,		
	2021	2020	2019
Share-based compensation expense included in cost of revenue	$ 4,044	$ 3,415	$ 2,681
Share-based compensation expense included in operating expenses	33,711	27,536	36,597
Total share-based compensation expense included in consolidated statements of income	37,755	30,951	39,278
Income tax benefit resulting from share-based compensation expense	(4,734)	(3,965)	(4,861)
Net share-based compensation expense included in consolidated statements of income, excluding tax benefit from settlement of share-based awards	33,021	26,986	34,417
Income tax benefit resulting from settlement of share-based awards	(32,474)	(38,981)	(19,140)
Net expense (benefit) related to share-based compensation arrangements included in consolidated statements of income	$ 547	$ (11,995)	$ 15,277

In the fourth quarter of 2019, we entered into a mutual separation agreement with our former CEO, pursuant to which Mr. Ayers's outstanding stock options were modified, resulting in a share-based compensation expense of approximately $10.9 million, primarily representing an acceleration of the cost of the equity awards. This expense was partially offset by a reduction to our provision for income taxes of approximately $0.8 million. Other than the modification to Mr. Ayers's stock options, as described above, there were no other material modifications to the terms of outstanding options, RSUs, PBRSUs, or DSUs during the years ended December 31, 2021, 2020, or 2019.

Share-based compensation expense is reduced for an estimate of the number of awards that are expected to be forfeited. We use historical data and other factors to estimate expected employee terminations and to evaluate whether particular groups of employees have significantly different forfeiture expectations.

The total unrecognized compensation expense, net of estimated forfeitures, for unvested share-based compensation awards at December 31, 2021, was $64.1 million, which will be recognized over a weighted average period of approximately 1.3 years.

Stock Options

Prior to December 4, 2019, all options granted to employees primarily vest ratably over five years on each anniversary of the date of grant. Options granted to non-employee directors vest fully on the first anniversary of the date of grant. Employee grants after December 4, 2019 vest ratably over four years. Vesting of option awards issued is conditional based on continuous service. Options granted after May 8, 2013 have a contractual term of ten years and options granted between January 1, 2006 and May 8, 2013 had contractual terms of seven years. Upon any change in control of the company, 25% of the unvested stock options then outstanding will vest and become exercisable. However, if the acquiring entity does not assume outstanding options, then all options will vest immediately prior to the change in control.

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. Changes in the subjective input assumptions can affect the fair value estimate. Our expected stock price volatility assumptions are based on the historical volatility of our stock over periods that are similar to the expected terms of grants and other relevant factors. We derive the expected term based on historical experience and other relevant factors concerning expected employee behavior with regard to option exercise. The risk-free interest rate is based on U.S. Treasury yields for a maturity approximating the expected term calculated 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 used in the valuation of option awards as of the date of grant. Differences in the expected stock price volatility, expected term or risk-free interest rate may necessitate distinct valuation assumptions at those grant dates. As such, we may use different assumptions for options granted throughout the year. The weighted averages of the valuation assumptions used to determine the fair value of each option award on the date of grant and the weighted average estimated fair values were as follows:

	For the Years Ended December 31,		
	2021	2020	2019
Share price at grant	$ 546.36	$ 291.14	$ 218.66
Share exercise price	$ 550.10	$ 291.14	$ 220.88
Expected stock price volatility	30 %	27 %	26 %
Expected term, in years	6.2	6.0	6.0
Risk-free interest rate	0.7 %	1.4 %	2.4 %
Weighted average fair value of options granted	$ 169.15	$ 84.92	$ 65.53

A summary of the status of options granted under our share-based compensation plans at December 31, 2021, and changes during the year then ended, are presented in the table below:

	Number of Options (000)	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value ($000)
Outstanding as of December 31, 2020	1,953	$ 149.32		
Granted	144	$ 550.10		
Exercised	(310)	$ 102.78		
Forfeited	(30)	$ 261.95		
Outstanding as of December 31, 2021	1,757	$ 188.47	5.8	$ 825,745
Fully vested as of December 31, 2021	1,109	$ 127.30	4.8	$ 588,831
Fully vested and expected to vest as of December 31, 2021	1,738	$ 186.72	5.7	$ 819,777

The total fair value of options vested were $17.3 million, $14.6 million, and $12.2 million during the years ended December 31, 2021, 2020, and 2019, respectively.

Intrinsic value of stock options exercised represents the amount by which the market price of the common stock exceeded the exercise price, before applicable income taxes. The total intrinsic values of stock options exercised were $147.9 million, $163.0 million, and $83.7 million during the years ended December 31, 2021, 2020, and 2019, respectively.

Restricted Stock Units

Prior to December 4, 2019, the majority of RSUs, including our PBRSUs, granted to employees vest ratably over five years on each anniversary of the date of grant. Employee grants after December 4, 2019, will vest ratably over 4 years. PBRSUs granted to employees vest based on meeting performance goals set on the day of grant. RSUs granted to non-employee directors vest fully on the first anniversary of the date of grant. Vesting as it relates to RSUs and PBRSUs issued is conditional based on continuous service. Upon any change in control of the company, 25% of the unvested RSUs and PBRSUs then outstanding will vest, provided, however, that if the acquiring entity does not assume the RSUs and PBRSUs, then all such units will vest immediately prior to the change in control. At time of grant, we assume all PBRSUs will meet performance goals to vest.

A summary of the status of RSUs and PBRSUs granted under our share-based compensation plans at December 31, 2021, and changes during the period then ended, are presented in the table below:

	Number of Units (000)	Weighted Average Grant-Date Fair Value
Nonvested as of December 31, 2020	218	$ 202.47
Granted	44	
Vested	(85)	
Forfeited	(12)	
Nonvested as of December 31, 2021	165	$ 306.18
Expected to vest as of December 31, 2021	156	$ 303.00

The total fair values of RSUs and PBRSUs vested were $46.1 million, $27.9 million, and $23.8 million during the years ended December 31, 2021, 2020, and 2019, respectively. The aggregate intrinsic value of nonvested RSUs and PBRSUs as of December 31, 2021, which is equal to the fair value of IDEXX's common stock as of December 31, 2021, multiplied by the number of nonvested units as of December 31, 2021, was $108.8 million.

Deferred Stock Units

Under our Director Plan, non-employee directors may defer a portion of their cash fees in the form of vested DSUs. Prior to 2014, certain members of our management could elect to defer a portion of their cash compensation in the form of vested deferred stock units under our Executive Plan. Each DSU represents the right to receive one unissued share of our common stock. These recipients receive a number of DSUs equal to the amount of cash fees or compensation deferred divided by the closing sale price of the common stock on the date of deferral. Also, under the Director Plan, non-employee directors are awarded annual grants of either RSUs or DSUs that vest fully on the first anniversary of the date of grant. Vesting for these annual RSU and DSU grants is conditional based on continuous service. Vested DSUs are distributed as shares of common stock on the distribution date elected by the participant and pursuant to the terms of the Director or Executive Plan, as applicable.

There were approximately 90,000 and 87,000 vested DSUs outstanding under our share-based compensation plans as of December 31, 2021 and 2020, respectively. During 2020, approximately 59,000 DSUs were distributed as shares of common stock to our former CEO in accordance with the terms of the Executive Plan and the deferral elections he previously made. Unvested DSUs as of December 31, 2021 and 2020, were not material.

Employee Stock Purchase Rights

Employee stock purchase rights are issued under the 1997 Employee Stock Purchase Plan, under which we reserved and may issue up to an aggregate of 4.7 million shares of common stock in periodic offerings. Under this plan, stock is sold to employees at a 15% discount off the closing price of the stock on the last day of each quarter. The dollar value of this discount is equal to the fair value of purchase rights recognized as share-based compensation. We issued approximately 29,500, 39,000, and 47,000 shares of common stock in connection with the Employee Stock Purchase Plan during the years ended December 31, 2021, 2020, and 2019, respectively. As of December 31, 2021, there were approximately 1.1 million remaining shares available for issuance under the 1997 Employee Stock Purchase Plan.

NOTE 6. CREDIT LOSSES

We are exposed to credit losses primarily through our sales of products and services to our customers. We maintain allowances for credit losses for potentially uncollectible receivables. We base our estimates on a detailed analysis of specific customer situations and a percentage of our accounts receivable by aging category. Historical credit loss experience provides the basis for the estimation of expected credit losses. Adjustments to historical loss information are made for differences in current economic conditions. Refer to "Note 2. Accounting Policies" for more information on our adoption of ASU 2016-13 on January 1, 2020, using the modified retrospective transition method.

Additional allowances may be required if either the financial condition of our customers was to deteriorate, or a strengthening U.S. dollar impacts the ability of foreign customers to make payments to us on their U.S. dollar-denominated purchases. We monitor our ongoing credit exposure through active review of counterparty balances against contract terms and due dates. Our activities include timely account reconciliations, dispute resolution, and payment confirmations. We may employ collection agencies and legal counsel to pursue recovery of defaulted receivables.

Account balances are charged off against the allowance when we believe it is probable the receivable will not be recovered. We may require collateralized asset support or a prepayment to mitigate credit risk. We do not have any off-balance sheet credit exposure related to our customers.

Accounts Receivable

The allowance for credit losses associated with accounts receivable was $5.7 million and $6.8 million at December 31, 2021, and December 31, 2020, respectively. Accounts receivable reflected on the balance sheet is net of this reserve. Based on an aging analysis, at December 31, 2021, approximately 90% of our accounts receivable had not yet reached the invoice due date and approximately 10% was considered past due, of which approximately 1.8% was greater than 60 days past due. At December 31, 2020, approximately 88% of our accounts receivable had not yet reached the invoice due date and approximately 12% was considered past due, of which approximately 1.5% was greater than 60 days past due. Write-offs and recoveries related to credit losses during the years ended December 31, 2021, 2020, and 2019 were not material.

Contract assets and lease receivables

The allowance for credit losses associated with the contract assets and lease receivables was $4.4 million and $3.7 million at December 31, 2021 and 2020, respectively. The assets reflected on the balance sheet are net of these reserves. Historically, we have experienced low credit loss rates on our customer commitment programs and lease receivables. We apply judgment in determining the customer's ability and intention to pay, which is based on a variety of factors including the customer's historical payment experience or, in the case of a new customer, published credit and financial information pertaining to the customer. Write-offs and recoveries related to credit losses during the years ended December 31, 2021, 2020, and 2019 were not material.

NOTE 7. INVENTORIES

Inventories are stated at the lower of cost (first-in, first-out) or net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. 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.

Unpaid inventory reflected within accounts payable in our consolidated balance sheets was $64.4 million, $45.6 million, and $39.5 million at December 31, 2021, 2020, and 2019, respectively. Instrument inventory transferred to property and equipment related to rental and operating-type reagent rental programs was $11.6 million, $9.6 million, $14.5 million during the years ended December 31, 2021, 2020, and 2019, respectively.

The components of inventories are as follows:

(in thousands)	December 31, 2021	December 31, 2020
Raw materials	$ 60,427	$ 45,986
Work-in-process	26,397	20,374
Finished goods	182,206	143,513
Inventories	$ 269,030	$ 209,873

NOTE 8. LEASES

The majority of our facilities are occupied under operating lease arrangements with various expiration dates through 2067, some of which include options to extend the life of the lease, and some of which include options to terminate the lease within 1 year. In certain instances, we are responsible for the real estate taxes and operating expenses related to these facilities. Additionally, we enter into operating leases for certain vehicles and office equipment in the normal course of business. We determine the expected term of any executed agreements using the non-cancelable lease term plus any renewal options by which the failure to renew imposes a penalty in such amount that renewal is reasonably assured. The derived expected term is then used in the determination of a financing or operating lease and in the calculation of straight-line rent expense. Rent escalations are considered in the calculation of minimum lease payments in our capital lease tests and in determining straight-line rent expense for operating leases. Minimum lease payments include the fixed lease component of the agreement, as well as fixed rate increases that are initially measured at the lease commencement date. Variable lease payments based on an index and payments associated with non-lease components and short-term rentals (leases with terms less than 12 months) are expensed as incurred. Consideration is allocated to the lease and non-lease components based on the estimated standalone prices.

We determine if an arrangement is a lease at its inception. Operating leases are included in operating lease right-of-use assets, accrued liabilities, and long-term operating lease liabilities in our consolidated balance sheets. Our financing leases are not material to the financial statements.

Right-of-use assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. Operating lease liabilities and right-of-use assets are recognized at commencement date based on the present value of lease payments over the lease term. As most of our leases do not provide an explicit rate, we use our incremental borrowing rate based on the information available at the commencement date in determining the present value of lease payments. Our lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Rent expense for lease payments is recognized on a straight-line basis over the lease term. The operating lease right-of-use assets also includes any rent prepayments, lease incentives upon receipt, and straight-line rent expense impacts, which represent the differences between our operating lease liabilities and right-of-use assets.

Maturities of operating lease liabilities are as follows:

(in thousands)	December 31, 2021
2022	$ 22,402
2023	21,122
2024	16,523
2025	12,675
2026	10,437
Thereafter	39,047
Total lease payments	122,206
Less imputed interest	(14,898)
Total lease liability (current and long-term)	$ 107,308

Total minimum future lease payments of approximately $1.6 million for leases that have not commenced as of December 31, 2021, are not included in the consolidated financial statements, as we do not yet control the underlying assets. These leases are expected to commence during 2022 through 2024 with lease terms of approximately 3 to 5.25 years.

	December 31, 2021	December 31, 2020
Weighted average remaining lease term - operating leases	9.4 years	10.3 years
Weighted average discount rate - operating leases	2.5 %	2.9 %

Expenses incurred related to operating leases, excluding variable and short-term leases, were approximately $23.0 million and $21.7 million during the year ended December 31, 2021 and 2020, respectively. Total expenses incurred related to

operating leases, including variable rent and short-term leases, were approximately $25.5 million and $24.5 million for the years ended December 31, 2021 and 2020, respectively.

Supplemental cash flow information for leases is as follows:

(in thousands)	For the Years Ended December 31, 2021	2020
Cash paid for amounts included in the measurement of operating lease liabilities	$ 24,214	$ 19,619
Right-of-use assets obtained in exchange for operating lease obligations, net of early lease terminations	$ 37,572	$ 26,807

NOTE 9. PROPERTY AND EQUIPMENT, NET

Property and equipment are stated at cost, net of accumulated depreciation and amortization. The costs of additions and improvements are capitalized, while maintenance and repairs are charged to expense as incurred. When an item is sold or retired, the cost and related accumulated depreciation are relieved, and the resulting gain or loss, if any, is recognized in the consolidated statements of income. We evaluate our property and equipment for impairment periodically or as changes in circumstances or the occurrence of events suggest the remaining value is not recoverable from future cash flows. If the carrying value of our property and equipment is impaired, an impairment charge is recorded for the amount by which the carrying value of the property and equipment exceeds its fair value. We provide for depreciation and amortization primarily using the straight-line method by charges to the consolidated statements of income in amounts that allocate the cost of property and equipment over their estimated useful lives as follows:

Asset Classification	Estimated Useful Life
Land improvements	15 to 20 years
Buildings and improvements	10 to 40 years
Leasehold improvements	Shorter of remaining lease term or useful life of improvements
Machinery and equipment	3 to 8 years
Office furniture and equipment	3 to 7 years
Computer hardware and software	3 to 7 years

We capitalize interest on the acquisition and construction of significant assets that require a substantial period of time to be made ready for use. The capitalized interest is included in the cost of the completed asset and depreciated over the asset's estimated useful life. The amount of interest capitalized during the years ended December 31, 2021 and 2020, was not material.

We capitalize certain costs incurred in connection with developing or obtaining software designated for internal use based on three distinct stages of development. Qualifying costs incurred during the application development stage, which consist primarily of internal payroll and direct fringe benefits and external direct project costs, including labor and travel, are capitalized and amortized on a straight-line basis over the estimated useful life of the asset. Costs incurred during the preliminary project and post-implementation and operation phases are expensed as incurred. These costs relate primarily to the determination of performance requirements, data conversion, and training. Software developed to deliver hosted services to our customers has been designated as internal use.

Property and equipment, net, consisted of the following:

(in thousands)	December 31, 2021	December 31, 2020
Land and improvements	$ 22,642	$ 13,982
Buildings and improvements	329,091	319,384
Leasehold improvements	93,248	82,459
Machinery and equipment	382,753	353,301
Office furniture and equipment	69,090	67,527
Computer hardware and software	276,895	265,664
Construction in progress	62,339	39,764
	1,236,058	1,142,081
Less accumulated depreciation and amortization	648,391	586,914
Total property and equipment, net	$ 587,667	$ 555,167

Below are the amounts of depreciation and amortization of property and equipment, capitalized computer software for internal use, unpaid property and equipment reflected in accounts payable and accrued expenses, and rental and reagent rental program instruments transferred from inventory to property and equipment:

(in thousands)	For the Years Ended December 31, 2021	2020	2019
Depreciation and amortization expense	$ 92,376	$ 86,095	$ 78,495
Capitalized computer software developed for internal use	$ 14,753	$ 18,472	$ 20,130
Unpaid property and equipment, reflected in accounts payable and accrued liabilities	$ 19,326	$ 13,343	$ 24,688
Rental and operating-type reagent rental program instruments transferred from inventory to property and equipment (Note 3)	$ 11,628	$ 9,645	$ 14,498

We had impairments of $5.1 million for the year ended December 31, 2021, associated with a write-down of rental assets in certain regions.

NOTE 10. OTHER CURRENT AND LONG-TERM ASSETS

Other current assets consisted of the following:

(in thousands)	December 31, 2021	December 31, 2020
Customer acquisition costs	$ 48,942	$ 43,751
Prepaid expenses	41,997	34,556
Contract assets, net [1]	37,772	23,837
Taxes receivable	19,464	19,476
Deferred sales commissions	6,475	5,738
Other	19,173	10,150
Other current assets	$ 173,823	$ 137,508

(1) Contract assets, net, are net of allowances for credit loss. Refer to "Note 6. Credit Losses."

Other long-term assets consisted of the following:

(in thousands)	December 31, 2021	December 31, 2020
Contract assets, net [1]	$ 122,160	$ 91,681
Customer acquisition costs	109,392	104,369
Deferred income taxes	24,784	31,549
Investment in long-term product supply arrangements	13,348	12,065
Deferred sales commissions	13,019	11,719
Taxes receivable	1,806	6,329
Other	45,891	31,883
Other long-term assets	$ 330,400	$ 289,595

(1) Contract assets, net, are net of allowances for credit loss. Refer to "Note 6. Credit Losses."

NOTE 11. GOODWILL AND INTANGIBLE ASSETS, NET

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 significant, 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 separately identified and recognized.

Our business combinations regularly include contingent consideration arrangements that require additional consideration to be paid based on the achievement of established objectives, most commonly related to customer retention or revenue growth of the customer base during the post-combination period. We assess contingent consideration to determine if it should be 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 if changes in estimates are made after the measurement period. During the fourth quarter of 2021, we increased the fair value of the contingent payment to ezyVet by $2.0 million. Changes in the fair value of contingent consideration and differences arising upon settlement were not material during the years ended December 31, 2020, and 2019.

We assess goodwill for impairment annually, at the reporting unit level, in the fourth quarter and whenever events or circumstances indicate impairment may exist. 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 goodwill impairment test. The more likely than not threshold is defined as having a likelihood of more than 50%. 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 assess the fair value of all of our reporting units and compare the fair value of the reporting unit to its carrying value to determine if the carrying value exceeds its fair value, and if a goodwill impairment loss should be recognized. In contrast, we can opt to bypass the qualitative assessment for any reporting unit in any period and proceed directly to assessing the fair value of all of our reporting units and compare the fair value of the reporting unit to carrying value to determine if any impairment exists. Doing so does not preclude us from performing the qualitative assessment in any subsequent period.

In the fourth quarter of 2021, we elected to bypass the qualitative approach that allows the assessment of qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount and instead proceeded directly to assessing the fair value of all of our reporting units and comparing the fair values of each reporting unit to the carrying values to determine if any impairment exists. 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.

Changes in forecasted cash flows or the discount rate would affect the estimated fair values of our reporting units and could result in a goodwill impairment loss in a future period.

No goodwill impairments were identified during the years ended December 31, 2021, 2020, or 2019, and no accumulated impairment losses are recorded.

We assess the realizability of intangible assets other than goodwill 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 asset group is the lowest level for which identifiable cash flows associated with the intangible asset are largely independent. 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 loss to adjust the intangible asset to its fair value would be reported as a non-cash charge to earnings. If necessary, we would calculate the fair value of an intangible asset using the present value of the estimated future cash flows to be generated by the intangible asset, and applying a risk-adjusted discount rate. We had no impairments of our intangible assets during the years ended December 31, 2021 and 2019. The amount of impairment for the year ended December 31, 2020 was immaterial.

The changes in the carrying amount of goodwill for the years ended December 31, 2021, 2020, and 2019, were as follows:

(in thousands)	**CAG**	**Water**	**LPD**	**Other**	**Consolidated Total**
Balance as of December 31, 2018	$ 182,386	$ 11,221	$ 14,351	$ 6,531	$ 214,489
Business combinations	24,826	—	—	—	24,826
Impact of changes in foreign currency exchange rates	138	390	(119)	—	409
Balance as of December 31, 2019	$ 207,350	$ 11,611	$ 14,232	$ 6,531	$ 239,724
Business combinations	220	—	—	—	220
Acquisition adjustment	(1,900)	—	—	—	(1,900)
Impact of changes in foreign currency exchange rates	4,724	412	167	—	5,303
Balance as of December 31, 2020	$ 210,394	$ 12,023	$ 14,399	$ 6,531	$ 243,347
Business combinations	120,346	—	—	—	120,346
Impact of changes in foreign currency exchange rates	(3,569)	(84)	(695)	—	(4,348)
Balance as of December 31, 2021	$ 327,171	$ 11,939	$ 13,704	$ 6,531	$ 359,345

Refer to "Note 4. Acquisitions and Investments" for information regarding goodwill and other intangible assets recognized in connection with the acquisition of businesses and other assets during the years ended December 31, 2021, 2020, and 2019.

We provide for amortization primarily using the straight-line method by charges to income in amounts that allocate the intangible assets over their estimated useful lives as follows:

Asset Classification	Estimated Useful Life
Customer-related intangible assets [1]	3 to 17 years
Product rights [2]	5 to 15 years
Noncompete agreements	3 to 5 years

Intangible assets other than goodwill consisted of the following:

(in thousands)	December 31, 2021			December 31, 2020		
	Cost	Accumulated Amortization	Net	Cost	Accumulated Amortization	Net
Customer-related intangible assets [1]	$ 121,936	$ 38,349	$ 83,587	$ 80,810	$ 32,838	$ 47,972
Product rights [2]	17,350	5,332	12,018	15,150	11,609	3,541
Noncompete agreements	4,257	827	3,430	1,250	220	1,030
	$ 143,543	$ 44,508	$ 99,035	$ 97,210	$ 44,667	$ 52,543

The above table excludes fully amortized intangible assets for the periods presented.
(1) Customer-related intangible assets are comprised of customer lists and customer relationships acquired from third parties.
(2) Product rights comprise certain technologies, intellectual property, licenses, and trade names acquired from third parties.

Amortization expense of intangible assets other than goodwill was $12.1 million, $9.8 million, and $9.4 million for the years ended December 31, 2021, 2020, and 2019, respectively.

At December 31, 2021, the aggregate amortization expense associated with intangible assets is estimated to be as follows for each of the next five years and thereafter:

(in thousands)	Amortization Expense
2022	$ 14,188
2023	12,430
2024	11,381
2025	10,633
2026	10,370
Thereafter	40,033
	$ 99,035

NOTE 12. ACCRUED LIABILITIES AND OTHER LONG-TERM LIABILITIES

Accrued liabilities consisted of the following:

(in thousands)	December 31, 2021	December 31, 2020
Accrued employee compensation and related expenses	$ 182,926	$ 167,649
Accrued expenses	133,978	112,526
Accrued customer incentives and refund obligations	79,469	75,064
Accrued taxes	42,605	42,676
Current lease liabilities	19,931	17,733
Accrued liabilities	$ 458,909	$ 415,648

Other long-term liabilities consisted of the following:

(in thousands)	December 31, 2021	December 31, 2020
Accrued taxes	$ 56,466	$ 60,313
Other accrued long-term expenses	14,475	25,291
Other long-term liabilities	$ 70,941	$ 85,604

NOTE 13. DEBT

Credit Facility

On December 9, 2021, we, along with IDEXX Distribution, Inc., IDEXX Operations, Inc., OPTI Medical Systems, Inc., IDEXX Laboratories Canada Corporation, IDEXX B.V., IDEXX Laboratories B.V., and IDEXX Laboratories GmbH, our wholly-owned subsidiaries (whether directly or indirectly held) (collectively, the "Borrowers"), entered into a fourth amended and restated credit agreement (the "Credit Agreement") relating to a five year unsecured revolving credit facility in the principal amount of $1 billion, among the Borrowers, the lenders party thereto, JPMorgan Chase Bank, N.A., as administrative agent, JPMorgan Chase Bank, N.A., Toronto Branch, as Toronto agent, and the other parties thereto.

The Credit Agreement amends and restates that certain third amended and restated credit agreement, dated as of April 14, 2020, (which provided for a $1 billion three-year unsecured revolving credit facility) to extend the maturity to December 9, 2026 with aggregate commitments available for borrowing by the Borrowers of $1 billion with the option to increase the aggregate commitments by $250 million, for an aggregate maximum of up to $1.25 billion, subject to the Borrowers obtaining commitments from existing or new lenders and satisfying other conditions specified in the Credit Agreement.

Under our Credit Facility prior to the December 9, 2021 amendment, the applicable interest rates on borrowings are based on the prevailing LIBOR, Canadian Dollar Rate, or EURIBOR, but not less than 1.0%, plus a credit spread ranging from 1.375% to 2.00%, based on our gross leverage ratio. The Credit Facility also allowed for borrowings based on the prevailing Prime rate, but not less than 2.00%, plus a credit spread from 0.375% to 1.00%. Under the Credit Facility, we also pay quarterly commitment fees ranging from 0.2% to 0.375%, based on our leverage ratio, on any unused commitment. Under our current amended Credit Facility, the applicable interest rates on borrowings are based on the prevailing LIBOR, Canadian Dollar Rate, or EURIBOR, but not less than 0.0%, plus a credit spread ranging from 0.875% to 1.375%, depending on our gross leverage ratio. The Credit Facility also allowed for borrowings based on the prevailing Prime rate, but not less than 1.00%, plus a credit spread from 0.0% to 0.375%. Under the current Credit Facility, we also pay quarterly commitment fees ranging from 0.075% to 0.25%, based on our leverage ratio, on any unused commitment. Our Credit Facility includes a provision for the determination of one or more benchmark replacement rates (including SOFR) as a successor to the LIBOR rate.

At December 31, 2021, we had $73.5 million outstanding borrowings under our Credit Facility with a weighted average effective interest rate of 1.1%. Our weighted average borrowing rate for the year ended December 31, 2021, was 2.7%, which reflected borrowings under our prior Credit Facility. At December 31, 2020, we had no outstanding borrowings under our Credit Facility. The funds available under the Credit Facility reflect a further reduction due to the issuance of letters of credit, which were issued in connection with our workers' compensation policy, for $1.4 million in the year ended December 31, 2021 and 2020.

Although the Credit Facility does not mature until December 9, 2026, all individual borrowings under the terms of the Credit Facility with an interest rate based on the prevailing LIBOR, Canadian Dollar Rate, or EURIBOR (as selected by the Borrower) have a stated term between 1 and 180 days. At the end of each term, the obligation is either repaid or rolled over into a new borrowing, or replaced by a borrowing based on a specific benchmark rate (where interest is then paid monthly). The Credit Facility contains a subjective material adverse event notification clause, which allows the debt holders to call the loans under the Credit Facility if we fail to provide prompt written notice to the syndicate of such an event. Based on the stated term and the existence of the subjective material adverse event clause, this Credit Facility is reflected in the current liabilities section of our consolidated balance sheets.

The obligations under the Credit Facility may be accelerated upon the occurrence of an event of default under the Credit Facility, which includes customary events of default including payment defaults, defaults in the performance of the affirmative, negative and financial covenants, the inaccuracy of representations or warranties, bankruptcy and insolvency

related defaults, defaults relating to judgments, certain events related to employee pension benefit plans under the Employee Retirement Income Security Act of 1974, the failure to pay specified indebtedness, cross-acceleration to specified indebtedness, and a change of control default. The Credit Facility contains affirmative, negative, and financial covenants customary for financings of this type. The negative covenants include restrictions on liens, indebtedness of subsidiaries of the Company, fundamental changes, investments, transactions with affiliates, and certain restrictive agreements. The sole financial covenant is a consolidated leverage ratio test that requires our ratio of debt to earnings before interest, taxes, depreciation, amortization, and share-based compensation defined as the consolidated leverage ratio under the terms of the Credit Facility, not to exceed 3.5-to-1. At December 31, 2021, we were in compliance with the covenants of the Credit Facility.

Senior Notes

The following describes all of our currently outstanding unsecured senior notes issued and sold in private placements (collectively, the "Senior Notes") as of December 31, 2021:

(Principal Amount in thousands)

Issue Date	Due Date	Series	Principal Amount	Coupon Rate	Senior Note Agreement
12/11/2013	12/11/2023	2023 Series A Notes	$ 75,000	3.94 %	NY Life 2013 Note Agreement
12/11/2013	12/11/2025	2025 Series B Notes	$ 75,000	4.04 %	NY Life 2013 Note Agreement
9/4/2014	9/4/2026	2026 Senior Notes	$ 75,000	3.72 %	NY Life 2014 Note Agreement
7/21/2014	7/21/2024	2024 Series B Notes	$ 75,000	3.76 %	Prudential 2015 Amended Agreement
6/18/2015	6/18/2025	2025 Series C Notes	€ 88,857	1.785 %	Prudential 2015 Amended Agreement
2/12/2015	2/12/2022	2022 Series A Notes	$ 75,000	3.25 %	MetLife 2014 Note Agreement
2/12/2015	2/12/2027	2027 Series B Notes	$ 75,000	3.72 %	MetLife 2014 Note Agreement
3/14/2019	3/14/2029	2029 Series C Notes	$ 100,000	4.19 %	MetLife 2014 Note Agreement
4/2/2020	4/2/2030	MetLife 2030 Series D Notes	$ 125,000	2.50 %	MetLife 2014 Note Agreement
4/14/2020	4/14/2030	Prudential 2030 Series D Notes	$ 75,000	2.50 %	Prudential 2015 Amended Agreement

The following narrative represents our Senior Note activity:

NY Life 2013 and 2014 Note Agreements, Including Amendments

In December 2013, we issued and sold through a private placement an aggregate principal amount of $150 million of unsecured senior notes consisting of $75 million of 3.94% Series A Senior Notes due December 11, 2023 (the “2023 Series A Notes”) and $75 million of 4.04% Series B Senior Notes due December 11, 2025 (the “2025 Series B Notes”) under a Note Purchase Agreement among the Company, New York Life Insurance Company and the accredited institutional purchasers named therein (as amended on April 10, 2020, the “NY Life 2013 Note Agreement”).

In September 2014, we issued and sold through a private placement an aggregate principal amount of $75 million of unsecured 3.72% senior notes due September 4, 2026 (the “2026 Senior Notes”) under a Note Purchase Agreement dated as of July 22, 2014, among the Company, New York Life Insurance Company and the accredited institutional purchasers named therein (as amended April 10, 2020, the “NY Life 2014 Note Agreement”).

On April 10, 2020, we amended the NY Life 2013 Note Agreement and the NY Life 2014 Note Agreement by entering into two Amendments to Note Purchase Agreement with New York Life Insurance Company and the other parties thereto, which modified several defined terms, schedules and covenant baskets in the NY Life 2013 Agreement and the NY Life 2014 Note Agreement to create additional operating flexibility, and in particular to align such provisions with similar modifications we made substantially concurrently in our other debt facilities.

Prudential 2015 Amended Agreement, Including Amendments

In July 2014, we issued and sold through a private placement an aggregate principal amount of $125 million of unsecured senior notes consisting of $50 million of 3.32% Series A Senior Notes due July 21, 2021 (the “2021 Series A Notes”) and $75 million of 3.76% Series B Senior Notes due July 21, 2024 (the “2024 Series B Notes”) under a Note Purchase and Private Shelf Agreement among the Company, Prudential Investment Management, Inc. (“Prudential”) and the accredited

institutional purchasers named therein (the “Prudential 2014 Note Agreement”). The $50 million 3.32% Series A Senior Note was repaid in full on the July 21, 2021 due date.

In June 2015, we entered into an Amended and Restated Multi-Currency Note Purchase and Private Shelf Agreement (the “Original Prudential 2015 Amended Agreement"), among the Company, Prudential, and the accredited institutional purchasers named therein, which amends and restates the Prudential 2014 Note Agreement. Pursuant to the Original Prudential 2015 Amended Agreement, we issued and sold through an aggregated private placement an aggregate principal amount of €88.9 million of unsecured 1.785% Series C Senior Notes due June 18, 2025 (the “2025 Series C Notes”).

On May 9, 2019, we entered into the Amendment to Note Purchase and Private Shelf Agreement (the "Prudential First Amendment") with Prudential and the other parties thereto, which amended certain reporting provisions in the Original Prudential 2015 Amended Agreement.

On April 10, 2020, we entered into the Second Amendment to the Prudential 2015 Amended Agreement (the “Prudential Second Amendment”), in order to (i) increase the facility size to $425 million, (ii) extend the facility issuance period to April 10, 2023, (iii) make various implementing and administrative changes in order to facilitate a $75 million notes issuance on April 14, 2020, (iv) allow the amount available to be issued under the facility to equal $425 million less the amount of notes outstanding from time to time during the issuance period and (v) modify several defined terms, schedules and covenant baskets in the Original Prudential 2015 Amended Agreement, as amended by the Prudential First Amendment, to create additional operating flexibility, and in particular to align such provisions with similar modifications we made substantially concurrently in our other debt facilities. We refer to the Original Prudential 2015 Agreement, as amended by the Prudential First Amendment and the Prudential Second Amendment, as the "Prudential 2015 Amended Agreement."

On April 14, 2020, we issued and sold to Prudential and other purchasers $75 million of our unsecured senior notes (the “Prudential 2030 Series D Notes”) pursuant to the Prudential Second Amendment. The entire outstanding balance of the Prudential 2030 Series D Notes is due and payable on April 14, 2030, and the Prudential 2030 Series D Notes bear interest at the rate of 2.50% per annum. We used the proceeds received from the Prudential 2030 Series D Notes for general corporate purposes.

MetLife 2014 Note Agreement, Including Amendments

We entered into a Multicurrency Note Purchase and Private Shelf Agreement, dated as of December 19, 2014 (the "Original MetLife 2014 Note Agreement"), among the Company, Metropolitan Life Insurance Company (“MetLife”) and the accredited institutional purchasers named therein pursuant to which we agreed to issue and sell an aggregate principal amount of $150 million of unsecured senior notes consisting of $75 million of our 3.25% Series A Senior Notes having a seven-year term (the "2022 Series A Notes"), and $75 million of our 3.72% Series B Senior Notes having a twelve-year term ("2027 Series B Notes"). The issuance, sale and purchase of these notes occurred in February 2015. The aggregate principal amount of our 2022 Series A Notes for $75.0 million will become due and payable on February 12, 2022.

On March 14, 2019, we amended the Original MetLife 2014 Note Agreement. Pursuant to the Original MetLife 2014 Note Agreement, as so amended, we issued and sold through a private placement an aggregate principal amount of $100 million of unsecured senior notes at a 4.19% per annum rate, due March 14, 2029 (the "2029 Series C Notes").

On March 23, 2020, we entered into the Second Amendment to the Original MetLife 2014 Note Agreement (the “MetLife Second Amendment”), in order to (i) increase the facility size from $150 million to $300 million, (ii) extend the facility issuance period to December 20, 2022, (iii) make various implementing and administrative changes in order to facilitate a $125 million notes issuance on April 2, 2020 and (iv) allow the amount available to be issued under the facility to equal $300 million, less the amounts outstanding on 2029 Series C Notes and MetLife 2030 Series D Notes.

On April 2, 2020, we issued and sold to MetLife and other purchasers $125 million of our unsecured senior notes (the “MetLife 2030 Series D Notes”) pursuant to the MetLife Second Amendment. The entire outstanding principal balance of the MetLife 2030 Series D Notes is due and payable on April 2, 2030, and the MetLife 2030 Series D Notes bear interest at the rate of 2.50% per annum. We used the proceeds received from the MetLife 2030 Series D Notes for general corporate purposes.

We refer to the Original MetLife 2014 Agreement, as so amended, as the "MetLife 2014 Agreement," and together with the NY Life 2013 Note Agreement, NY Life 2014 Note Agreement, and Prudential 2015 Amended Note Agreement, collectively, as the "Senior Note Agreements."

Senior Note Agreements

The Senior Note Agreements contain affirmative, negative, and financial covenants customary for agreements of this type. The negative covenants include restrictions on liens, indebtedness of our subsidiaries, priority indebtedness, fundamental changes, investments, transactions with affiliates, certain restrictive agreements, and violations of laws and regulations. The sole financial covenant is a consolidated leverage ratio test that requires our ratio of debt to earnings before interest, taxes, depreciation, amortization, and share-based compensation, as defined in the Senior Note Agreements, not to exceed 3.5-to-1. At December 31, 2021, we were in compliance with the covenants of the Senior Note Agreements.

Should we elect to prepay the Senior Notes, such aggregate prepayment will include the applicable make-whole amount(s), as defined within the applicable Senior Note Agreements. Additionally, in the event of a change in control of the Company or upon the disposition of certain assets of the Company the proceeds of which are not reinvested (as defined in the Senior Note Agreements), we may be required to prepay all or a portion of the Senior Notes. The obligations under the Senior Notes may be accelerated upon the occurrence of an event of default under the applicable Senior Note Agreement, each of which includes customary events of default including payment defaults, defaults in the performance of the affirmative, negative and financial covenants, the inaccuracy of representations or warranties, bankruptcy and insolvency related defaults, defaults relating to judgments, certain events related to employee pension benefit plans under the Employee Retirement Income Security Act of 1974, the failure to pay specified indebtedness and cross-acceleration to specified indebtedness. We used the net proceeds from the issuances and sale of the Senior Notes for general corporate purposes.

Annual principal payments on long-term debt at December 31, 2021, are as follows:

(in thousands)

Years Ending December 31,	**Amount**
2022	$ 75,000
2023	75,000
2024	75,000
2025	175,711
2026	75,000
Thereafter	375,000
	$ 850,711

Total interest paid on all debt (including our Credit Facility) for the years ended December 31, 2021, 2020, and 2019, was $30.5 million, $32.4 million, and $29.7 million, respectively.

NOTE 14. 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. We record a valuation allowance to reduce our deferred tax assets to the amount that is more likely than not to be realized. In assessing the need for a valuation allowance, we consider future taxable income and ongoing prudent and feasible tax planning strategies. In the event that we determine that we would be able to realize our deferred tax assets in the future in excess of the net recorded amount, a reduction of the valuation allowance would increase income in the period such determination was made. Likewise, should we determine that we would not be able to realize all or part of our net deferred tax asset in the future, a reduction to the deferred tax asset would be charged to income in the period such determination was made.

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. Unrecognized tax benefits are the differences between tax positions taken, or expected to be taken, in tax returns, and the benefits recognized for accounting purposes. We classify uncertain tax positions as long-term liabilities.

Significant judgment is required in determining our worldwide provision for income taxes and our income tax filings are regularly under audit by tax authorities. Any audit result differing from amounts recorded would increase or decrease income in the period that we determine such adjustment is likely. Interest expense and penalties associated with the underpayment of income taxes are included in income tax expense.

Earnings before income taxes were as follows:

(in thousands)	For the Years Ended December 31,		
	2021	2020	2019
Domestic	$ 689,994	$ 483,694	$ 377,964
International	212,660	178,291	144,254
	$ 902,654	$ 661,985	$ 522,218

The provision (benefit) for income taxes comprised the following:

(in thousands)	For the Years Ended December 31,		
	2021	2020	2019
Current			
Federal	$ 112,811	$ 72,921	$ 52,194
State	19,147	17,346	11,967
International	29,288	26,301	24,239
	161,246	116,568	88,400
Deferred			
Federal	(7,019)	(14,126)	4,826
State	(503)	(2,863)	269
International	4,086	(19,725)	931
	(3,436)	(36,714)	6,026
	$ 157,810	$ 79,854	$ 94,426

The provision for income taxes differs from the amounts computed by applying the statutory federal income tax rate as follows:

	For the Years Ended December 31,		
	2021	2020	2019
U.S. federal statutory rate	21.0 %	21.0 %	21.0 %
State income tax, net of federal tax benefit	2.1	2.4	2.3
Taxation on international earnings	(0.8)	(1.0)	(1.1)
Foreign derived intangible income	(1.2)	(1.1)	(1.1)
Share-based compensation from settlements	(3.6)	(5.9)	(3.6)
Research and development credit	(0.7)	(0.8)	(0.8)
Impact of Switzerland tax reform	—	(3.3)	—
Other, net	0.7	0.8	1.4
Effective tax rate	17.5 %	12.1 %	18.1 %

Our effective income tax rate was 17.5% for the year ended December 31, 2021, and 12.1% for the year ended December 31, 2020. Our effective income tax rate for the year ended December 31, 2021, was higher primarily due to the prior year one-time positive impact related to the enactment of tax reform in Switzerland due to recording a deferred tax asset related to the transitional benefits, as well as higher tax benefits in the prior year related to share-based compensation.

Our effective income tax rate was 12.1% for the year ended December 31, 2020, and 18.1% for the year ended December 31, 2019. Our effective income tax rate for the year ended December 31, 2020, was lower primarily due to the one-time positive impact related to the enactment of tax reform in Switzerland due to recording a deferred tax asset related to the transitional benefits, as well as higher tax benefits related to share-based compensation.

Income taxes paid, net of refunds received, for the periods ended December 31, 2021, 2020, and 2019, were $161.7 million, $110.7 million, and $88.0 million, respectively.

We have received a tax ruling from the Netherlands that documents our mutual understanding of how existing tax laws apply to our circumstances. Primarily as a result of this tax ruling, our net income was higher by $21.4 million, $14.2 million, and $13.7 million for the years ended December 31, 2021, 2020, and 2019, respectively. The benefits from our tax rulings are reflected within the overall benefits received from taxation on international earnings in the table above. On December 21, 2021,

the Netherlands adopted legislation eliminating the tax benefits related to this tax ruling for tax years beginning after December 31, 2021.

The components of the net deferred tax assets (liabilities) included in the accompanying consolidated balance sheets are as follows:

(in thousands)	December 31, 2021	December 31, 2020
Assets		
Accrued expenses	$ 48,433	$ 46,830
Accounts receivable reserves	2,131	2,505
Deferred revenue	6,269	7,629
Inventory basis differences	6,553	4,272
Property-based differences	16,132	14,865
Intangible asset basis differences	46,606	51,319
Share-based compensation	10,740	10,011
Other	1,163	1,484
Net operating loss carryforwards	8,570	5,427
Tax credit carryforwards	13,483	13,385
Unrealized losses on foreign currency exchange contracts and investments	1,755	5,060
Total assets	161,835	162,787
Valuation allowance	(39,280)	(40,262)
Total assets, net of valuation allowance	122,555	122,525
Liabilities		
Customer acquisition costs	(37,265)	(34,449)
Property-based differences	(42,363)	(49,547)
Intangible asset basis differences	(17,345)	(16,134)
Other	(5,662)	(2,241)
Unrealized gains on foreign currency exchange contracts and investments	(4,071)	(312)
Total liabilities	(106,706)	(102,683)
Net deferred tax assets	$ 15,849	$ 19,842

As of December 31, 2021, we record valuation allowances against certain deferred tax assets related to temporary differences, including intangible asset basis differences and net operating loss ("NOL") and tax credit carryforwards, as it is more likely than not that they will not be realized or utilized within the carryforward period.

The following table summarizes the changes in valuation allowance for deferred tax assets:

(in thousands)	For the Years Ended December 31,		
	2021	2020	2019
Balance at beginning of year	$ 40,262	$ 9,454	$ 6,212
Charges to costs and expense	1,464	31,076	3,489
Write-off/cash payments	(1,182)	(34)	(226)
Foreign currency translation	(1,264)	(234)	(21)
Balance at the end of the year	$ 39,280	$ 40,262	$ 9,454

As of December 31, 2021, we have NOLs in certain state and international jurisdictions of approximately $32.9 million available to offset future taxable income. Most of these NOLs will expire at various dates between 2022 and 2028 and the remainder have indefinite lives.

The following table summarizes the changes in unrecognized tax positions:

(in thousands)	For the Years Ended December 31,		
	2021	2020	2019
Total amounts of unrecognized tax benefits, beginning of period	$ 22,484	$ 26,841	$ 24,247
Gross increases (decreases) in unrecognized tax positions as a result of tax positions taken during a prior period	443	(1,755)	(276)
Gross increases in unrecognized tax positions as a result of tax positions taken in the current period	2,414	4,199	4,083
Decreases in unrecognized tax positions related to settlements with taxing authorities	(537)	(6,446)	—
Decreases in unrecognized tax positions as a result of a lapse of the applicable statutes of limitations	(3,015)	(355)	(1,213)
Total amounts of unrecognized tax benefits, end of period	$ 21,789	$ 22,484	$ 26,841

Of the total unrecognized tax benefits at December 31, 2021 and 2020, $22.2 million and $21.8 million, respectively, comprise unrecognized tax positions that would, if recognized, affect our effective tax rate.

During the years ended December 31, 2021, 2020, and 2019, we recorded interest expense and penalties of $1.1 million, $1.3 million, and $1.8 million, respectively, as income tax expense in our consolidated statement of income. At December 31, 2021, 2020, and 2019, we had $3.8 million, $3.6 million, and $3.6 million, respectively, of estimated interest expense and penalties accrued in our consolidated balance sheets.

In the ordinary course of our business, our income tax filings are regularly under audit by tax authorities. While we believe we have appropriately provided for all uncertain tax positions, amounts asserted by taxing authorities could be greater or less than our accrued position. Accordingly, additional provisions on income tax matters, or reductions of previously accrued provisions, could be recorded in the future as we revise our estimates due to changing facts and circumstances or the underlying matters are settled or otherwise resolved. We are currently under tax examinations in various jurisdictions. We anticipate that these examinations will be concluded within the next two years. With few exceptions, we are no longer subject to income tax examinations in any jurisdiction in which we conduct significant taxable activities for years before 2016.

NOTE 15. EARNINGS PER SHARE

Basic earnings per share is computed by dividing net income attributable to our stockholders by the weighted average number of shares of common stock and vested deferred stock units outstanding during the year. The computation of diluted earnings per share is similar to the computation of basic earnings per share, except that the denominator is increased for the assumed exercise of dilutive options and assumed issuance of unvested restricted stock units and unvested deferred stock units using the treasury stock method unless the effect is anti-dilutive. The treasury stock method assumes that proceeds, including cash received from the exercise of employee stock options and the total unrecognized compensation expense for unvested share-based compensation awards, would be used to purchase our common stock at the average market price during the period. Vested deferred stock units outstanding are included in shares outstanding for basic and diluted earnings per share because the associated shares of our common stock are issuable for no cash consideration, the number of shares of our common stock to be issued is fixed and issuance is not contingent. Refer to "Note 5. Share-Based Compensation" for additional information regarding deferred stock units.

The following is a reconciliation of weighted average shares outstanding for basic and diluted earnings per share:

(in thousands)	For the Years Ended December 31,		
	2021	2020	2019
Shares outstanding for basic earnings per share:	85,200	85,342	86,115
Shares outstanding for diluted earnings per share:			
Shares outstanding for basic earnings per share	85,200	85,342	86,115
Dilutive effect of share-based payment awards	1,372	1,380	1,427
	86,572	86,722	87,542

Certain options to acquire shares have been excluded from the calculation of shares outstanding for diluted earnings per share because they were anti-dilutive. The following table presents information concerning those anti-dilutive options:

(in thousands)	For the Years Ended December 31,		
	2021	2020	2019
Weighted average number of shares underlying anti-dilutive options	121	206	200

NOTE 16. COMMITMENTS, CONTINGENCIES AND GUARANTEES

Commitments

Refer to "Note 8. Leases" for more information regarding our lease commitments.

We are required to annually purchase a minimum amount of inventory from certain suppliers. Through 2026, we have a total of $2.9 million in minimum purchase commitments under these arrangements.

Contingencies

We are subject to claims that may arise in the ordinary course of business, including with respect to actual and threatened litigation and other matters. We accrue for loss contingencies when it is probable that future expenditures will be made, and such expenditures can be reasonably estimated. However, the results of legal actions cannot be predicted with certainty, and therefore our actual losses with respect to these contingencies could exceed our accruals. Except for the litigation matter described below, at December 31, 2021, our accruals with respect to actual and threatened litigation were not material.

We are a defendant in an ongoing litigation matter involving an alleged breach of contract for underpayment of royalty payments made from 2004 through 2017 under an expired patent license agreement. The plaintiff has asserted a claim of approximately $50 million, inclusive of interest through June 30, 2020, alleging that the incorrect royalty provision was applied to certain licensed products and services throughout the agreement term and that royalties were also due on non-licensed diagnostic services that were provided concurrently with licensed services. The trial court previously ruled in favor of the plaintiff in this matter and we are appealing the judgment and continue to vigorously defend ourselves against the plaintiff's allegations. While we believe the claim is without merit, litigation is inherently unpredictable and there can be no assurance that we will prevail in this matter. During the third quarter of 2020, we established an accrual of $27.5 million related to this ongoing matter, which represents the amount of a contingent loss that we have determined to be probable and estimable. We have not made any adjustments to this accrual since it was established. The actual cost of resolving this matter may be higher or lower than the amount we have accrued.

We self-insure costs associated with health, workers' compensation, auto, and general welfare claims incurred by our U.S. and Canadian employees up to certain limits. Insurance companies provide insurance for claims above these limits. Claim liabilities are recorded for estimates of the loss that we will ultimately incur on reported claims, as well as estimates of claims that have been incurred but not yet reported. Such liabilities are based on individual coverage, the average time from when a claim is incurred to the time it is paid and judgments about the present, and expected levels of claim frequency and severity. Estimated claim liabilities could be significantly affected if future occurrences and claims differ from these assumptions and historical trends. Estimated claim liabilities are included in accrued liabilities in the accompanying consolidated balance sheets.

Under our current employee healthcare insurance policy for U.S. employees, we retain claims liability risk per incident up to $1 million per year in 2021, 2020, and 2019. We recognized U.S. employee healthcare claim expense of $78.5 million, $59.5 million, and $59.3 million for the years ended December 31, 2021, 2020, and 2019, respectively, which represents actual claims paid and an estimate of our liability for the uninsured portion of employee healthcare obligations that have been incurred but not paid. Should employee health insurance claims exceed our estimated liability, we would have further obligations. Our estimated liability for healthcare claims that have been incurred but not paid as of December 31, 2021 and 2020, was approximately $7.8 million and $5.5 million, respectively.

Workers' compensation and automobile claim expenses recognized during the years ended December 31, 2021, 2020, and 2019 and our respective liability for such claims as of December 31, 2021, 2020, and 2019 were not material. For the years ended on or prior to December 31, 2018, based on our retained claim liability per incident and our aggregate claim liability per year, our maximum liability in excess of the amounts deemed probable and previously recognized is not material as of

December 31, 2021. As of December 31, 2021, we had outstanding letters of credit totaling $1.4 million to the insurance companies as security for the claims in connection with these policies.

We have entered into an employment agreement with our chief executive officer whereby payment may be required if we terminate his employment without cause other than following a change in control. The amount payable is based upon the executive's salary at the time of termination and the cost to us of continuing to provide certain benefits. Had this officer been terminated without cause at December 31, 2021, other than following a change in control, we would have had an obligation for salaries and benefits of approximately $2.0 million under such agreement. In addition, the agreement provides for continued vesting of his outstanding equity awards for a period of two years, which would accelerate approximately $8.0 million of share-based compensation expense as of December 31, 2021.

We have entered into employment agreements with each of our officers that require us to make certain payments in the event the officer's employment is terminated under certain circumstances within a certain period following a change in control. The amount payable by us under each of these agreements is based on the officer's salary and bonus history at the time of termination and the cost to us of continuing to provide certain benefits. Had all of our officers been terminated in qualifying terminations following a change in control at December 31, 2021, we would have had aggregate obligations of approximately $42.2 million under these agreements. These agreements also provide for the acceleration of the vesting of all stock options and restricted stock units upon any qualifying termination following a change in control. At this time, we believe the likelihood of terminations as a result of the scenarios described is remote, and therefore, we have not accrued for such loss contingencies.

From time to time, we have received notices alleging that our products infringe third-party proprietary rights, although we are not aware of any pending litigation with respect to such claims. Patent litigation frequently is complex and expensive, and the outcome of patent litigation can be difficult to predict. There can be no assurance that we will prevail in any infringement proceedings that may be commenced against us. If we lose any such litigation, we may be stopped from selling certain products and/or we may be required to pay damages as a result of the litigation.

Guarantees

We enter into agreements with third parties in the ordinary course of business under which we are obligated to indemnify such third parties for and against various risks and losses. The precise terms of such indemnities vary with the nature of the agreement. In many cases, we limit the maximum amount of our indemnification obligations, but in some cases, those obligations may be theoretically unlimited. We have not incurred material expenses in discharging any of these indemnification obligations and, based on our analysis of the nature of the risks involved, we believe that the fair value of potential indemnification under these agreements is minimal. Accordingly, we have recorded no liabilities for these obligations at December 31, 2021 and 2020.

When acquiring a business, we sometimes assume liability for certain events or occurrences that took place prior to the date of acquisition. As of December 31, 2021 and 2020, we do not have any material pre-acquisition liabilities recorded.

NOTE 17. SEGMENT REPORTING

We operate primarily through three business segments: diagnostic and information management-based products and services for the companion animal veterinary industry, which we refer to as CAG; water quality products (“Water”); and diagnostic products and services for livestock and poultry health, improve producer efficiency, and to ensure the quality and safety of milk, which we refer to as LPD. Our Other operating segment combines and presents our human medical diagnostic products and services business with our out-licensing arrangements because they do not meet the quantitative or qualitative thresholds for reportable segments.

Operating segments are defined as components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision-maker (the "CODM"), or decision-making group, in deciding how to allocate resources and in assessing performance. Our CODM is our Chief Executive Officer. Our reportable segments include: CAG, Water, LPD, and Other. Assets are not allocated to segments for internal reporting purposes.

CAG provides products and provide services for veterinarians and the biomedical research community, primarily related to diagnostics and information management. Water provides a range of innovative products used in the detection and quantification of various microbiological parameters in water. LPD provides diagnostic tests and related instrumentation and provides services that are used to manage the health status of livestock and poultry, to improve producer efficiency, and to ensure the quality and safety of milk. OPTI Medical develops, manufactures, and distributes human medical diagnostic products and provides human medical diagnostic services.

Intersegment revenues, which are not included in the table below, were not material for the years ended December 31, 2021, 2020, and 2019.

The following is a summary of segment performance:

(in thousands)	For the Years Ended December 31,				
	CAG	**Water**	**LPD**	**Other**	**Consolidated Total**
2021					
Revenue	$ 2,889,960	$ 146,505	$ 135,887	$ 43,008	$ 3,215,360
Income from operations	$ 824,022	$ 65,444	$ 28,636	$ 13,926	$ 932,028
Interest expense, net					(29,374)
Income before provision for income taxes					902,654
Provision for income taxes					157,810
Net income					744,844
Less: Net income attributable to noncontrolling interest					(1)
Net income attributable to IDEXX Laboratories, Inc. stockholders					$ 744,845
Depreciation and amortization	$ 94,202	$ 2,709	$ 3,908	$ 3,777	$ 104,596
2020					
Revenue	$ 2,385,765	$ 128,625	$ 145,845	$ 46,420	$ 2,706,655
Income from operations	$ 574,887	$ 58,867	$ 40,008	$ 20,762	$ 694,524
Interest expense, net					(32,539)
Income before provision for income taxes					661,985
Provision for income taxes					79,854
Net income					582,131
Less: Net income attributable to noncontrolling interest					355
Net income attributable to IDEXX Laboratories, Inc. stockholders					$ 581,776
Depreciation and amortization	$ 84,697	$ 2,630	$ 4,070	$ 4,601	$ 95,998
2019					
Revenue	$ 2,119,183	$ 132,850	$ 132,635	$ 22,240	$ 2,406,908
Income from operations	$ 462,605	$ 61,923	$ 24,735	$ 3,583	$ 552,846
Interest expense, net					(30,628)
Income before provision for income taxes					522,218
Provision for income taxes					94,426
Net income					427,792
Less: Net income attributable to noncontrolling interest					72
Net income attributable to IDEXX Laboratories, Inc. stockholders					$ 427,720
Depreciation and amortization	$ 77,620	$ 2,794	$ 4,007	$ 3,590	$ 88,011

Refer to "Note 3. Revenue Recognition" for a summary of disaggregated revenue by reportable segment and by major product and service category for the years ended December 31, 2021, 2020, and 2019.

Net long-lived assets, consisting of net property and equipment, are subject to geographic risks because they are generally difficult to move and to effectively utilize in another geographic area in a reasonable time period and because they are relatively illiquid. Net long-lived assets by principal geographic areas were as follows:

(in thousands)

	December 31, 2021	December 31, 2020
Americas		
United States	$ 436,003	$ 412,700
Brazil	17,043	20,797
Canada	7,003	4,993
	460,049	438,490
Europe, the Middle East and Africa		
Germany	60,451	67,354
United Kingdom	9,828	10,191
Netherlands	19,405	15,267
France	1,884	2,062
Switzerland	3,545	3,743
Other	3,821	3,668
	98,934	102,285
Asia Pacific Region		
Japan	5,845	4,503
Australia	14,584	3,304
Other	8,255	6,585
	28,684	14,392
Total	$ 587,667	$ 555,167

NOTE 18. FAIR VALUE MEASUREMENTS

U.S. GAAP defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. U.S. GAAP requires an entity to maximize the use of observable inputs, where available, and minimize the use of unobservable inputs when measuring fair value.

We have certain financial assets and liabilities that are measured at fair value on a recurring basis, certain nonfinancial assets and liabilities that may be measured at fair value on a non-recurring basis, and certain financial assets and liabilities that are not measured at fair value in our consolidated balance sheets but for which we disclose the fair value. The fair value disclosures of these assets and liabilities are based on a three-level hierarchy, which is defined as follows:

Level 1	Quoted prices in active markets for identical assets or liabilities that the entity can access at the measurement date.
Level 2	Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
Level 3	Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Assets and liabilities measured at fair value are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. Our assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment and considers factors specific to the asset or liability. We did not have any transfers between Level 1 and Level 2, or transfers in or out of Level 3, of the fair value hierarchy during the years ended December 31, 2021 and 2020.

Our cross currency swap contracts are measured at fair value on a recurring basis in our accompanying consolidated balance sheets. We measure the fair value of our cross currency swap contracts classified as derivative instruments using prevailing market conditions as of the close of business on each balance sheet date. The product of this calculation is then adjusted for counterparty risk.

Our foreign currency exchange contracts are measured at fair value on a recurring basis in our accompanying consolidated balance sheets. We measure the fair value of our foreign currency exchange contracts classified as derivative

instruments using an income approach, based on prevailing market forward rates less the contract rate multiplied by the notional amount. The product of this calculation is then adjusted for counterparty risk.

The amounts outstanding under our unsecured revolving credit facility ("Credit Facility" or "line of credit") and senior notes ("long-term debt") are measured at carrying value in our accompanying consolidated balance sheets though we disclose the fair value of these financial instruments. We determine the fair value of the amount outstanding under our Credit Facility and long-term debt using an income approach, utilizing a discounted cash flow analysis based on current market interest rates for debt issues with similar remaining years to maturity, adjusted for applicable credit risk. Our Credit Facility and long-term debt are valued using Level 2 inputs. The estimated fair value of our Credit Facility approximates its carrying value. At December 31, 2021, the estimated fair value and carrying value of our long-term debt were $916.3 million and $850.7 million, respectively. At December 31, 2020, the estimated fair value and carrying value of our long-term debt were $1.0 billion and $909.1 million, respectively.

The following tables set forth our assets and liabilities that were measured at fair value on a recurring basis by level within the fair value hierarchy:

(in thousands)

As of December 31, 2021	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Balance at December 31, 2021
Assets				
Money market funds [1]	$ 76	$ —	$ —	$ 76
Equity mutual funds [2]	$ 826	$ —	$ —	$ 826
Cross currency swaps [3]	$ —	$ 4,256	$ —	$ 4,256
Foreign currency exchange contracts [3]	$ —	$ 6,512	$ —	$ 6,512
Liabilities				
Foreign currency exchange contracts [3]	$ —	$ 601	$ —	$ 601
Deferred compensation [4]	$ 826	$ —	$ —	$ 826
Contingent payments - acquisitions	$ —	$ —	$ 7,230	$ 7,230

(in thousands)

As of December 31, 2020	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Balance at December 31, 2020
Assets				
Money market funds [1]	$ 76	$ —	$ —	$ 76
Equity mutual funds [2]	$ 1,145	$ —	$ —	$ 1,145
Foreign currency exchange contracts [3]	$ —	$ 125	$ —	$ 125
Liabilities				
Cross currency swaps [3]	$ —	$ 2,841	$ —	$ 2,841
Foreign currency exchange contracts [3]	$ —	$ 12,373	$ —	$ 12,373
Deferred compensation [4]	$ 1,145	$ —	$ —	$ 1,145

(1) Money market funds with an original maturity of less than ninety days are included within cash and cash equivalents. The remaining balance of cash and cash equivalents as of December 31, 2021, and December 31, 2020, consisted of demand deposits.
(2) Equity mutual funds relate to a deferred compensation plan that was assumed as part of a previous business combination. This amount is included within other long-term assets. Refer to footnote (4) below for a discussion of the related deferred compensation liability.
(3) Cross currency swaps and foreign currency exchange contracts are included within other current assets; other long-term assets; accrued liabilities; or other long-term liabilities depending on the gain (loss) position and anticipated settlement date.
(4) A deferred compensation plan assumed as part of a previous business combination is included within accrued liabilities and other long-term liabilities. The fair value of our deferred compensation plan is indexed to the performance of the underlying equity mutual funds discussed in footnote (2) above.

The estimated fair values of certain financial instruments, including cash and cash equivalents, accounts receivable, and accounts payable, approximate carrying value due to their short maturity.

Contingent Consideration

We have classified our liabilities for contingent consideration related to acquisitions within Level 3 of the fair value hierarchy because the fair value is determined using significant unobservable inputs, which includes the achievements of future revenues. The contingent consideration is included within other short-term liabilities.

We record changes in the estimated fair value of contingent consideration in the consolidated statements of income. Changes in contingent consideration liabilities are measured at fair value on a recurring basis using unobservable inputs (Level 3) and during the year ended December 31, 2021, are as follows:

(in thousands)	Fair Value
Contingent consideration as of December 31, 2020	$ —
Contingent consideration recorded from acquisitions (Note 4)	5,230
Change in estimated fair value	2,000
Contingent consideration as of December 31, 2021	$ 7,230

We originally recorded a $5.0 million contingent consideration associated with our acquisition of ezyVet during the second quarter of 2021. During the fourth quarter of 2021, we increased the contingent consideration by $2.0 million to reflect the most recent estimate associated with achievements of future revenue.

NOTE 19. HEDGING INSTRUMENTS

Disclosure within this note is presented to provide transparency about how and why we use derivative and non-derivative instruments (collectively "hedging instruments"), how the instruments and related hedged items are accounted for, and how the instruments and related hedged items affect our financial position, results of operations, and cash flows.

We are exposed to certain risks related to our ongoing business operations. The primary risk that we currently manage by using hedging instruments is foreign currency exchange risk. We may also enter into interest rate swaps to minimize the impact of interest rate fluctuations associated with borrowings under our variable-rate Credit Facility.

Our subsidiaries enter into foreign currency exchange contracts to manage the exchange risk associated with their forecasted intercompany inventory purchases and sales for the next year. From time to time, we may also enter into other foreign currency exchange contracts, cross currency swaps, or foreign-denominated debt issuances to minimize the impact of foreign currency fluctuations associated with specific balance sheet exposures, including net investments in certain foreign subsidiaries.

The primary purpose of our foreign currency hedging activities is to protect against the volatility associated with foreign currency transactions, including transactions denominated in euro, British pound, Japanese yen, Canadian dollar, and Australian dollar. We also utilize natural hedges to mitigate our transaction and commitment exposures. Our corporate policy prescribes the range of allowable hedging activity. We enter into foreign currency exchange contracts with well-capitalized multinational financial institutions, and we do not hold or engage in transactions involving hedging instruments for purposes other than risk management. Our accounting policies for these contracts are based on our designation of such instruments as hedging transactions.

We recognize all hedging instruments on the balance sheet at fair value at the balance sheet date. Instruments that do not qualify for hedge accounting treatment must be recorded at fair value through earnings. To qualify for hedge accounting treatment, cash flow and net investment hedges must be highly effective in offsetting changes to expected future cash flows or fair value on hedged transactions. If the instrument qualifies for hedge accounting, changes in the fair value of the hedging instrument from the effective portion of the hedge are deferred in AOCI, net of tax, and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. We immediately record in earnings the extent to which a hedging instrument is not effective in achieving offsetting changes in fair value. We de-designate hedging instruments from hedge accounting when the likelihood of the hedged transaction occurring becomes less than probable. For de-designated

instruments, the gain or loss from the time of de-designation through maturity of the instrument is recognized in earnings. Any gain or loss in AOCI at the time of de-designation is reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Refer to "Note 21. Accumulated Other Comprehensive Income" for further information regarding the effect of hedging instruments on the consolidated statements of income for the years ended December 31, 2021, 2020, and 2019.

We enter into master netting arrangements with the counterparties to our derivative transactions which permit certain outstanding receivables and payables to be offset in the event of default. Our derivative contracts do not require either party to post cash collateral. We elect to present our derivative assets and liabilities in the accompanying consolidated balance sheets on a gross basis. All cash flows related to our foreign currency exchange contracts are classified as operating cash flows, which is consistent with the cash flow treatment of the underlying items being hedged.

Refer to "Note 18. Fair Value Measurements" for additional information regarding the fair value of our derivative instruments and "Note 21. Accumulated Other Comprehensive Income" for additional information regarding the effect of derivative instruments designated as cash flow hedges on the consolidated statements of income.

Cash Flow Hedges

We have designated our foreign currency exchange contracts as cash flow hedges as these derivative instruments mitigate the exposure to variability in the cash flows of forecasted transactions attributable to foreign currency exchange. Unless noted otherwise, we have also designated our derivative instruments as qualifying for hedge accounting treatment.

We did not de-designate any instruments from hedge accounting treatment during the years ended December 31, 2021, 2020, and 2019. Gains and losses related to hedge ineffectiveness recognized in earnings during the years ended December 31, 2021, 2020, and 2019 were not material. At December 31, 2021, the estimated amount of net gains, net of tax, which are expected to be reclassified out of AOCI and into earnings within the next twelve months is $5.0 million if exchange rates do not fluctuate from the levels at December 31, 2021.

We target to hedge approximately 75% to 85% of the estimated exposure from intercompany product purchases and sales denominated in the euro, British pound, Canadian dollar, Japanese yen, and Australian dollar. We have additional unhedged foreign currency exposures related to foreign services and emerging markets where it is not practical to hedge. We primarily utilize foreign currency exchange contracts with durations of less than 24 months. Quarterly, we enter into contracts to hedge incremental portions of anticipated foreign currency transactions for the current and following year. As a result, our risk with respect to foreign currency exchange rate fluctuations and the notional value of foreign currency exchange contracts may vary throughout the year. The U.S. dollar is the currency purchased or sold in all of our foreign currency exchange contracts. The notional amount of foreign currency exchange contracts to hedge forecasted intercompany inventory purchases and sales totaled $286.7 million, and $202.7 million at December 31, 2021 and 2020, respectively.

The following table presents the effect of cash flow hedge accounting on our consolidated statements of income and comprehensive income, and provides information regarding the location and amounts of pretax gains or losses of derivatives:

(in thousands)		Years Ended December 31,		
		2021	**2020**	**2019**
Financial statement line items in which effects of cash flow hedges are recorded	Cost of revenue	$ 1,325,928	$ 1,135,615	$ 1,041,359
Foreign exchange contracts				
Amount of (loss) gain reclassified from accumulated other comprehensive income into income		$ (7,121)	$ 829	$ 10,628

Net Investment Hedges, Euro-Denominated Notes

In June 2015, we issued and sold through a private placement an aggregate principal amount of €88.9 million in euro-denominated 1.785% Series C Senior Notes due June 18, 2025. We have designated these euro-denominated notes as a hedge of our euro net investment in certain foreign subsidiaries to reduce the volatility in stockholders' equity caused by changes in foreign currency exchange rates in the euro relative to the U.S. dollar. As a result of this designation, gains and losses from the change in translated U.S. dollar value of these euro-denominated notes are recorded in AOCI rather than to earnings. We recorded a gain of $6.4 million, a loss of $7.4 million, and a gain of $1.8 million, net of tax, within AOCI as a result of this net

investment hedge for the years ended December 31, 2021, 2020, and 2019, respectively. The related cumulative unrealized gain recorded at December 31, 2021, will not be reclassified in earnings until the complete or substantially complete liquidation of the net investment in the hedged foreign operations or all or a portion of the hedge no longer qualifies for hedge accounting treatment. Refer to "Note 13. Debt" to the consolidated financial statements included in this Annual Report on Form 10-K for further information regarding the issuance of these euro-denominated notes.

Net Investment Hedges, Cross Currency Swaps

We have entered into several cross currency swap contracts as a hedge of our net investment in foreign operations to offset foreign currency translation gains and losses on the net investment. These cross currency swaps have maturity dates beginning on June 30, 2023, through June 18, 2025. At maturity of the cross currency swap contracts, we will deliver the notional amounts of €90.0 million and will receive approximately $104.5 million from the counterparties on June 30, 2023, and we will deliver the notional amount of €15.0 million and will receive approximately $17.5 million from the counterparties on June 18, 2025. The change in fair value of the cross currency swap contracts are recorded in AOCI and will be reclassified to earnings when the foreign subsidiaries are sold or substantially liquidated. We recorded a gain of $5.4 million, a loss of $5.6 million, and a gain of $2.1 million, net of tax, within AOCI as a result of these net investment hedges, during the years ended December 31, 2021, 2020, and 2019, respectively. We will receive quarterly interest payments from the counterparties based on a fixed interest rate until maturity of the cross currency swaps. This interest rate component is excluded from the assessment of hedge effectiveness and, thus, is recognized as a reduction to interest expense over the life of the hedge instrument. We recognized approximately $2.8 million and $2.7 million related to the excluded component as a reduction of interest expense for the years ended December 31, 2021 and 2020, respectively.

Fair Values of Hedging Instruments Designated as Hedges in Consolidated Balance Sheets

The fair values of hedging instruments, their respective classification on the consolidated balance sheets, and amounts subject to offset under master netting arrangements consisted of the following derivative instruments, unless otherwise noted:

(in thousands)		Hedging Assets	
		December 31, 2021	December 31, 2020
Derivatives and non-derivatives designated as hedging instruments	**Balance Sheet Classification**		
Foreign currency exchange contracts	Other current assets	$ 6,512	$ 125
Cross currency swaps	Other long-term assets	4,256	—
Total derivative instruments presented as hedge instruments on the balance sheet		10,768	125
Gross amounts subject to master netting arrangements not offset on the balance sheet		(601)	(125)
Net amount		$ 10,167	$ —

(in thousands)		Hedging Liabilities	
		December 31, 2021	December 31, 2020
Derivatives and non-derivatives designated as hedging instruments	**Balance Sheet Classification**		
Foreign currency exchange contracts	Accrued liabilities	$ 601	$ 12,373
Cross currency swaps	Other long-term liabilities	—	2,841
Total derivative instruments presented as cash flow hedges on the balance sheet		601	15,214
Non-derivative foreign currency denominated debt designated as net investment hedge on the balance sheet [1]	Long-term debt	100,711	109,125
Total hedging instruments presented on the balance sheet		101,312	124,339
Gross amounts subject to master netting arrangements not offset on the balance sheet		(601)	(125)
Net amount		$ 100,711	$ 124,214

(1) Amounts represent reported carrying amounts of our foreign currency denominated debt. Refer to "Note 18. Fair Value Measurements" for information regarding the fair value of our long-term debt.

NOTE 20. REPURCHASES OF COMMON STOCK

As of December 31, 2021, our Board of Directors has authorized the repurchase of up to 73.0 million shares of our common stock in the open market or in negotiated transactions pursuant to the Company's share repurchase program. We believe that the repurchase of our common stock is a favorable means of returning value to our stockholders, and we also repurchase to offset the dilutive effect of our share-based compensation programs. Repurchases of our common stock may vary depending upon the level of other investing activities and the share price. As of December 31, 2021, there are approximately 5.0 million remaining shares available for repurchase under this authorization.

We primarily acquire shares by repurchases in the open market. However, we also acquire shares that are surrendered by employees in payment for the minimum required statutory withholding taxes due on the vesting of restricted stock units and the settlement of deferred stock units, otherwise referred to herein as employee surrenders. We issue shares of treasury stock upon the vesting of certain restricted stock units and upon the exercise of certain stock options. The number of shares of treasury stock issued during the years ended December 31, 2021, 2020, and 2019, was not material.

The following is a summary of our open market common stock repurchases, reported on a trade date basis, and shares acquired through employee surrenders:

(in thousands, except per share amounts)	For the Years Ended December 31,		
	2021	2020	2019
Shares repurchased in the open market	1,283	721	1,215
Shares acquired through employee surrenders for statutory tax withholding	29	58	39
Total shares repurchased	1,312	779	1,254
Cost of shares repurchased in the open market	$ 755,545	$ 179,623	$ 303,838
Cost of shares for employee surrenders	15,562	20,603	8,054
Total cost of shares	$ 771,107	$ 200,226	$ 311,892
Average cost per share - open market repurchases	$ 588.58	$ 249.20	$ 249.84
Average cost per share - employee surrenders	$ 548.08	$ 354.98	$ 210.10
Average cost per share - total	$ 587.70	$ 257.08	$ 248.62

NOTE 21. ACCUMULATED OTHER COMPREHENSIVE INCOME

The changes in AOCI, net of tax, consisted of the following:

	For the Years Ended December 31, 2021 and 2020					
		Unrealized (Loss) Gain on Cash Flow Hedges, Net of Tax	Unrealized (Loss) Gain on Net Investment Hedges, Net of Tax			
(in thousands)	Unrealized (Loss) Gain on Investments, Net of Tax	Foreign Currency Exchange Contracts	Euro-Denominated Notes	Cross Currency Swaps	Cumulative Translation Adjustment	Total
Balance as of December 31, 2019	$ 110	$ (736)	$ 1,396	$ 3,467	$ (50,419)	$ (46,182)
Other comprehensive (loss) income before reclassifications	(382)	(8,527)	(7,378)	(5,626)	15,151	(6,762)
Amounts reclassified from accumulated other comprehensive income	—	(671)	—	—	—	(671)
Balance as of December 31, 2020	(272)	(9,934)	(5,982)	(2,159)	(35,268)	(53,615)
Other comprehensive income (loss) before reclassifications	146	9,139	6,404	5,399	(26,731)	(5,643)
Amounts reclassified from accumulated other comprehensive income	—	5,774	—	—	—	5,774
Balance as of December 31, 2021	$ (126)	$ 4,979	$ 422	$ 3,240	$ (61,999)	$ (53,484)

The following table presents components and amounts reclassified out of AOCI to net income:

(in thousands)	Affected Line Item in the Statements of Income	Amounts Reclassified from AOCI for the Years Ended December 31,		
		2021	2020	2019
Gains (losses) on derivative instruments included in net income:				
Foreign currency exchange contracts	Cost of revenue	$ (7,121)	$ 829	$ 10,628
	Tax (benefit) expense	(1,347)	158	2,467
	(Losses) gains, net of tax	$ (5,774)	$ 671	$ 8,161

NOTE 22. PREFERRED STOCK

Our Board of Directors is authorized, subject to any limitations prescribed by law, without further stockholder approval, to issue from time to time up to 500,000 shares of Preferred Stock, $1.00 par value per share ("Preferred Stock"), in one or more series. Each such series of Preferred Stock shall have such number of shares, designations, preferences, voting powers, qualifications, and special or relative rights or privileges as shall be determined by the Board of Directors, which may include, among others, dividend rights, voting rights, redemption and sinking fund provisions, liquidation preferences, conversion rights, and preemptive rights. There are no shares of Preferred Stock outstanding as of December 31, 2021 and 2020.

NOTE 23. IDEXX RETIREMENT AND INCENTIVE SAVINGS PLAN

We have established the IDEXX Retirement and Incentive Savings Plan (the "401(k) Plan"). U.S. employees eligible to participate in the 401(k) Plan may contribute specified percentages of their salaries. We match a portion of these contributions, not to exceed 5% of participants' eligible compensation. We matched $25.8 million, $23.4 million, and $21.1 million for the years ended December 31, 2021, 2020, and 2019, respectively. In addition, we may make contributions to the 401(k) Plan at the discretion of the Board of Directors. There were no discretionary contributions in 2021, 2020 or 2019.

We also have established defined contribution plans for regional employees in Europe and in Canada. With respect to these plans, our contributions over the past three years have not been material.

EXHIBIT INDEX

Exhibit No.	Description
3.1	Restated Certificate of Incorporation of the Company, as amended (filed as Exhibit No. 3(i) to Quarterly Report on Form 10-Q for the quarter ended June 30, 2006, File No. 0-19271, and incorporated herein by reference).
3.2	Amended and Restated By-Laws of the Company (filed as Exhibit No. 3.1 to Current Report on Form 8-K filed December 12, 2017, File No. 0-19271, and incorporated herein by reference).
4.1	Description of the Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934 (filed as Exhibit 4.1 to Annual Report on Form 10-K for the year ended December 31, 2019, File No. 0-19271 ("2019 Form 10-K"), and incorporated herein by reference).
4.2	Note Purchase Agreement, dated as of December 11, 2013, among the Company, as issuer, New York Life Insurance Company, New York Life Insurance and Annuity Corporation and New York Life Insurance and Annuity Corporation Institutionally Owned Life Insurance Separate Account (BOLI 30C), as purchasers (filed as Exhibit No. 99.1 to Current Report on Form 8-K filed December 12, 2013, File No. 0-19271, and incorporated herein by reference).
4.3	Note Purchase and Private Shelf Agreement, dated as of July 21, 2014, among the Company, as issuer, Prudential Investment Management, Inc., Pruco Life Insurance Company, The Prudential Insurance Company of America, The Gibraltar Life Insurance Co., Ltd., PAR U Hartford Life Insurance Comfort Trust, The Independent Order of Foresters, Zurich American Insurance Company, Globe Life and Accident Insurance Company, Family Heritage Life Insurance Company of America, MTL Insurance Company, The Lincoln National Life Insurance Company, William Penn Life Insurance Company of New York, Farmers Insurance Exchange and Mid Century Insurance Company, as purchasers (filed as Exhibit No. 99.1 to Current Report on Form 8-K filed July 25, 2014, File No. 0-19271, and incorporated herein by reference).
4.4	Note Purchase Agreement, dated as of July 22, 2014, among the Company, as issuer, New York Life Insurance Company, New York Life Insurance and Annuity Corporation and New York Life Insurance and Annuity Corporation Institutionally Owned Life Insurance Separate Account (BOLI 30C), as purchasers (filed as Exhibit No. 99.2 to Current Report on Form 8-K filed July 25, 2014, File No. 0-19271, and incorporated herein by reference).
4.5	Amendment to Note Purchase Agreement, dated as of April 10, 2020, among the Company, as issuer, New York Life Insurance Company, New York Life Insurance and Annuity Corporation and New York Life Insurance and Annuity Corporation Institutionally Owned Life Insurance Separate Account (BOLI 30C), as purchasers (filed as Exhibit 10.4 to Current Report on Form 8-K filed April 16, 2020, File No. 0-19271, and incorporated herein by reference).
4.6	Amendment to Note Purchase Agreement, dated as of April 10, 2020, among the Company, as issuer, New York Life Insurance Company, New York Life Insurance and Annuity Corporation and New York Life Insurance and Annuity Corporation Institutionally Owned Life Insurance Separate Account (BOLI 30C), as purchasers (filed as Exhibit 10.5 to Current Report on Form 8-K filed April 16, 2020, File No. 0-19271, and incorporated herein by reference).
4.7	Amended and Restated Multi-Currency Note Purchase and Private Shelf Agreement, dated as of June 18, 2015, among the Company, Prudential Investment Management, Inc., Pruco Life Insurance Company, The Prudential Insurance Company of America, The Gibraltar Life Insurance Co., Ltd., PAR U Hartford Life Insurance Comfort Trust, The Independent Order of Foresters, Zurich American Insurance Company, Globe Life and Accident Insurance Company, Family Heritage Life Insurance Company of America, MTL Insurance Company, The Lincoln National Life Insurance Company, William Penn Life Insurance Company of New York, Farmers Insurance Exchange, Mid Century Insurance Company and Farmers New World Life Insurance Company, as purchasers (filed as Exhibit No. 99.1 to Current Report on Form 8-K filed June 24, 2015, File No. 0-19271, and incorporated herein by reference).
4.8	Amendment to Amended and Restated Multi-Currency Note Purchase and Private Shelf Agreement, dated as of May 9, 2019, among the Company, as issuer, each of the Subsidiary Guarantors (as defined therein), Prudential and each of the holders of the Notes (as defined therein) (filed as Exhibit 10.2 to Current Report on Form 8-K filed April 16, 2020, File No. 0-19271, and incorporated herein by reference).

4.9	Second Amendment to Amended and Restated Multi-Currency Note Purchase and Private Shelf Agreement, dated as of April 10, 2020, among the Company, as issuer, each of the Subsidiary Guarantors (as defined therein), Prudential and each of the holders of the Notes (as defined therein) (filed as Exhibit 10.3 to Current Report on Form 8-K filed April 16, 2020, File No. 0-19271, and incorporated herein by reference).
4.10	Multicurrency Note Purchase and Private Shelf Agreement, dated as of December 19, 2014, among the Company, as issuer, and Metropolitan Life Insurance Company, MetLife Insurance Company USA, Symetra Life Insurance Company, MetLife Insurance K.K., AXIS Reinsurance Company, and Union Fidelity Life Insurance Company, as purchasers (filed as Exhibit 10.1 to Current Report on Form 8-K filed March 15, 2019, File No. 0-19271, and incorporated herein by reference).
4.11	First Amendment to Multicurrency Note Purchase and Private Shelf Agreement, dated March 14, 2019, among the Company, as issuer, and IDEXX Distribution, Inc., IDEXX Operations, Inc., and OPTI Medical Systems, Inc., each as a subsidiary guarantor, and Metropolitan Life Insurance Company, MetLife Reinsurance Company of Bermuda, Ltd., Brighthouse Life Insurance Company, Symetra Life Insurance Company, and AXIS Reinsurance Company (filed as Exhibit 10.2 to Current Report on Form 8-K filed March 15, 2019, File No. 0-19271, and incorporated herein by reference).
4.12	Second Amendment to Multicurrency Note Purchase and Private Shelf Agreement, dated March 23, 2020, among the Company, as issuer, each of the Subsidiary Guarantors (as defined therein), Metropolitan Life Insurance Company and each of the holders of the Notes (as defined therein) (filed as Exhibit 10.1 to Current Report on Form 8-K filed March 27, 2020, File No. 0-19271, and incorporated herein by reference).
10.1*	U.S. Supply Agreement, effective as of October 16, 2003, among IDEXX Operations, Inc., the Company and Ortho-Clinical Diagnostics, Inc. ("Ortho") (filed herewith).
10.2*	Amendment No. 1 to U.S. Supply Agreement effective as of January 1, 2005, among IDEXX Operations, Inc., the Company and Ortho (filed herewith).
10.3	Amendment No. 2 to U.S. Supply Agreement effective as of October 15, 2006, among IDEXX Operations, Inc., the Company and Ortho (filed as Exhibit No. 10.4 to Annual Report on Form 10-K for the year ended December 31, 2007, File No. 0-19271 ("2007 Form 10-K"), and incorporated herein by reference).
10.4*	Amendment No. 3 to U.S. Supply Agreement effective as of January 18, 2008, among IDEXX Operations, Inc., the Company and Ortho (filed as Exhibit No. 10.5 to 2007 Form 10-K, and incorporated herein by reference).
10.5*	Amendment No. 4 to U.S. Supply Agreement effective as of December 28, 2011, among IDEXX Operations, Inc., the Company and Ortho (filed as Exhibit No. 10.5 to Annual Report on Form 10-K for the year ended December 31, 2011, File No. 0-19271 ("2011 Form 10-K") (filed herewith).
10.6*	Amendment No. 5 to U.S. Supply Agreement effective as of December 9, 2013, among IDEXX Operations, Inc., the Company and Ortho (filed herewith).
10.7*	Amendment No. 6 to U.S. Supply Agreement effective as of January 1, 2017, among IDEXX Operations, Inc., the Company and Ortho (filed as Exhibit No. 10.27 to Annual Report on Form 10-K for the year ended December 31, 2017, File No. 0-19271, and incorporated herein by reference).
10.8*	Amendment No. 7 to U.S. Supply Agreement effective as of July 9, 2019, among IDEXX Operations, Inc., the Company and Ortho (filed as Exhibit 10.1 to Quarterly Report on Form 10-Q for the quarter ended September 230, 2021, File No. 0-19271 and incorporated herein by reference).
10.9*	Amendment No. 8 to U.S. Supply Agreement effective as of September 1, 2021, among IDEXX Operations, Inc., the Company and Ortho (filed herewith).
10.10*	European Supply Agreement, effective as of October 17, 2003, among IDEXX Europe B.V., the Company and Ortho (filed herewith).
10.11*	Amendment No. 1 to European Supply Agreement effective as of January 1, 2005, among IDEXX Europe B.V., the Company and Ortho (filed herewith).

10.12*	Amendment No. 2 to European Supply Agreement effective as of January 18, 2008, among IDEXX Europe B.V., the Company and Ortho (filed as Exhibit No. 10.8 to 2007 Form 10-K, and incorporated herein by reference).
10.13*	Amendment No. 3 to European Supply Agreement effective as of December 28, 2011, among IDEXX Europe B.V., the Company and Ortho (filed herewith).
10.14*	Amendment No. 4 to European Supply Agreement effective as of December 9, 2013, among IDEXX Europe B.V., the Company and Ortho (filed herewith).
10.15	Amendment No. 5 to European Supply Agreement effective as of July 9, 2019, among IDEXX Europe B.V., the Company and Ortho (filed as Exhibit 10.2 to Quarterly Report on Form 10-Q for the quarter ended September 30, 2021, File No. 0-19271 and incorporated herein by reference).
10.16*	Amendment No. 6 to European Supply Agreement effective as of September 1, 2021, among IDEXX Europe B.V., the Company and Ortho (filed herewith).
10.17*	Amendment, Release and Settlement Agreement dated as of September 12, 2002, among the Company, IDEXX Europe B.V., and Ortho (filed as Exhibit No. 10.1 to Quarterly Report on Form 10-Q for the quarter ended September 30, 2002, File No. 0-19271, and incorporated herein by reference).
10.18*	Waiver to U.S. Supply Agreement, effective as of October 16, 2003, as amended, among IDEXX Operations, Inc., the Company and Ortho-Clinical Diagnostics, Inc. dated as of April 7, 2020 (filed as Exhibit 10.1 Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, File No. 0-19271, and incorporated herein by reference).
10.19*	Letter Agreement between Ortho-Clinical Diagnostics, Inc. and IDEXX Operations, Inc. dated November 2, 2021 (filed herewith).
10.20*	Letter Agreement between Ortho-Clinical Diagnostics, Inc. and IDEXX Operations, Inc. and IDEXX Europe B.V. dated as of July 10, 2020 (filed as Exhibit 10.1 to Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, File No. 0-19271, and incorporated herein by reference).
10.21**	Form of Executive Employment Agreement dated May 26, 2013, between the Company and each of the Company's Executive Officers, other than the Chief Executive Officer (filed as Exhibit No. 10.3 to Quarterly Report on Form 10-Q for the quarter ended June 30, 2013 File No. 0-19271, and incorporated herein by reference).
10.22**	Restated Director Deferred Compensation Plan, as amended (filed herewith).
10.23 **	Restated Executive Deferred Compensation Plan, as amended (filed as Exhibit No. 10.3 to Quarterly Report on Form 10-Q for the quarter ended June 30, 2010, File No. 0-19271, and incorporated herein by reference).
10.24**	IDEXX Laboratories, Inc. 1997 Employee Stock Purchase Plan, as amended filed as Exhibit 10.19 to Annual Report on Form 10-K for the year ended December 31, 2020, File No. 0-19271, and incorporated herein by reference.
10.25**	2009 Stock Incentive Plan, as amended (filed as Exhibit No. 99.1 to Registration Statement on Form S-8 filed December 30, 2013, File No. 333-193136, and incorporated herein by reference).
10.26**	2018 Stock Incentive Plan (filed as Appendix B to the Definitive Proxy Statement on Schedule 14A for the 2018 Annual Meeting of Stockholders filed on March 28, 2018, and incorporated herein by reference).
10.27**	Summary of Executive Incentive Plan (filed as Exhibit No. 10.22 to Annual Report on Form 10-K for the year December 31, 2020, File No. 0-19271, and incorporated herein by reference).
10.28**	Form of Director Stock Option Agreement (filed herewith).
10.29**	Form of Director Restricted Stock Unit (filed herewith).

10.30**	Form of Employee Stock Option Agreement for grants in 2010 to 2015 (filed as Exhibit 10.21 to Annual Report on Form 10-K for the year ended December 31, 2009, File No. 0-19271, and incorporated herein by reference).
10.31**	Form of Employee Stock Option Agreement for grants in 2016 and 2017 (filed as Exhibit 10.20 to Annual Report on Form 10-K for the year ended December 31, 2015, File No. 0-19271, and incorporated by reference herein).
10.32**	Form of Employee Stock Option Agreement for grants in 2018 and 2019 (filed as Exhibit 10.25 to Annual Report on Form 10-K for the year ended December 31, 2018, File No. 0-19271 ("2018 Form 10-K"), and incorporated by reference herein).
10.33**	Form of Employee Stock Option Agreement for grants in 2020 and 2021 (filed as Exhibit 10.28 to 2019 Form 10-K, and incorporated herein by reference).
10.34**	Form of Employee Stock Option Agreement for grants beginning in 2022 (filed herewith).
10.35**	Form of Employee Restricted Stock Unit Agreement for grants in 2015 (filed as Exhibit 10.24 to Annual Report on Form 10-K for the year ended December 31, 2009, File No. 0-19271, and incorporated herein by reference).
10.36**	Form of Employee Restricted Stock Unit Agreement for grants in 2016 and 2017 (filed as Exhibit 10.22 to Annual Report on Form 10-K for the year ended December 31, 2015, File No. 0-19271, and incorporated herein by reference).
10.37**	Form of Employee Restricted Stock Unit Agreement for grants in 2018 and 2019 (filed as Exhibit 10.26 to 2018 Form 10-K, and incorporated herein by reference).
10.38**	Form of Employee Restricted Stock Unit for grants in 2020 and 2021 (filed as Exhibit 10.32 to 2019 Form 10-K, and incorporated herein by reference).
10.39**	Form of CEO Stock Option Agreement for grant in 2021 (files as Exhibit 10.1 to Quarterly Report of Form 10-Q for the quarter ended March 31, 2021, File No. 0-19271, and incorporated herein by reference).
10.40**	Form of CEO Restricted Stock Agreement for grant in 2021 (file as Exhibit 10.2 to Quarterly Report of Form 10-Q for the quarter ended March 31, 2021, File No. 0-19271, and incorporated herein by reference).
10.41**	Form of Employee Restricted Stock Unit for grants beginning in 2022 (filed herewith).
10.42**	Form of Employee High-Performer Restricted Stock Unit beginning in 2022 (filed herewith).
10.43**	Form of Restricted Stock Unit for grants made to Jonathan J. Mazelsky in 2022 (filed herewith).
10.44**	Form of Stock Option Agreement for grants made to Jonathan J. Mazelsky in 2022 (filed herewith).
10.45**	Form of Employee Performance-Based Restricted Stock Unit Agreement (filed as Exhibit 10.27 to 2018 Form 10-K, and incorporated herein by reference).
10.46	Third Amended and Restated Credit Agreement, dated as of April 14, 2020, among the Company, IDEXX Distribution, Inc., IDEXX Operations, Inc., OPTI Medical Systems, Inc., IDEXX Laboratories Canada Corporation, IDEXX Europe B.V., and IDEXX Holding B.V., as borrowers, the lenders party thereto, JPMorgan Chase Bank, N.A., as administrative agent, JPMorgan Chase Bank, N.A., Toronto Branch, as Toronto agent, and the other parties thereto (filed as Exhibit 10.6 to Current Report on Form 8-K filed April 16, 2020, File No. 0-19271, and incorporated herein by reference).
10.47	Fourth Amended and Restated Credit Agreement, dated as of December 9, 2021, among the Company, IDEXX Distribution, Inc., IDEXX Operations, Inc., OPTI Medical Systems, Inc., IDEXX Laboratories Canada Corporation, IDEXX B.V., IDEXX Laboratories B.V., and IDEXX Laboratories GmbH, as borrowers, the lenders party thereto, JPMorgan Chase Bank, N.A., as administrative agent, JPMorgan Chase Bank, N.A., Toronto Branch, as Toronto agent, and the other parties thereto (filed as Exhibit 10.1 to Current Report on Form 8-K filed December 9, 2021, File No. 0-19271, and incorporated herein by reference).
10.48	Second Amended and Restated Employment Agreement, dated October 23, 2019, by and between the Company and Jonathan (Jay) Mazelsky (filed as Exhibit 10.3 to Current Report on Form 8-K filed October 24, 2019, File No. 0-19271, and incorporated herein by reference).

21	Subsidiaries of the Company (filed herewith).
23	Consent of PricewaterhouseCoopers LLP, an independent registered public accounting firm (filed herewith).
31.1	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith).
31.2	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith).
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith).
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith).
101	The following financial and related information from IDEXX Laboratories, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2021, formatted in Inline eXtensible Business Reportable Language (iXBRL) includes: (i) the Consolidated Balance Sheet; (ii) the Consolidated Statement of Income; (iii) the Consolidated Statements of Comprehensive Income; (iv) the Consolidated Statement of Changes in Stockholders' Equity (Deficit); (v) the Consolidated Statement of Cash Flows; and, (vi) Notes to Consolidated Financial Statements.
104	The cover page from the Company's Annual Report of Form 10-K for the fiscal year ended December 31, 2021, formatted in Inline XBRL and contained in Exhibit 101.
*	Confidential treatment requested as to certain portions.
**	Management contract or compensatory arrangement required to be filed as an exhibit pursuant to Item 15(a)(3) of Form 10-K.

SIGNATURES

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

IDEXX LABORATORIES, INC.

By: /s/ Jonathan J. Mazelsky
Jonathan J. Mazelsky
President and Chief Executive Officer

Date: February 16, 2022

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

SIGNATURE	TITLE	DATE
/s/ Jonathan J. Mazelsky Jonathan J. Mazelsky	President, Chief Executive Officer and Director (Principal Executive Officer)	February 16, 2022
/s/ Brian P. McKeon Brian P. McKeon	Executive Vice President, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	February 16, 2022
/s/ Lawrence D. Kingsley Lawrence D. Kingsley	Non-Executive Board Chair	February 16, 2022
/s/ Jonathan W. Ayers Jonathan W. Ayers	Director	February 16, 2022
/s/ Asha S. Collins, PhD Asha S. Collins, PhD	Director	February 16, 2022
/s/ Bruce L. Claflin Bruce L. Claflin	Director	February 16, 2022
/s/ Stuart M. Essig, PhD Stuart M. Essig, PhD	Director	February 16, 2022
/s/ Daniel M. Junius Daniel M. Junius	Director	February 16, 2022
/s/ Sam A. Samad Sam A. Samad	Director	February 16, 2022
/s/ M. Anne Szostak M. Anne Szostak	Director	February 16, 2022
/s/ Sophie V. Vandebroek, PhD Sophie V. Vandebroek, PhD	Director	February 16, 2022