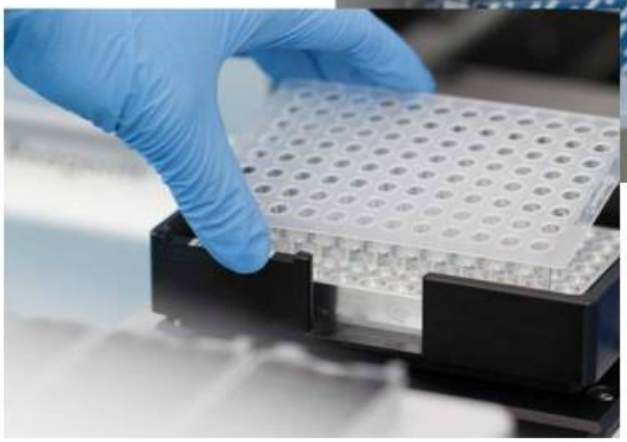
# 2018

QIAGEN N.V. IFRS ANNUAL REPORT



Sample to Insight

QIAGEN

**QIAGEN N.V.**

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# Report of the Supervisory Board

The 5,000 employees of QIAGEN - known as QIAGENers - are the reason for our success. The members of the Supervisory Board wish to thank all QIAGENers for their contributions during 2018 toward achieving our vision of making improvements in life possible. We would also like to thank our shareholders, customers, business partners and other stakeholders for honoring QIAGEN with their continued collaboration and trust.

**2018 performance achieves full-year goals**

A key role of the Supervisory Board is to monitor the performance and progress of QIAGEN's business on a regular basis, and this was done during the course of 2018 with detailed written and oral reports from the Managing Directors, members of the Executive Committee and other senior leaders.

We were pleased with the achievements of QIAGEN in 2018, delivering a performance in line with our outlook for net sales growth and exceeding our target for adjusted earnings per share. Our teams made outstanding progress on creating what we believe is one of the most dynamic and disruptive portfolios of Sample to Insight solutions for molecular testing. QIAGEN's growth initiatives are moving ahead well, and the efforts of our employees in 2018 have created a solid foundation for further growth in 2019 and the coming years. We support the strategy of QIAGEN to deliver on growth plans and expand the leadership position in molecular testing across the continuum from life sciences research to clinical healthcare.

**Composition of the Supervisory Board and Managing Board**

The composition of the Supervisory Board changed during 2018 with the retirement of Prof. Dr. Manfred Karobath. As announced in early 2018, Dr. Håkan Björklund was chosen by the Supervisory Board as the new Chairman after the Annual General Meeting in June 2018.

The members of the Supervisory Board would like to express their deepest appreciation for the contributions of Prof. Karobath to QIAGEN during his 18 years on the Supervisory Board, having served as a source of wisdom and insight, as well as contributing his extensive experience in the pharmaceuticals and life sciences industries. He was an essential contributor in helping QIAGEN to develop truly innovative products and solutions that have helped QIAGEN make progress toward achieving its vision of making improvements in life possible.

All current members of the Supervisory Board are expected to stand for re-election at the upcoming Annual General Meeting in June 2019. All members, with the exception of Dr. Metin Colpan and Ms. Elizabeth E. Tallett have served in the Supervisory Board for less than eight years as recommended by the Dutch Corporate Governance Code. QIAGEN values the profound industry experience of Dr. Colpan and Ms. Tallett for their in-depth knowledge, and supports their reappointments.

The target profile of the Supervisory Board can be found on QIAGEN's website, and the current composition fully complies with this profile. Further information on the individual members of the Supervisory Board, such as gender, age, nationality and other positions relevant to the performance of its duties as Supervisor Board member, date of initial appointment and current term of office is set forth in the Corporate Governance and Compensation overview.

QIAGEN has a commitment to developing a diverse leadership team, with a broad range of backgrounds, experience, skills and capabilities. In nominating candidates, QIAGEN is committed to increasing diversity while pursuing individuals to join QIAGEN with a unique blend of scientific and commercial expertise and experience that will contribute to our future business success. Management development programs support the career advancement of leaders regardless of gender and other factors. As a result, a number of women are in key leadership roles around the world, and QIAGEN currently has 28% of management roles held by women. In line with this commitment, the Supervisory Board continues to take diversity into account when proposing members for election or re-election without compromising QIAGEN's commitment to hiring the best individuals for positions without any discrimination. The current governance structure has led to the size of the Managing Board of two members, so achieving a diversity goal as measured solely by a percentage of overall membership is difficult to achieve. At the same time, QIAGEN has significantly increased the diversity of its senior leadership team and will continue to do so in the future.

**Principal topics discussed by the Supervisory Board**

As empowered by the Dutch Corporate Governance Code, the Supervisory Board devoted considerable time during 2018 to discussing and assessing QIAGEN's corporate strategy, main risks and opportunities, and an annual assessment by the Managing Board of the design and effectiveness of internal risk management and control systems as well as any significant changes in them. In addition, the Supervisory Board discussed and reviewed the functioning of its committees and individual members, its current composition, competence, succession schedule and desired profile in various meetings and through written surveys.

The Supervisory Board met five times during 2018 with attendance of all Supervisory Board members in all meetings and regular attendance of the members of the Managing Board for certain agenda items. The Supervisory Board also met to review and discuss agenda items in the absence of the Managing Board members, such as performance and strategy as well as to discuss compensation matters. Information about the Supervisory Board members, including positions held on other boards, is included in the Corporate Governance and Compensation overview. All members of the Supervisory Board had adequate time available to give sufficient attention to the concerns of the company. The Supervisory Board further discussed the performance of the Managing Board and concluded that it and the Managing Board were functioning properly.

**Committees of the Supervisory Board**

The Supervisory Board has established an Audit Committee (Chair Mr. Lawrence Rosen), a Compensation Committee (Chair Ms. Elizabeth Tallett), a Selection and Appointment Committee (Chair Dr. Björklund), and a Science and Technology Committee (Chair Dr. Metin Colpan) from among its members. The Supervisory Board reserves the right to establish other committees as deemed beneficial, and has approved charters under which each of these committees operates (charters are available on our website at www.QIAGEN.com). The deliberations and findings of the committees were reported by the committee chairs to the Supervisory Board in its meetings on a regular basis. All committee members attended all committee meetings in 2018 physically or by phone. Further detailed information on the composition of the Supervisory Board and its committees, the number of committee meetings held in 2018 and the main topics of discussion, the remuneration of its members, as well as other information on the Supervisory Board, can be found in the Corporate Governance and Compensation overview, which is an integral part of this Annual Report.

Through its Compensation Committee, the Supervisory Board executed and monitored compliance with the Remuneration Policy approved at the Annual General Meeting held on June 25, 2014. Compensation of Managing Board members consists of a fixed salary and variable components. Variable compensation includes one-time and annual payments linked to business performance (bonuses) as well as long-term incentives, such as share-based compensation, and pension plans. The Remuneration Policy and the various aspects of compensation, including the detailed remuneration of individual Managing Board members, are described in the Remuneration Report, which is available on QIAGEN's website. Information on QIAGEN's activities was communicated by the Managing Board to the Supervisory Board through regular meetings and business reports.

**Corporate governance**

All members of the Supervisory Board fulfill the independence criteria as defined by the Dutch Corporate Governance Code. The Supervisory Board follows the principle of increasing shareholder value as the members represent the interests of all stakeholders, including shareholders, and has always pursued the highest standards in Corporate Governance.

QIAGEN is committed to a corporate governance structure that best suits its business and stakeholders, and that complies with relevant rules and regulations. QIAGEN has endorsed since 1997 the recommendations made in the report of the Netherlands Committee on Corporate Governance, which was replaced by the Dutch Corporate Governance Code effective January 1, 2004. The Dutch Code was last amended on December 8, 2016 and is applicable as from January 1, 2017. Our policy is to follow the guidelines of Good Practice of Corporate Governance as described in the Dutch Corporate Governance Code, although some minor deviations may result from the impact of factors such as legal requirements imposed on QIAGEN or industry standards.

QIAGEN's common shares are registered and traded in the U.S. on the New York Stock Exchange as of January 2018 (formerly on the NASDAQ Global Select Market) and in Germany on the Frankfurt Stock Exchange in the Prime Standard segment. Shareholders in Europe and the U.S. hold the majority of common shares. As a result of these listings for its Global Shares, QIAGEN is subject to the rules regarding Corporate Governance set by the NYSE. Additionally, QIAGEN provides detailed disclosure in the Corporate Governance and Compensation overview regarding compliance with the Dutch Corporate Governance Code.

QIAGEN believes all of its operations are carried out in accordance with legal frameworks, including Dutch Corporate Law, U.S. laws and regulations, EU regulations and laws of the German capital market.

**Financial statements and audits**

In this Annual Report, the financial statements for 2018 are presented as prepared by the Managing Board, audited by KPMG (Independent Registered Public Accounting Firm). We examined the financial statements, the proposal for the use of the distributable profit, the consolidated financial statements and the management report. We have no objections, thus we concur with the results of the audit, and it has been approved by the Supervisory Board. In closing, the Supervisory Board would like to again thank all QIAGEN employees for the outstanding performance and commitment during 2018.

Venlo, the Netherlands, March 2019

The Supervisory Board:

Dr. Håkan Björklund

Chairman of the Supervisory Board

## Management Report

### Operations and Business Environment

***Company overview***

QIAGEN is a global leader in Sample to Insight solutions that transform biological samples into valuable molecular insights. Our mission is to enable our customers in four broad classes - Molecular Diagnostics, Applied Testing, Pharma and Academia - to achieve outstanding success and breakthroughs, all in keeping with our goal of making improvements in life possible.

QIAGEN's solutions integrate sample and assay technologies, bioinformatics and automation systems into workflows that support more than 500,000 customers worldwide in generating insights into the molecular building blocks of life. Our proven solutions and content are providing answers in hospitals and laboratories worldwide, helping make sense of the increasing volumes and complexity of biological information.

As we move deeper into "the Century of Biology," knowledge of the molecular basis of life has been growing exponentially, along with greater understanding of diseases and biological mechanisms. Dramatic acceleration in the speed of analyzing DNA - and reduction in cost - is generating new discoveries and vast quantities of genomic data. This revolution in the life sciences is transforming healthcare and influencing other areas of everyday life. QIAGEN's innovative technologies enable and accelerate this ongoing wave of discovery and its wide-ranging applications.

QIAGEN began operations in 1986 as a pioneer in the emerging biotechnology sector, introducing a novel method that standardized and accelerated extraction and purification of nucleic acids from biological samples. As molecular biology has grown to influence many areas of life, QIAGEN has expanded to serve the full spectrum of market needs. We believe our sample technologies are unmatched in quality for isolating and preparing DNA (deoxyribonucleic acid), RNA (ribonucleic acid) and proteins from blood or other liquids, tissue, plants or other materials. Our assay technologies amplify, enrich and make these biomolecules accessible for analysis, such as identifying the genetic information of a pathogen or a gene mutation in a tumor. QIAGEN's industry-leading bioinformatics solutions allows users to analyze and interpret data to provide relevant, actionable insights. Our automation systems for polymerase chain reaction (PCR), next-generation sequencing (NGS) and other technologies tie these together in seamless and cost-effective molecular testing workflows - from Sample to Insight.

Net sales of $1.50 billion in 2018 consisted of consumable kits and other revenues (88% of sales) and automation systems and instruments (12% of sales). Approximately 49% of net sales in 2018 were in Molecular Diagnostics, and 51% in Life Sciences customer classes in the Academia, Pharma and Applied Testing markets.

QIAGEN has grown by developing new platforms, consumables and bioinformatics to meet growing needs in the market, partnering with researchers and Pharma companies, and acquiring companies or technologies to complement our portfolio. We believe the addressable global market for QIAGEN's portfolio of molecular testing products for customers across the continuum of life science research and molecular diagnostics totals more than $8 billion.

We have funded our growth through internally generated funds, debt offerings, and private and public sales of equity securities. QIAGEN has global shares that are listed on the New York Stock Exchange under the ticker symbol "QGEN" and on the Frankfurt Prime Standard as "QIA."

The company is registered under its commercial and legal name QIAGEN N.V. with the trade register (*kamer van koophandel*) of the Dutch region Limburg Noord under file number 12036979. QIAGEN N.V. is a public limited liability company (*naamloze vennootschap*) under Dutch law as a holding company. Our principal executive office is located at Hulsterweg 82, 5912 PL Venlo, The Netherlands, and our telephone number is +31-77-355-6600.

As a holding company, QIAGEN conducts business through subsidiaries located throughout the world. Further information about QIAGEN can be found at *www.qiagen.com*. By referring to our website, we do not incorporate the website or any portion of the website by reference into this Annual Report.

***Recent Developments***

QIAGEN has recently achieved a number of milestones by continuing to focus on strategic growth initiatives:

**Driving the rapid growth of our QuantiFERON-TB franchise:**

- QIAGEN's QuantiFERON-TB tests play an increasingly central role in the global fight against tuberculosis (TB), a contagious bacterial infection that strikes more than 10 million new patients and kills about 1.7 million annually. As many as one out of three people worldwide have latent TB infection, in which the bacterium infects the body but produces no symptoms. About 5-10% of those individuals, if untreated, will progress to active TB disease, so screening high-risk individuals and treating the infected ones to prevent active disease is critical to TB control.
- Sales of the QuantiFERON-TB franchise, including the fourth-generation QuantiFERON-TB Gold Plus (QFT-Plus) and

third-generation QuantiFERON-TB Gold (QFT), grew 21% in 2018 to $223 million. QIAGEN continues to innovate, and the franchise is on track toward a target of $300 million in sales by 2020.

- QuantiFERON-TB Gold Plus, now adopted in more than 75 countries, continues to ramp up after launching in the United States in October 2017 and Japan in February 2018. The fourth-generation test adds clinical insights by measuring cell-mediated immune response to TB infection from both CD4+ and CD8+ T cells, a feature cited by experts for its potential to identify adults at greater risk of progressing to active TB.
- In October 2018, QIAGEN and DiaSorin introduced a state-of-the-art automation option for QuantiFERON-TB Gold Plus customers, embedding QFT-Plus in DiaSorin's broad assay menu for LIAISON-family analyzers. More than 7,000 LIAISON analyzers are in use worldwide. Laboratories in Europe and other markets can now use this CE-marked solution to process QFT-Plus tests with DiaSorin’s flexible, efficient automation. Availability is planned for the United States in 2019 and China in 2020.
- QIAGEN also partnered with Hamilton Robotics beginning in July 2018 to improve the automation of sample processing for QFT-Plus with Hamilton's best-in-class liquid handling technology.
- In January 2019, QIAGEN announced plans to develop QuantiFERON-TB Access, a simplified, low-cost test tailored to the needs of low-resource regions with a high burden of tuberculosis, including parts of Asia, Africa and South America. The new product will advance global TB control efforts with ultrasensitive digital detection in a workflow designed for cost-efficiency and ease of use in areas lacking laboratory infrastructure. QIAGEN is developing QuantiFERON-TB Access in a new partnership with Ellume, an Australian developer of high-performance digitally-enabled diagnostics. Clinical trials are planned to start in 2019, and commercialization is expected to begin in 2020.
- Support is growing for latent TB testing and treatment of high-risk individuals as a preventive component of global TB control programs. In 2018, world leaders at the first-ever high-level United Nations meeting on tuberculosis agreed to provide $13 billion a year by 2022 for preventive testing and treatment, targeting 30 million people. New guidelines from the World Health Organization (WHO) recommended scale-up of latent TB testing in countries with a high disease burden, as well as low-burden countries. Also in 2018 the UN International Organization for Migration adopted QFT-Plus for use in screening immigrants, and the International Panel Physicians Association endorsed QFT-Plus over skin tests. The U.S. Centers for Disease Control required use of FDA-approved blood tests such as ours for testing immigrants, and guidelines from the American Academy of Pediatrics also supported the tests.
- In addition to tuberculosis control, QIAGEN continues to expand its immune-monitoring pipeline for the future, developing new applications and content for QuantiFERON technology and other emerging platforms.

**Extending QIAGEN's reach in next-generation sequencing:**

- QIAGEN continues to expand our global presence in the fast-growing market for next-generation sequencing (NGS). We are a leader in "universal" technologies for preparing samples, analyzing genomic variations and interpreting data with any NGS system. The GeneReader NGS System, the world’s first Sample to Insight NGS solution enabling any laboratory to deliver actionable sequencing results, is growing in placements and establishing a broad content menu. Our diversified NGS franchise produced more than $140 million in sales in 2018.
- In 2018, QIAGEN continued to partner with customers to add universal solutions to deliver faster, better NGS insights. In immuno-oncology, the new QIAseq TMB Panel offers in-depth analysis of biomarkers such as tumor mutational burden, with potential to predict responses to immunotherapy in advanced cancers. In the growing RNA sequencing field, the new QIAseq FastSelect RNA Removal Kit addresses a major bottleneck for researchers. Our industry-leading solutions for preparation of liquid biopsy samples, along with a diverse offering of off-the-shelf and customized QIAseq panels, continued to expand to new applications across research fields.
- Adding value to the GeneReader system, we continue to expand the Sample to Insight content menu. In June 2018, we launched customizable QIAact panels for research in hereditary diseases, including inherited cancers, cystic fibrosis, inherited cardiovascular diseases, universal carrier screening and other conditions. In October 2018, we introduced the GeneRead QIAact Actionable Insights Tumor DNA UMI panel, targeting 30 genes influencing the most widespread cancers including lung, melanoma, prostate and other solid tumors, and the GeneRead QIAact BRCA Advanced UMI panel, for deep-dive analysis in breast, ovarian and other cancers. In December 2018, we launched the QIAact Myeloid DNA UMI Panel covering 25 highly relevant genes for onco-hematology research. The panels run with the GeneReader system and integrate seamlessly with our QCI software for analysis and interpretation.
- We have actively incorporated the GeneReader NGS System into collaborations with pharmaceutical companies for co-development of companion diagnostics, aiming to build a pipeline of future content for the platform.
- In March 2018, QIAGEN launched a partnership with Natera Inc., a leader in cell-free DNA genetic testing, to develop

NGS assays for non-invasive prenatal testing for use on our GeneReader NGS System, which will expand the future offering beyond the current focus on oncology.

- QIAGEN solutions, including both platform-agnostic technologies and integrated solutions for the GeneReader, featured in numerous studies presented at scientific meetings in 2018, including the American Association for Cancer Research (AACR), American Society of Clinical Oncology (ASCO), American Society of Human Genetics (ASHG), Association for Molecular Pathology (AMP) and American Society for Hematology (ASH). QIAGEN executives and customer-focused teams meet with many customers at these meetings, including academic researchers, pharmaceutical R&D experts and clinicians, to build relationships and demonstrate our Sample to Insight offering of NGS solutions.

**Reaping the value of genomic insights for Precision Medicine:**

- In 2018, QIAGEN continued to build its leading position in Precision Medicine (formerly referred to as Personalized Healthcare), collaborating with more than 25 pharmaceutical and biotech companies to develop companion and complementary diagnostics to guide clinical decision-making. These partnerships feed a deep pipeline of molecular tests for use in clinical trials and, following regulatory approval, in patient care. QIAGEN offers a full range of Sample to Insight technologies in these programs, including our PCR and NGS platforms and universal solutions. We employ established and newly discovered biomarkers in our Pharma partnerships and have robust relationships in emerging therapeutic approaches such as immuno-oncology.
- QIAGEN received the second and third FDA approvals in 2018 for our *therascreen* EGFR RGQ PCR Kit in lung cancer, for use as a companion diagnostic to guide selection of patients for targeted therapies being launched by Pfizer and Boehringer Ingelheim. The test is registered in more than 40 countries globally.
- In February 2018 we launched the CE-IVD marked *therascreen* PITX2 RGQ PCR Kit as the first clinically validated DNA methylation assay to help predict the response of high-risk breast cancer patients to anthracycline-based chemotherapy. The assay is QIAGEN's first epigenetic test in breast cancer.
- Our *ipsogen* JAK2 RGQ PCR Kit also received FDA clearance in early 2018 for two additional uses. The test now covers the diagnosis of all myeloproliferative neoplasms, a group of cancers in which immature blood cells in the bone marrow do not mature and become healthy blood cells.
- In 2018, we created a Day-One Lab Readiness initiative, a network of collaborations with CLIA-certified laboratories to ensure immediate patient access to QIAGEN companion diagnostics upon regulatory approval of new oncology drugs. Based on the FDA's modernized approach to advanced diagnostics, we are partnering with labs to allow pre-approval validation and setup of tests. An agreement with NeoGenomics, a leading U.S. provider of cancer-related genetic testing, will ensure immediate availability of QIAGEN companion diagnostics upon FDA approval of drugs and tests. A collaboration with SRL, Inc., Japan's largest clinical testing company, will enable rapid availability there. The initiative will support synchronized launches with Pharma partners and benefit patients in need of new therapies.
- A collaboration with Novartis, announced in December 2018, aims to bring to market a QIAGEN companion diagnostic to guide the use of the Novartis compound BYL719 (alpelisib) as a combination therapy for certain patients with PIK3CA-mutated, hormone receptor-positive, human epidermal growth factor receptor-2 negative (HR+/HER2-) advanced or metastatic breast cancer. The drug candidate is in late-stage development, and QIAGEN expects to provide its PIK3CA test to partners who will be ready to offer immediate access to the test upon potential regulatory approvals of BYL719 and QIAGEN's test.
- As one of the world's leading independent developers of molecular tests, with a diverse portfolio of platforms and solutions, QIAGEN is a preferred partner for creating and commercializing diagnostics in Precision Medicine.

**Expanding QIAGEN automation solutions to serve growing market needs:**

- QIAGEN has strategically expanded our offering of automation solutions to enter emerging segments of the life science and molecular diagnostics markets, as well as to meet rapidly evolving needs of customers in a variety of applications. Diversifying the automation portfolio offers opportunities for QIAGEN to leverage our molecular content on multiple platforms in growing markets.
- The flagship QIAsymphony automation solution, a cost-effective modular system that integrates PCR molecular testing workflows from initial sample processing to final insights, surpassed QIAGEN's 2018 goal of 2,300 cumulative placements. The platform's rapid dissemination and growing content menu fueled solid single-digit growth in consumables for QIAsymphony. The system serves laboratories around the world, with the broadest test menu of any platform in its category in Europe and other markets, plus the unique ability to handle laboratory-developed tests. Nearly 30 diagnostic tests in infectious disease, oncology and transplant care are marketed for use on the Rotor-Gene Q, a component of the modular QIAsymphony workflow. In the United States, eight FDA-approved diagnostic tests, including three companion

diagnostics to guide treatment decisions in cancer, are marketed for this detection platform. The sample processing module, QIAsymphony SP, is a market-leading "front end" solution for reliable automated handling of samples, including liquid biopsies, for molecular testing such as next-generation sequencing.

- The GeneReader NGS System, initially launched in 2015, continued to gain acceptance worldwide in 2018. QIAGEN again expanded the content menu of commercial and customized DNA panels to meet changing needs in clinical research and fields such as forensics. (See section on next-generation sequencing.)
- In April 2018, QIAGEN entered the rapidly growing syndromic testing market by launching QIAstat-Dx for one-step, fully integrated molecular analysis of hard-to-diagnose syndromes. The European launch followed acquisition of STAT-Dx, developer of the unique cartridge-based PCR technology for multiplex molecular testing. QIAstat-Dx enables fast, cost-effective and easy-to-use syndromic testing with novel Sample to Insight solutions. QIAGEN expects a U.S. launch for QIAstat-Dx, following regulatory approvals, in 2019. QIAstat-Dx was launched initially with two CE-IVD marked syndromic tests, enabling clinicians to differentiate among pathogens that cause respiratory and gastrointestinal infections. In 2019, QIAGEN is launching CE-marked panels for hepatitis B and hepatitis C. The pipeline of planned assays for QIAstat-Dx spans infectious diseases, oncology, companion diagnostics and other areas.
- In September 2018, QIAGEN partnered with NeuMoDx Molecular, Inc. to commercialize two new fully integrated automation systems for higher-throughput PCR testing in clinical laboratories that are processing increasing molecular test volumes. In late 2018 QIAGEN began distributing the high-throughput NeuMoDx 288 and mid-throughput NeuMoDx 96 in Europe and other major non-U.S. markets. NeuMoDx will distribute these instruments within the United States. An initial assay menu offers CE-IVD marked assays for Group B Streptococcus (GBS) and Chlamydia trachomatis/Neisseria gonorrhoeae (CT/NG) infections. Additional diagnostic tests are under development, and the NeuMoDx platforms also offer the ability to efficiently process laboratory-developed tests. The companies also entered into an agreement under which QIAGEN can acquire all NeuMoDx shares not currently owned at a predetermined price (see Item 5).
- In January 2019, we announced plans to develop next-generation systems for digital PCR, combining QIAGEN technologies with assets acquired from Formulatrix, Inc. QIAGEN expects to leverage our worldwide presence in labs using our quantitative PCR solutions to enter the emerging market for digital PCR. We are targeting a 2020 launch with fully-integrated solutions that simplify workflows compared to current digital PCR systems, offer higher throughput and multiplexing, and provide customers with favorable costs for instruments and consumables. We are developing a broad content menu of QIAGEN assays for use in digital PCR.

**Using bioinformatics to transform raw data into valuable insights:**

- QIAGEN’s broad offering of content-enabled bioinformatics continues to drive growth, turning vast amounts of genomic data into actionable insights for customers. Our bioinformatics, marketed both as standalone products and integrated into Sample to Insight QIAGEN workflows, address critical bottlenecks in next-generation sequencing, especially for clinical research and diagnostics.
- We continually seek opportunities to upgrade QIAGEN solutions for analysis and interpretation, and we pursue collaborations across the genomics and bioinformatics community to offer customers the richest possible insights for research and diagnostics in support of Precision Medicine. We launched major enhancements to QIAGEN Clinical Insight (QCI) in October 2018 to deliver expanded Sample to Insight workflows for clinical NGS. QIAGEN introduced QCI Analyze Universal for full end-to-end workflow support of all major clinical sequencing platforms and assay types, along with expanded QCI capabilities for interpretation of biomarkers in immuno-oncology.
- In February 2019, we announced an agreement with Ares Genetics to develop innovative bioinformatics and assay solutions to accelerate research targeting the global health challenges posed by antibiotic-resistant bacteria. QIAGEN acquired an exclusive license to leverage the industry-leading ARESdb antimicrobial resistance database, as well as Ares bioinformatics tools and workflows, in QIAGEN bioinformatics products and services. QIAGEN also obtained a non-exclusive worldwide license to develop and commercialize NGS and PCR assays using the Ares content.
- In January 2019, QIAGEN acquired N-of-One, Inc., a pioneer in molecular oncology decision support services, to strengthen our leadership in clinical NGS interpretation. N-of-One’s services and proprietary database will be integrated into QCI, adding medical interpretation and real-world evidence insights and offering robust decision support. N-of-One’s somatic cancer database, with more than 125,000 anonymized patient samples, will expand our already industry-leading genomics knowledge base.
- In November 2018, we introduced a new QCI Interpret solution for blood cancers, to provide actionable information for sub-classification and prognostic assessment of hematological malignancies such as leukemia, Non-Hodgkin lymphoma, Hodgkin lymphoma and multiple myeloma. QCI Interpret is a web-based decision support platform that draws on the industry-leading QIAGEN Knowledge Base to evaluate genomic variants in the context of published biomedical literature,

professional guidelines, publicly and privately available databases, drug labels and clinical trials.

- Also in November 2018, QIAGEN launched new CLC Genomics Workbench software to serve more customers, reinforcing a strategic push to expand the utility of QIAGEN's analysis tools beyond the current core market of bioinformaticians. The new tool combines the best of two previous products, CLC Biomedical Genomics Workbench and CLC Genomics Workbench. Improvements include a streamlined, easy-to-use interface useful for scientists with any bioinformatics skill level, a dramatically reduced data footprint to accommodate computing resources in virtually any lab, and in-depth reference tools to get users started quickly for many species and genomic panels.

**Pioneering liquid biopsy solutions and other differentiated sample technologies**:

- As a world leader in sample technologies enabling laboratories to obtain highest-quality DNA and RNA for molecular testing, QIAGEN's differentiated solutions for front-end challenges continued to drive growth in 2018. QIAGEN technologies process an estimated 50,000 biological samples a day. Our strategic focus is on rapidly growing applications in research and clinical diagnostics, such as "liquid biopsies" for efficient, and less-invasive diagnosis and soil, liquid and plant samples for analyzing microbiomes.
- In January 2019, QIAGEN launched QIAcube Connect, a next-generation solution for automated sample processing. Building on over 8,000 placements of the first-generation QIAcube instrument, QIAcube Connect delivers a new level of digitization and ease of use to process samples with thousands of protocols, while assuring full standardization and freeing researchers from repetitive manual processing.
- Innovative liquid biopsy technologies increasingly enable QIAGEN customers to unlock molecular insights from blood or other fluids as alternatives to surgical biopsies and tissue samples. In April 2018 we launched two novel liquid biopsy panels to evaluate circulating tumor cells (CTCs): The AdnaTest ProstateCancerPanel AR-V7 Kit and the AdnaTest LungCancer Kit both deliver unique insights for the growing field of research into molecular mechanisms. QIAGEN solutions based on several different technologies for isolation and stabilization of nucleic acids are used in an estimated 80% of liquid biopsy testing.
- As a pioneer in sample technologies, QIAGEN partners with leading microbiome researchers to provide cutting-edge tools for the study of microbial communities in the body and the environment. In 2018, QIAGEN launched the new DNeasy PowerSoil Pro Kit and DNeasy Plant Pro Kit as innovative tools for extracting fungal and bacterial DNA from a variety of soil and plant samples. We also introduced QIAseq 16S/ITS Panels and UCP Multiplex PCR Kit for next-generation sequencing to enable the most accurate microbial community profiling from complex samples. QIAGEN supports research initiatives worldwide, and our solutions are used and recommended by international consortia like the Human Microbiome Project, the Earth Microbiome Project and the MetaSUB Consortium.
- In Applied Testing, QIAGEN's efficient, highly accurate sample and assay technologies for forensics and human identification helped drive our growth again in 2018. QIAGEN partners with public agencies and international organizations in a variety of initiatives for investigation of crimes, identification of missing persons and forensic research. For example, QIAGEN won a tender in 2018 from one government to manage creation of a national DNA database, scaling up over three years to process and load 500,000 DNA samples, and to provide Sample to Insight forensic capabilities to aid in law enforcement, disaster relief and other public safety applications.
- QIAGEN's Custom Solutions business, started in 2017, serves life science and molecular diagnostics customers with the tools and expertise to quickly build and commercialize products that meet unique workflow requirements. The unit offers custom and OEM sample technologies, oligo and enzyme product options for PCR, qPCR and NGS product development, as well as a range of other platform technologies.

***Our Products***

QIAGEN's leadership in Sample to Insight solutions for molecular testing leverages our position across a wide range of applications and customer classes. We provide more than 500 core consumable products (sample and assay "kits"), as well as instruments and automation systems. Our bioinformatics solutions connect laboratory workflows and process genomic data, reporting relevant insights to enable scientists or clinicians to decide on further action.

These diverse revenue streams can be seen in two main categories: consumables and related revenue, and automation platforms and instruments.

**Consumables and related revenues**

Consumable products, accounting for approximately 78-80% of net sales, typically include sample technologies to extract and purify molecules of interest from biological samples and assay technologies that make information from these samples available for analysis and interpretation. To maximize customer convenience and reduce user error, these kits contain all necessary reagents and a manual of protocols and background information. Reliability, standardization, ease of use and cost-

effectiveness are keys to the success of molecular testing products.

QIAGEN's **sample technologies** ensure that each biological sample is processed in a highly reproducible, standardized method with the highest quality. A broad range of kits support applications such as plasmid DNA purification, RNA purification and stabilization, genomic and viral nucleic acid purification, DNA cleanup after PCR and sequencing, target enrichment, and library preparation for sequencing. We continue to expand our portfolio for applications such as preparing DNA and RNA from minimally-invasive liquid biopsies for cancer and processing difficult samples for research into the microbiome and metagenomics.

Our **assay technologies** contain all the needed reagents to enable customers to target molecules of interest for detection on platforms supporting PCR, NGS or multimodal analysis. Each assay kit is sufficient to support a number of applications, varying from a single application to kits containing more than 1,000 applications each. Applications include open, general-purpose PCR reagents, as well as kits and panels for detection of viral or bacterial pathogens and parasites, pharmacogenomic testing and genotyping. In PCR, examples are our *therascreen* family of companion diagnostics, *artus* line for profiling infectious diseases, and *investigator* assays for forensics and human identification. A growing portfolio of Digital NGS panels enable sequencing to target DNA or RNA variants for clinical research in cancer or other diseases.

Related revenues, accounting for approximately 7-9% of our net sales, include **bioinformatics solutions**, sold as freestanding software or cloud-based solutions and also integrated into many QIAGEN consumables and instruments for seamless Sample to Insight workflows.

Related revenues also include royalties, milestone payments from co-development agreements with pharmaceutical companies, payments from technology licenses and patent sales, and custom services, such as whole genome amplification services, DNA sequencing, and non-cGMP DNA production on a contract basis.

**Automation platforms and instruments**

Our instrumentation systems, contributing approximately 12-13% of net sales together with related services and contracts, automate the use of consumables into efficient workflows for a broad range of laboratory needs. QIAGEN platforms are designed to carry our customers from Sample to Insight - handling and preparation of biological samples, analysis using sequencing technologies, and interpretation that delivers valuable insights. These instruments enable laboratories to perform reliable and reproducible processes, including nucleic acid sample preparation, assay setup, target detection, and interpretation of genomic information. Often several of these instruments are integrated into end-to-end workflows.

Among the automation platforms that contribute to QIAGEN's business:

**QIAsymphony** is a user-friendly automation system that drives integrated workflows for molecular testing, making laboratories more efficient and helping disseminate standardized, clinically proven molecular diagnostics. The platform includes three modules - **QIAsymphony SP** for sample preparation, **QIAsymphony AS** for assay setup, and **Rotor-Gene Q**, our rotary real-time PCR cycler system, which makes sequences of DNA and RNA visible through amplification and quantifiable. The fully integrated system with all three modules is **QIAsymphony RGQ**. In 2018, our installed base surpassed 2,300 QIAsymphony systems in a wide variety of applications and laboratories worldwide. The platform enhances workflows through continuous loading, random access and the ability to process an almost unlimited range of sample types. QIAsymphony has the broadest content menu in its category in Europe and other markets, and QIAGEN is developing more regulator-approved assays to add value for customers.

**GeneReader NGS System**, introduced in late 2015, continues to gain acceptance as the first complete Sample to Insight next-generation sequencing (NGS) solution designed for any laboratory to deliver actionable results. This end-to-end platform provides a simpler, more cost-effective way for basic and translational research to take advantage of NGS technology for improved outcomes. The benchtop GeneReader workflow offers the flexibility of scalable batch sizes and continuous loading of multiple flow cells, and customers can achieve relevant insights using QIAGEN's proven gene panels and bioinformatics. In 2018, we continued to add new content, including QIAact panels covering the most widespread cancers and deep-dive panels for myeloid malignancies and breast and ovarian cancers, as well as customizable panels for research in inherited diseases. GeneReader's digital sequencing integrates seamlessly with QIAGEN bioinformatics solutions for interpretation.

**QIAstat-Dx** enables fast, cost-effective and easy-to-use syndromic testing with novel Sample to Insight solutions. Launched in Europe in April 2018, QIAstat-Dx provides a one-step, fully integrated molecular analysis of common syndromes with a small laboratory footprint. The first two tests differentiate hard-to-diagnose respiratory and gastrointestinal infections, and QIAGEN is developing an extensive pipeline of additional content. QIAGEN expects a 2019 U.S. launch of QIAstat-Dx following regulatory approvals.

**NeuMoDx 288** and **NeuMoDx 96** are fully integrated systems for automation of higher-throughput PCR testing in clinical laboratories with increasing molecular test volumes. QIAGEN began distributing the systems in Europe and other major

non-U.S. markets in late 2018, with an initial test menu in infectious diseases and a broad pipeline under development. The platforms' developer, NeuMoDx Molecular, Inc., is distributing these instruments within the United States. Under a merger agreement, QIAGEN can acquire all NeuMoDx shares not currently owned at a predetermined price.

**QIAcube** workstations provide highly versatile solutions for automated sample processing, and we are now launching the next-generation **QIAcube Connect** with advanced digital capabilities and full connectivity. These solutions assure standardization of sample preparation and save laboratory staff time by eliminating repetitive manual procedures.

***Customers***

With a growing portfolio of innovative products for molecular testing, QIAGEN has built deep customer relationships across the entire value chain of the life sciences. Discoveries often surface in universities and research institutes and are published, then are licensed for development by pharmaceutical and biotech companies, and finally move into widespread commercial use in healthcare and other areas of life. We serve the needs of four major customer classes:

- **Molecular Diagnostics** - healthcare providers engaged in patient care including hospitals, public health organizations, reference laboratories and physician practices
- **Applied Testing** - government or industry customers using molecular technologies in non-healthcare fields such as forensics and human identification
- **Pharma** - pharmaceutical and biotechnology companies using molecular testing to support drug discovery, translational medicine and clinical development efforts
- **Academia** - researchers exploring the secrets of life such as disease mechanisms and pathways, in some cases translating findings into drug targets or other products

*Molecular Diagnostics*

The ability of advanced diagnostic technologies to unlock molecular information for patients is changing the practice of medicine, creating a large and growing market for sample preparation, assay kits and bioinformatics in clinical care. Dissemination of PCR and other amplification technologies has brought molecular diagnostics into routine use in healthcare around the world, and next-generation sequencing is disseminating rapidly to further transform healthcare. Technologies for molecular diagnostics enable clinicians and labs to identify and profile microorganisms, cancer cells, bacteria and viruses by detecting specific nucleic acid sequences or characterizing newly discovered genomic sequences related to diseases. Commercial applications are multiplying as researchers identify new biological markers for disease and develop novel technologies to decipher these diagnostic clues.

The molecular diagnostics market generates total sales estimated by industry experts at approximately $7 billion in 2018, including about $4-5 billion potentially addressable with QIAGEN's product portfolio. Molecular diagnostics is the most dynamic segment of the global *in vitro* diagnostics market and is growing at a compound annual rate estimated in the high single-digits or low double-digits. Given the advantages of precise genetic information over traditional tests, QIAGEN expects the healthcare market to continue to provide significant growth opportunities.

In QIAGEN's robustly growing Molecular Diagnostics business we focus on three priorities for fighting disease:

- **Oncology** - accurately diagnosing cancer, enabling prevention or early detection, and guiding selection of therapies with individualized molecular insights. QIAGEN offers a broad portfolio of companion diagnostic kits and panels to detect mutations of genes such as KRAS, EGFR, BRAF, BRCA1/2 and others that influence the development of cancers and the efficacy and safety of medicines. We also provide industry-leading tests to screen for human papillomavirus (HPV) and protect women from cervical cancer.
- **Infectious diseases** - detecting and differentiating a broad range of viral and bacterial infections, including diseases such as HIV, hepatitis, influenza and healthcare-associated infections, as well as common respiratory and gastrointestinal syndromes. Use of molecular testing to differentiate among pathogens can be useful in guiding treatment, such as selection of antibiotic or antiviral therapies.
- **Immune monitoring** - using advanced technologies that detect immune-system markers as a preventive strategy, such as screening patients for latent TB infection to guard against active TB disease, as well as for monitoring immune function, such as in transplantation patients.

QIAGEN offers one of the broadest portfolios of molecular technologies for healthcare. Success in Molecular Diagnostics depends on the ability to accurately analyze purified nucleic acid samples from sources such as blood, tissue, body fluids and stool, on automated systems that process these samples reliably and efficiently, often handling hundreds of samples concurrently. Other success factors are the range of assays for diseases and biomarkers, convenience and ease of laboratory workflow, and reliability and standardization of lab procedures.

The immune monitoring portfolio, using sensitive QuantiFERON technology, accurately detects infection and measures immune response in patients. Our lead products in this field, QuantiFERON-TB Gold and QuantiFERON-TB Gold Plus, are used in tuberculosis (TB) control efforts worldwide to detect latent TB infection (LTBI) by screening vulnerable populations, such as close contacts of patients with active TB disease, immunocompromised persons or patients on immunosuppressive drugs. Individuals with LTBI can then be treated, preventing the infection from becoming active and contagious. As modern blood tests analyzed in a laboratory, the QuantiFERON-TB assays are faster, less labor-intensive and more accurate than the century-old tuberculin skin test. The potential global market for latent TB infection testing is estimated at up to $1 billion.

QIAGEN's oncology test portfolio includes a broad range of technologies and biomarkers for Precision Medicine, including regulator-approved companion diagnostics for oncogenes such as KRAS, EGFR and JAK2, as well as comprehensive gene panels for research applications in next-generation sequencing. In 2018, we broadened the use of our *therascreen* EGFR RGQ PCR Kit with its second and third FDA approvals as a companion diagnostic in lung cancer, launched the *therascreen* PITX2 RGQ PCR Kit as the first clinically validated DNA methylation assay to help predict the response of high-risk breast cancer patients to chemotherapy, and added two new FDA-cleared uses for our *ipsogen* JAK2 RGQ PCR Kit. We have a deep pipeline of oncology tests for PCR and NGS analysis under development. In addition to our broad portfolio of molecular technologies and automation systems, QIAGEN offers Pharma partners a full infrastructure for co-development programs, intellectual property on platforms and content, regulatory experience, global marketing reach, and independence as a company focusing exclusively on these types of technologies.

QIAGEN also offers an extensive range of kits for diagnosing infectious diseases, including a broad menu of reliable tests on the QIAsymphony platform, plus the new QIAstat-Dx panels for respiratory and gastrointestinal syndromes. We are expanding this portfolio by seeking regulatory approvals of new tests in additional markets.

QIAGEN is one of the global leaders in screening technologies for HPV, a viral infection that is the primary cause of cervical cancer, which kills about 270,000 women a year. Our “gold standard” *digene* HC2 HPV Test and our *care*HPV Test for use in low-resource regions lead the market in HPV screening around the world. In the United States, QIAGEN vigorous price competition has reduced that business to about 1% of total sales.

*Applied Testing*

Use of molecular technologies is expanding in more areas of life as industry and government organizations apply standardized Sample to Insight solutions to diverse needs. Applied Testing is our term for applications outside of human healthcare and research. The value of genetic “fingerprinting” has been shown for criminal investigations or clarification of paternity or ancestry, as well as for food safety and veterinary diagnostics. In 2018, we took steps to streamline QIAGEN’s Applied Testing business by divesting our portfolio of veterinary assays to a new animal health company funded by a private capital firm.

QIAGEN’s forensics franchise delivered solid growth in 2018. We are a leader in standardizing solutions for reliable forensic testing, and we have built strong relationships with law enforcement and other organizations engaged in human identification. QIAGEN also provides industry-leading solutions for studies of microbiomes and their effect on health and the environment.

*Pharma*

QIAGEN has deep relationships with pharmaceutical and biotechnology companies. Drug discovery and translational research efforts increasingly employ genomic information, both to guide research in diseases and to differentiate patient populations most likely to respond to particular therapies. We estimate that about half of QIAGEN sales in this customer class support research, while the other half supports clinical development, including stratification of patient populations based on genetic information. QIAGEN's bioinformatics solutions also are widely used to guide pharmaceutical research.

We have built a position as the preferred partner for pharmaceutical and biotech companies to co-develop companion diagnostics paired with targeted drugs. A wave of newly discovered biomarkers and molecular tests indicating the likely efficacy and safety of associated drugs is now transforming the treatment of cancer and other diseases. Our more than 25 master collaboration agreements with Pharma, some with multiple co-development projects, have created a rich pipeline of molecular tests that can move, along with the drugs, through clinical trials and regulatory approvals for marketing to healthcare providers. Several new companion diagnostics are currently in the registration process.

*Academia*

QIAGEN provides Sample to Insight solutions to leading research institutions around the world. While many academic laboratories continue to use manual, labor-intensive methods or create their own in-house technologies, QIAGEN has focused on enabling labs to replace time-consuming traditional methods and internal development efforts with reliable, fast, highly reproducible, and high-quality technologies. QIAGEN often partners with leading institutions in research projects and develops customized solutions such as NGS panels for digital sequencing of multiple gene targets needed for a researcher's study.

As academic institutions increasingly embrace translational research, bridging from discoveries to practical applications in

medicine, our relationships in Academia also support our presence in the Molecular Diagnostics, Pharma and Applied Testing customer classes. Research in university settings often helps in development of technologies for targeted biomolecules, and academic research also can result in scientific publications that validate the usefulness of QIAGEN solutions.

***Global Presence by Category of Activity and Geographic Market***

**Product Category Information**

Net sales for the product categories are attributed based on those revenues related to sample and assay products and similarly related revenues including bioinformatics solutions, and revenues derived from instrumentation sales.

| (in thousands) | 2018 | 2017 | 2016 |
|---|---|---|---|
| **Net Sales** | | | |
| Consumables and related revenues | **$ 1,315,459** | $ 1,242,715 | $ 1,166,131 |
| Instrumentation | **186,389** | 174,821 | 171,860 |
| Total | **$ 1,501,848** | $ 1,417,536 | $ 1,337,991 |

**Geographical Information**

QIAGEN currently markets products in more than 130 countries. The following table shows total revenue by geographic market for the past three years (net sales are attributed to countries based on the location of the customer, as certain subsidiaries have international distribution):

| (in thousands) | 2018 | 2017 | 2016 |
|---|---|---|---|
| **Net Sales** | | | |
| Americas: | | | |
| United States | **$ 632,660** | $ 579,906 | $ 555,676 |
| Other Americas | **60,359** | 73,478 | 71,797 |
| Total Americas | **693,019** | 653,384 | 627,473 |
| Europe, Middle East and Africa | **490,301** | 462,980 | 428,055 |
| Asia Pacific and Rest of World | **318,528** | 301,172 | 282,463 |
| Total | **$ 1,501,848** | $ 1,417,536 | $ 1,337,991 |

QIAGEN has built an increasing presence in key emerging markets as a growth strategy. In 2018, the top seven emerging markets - Brazil, Russia, India, China, South Korea, Mexico and Turkey - contributed approximately 16% of net sales.

***Research and Development***

We are committed to expanding our global leadership in Sample to Insight solutions for molecular testing in healthcare and the life sciences. Our strategy for managing innovation focuses on addressing the most significant unmet medical and scientific needs. We target our resources to develop promising technologies for use by our customers in Molecular Diagnostics, Applied Testing, Pharma and Academia - and to meet the needs of clinicians and scientists in key geographic markets.

Innovation at QIAGEN follows parallel paths:

- Creating new systems for automation of workflows - platforms for laboratories, hospitals and other users of these novel molecular technologies.
- Expanding our broad portfolio of novel “content” - including assays to detect and measure biomarkers for disease or genetic identification.
- Integrating bioinformatics with the testing process - software and cloud-based resources to interpret and transform raw molecular data into useful insights.

As a percentage of sales, our research and development investments are among the highest in our industry. Almost 1,100 employees in research and development work in QIAGEN centers of excellence on three continents.

Strengthening our leadership in automation is a key to driving dissemination of molecular testing in healthcare and other laboratories, as well as generating increased demand for our consumable products. We continue to expand the applications of all of our automation systems. QIAGEN is developing and commercializing a deep pipeline of assays for preventive screening and diagnostic profiling of diseases, detection of biomarkers to guide Precision Medicine in cancer and other diseases, and other molecular targets. Our assay development program aims to commercialize tests that will add value to our QIAsymphony,

QIAstat-Dx, NeuMoDx and GeneReader NGS automation systems in the coming years. In 2018, we launched novel diagnostic tests running on the QIAsymphony platform for lung, breast and blood cancers, as well as Trichomonas vaginalis and human papillomavirus. In early 2019, we added tests for hepatitis B and hepatitis C to the menu of diagnostics for QIAstat-Dx.

Our bioinformatics teams are also developing new software solutions and adding proprietary cloud-based content to support the latest research and clinical trends in molecular testing, especially the interpretation of large volumes of data from next-generation sequencing. In addition, we are integrating these digital technologies with instruments and molecular content to provide our customers seamless Sample to Insight workflows.

***Sales and Marketing***

We market our products in more than 130 countries, mainly through subsidiaries in markets that we believe have the greatest sales potential in the Americas, Europe, Australia and Asia. Experienced marketing and sales staff, many of them scientists with academic degrees in molecular biology or related areas, sell our products and provide direct support to customers. Key accounts are overseen by business managers to ensure that we serve customers' commercial needs, such as procurement processes, financing, data on costs and value of our systems, and collaborative relationships. In many markets, we have specialized independent distributors and importers.

Our marketing strategy focuses on providing differentiated, high-quality products across the value chain from Sample to Insight, integrating components into end-to-end solutions when possible, and enhancing relationships with commitment to technical excellence and customer service. Our "omni-channel" approach seeks to engage customers through their preferred channels - online, by phone, in person, etc. – and to optimize investment in different customer types.

QIAGEN has initiated actions to drive the growth of our digital marketing channels - including our website (www.qiagen.com), product-specific sites and social media. Our eCommerce team works with clients to provide automated processes supporting a variety of electronic transactions and all major eProcurement systems. Information contained on our website, or accessed through it, is not part of this Annual Report.

Our GeneGlobe web portal (www.geneglobe.com) is a valuable outreach to scientists in Pharma and Academia, enabling researchers to search and order from approximately 25 million pre-designed and custom PCR assay kits, NGS assay panels and other products. We have integrated GeneGlobe with our bioinformatics solutions, linking biological interpretation with ordering of relevant assays to accelerate research.

QIAGEN uses a range of tools to provide customers with direct access to technical support, inform them of new product offerings, and enhance our reputation for technical excellence, high-quality products and commitment to service. For example, our technical service hotline allows existing or potential customers to discuss a wide range of questions about our products and molecular biology procedures, online or via phone, with Ph.D. and M.Sc. scientists at QIAGEN. Frequent communication with customers enables us to identify market needs, learn of new developments and opportunities, and respond with new products.

We also distribute publications, including our catalog, to existing and potential customers worldwide, providing new product information, updates, and articles about existing and new applications. In addition, we hold numerous scientific seminars at clinical, academic and industrial research institutes worldwide and at major scientific and clinical meetings. We conduct direct marketing campaigns to announce new products and special promotions, and we offer personalized electronic newsletters highlighting molecular biology applications.

For laboratories that frequently rely on our consumables, the QIAstock program maintains inventory on-site to keep up with their requirements. QIAGEN representatives make regular visits to replenish the stock and help with other needs, and we are automating this process with digital technologies. Easy-to-use online ordering, inventory monitoring and customer-driven changes make QIAstock an efficient system for providing ready access to our products for the hundreds of customers worldwide who use this program.

***Seasonality***

Our business does not experience significant, predictable seasonality. Historically, a significant portion of our sales have been to researchers, universities, government laboratories and private foundations whose funding is dependent upon grants from government agencies, such as the National Institutes of Health and similar bodies. To the extent that our customers experience increases, decreases or delays in funding arrangements and budget approvals, and to the extent that any of our customers' activities are slowed, such as during times of higher unemployment, vacation periods or delays in the approval of government budgets, we may experience fluctuations in sales volumes during the year or delays from one period to the next in the recognition of sales.

***Intellectual Property, Proprietary Rights and Licenses***

We have made and expect to continue to make investments in intellectual property. In 2018, our purchases of intangible assets totaled 95.0 million. While we do not depend solely on any individual patent or technology, we are significantly dependent in the aggregate on technology that we own or license. Therefore, we consider protection of proprietary technologies and products one of the major keys to our business success. We rely on a combination of patents, licenses and trademarks to establish and protect proprietary rights. As of December 31, 2018, we owned 340 issued patents in the United States, 277 issued patents in Germany and 1,786 issued patents in other major industrialized countries. We had 576 pending patent applications. Our policy is to file patent applications in Western Europe, the United States and Japan. U.S. patents have a term of 17 years from the date of issue (for patents issued from applications submitted prior to June 8, 1995), or 20 years from the date of filing (in the case of patents issued from applications submitted on or after June 8, 1995). Patents in most other countries have a term of 20 years from the date of filing the patent application. We intend to aggressively prosecute and enforce patents and to otherwise protect our proprietary technologies. We also rely on trade secrets, know-how, continuing technological innovation and licensing opportunities to develop and maintain our competitive position.

Our practice is to require employees, consultants, outside scientific collaborators, sponsored researchers and other advisers to execute confidentiality agreements upon commencement of their relationships with us. These agreements provide that all confidential information developed by or made known to the individual during the course of the relationship is to be kept confidential and not disclosed to third parties, subject to a right to publish certain information in scientific literature in certain circumstances and to other specific exceptions. In the case of our employees, the agreements provide that all inventions conceived by individuals in the course of their employment will be our exclusive property.

See "Principle of Risks and Uncertainties" included below for details regarding risks related to our reliance on patents and proprietary rights.

***Competition***

In the Academic and Pharma markets, we believe our primary competition in sample technology products involves traditional separation and purification methods, such as phenol extraction, cesium chloride density gradient centrifugation, and precipitation. These methods utilize widely available reagents and other chemicals supplied by companies in these markets. We compete with these methods through innovative technologies and products, offering a comprehensive solution for nucleic acid collection, pre-treatment, separation and purification needs and providing significant advantages in speed, reliability, convenience, reproducibility and ease of use.

We also experience competition in various markets from other companies providing sample preparation products in kit form and assay solutions. These competitors include, but are not limited to, companies with a focus on nucleic acid separation and purification, assay solutions and for transfection reagents and protein fractionation products. We believe our proprietary technologies and products offer significant advantages over competitors' products with regard to purity, speed, reliability and ease-of-use.

Some of our other products within our molecular diagnostics customer class, such as tests for Chlamydia, Gonorrhea, hepatitis B virus, herpes simplex virus and CMV, compete against existing screening, monitoring and diagnostic technologies, including tissue culture and antigen-based diagnostic methodologies. We believe the primary competitive factors in the market for gene-based probe diagnostics and other screening devices are clinical validation, performance and reliability, ease of use, standardization, cost, proprietary position, competitors' market shares, access to distribution channels, regulatory approvals and reimbursement.

We do not believe our competitors typically have the same comprehensive approach to sample to insight solutions as we do or the ability to provide the broad range of technologies and depth of products and services that we offer. With our complete range of manual and fully automated solutions, we believe we offer the value of standardization of procedures and, therefore, more reliable results. We also believe our integrated strategic approach gives us a competitive advantage. The quality of sample technologies-an area in which we have a unique market and leadership position-is a key prerequisite for reliable molecular assay solutions, which increasingly are being applied in emerging markets such as Molecular Diagnostics and Applied Testing.

Current and potential competitors may be in the process of seeking FDA or foreign regulatory approvals for their respective products. Our continued future success will depend in large part on our ability to maintain our technological advantage over competing products, expand our market presence and preserve customer loyalty. There can be no assurance that we will be able to compete effectively in the future or that development by others will not render our technologies or products non-competitive.

***Suppliers***

As part of our supplier assessment procedures, we evaluate on a monthly basis the performance of our raw material and component suppliers, potential new alternative sources of such materials and components, and the risks and benefits of reliance on our existing suppliers. We buy materials for our products from many suppliers, and are not dependent on any one supplier or

group of suppliers for our business as a whole. Raw materials generally include chemicals, raw separation media, biologics, plastics, electronics and packaging. Raw materials are generally readily available at competitive, stable prices from a number of suppliers. Certain raw materials are produced under our specifications, so we closely monitor stock levels to maintain adequate supplies. We believe we maintain inventories at a sufficient level to ensure reasonable customer service levels and to guard against normal volatility in availability.

***Government Regulations***

We are subject to a variety of laws and regulations in the European Union, the United States and other countries. The level and scope of the regulation varies depending on the country or defined economic region, but may include, among other things, the research, development, testing, clinical trials, manufacture, storage, recordkeeping, approval, labeling, promotion and commercial sales and distribution, of many of our products.

**European Union Regulations**

In the European Union, *in vitro* diagnostic medical devices (IVDs) have been regulated under EU-Directive 98/79/EC (IVD Directive) and corresponding national provisions, however, this Directive will be replaced by the In Vitro Diagnostic Device Regulation (IVDR) in May 2022. The IVD Directive requires that medical devices meet the essential requirements set out in an annex of the directive. These requirements include the safety and efficacy of the devices. According to the IVD Directive, the Member States presume compliance with these essential requirements in respect of devices which are in conformity with the relevant national standards transposing the harmonized standards of which the reference numbers have been published in the Official Journal of the European Communities. These harmonized standards include ISO 13485:2003, the quality standard for medical device manufacturers.

IVD medical devices, other than devices for performance evaluation, must bear the CE marking of conformity when they are placed on the market. The CE mark is a declaration by the manufacturer that the product meets all the appropriate provisions of the relevant legislation implementing the relevant European Directive. As a general rule, the manufacturer must follow the procedure of the EC Declaration of conformity to obtain this CE marking.

Each European country must adopt its own laws, regulations and administrative provisions necessary to comply with the IVD Directive. Member States may not create any obstacle to the placing on the market or the putting into service within their territory of devices bearing the CE marking according to the conformity assessment procedures.

Under the IVDR, which was enacted by the European Commission (EC) on May 25, 2017, in vitro diagnostics will be subject to additional legal regulatory requirements after the IVDR comes into full effect on May 26, 2022. Once implemented, the entire EU IVD industry will have to comply with these new requirements, which will bring the EU regulatory landscape on par with other highly regulated markets such as the US. Many Guidance Documents and other regulatory mechanisms will need to be established during this transition period and it is anticipated that it will be late in 2019 before the infrastructure is established to begin the new approvals process.

**U.S. Regulations**

In the United States, *in vitro* diagnostic products are subject to regulation by the FDA as medical devices to the extent that they are intended for use in the diagnosis, treatment, mitigation or prevention of disease or other conditions. They are subject to premarket review and postmarket controls which will differ depending on how the FDA classifies a specific IVD. Certain types of tests like some that we manufacture and sell for research use only in the United States have not been subject to FDA's premarket review and controls because we do not promote these tests for clinical diagnostic use, and they are labeled "For Research Use Only," or RUO, as required by the FDA. Other tests, known as laboratory developed tests (LDTs) which are in vitro diagnostic tests that are designed, manufactured and used within a single laboratory, have been subject to enforcement discretion, which means that FDA generally has not enforced premarket review and other applicable FDA requirements. However, as LDTs have increased in complexity, the FDA has begun to take a risk-based approach to their regulation. Failure to comply with applicable U.S. requirements may subject a company to a variety of administrative or judicial sanctions, such as FDA refusal to approve pending PMAs, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, civil penalties and criminal prosecution.

*In Vitro Diagnostics*

The FDA regulates the sale or distribution of medical devices, including *in vitro* diagnostic test kits and some LDTs. The information that must be submitted to the FDA in order to obtain clearance or approval to market a new medical device varies depending on how the medical device is classified by the FDA. Medical devices are classified into one of three classes on the basis of the controls deemed by the FDA to be necessary to reasonably ensure their safety and effectiveness. Class I devices are subject to general controls, including labeling, pre-market notification and adherence to the FDA's quality system regulations, which are device-specific good manufacturing practices. Class II devices are subject to premarket notification, general controls and sometimes special controls, including performance standards and post-market surveillance. Class III devices are subject to

most of the previously identified requirements as well as to pre-market approval. All Class I devices are exempt from premarket review; most Class II devices require 510(k) clearance, and all Class III devices must receive premarket approval before they can be sold in the United States. The payment of a fee, that is typically adjusted annually, to the FDA is usually required when a 510(k) notice or premarket approval application is submitted.

*510(k) Premarket Notification.* A 510(k) notification requires the sponsor to demonstrate that a medical device is substantially equivalent to another marketed device, termed a "predicate device", that is legally marketed in the United States and for which a premarket approval application (PMA) was not required. A device is substantially equivalent to a predicate device if it has the same intended use and technological characteristics as the predicate; or has the same intended use but different technological characteristics, where the information submitted to the FDA does not raise new questions of safety and effectiveness and demonstrates that the device is at least as safe and effective as the legally marketed device.

The FDA generally issues a decision letter within 90 days of receipt of the 510(k) if it has no additional questions or sends a first action letter requesting additional information within 75 days. Most 510(k)s do not require clinical data for clearance, but a minority will. Requests for additional data, including clinical data, will increase the time necessary to review the notice. If the FDA believes that the device is not substantially equivalent to a predicate device, it will issue a "Not Substantially Equivalent" letter and designate the device as a Class III device, which will require the submission and approval of a PMA before the new device may be marketed. Under certain circumstances, the sponsor may request the FDA to make a risk-based determination of the new device and reclassify the new device as a Class I or Class II device. The FDA continues to reevaluate the 510(k) pathway and process and the de novo process, and has taken what it describes as a risk-based approach to develop innovative regulatory policy to propose a more "contemporary" approach. We cannot predict what if any changes will occur or how they will affect our current or future products.

*Premarket Approval.* The PMA process is more complex, costly and time consuming than the 510(k) process. A PMA must be supported by more detailed and comprehensive scientific evidence, including clinical data, to demonstrate the safety and efficacy of the medical device for its intended purpose. If the device is determined to present a "significant risk," the sponsor may not begin a clinical trial until it submits an investigational device exemption (IDE) to the FDA and obtains approval to begin the trial.

After the PMA is submitted, the FDA has 45 days to make a threshold determination that the PMA is sufficiently complete to permit a substantive review. If the PMA is complete, the FDA will file the PMA. The FDA is subject to a performance goal review time for a PMA that is 180 days from the date of filing, although in practice this review time is longer. Questions from the FDA, requests for additional data and referrals to advisory committees may delay the process considerably. The total process may take several years and there is no guarantee that the PMA will ever be approved. Even if approved, the FDA may limit the indications for which the device may be marketed. The FDA may also request additional clinical data as a condition of approval or after the PMA is approved. Any changes to the medical device may require a supplemental PMA to be submitted and approved before changed medical device may be marketed.

Any products sold by us pursuant to FDA clearances or approvals will be subject to pervasive and continuing regulation by the FDA, including record keeping requirements, reporting of adverse experiences with the use of the device and restrictions on the advertising and promotion of our products. Device manufacturers are required to register their establishments and list their devices with the FDA and are subject to periodic inspections by the FDA and certain state agencies. Noncompliance with applicable FDA requirements can result in, among other things, warning letters, fines, injunctions, civil penalties, recalls or seizures of products, total or partial suspension of production, refusal of the FDA to grant 510(k) clearance or PMA approval for new devices, withdrawal of 510(k) clearances and/or PMA approvals and criminal prosecution.

*Regulation of Companion Diagnostic Devices*

If a sponsor or the FDA believes that a diagnostic test is essential for the safe and effective use of a corresponding therapeutic product, the sponsor of the therapeutic product will typically work with a collaborator to develop an in vitro companion diagnostic device, or IVD. IVDs are regulated by the FDA as medical devices. The FDA issued a final guidance document in 2014, entitled "In Vitro Companion Diagnostic Devices" that is intended to assist companies developing in vitro companion diagnostic devices and companies developing therapeutic products that depend on the use of a specific in vitro companion diagnostic for the safe and effective use of the product. The FDA defined an IVD companion diagnostic device as a device that provides information that is essential for the safe and effective use of a corresponding therapeutic product. The FDA expects that the therapeutic sponsor will address the need for an approved or cleared IVD companion diagnostic device in its therapeutic product development plan and that, in most cases, the therapeutic product and its corresponding IVD companion diagnostic will be developed contemporaneously.

It also issued a draft guidance on July 15, 2016, entitled, "Principles for Codevelopment of an In Vitro Companion Diagnostic Device with a Therapeutic Product" to serve as a practical guide to assist therapeutic product sponsors and IVD sponsors in developing a therapeutic product and an accompanying IVD companion diagnostic.

The FDA indicated that it will apply a risk-based approach to determine the regulatory pathway for IVD companion diagnostic devices, as it does with all medical devices. This means that the regulatory pathway will depend on the level of risk to patients, based on the intended use of the IVD companion diagnostic device and the controls necessary to provide a reasonable assurance of safety and effectiveness. The two primary types of marketing pathways for medical devices are clearance of a premarket notification under Section 510(k) of the Federal Food, Drug, and Cosmetic Act, or 510(k), and approval of a premarket approval application, or PMA. We expect that any IVD companion diagnostic device developed for use with our drug candidates will utilize the PMA pathway and that a clinical trial performed under an investigational device exemption, or IDE, will have to be completed before the PMA may be submitted.

The FDA expects that the therapeutic sponsor will address the need for an IVD companion diagnostic device in its therapeutic product development plan and that, in most cases, the therapeutic product and its corresponding IVD companion diagnostic device will be developed contemporaneously. If the companion diagnostic test will be used to make critical treatment decisions such as patient selection, treatment assignment, or treatment arm, it will likely be considered a significant risk device for which a clinical trial will be required.

The sponsor of the IVD companion diagnostic device will be required to comply with the FDA's IDE requirements that apply to clinical trials of significant risk devices. If the diagnostic test and the therapeutic drug are studied together to support their respective approvals, the clinical trial must meet both the IDE and IND requirements.

PMAs must be supported by valid scientific evidence, which typically requires extensive data, including technical, preclinical, clinical and manufacturing data, to demonstrate to the FDA's satisfaction the safety and effectiveness of the device. For diagnostic tests, a PMA typically includes data regarding analytical and clinical validation studies. As part of its review of the PMA, the FDA will conduct a pre-approval inspection of the manufacturing facility or facilities to ensure compliance with the Quality System Regulation, or QSR, which requires manufacturers to follow design, testing, control, documentation and other quality assurance procedures. FDA review of an initial PMA may require several years to complete.

If the FDA evaluations of both the PMA and the manufacturing facilities are favorable, the FDA will either issue an approval order or an approvable letter, which usually contains a number of conditions that must be met in order to secure the final approval of the PMA. If the FDA's evaluation of the PMA or manufacturing facilities is not favorable, the FDA will send the applicant a not approvable letter or an order denying approval. A not approvable letter will outline the deficiencies in the application and, where practical, will identify what is necessary to make the PMA approvable. The FDA may also determine that additional clinical trials are necessary, in which case the PMA approval may be delayed for several months or years while the trials are conducted and then the data submitted in an amendment to the PMA. Once granted, PMA approval may be withdrawn by the FDA if compliance with post approval requirements, conditions of approval or other regulatory standards is not maintained or problems are identified following initial marketing.

After approval, the use of an IVD companion diagnostic device with a therapeutic product will be stipulated in the instructions for use in the labeling of both the diagnostic device and the corresponding therapeutic product. In addition, a diagnostic test that was approved through the PMA process or one that was cleared through the 510(k) process and placed on the market will be subject to many of the same regulatory requirements that apply to approved drugs. The FDA has approved a number of drug/diagnostic device companions in accordance with the Guidance.

*Unique Device Identifier Requirements*

In September 2013, the FDA issued its final rule on the Unique Device Identifier. This rule now requires an additional registered identifier, including a special barcode, on all FDA regulated medical devices. The rule is implemented in phases with the first deadline of September 24, 2014 being established for all Class III medical devices. For QIAGEN, this impacted the *HC2, QuantiFERON, artus, and therascreen* products. We established a task force to ensure that the deadline was met but there is additional administrative and regulatory burden on us related to the annual reporting of compliance of these products to the new regulation. Class II and Class I products were required to have this same labeling as of September 24, 2016 and 2018, respectively. QIAGEN was fully compliant with the new rule by September 2018. The new rule will also require additional compliance oversight now that it has been implemented. The requirements are now confirmed as part of our annual reporting and PMA submissions. They are also assessed during site inspections by the U.S. FDA.

*Regulation of Research Use Only Products*

Some of our products are sold for research purposes in the U.S., and labeled "For Research Use Only" (RUO) or "for molecular biology applications." In November 2013, the FDA issued a final Guidance for Industry and Food and Drug Administration Staff entitled, "Distribution of In Vitro Diagnostic Products Labeled for Research Use Only or Investigational Use Only." In the Guidance, RUO refers to devices that are in the laboratory phase of development, and investigational use only, or IUO, refers to devices that are in the product testing phase of development. These types of devices are exempt from most regulatory controls. Because we do not promote our RUOs for clinical diagnostic use or provide technical assistance to clinical laboratories with respect to these tests, we believe that these tests are exempt from FDA's premarket review and other requirements. If the FDA

were to disagree with our designation of any of these products, we could be forced to stop selling the product until we obtain appropriate regulatory clearance or approval. Further, it is possible that some of our RUOs may be used by some customers without our knowledge in their LDTs, which they develop, validate and promote for clinical use. However, as previously noted, we do not promote these products for use in LDTs or assist in the development of the LDTs for clinical diagnostic use.

The 21st Century Cures Act (Cures Act) was enacted into law on December 13, 2016, after a bipartisan, multi-year effort. The Cures Act primarily affects activities of the Department of Health and Human Services (HHS) and its agencies, including the Food and Drug Administration (FDA or the Agency). On June 6, 2017, Scott Gottlieb, M.D., Commissioner of Food and Drugs, reported to Congress as required by the Cures Act. This report included the Food & Drug Administration Work Plan and Proposed Funding Allocations of FDA Innovation Account (Required by Section 1002 of the 21st Century Cures Act (Public Law 114-255). This is now being implemented with a broad spectrum of initiatives within the FDA with the goal to support patients with improved and timely access to safe and efficacious medical products. For industry, it is anticipated that some processes will become less burdensome with more rapid approval/clearance cycles while others will continue to require significant investment.

*HIPAA and Other Privacy and Security Laws*

Numerous privacy and data security laws apply to personal information, including health information. These laws vary in their application. For example, the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, and their implementing regulations (collectively, HIPAA), regulate the uses, disclosures and security of identifiable health information (protected health information or PHI) in the hands of certain health care providers, health plans or health care clearing houses (covered entities). HIPAA regulates and limits covered entities' uses and disclosures of PHI and requires the implementation of administrative, physical and technical safeguards to keep PHI secure. HIPAA also applies to organizations that create, receive, maintain or transmit PHI to provide services to or for or on behalf of covered entities (business associates). Business associates and certain of their subcontractors are required to comply with certain privacy and all of the security standards of HIPAA. Business associates and covered entities must also comply with breach notification standards established by HIPAA. The HIPAA breach notification standards require covered entities to notify affected individuals, the government, and in some cases, local and national media in the event of a breach of PHI that has not been secured in accordance with HIPAA standards, such as by encryption. The breach notification standards require business associates to notify covered entity customers of their own breaches of unsecured PHI so that the relevant covered entity may make required notifications. In the ordinary course, HIPAA does not apply to us directly, but if we were to act as a HIPAA covered entity or business associate, we would be subject to these obligations. Most of our institutional and physician customers are covered entities under HIPAA and must obtain proper authorization, de-identify information or take some other step so that we may provide services involving PHI. When PHI is de-identified in accordance with HIPAA or when the disclosure of PHI is authorized by a patient, HIPAA does not impose any compliance obligations on the recipient, but our use and disclosure of the information may be limited by contract or the terms of the authorization.

All 50 states have adopted data breach notification laws relating to the "personal information" of their residents. Personal information typically includes an individual's name or initials coupled with social security, financial account, debit, credit or state-issued identification number or other information that could lead to identity theft. An increasing number of states are broadly including "health information" as personal information protected under the law. There is significant variability under these laws, but most require notification to affected individuals and to the government in the event of breach. Other laws of some states require that that we comply with data security obligations. These laws may apply to us when we receive or maintain personal information regarding individuals, including our employees.

We are subject to enforcement by state attorneys general who have authority to enforce state data privacy or security laws. Accordingly, we maintain an active privacy and data security program designed to address applicable regulatory compliance requirements.

The Genetic Information Nondiscrimination Act of 2008, also referred to as GINA, is a federal law that protects individuals from discrimination in the health insurance and employment contexts because of DNA characteristics that may affect their health. GINA prohibits covered employers from requesting, obtaining, or using employees' genetic information (subject to limited exceptions), and prohibits covered health insurers from requesting genetic information or using any such information they may already have for purposes of making eligibility, premium, or coverage-related decisions.

Many states have also adopted genetic testing and privacy laws. These laws typically require a specific, written consent for genetic testing as well as consent for the disclosure of genetic test results and otherwise limit uses and disclosures of genetic testing results. A few states have adopted laws that give their residents property rights in their genetic information.

Privacy and data security laws, including those relating to health information, are complex, overlapping and rapidly evolving. As our activities evolve and expand, additional laws may be implicated. For example, the California Consumer Privacy Act of 2018, set to take effect on January 1, 2020, imposes expansive new requirements and protections upon the processing of

personal data, aimed at giving California consumers more visibility and control over their personal information. There are also non-U.S. privacy laws, such as the General Data Protection Regulation (GDPR) of the European Union, that impose restrictions on the transfer, access, use, and disclosure of health and other personal information. We have implemented the requirements set forth by the GDPR, which took effect on May 25, 2018. All of these laws impact our business either directly or indirectly. Our failure to comply with applicable privacy or security laws or significant changes in these laws could significantly impact our business and future business plans. For example, we may be subject to regulatory action or lawsuits in the event we fail to comply with applicable privacy laws. We may face significant liability in the event any of the personal information we maintain is lost or otherwise subject to misuse or other wrongful use, access or disclosure.

*Compliance with Fraud and Abuse Laws*

We have to comply with various U.S. federal and state laws, rules and regulations pertaining to healthcare fraud and abuse, including anti-kickback laws and physician self-referral laws, rules and regulations. Violations of the fraud and abuse laws are punishable by criminal and civil sanctions, including, in some instances, exclusion from participation in federal and state healthcare programs, including Medicare and Medicaid.

*Anti-Kickback Statute*

The federal Anti-Kickback Statute prohibits persons from knowingly or willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in exchange for or to induce:

- The referral of an individual for a service or product for which payment may be made by Medicare, Medicaid or other government-sponsored healthcare program; or
- purchasing, ordering, arranging for, or recommending the ordering of, any service or product for which payment may be made by a government-sponsored healthcare program.

The definition of “remuneration” has been broadly interpreted to include anything of value, including such items as gifts, certain discounts, waiver of payments, and providing anything at less than its fair market value. In addition, several courts have interpreted the law to mean that if “one purpose” of an arrangement is intended to induce referrals, the statute is violated.

The Anti-Kickback Statue is broad and prohibits many arrangements and practices that are lawful in businesses outside of the healthcare industry. Recognizing that the Anti-Kickback Statute is broad and may technically prohibit many innocuous or beneficial arrangements, the Office of Inspector General of the Department of Health and Human Services (OIG) has issued regulations, commonly known as "safe harbors." These safe harbors set forth certain requirements that, if fully met, will insulate healthcare providers, medical device manufacturers, and others, from prosecution under the Anti-Kickback Statute. Although full compliance with these safe harbor provisions ensures against prosecution under the Anti-Kickback Statute, full compliance is often difficult and the failure of a transaction or arrangement to fit within a specific safe harbor does not necessarily mean that the transaction or arrangement is illegal or that prosecution under the Anti-Kickback Statute will be pursued. However, conduct and business arrangements that do not fully satisfy each applicable safe harbor may result in increased scrutiny by government enforcement authorities such as the OIG. The statutory penalties for violating the Anti-Kickback Statute include imprisonment for up to five years and criminal fines of up to $25,000 per violation. In addition, through application of other laws, conduct that violates the Anti-Kickback Statute can also give rise to False Claims Act lawsuits, civil monetary penalties and possible exclusion from Medicare and Medicaid and other federal healthcare programs. In addition to the Federal Anti-Kickback Statute, many states have their own kickback laws. Often, these laws closely follow the language of the federal law, although they do not always have the same scope, exceptions, safe harbors or sanctions. In some states, these anti-kickback laws apply not only to payment made by a government health care program but also with respect to other payors, including commercial insurance companies.

We have and may in the future, enter into various agreements with health care providers who perform services for us, including some who make clinical decisions to use our products. All such arrangements have been structured with the intention of complying with all applicable fraud and abuse laws, including the Anti-Kickback Statute.

*Other Fraud and Abuse Laws*

The federal False Claims Act (FCA) prohibits any person from knowingly presenting, or causing to be presented, a false claim or knowingly making, or causing to be made, a false statement to obtain payment from the federal government. Those found in violation of the FCA can be subject to fines and penalties of three times the damages sustained by the government, plus mandatory civil penalties of between $5,500 and $11,000 for each separate false claim. Actions filed under the FCA can be brought by any individual on behalf of the government, a "qui tam" action, and such individual, known as a "relator" or, more commonly, as a "whistleblower," who may share in any amounts paid by the entity to the government in damages and penalties or by way of settlement. In addition, certain states have enacted laws modeled after the FCA, and this legislative activity is expected to increase. Qui tam actions have increased significantly in recent years, causing greater numbers of healthcare companies, including medical device manufacturers, to defend false claim actions, pay damages and penalties or be excluded

from Medicare, Medicaid or other federal or state healthcare programs as a result of investigations arising out of such actions.

The federal ban on physician self-referrals, commonly known as the Stark Law, prohibits, subject to certain exceptions, physician referrals of Medicare and Medicaid patients to an entity providing certain "designated health services" if the physician or an immediate family member of the physician has any financial relationship with the entity. Penalties for violating the Stark Law include fines, civil monetary penalties and possible exclusion from federal healthcare programs. In addition to the Stark Law, many states have their own self-referral laws. Often, these laws closely follow the language of the federal law, although they do not always have the same scope, exceptions or safe harbors.

The anti-inducement law (Section 1128A(a)(5) of the Social Security Act), prohibits providers from offering anything of value to a Medicare or Medicaid beneficiary to induce the beneficiary to use items or services covered by either program. Additionally, the Civil Monetary Penalties Law (Section 1128A of the Social Security Act), authorizes the United States Department of Health and Human Services to impose civil penalties administratively for various fraudulent or abusive acts.

The OIG also has authority to bring administrative actions against entities for alleged violations of a number of prohibitions, including the Anti-Kickback Statute and the Stark Law. The OIG may seek to impose civil monetary penalties or exclusion from the Medicare, Medicaid and other federal healthcare programs. Civil monetary penalties can range from $2,000 to $50,000 for each violation or failure plus, in certain circumstances, three times the amounts claimed in reimbursement or illegal remuneration. Typically, exclusions last for five years.

In addition, we must comply with a variety of other laws, such as laws prohibiting false claims for reimbursement under Medicare and Medicaid, all of which can also be triggered by violations of federal anti-kickback laws; the Health Insurance Portability and Accounting Act of 1996, which makes it a federal crime to commit healthcare fraud and make false statements; and the Federal Trade Commission Act and similar laws regulating advertisement and consumer protections.

There are also an increasing number of state "sunshine" laws that require manufacturers to provide reports to state governments on pricing and marketing information. Several states have enacted legislation requiring manufacturers, including medical device companies to, among other things, establish marketing compliance programs, file periodic reports with the state, make periodic public disclosures on sales and marketing activities, and to prohibit or limit certain other sales and marketing practices. In addition, a federal law known as the Physician Payments Sunshine Act, requires manufacturers, including medical device manufacturers, to track and report to the federal government certain payments and other transfers of value made to physicians and teaching hospitals and ownership or investment interests held by physicians and their immediate family members. The federal government discloses the reported information on a publicly available website. If we fail to track and report as required by these laws or to otherwise comply with these laws, we could be subject to the penalty provisions of the pertinent state and federal authorities.

Despite extensive procedures to ensure compliance, we may also be exposed to liabilities under the U.S. Foreign Corrupt Practices Act, or FCPA, which generally prohibits companies and their intermediaries from making corrupt payments to foreign officials for the purpose of obtaining or maintaining business or otherwise obtaining favorable treatment, and requires companies to maintain adequate record-keeping and internal accounting practices to accurately reflect the transactions of the company. We are also subject to a number of other laws and regulations relating to money laundering, international money transfers and electronic fund transfers. These laws apply to companies, individual directors, officers, employees and agents.

*Environment, Health and Safety*

We are subject to laws and regulations related to the protection of the environment, the health and safety of employees and the handling, transportation and disposal of medical specimens, infectious and hazardous waste and radioactive materials. For example, the U.S. Occupational Safety and Health Administration (OSHA) has established extensive requirements relating specifically to workplace safety for healthcare employers in the U.S. This includes requirements to develop and implement multi-faceted programs to protect workers from exposure to blood-borne pathogens, such as HIV and hepatitis B and C, including preventing or minimizing any exposure through needle stick injuries. For purposes of transportation, some biological materials and laboratory supplies are classified as hazardous materials and are subject to regulation by one or more of the following agencies: the U.S. Department of Transportation, the U.S. Public Health Service, the United States Postal Service and the International Air Transport Association.

**Other Country Specific Requirements**

In many countries outside of the United States and the EU, coverage, pricing and reimbursement approvals are also required. Additionally, many of the major markets are adopting regulations and requirements similar to U.S. Food and Drug Administration (FDA) which require additional submission activities and management of country specific regulatory requirements. This is being led by the International Medical Device Regulators Forum (IMDRF). This Forum consists of regulators from around the world that have signed governmental agreements to align global regulations, especially around submissions and approvals. In the long term this holds the promise of reducing volatility and complexity in the regulatory landscape.

**Reimbursement**

***United States***

In the United States, payments for diagnostic tests come from several sources, including third party payors such as health maintenance organizations and preferred provider organizations; government health programs such as Medicare and Medicaid; and, in certain circumstances, hospitals, referring laboratories or the patients themselves. For many years, federal and state governments in the United States have pursued methods to reduce the cost of these programs. For example, in 2010, the United States enacted major healthcare reform legislation known as the Patient Protection and Affordable Care Act (ACA). Such changes have had, and are expected to continue to have, an impact on our business. At present, Medicare payment rates are affected by across-the-board federal budget cuts commonly referred to as "sequestration." Under sequestration, the Centers for Medicare & Medicaid Services (CMS), the federal agency responsible for administering Medicare and Medicaid, reduced Medicare payments to providers by 2% annually beginning in 2013 and through 2023.

We frequently identify value propositions on our products and communicate them to payors, providers, and patient stakeholders and attempt to positively impact coverage, coding and payment pathways. However, we have no direct control over payor decisions with respect to coverage and payment levels for our products. The manner and level of reimbursement may depend on the site of care, the procedure(s) performed, the final patient diagnosis, the device(s) and/or drug(s) utilized, the available budget, or a combination of these factors, and coverage and payment levels are determined at each payor's discretion. Changes in reimbursement levels or methods may positively or negatively affect sales of our products in any given country for any given product. At QIAGEN, we work with several specialized reimbursement consulting companies and maintain regular contact with payers.

As government programs seek to expand healthcare coverage for their citizens, they have at the same time sought to control costs by limiting the amount of reimbursement they will pay for particular procedures, products or services. Many third-party payors have developed payment and delivery mechanisms to support cost control efforts and to focus on paying for quality. Such mechanisms include payment reductions, pay for performance metrics, quality-based performance payments, restrictive coverage policies, studies to compare effectiveness and patient outcomes, and technology assessments. These changes have increased emphasis on the delivery of more cost-effective and quality-driven healthcare.

*Code Assignment.* In the United States, a third-party payor's decisions regarding coverage and payment are impacted, in large part, by the specific Current Procedural Terminology, or CPT, code used to identify a test. The American Medical Association, or AMA, publishes the CPT, which is a listing of descriptive terms and identifying codes for reporting medical services and procedures. The purpose of the CPT is to provide a uniform language that accurately describes medical, surgical, and diagnostic services and therefore to ensure reliable nationwide communication among healthcare providers, patients, and third-party payors. CMS uses its own HCPCS codes for medical billing and reimbursement purposes. Level I HCPCS codes reflect current CPT codes, while Level II codes primarily represent non-physician services and Level III codes are local codes developed by Medicaid agencies, Medicare contractors and private insurers.

A manufacturer of in vitro diagnostic kits or a provider of laboratory services may request establishment of a Category I CPT code for a new product. Assignment of a specific CPT code ensures routine processing and payment for a diagnostic test by both private and government third-party payors.

The AMA has specific procedures for establishing a new CPT code and, if appropriate, for modifying existing nomenclature to incorporate a new test into an existing code. If the AMA concludes that a new code or modification of nomenclature is unnecessary, the AMA will inform the requestor how to use one or more existing codes to report the test.

While the AMA's decision is pending, billing and collection may be sought under an existing, non-specific CPT code. A manufacturer or provider may decide not to request assignment of a CPT code and instead use an existing, non-specific code for reimbursement purposes. However, use of such codes may result in more frequent denials and/or requests for supporting clinical documentation from the third-party payor and in lower reimbursement rates, which may vary based on geographical location.

CMS reimbursement rates for clinical diagnostic tests are defined by HCPS code in the Clinical Laboratory Fee Schedule (CLFS). In 2012, the AMA added 127 new CPT codes for molecular pathology services that became effective on January 1, 2013. These new CPT codes are biomarker specific and were designed to replace the previous methodology of billing for molecular pathology testing, which involved "stacking" a series of non-biomarker specific CPT codes together to describe the testing performed. CMS issued final national reimbursement prices for the new CPT codes in November 2013. These federal reimbursement amounts are widely acknowledged to be lower than the reimbursement obtained by the now outdated "stacking" method, but commercial payors and Medicare contractors are still in the process of solidifying their coverage and reimbursement policies for the testing described by these new CPT codes. As of January 1, 2018, in accordance with the Protecting Access to Medicare Act of 2014 (PAMA), CMS began calculating Medicare reimbursement rates for certain clinical diagnostic tests using weighted median private payor rates, which are based on rate information reported by applicable laboratories. This new rate methodology means the lower reimbursement rates previously experienced in the field of molecular pathology testing now extends to additional diagnostic testing codes on the CLFS.

*Coverage Decisions.* When deciding whether to cover a particular diagnostic test, private and government third-party payors generally consider whether the test is a contractual benefit and, if so, whether it is reasonable and necessary for the diagnosis or treatment of an illness or injury. However, most third-party payors do not cover experimental services. Coverage determinations are often influenced by current standards of practice and clinical data, particularly at the local level. CMS, the government agency responsible for overseeing the Medicare program, has the authority to make coverage determinations on a national basis, but most Medicare coverage decisions are made at the local level by contractors that administer the Medicare program in specified geographic areas. Private and government third-party payors have separate processes for making coverage determinations, and private third-party payors may or may not follow Medicare's coverage decisions. If a third-party payor has a coverage determination in place for a particular diagnostic test, billing for that test must comply with the established policy. Otherwise, the third-party payor makes reimbursement decisions on a case-by-case basis.

*Payment*. Payment for covered diagnostic tests is determined based on various methodologies, including prospective payment systems and fee schedules. In addition, private third-party payors may negotiate contractual rates with participating providers or set rates as a percentage of the billed charge. Diagnostic tests furnished to Medicare inpatients generally are included in the bundled payment made to the hospital under Medicare's Inpatient Prospective Payment System, utilizing Diagnosis Related Groups (DRGs) depending on the patient's condition. Payment for diagnostic tests furnished to Medicare beneficiaries in outpatient settings is based on the CLF, under which a payment amount is assigned to each covered CPT code, or through the Outpatient Prospective Payment System (OPPS), which is the outpatient equivalent of the DRG model. The law technically requires fee schedule amounts to be adjusted annually by the percentage increase in the consumer price index (CPI) for the prior year, but Congress has frozen payment rates in certain years. Medicaid programs generally pay for diagnostic tests based on a fee schedule, but reimbursement varies by state.

***European Union***

In the European Union, the reimbursement mechanisms used by private and public health insurers vary by country. For the public systems, reimbursement is determined by guidelines established by the legislator or responsible national authority. As elsewhere, inclusion in reimbursement catalogues focuses on the medical usefulness, need, quality and economic benefits to patients and the healthcare system. Acceptance for reimbursement comes with cost, use, and often volume restrictions, which again can vary by country.

**Conflict Minerals**

U.S. legislation has been enacted to improve transparency and accountability concerning the sourcing of conflict minerals from mines located in the conflict zones of the Democratic Republic of Congo (DRC) and its adjoining countries. The term conflict minerals currently encompasses tantalum, tin, tungsten (or their ores) and gold. Certain of our instrumentation product components which we purchase from third party suppliers contain gold. This U.S. legislation requires manufacturers, such as us, to investigate our supply chain and disclose if there is any use of conflict minerals originating in the DRC or adjoining countries. We conduct due diligence measures annually to determine the presence of conflict minerals in our products and the source of any such conflict minerals. Because we do not purchase conflict minerals directly from smelters or refineries, we rely on our suppliers to specify to us their Conflict Minerals sources and declare their conflict minerals status. We disclosed our most recent Conflict Minerals findings to the Securities Exchange Commission for the calendar year ending December 31, 2017 on Form SD on May 17, 2018 and will provide updated disclosure to the Securities Exchange Commission as required.

**Organizational Structure**

QIAGEN N.V. is the holding company for more than 50 consolidated subsidiaries, many of which have the primary function of distributing our products and services on a regional basis. Certain subsidiaries also have research and development or production activities. A listing of our significant subsidiaries and their jurisdictions of incorporation is included in Note 29 "Consolidated Companies" of the Consolidated Financial Statements.

**Description of Property**

Our production and manufacturing facilities for consumable products are located in Germany, the United States and China. Our facilities for software development are located in the United States, Germany, Poland, Denmark and Romania. In recent years, we have made investments in automated and interchangeable production equipment to increase our production capacity and improve efficiency. Our production and manufacturing operations are highly integrated and benefit from sophisticated inventory control. Production management personnel are highly qualified, and many have advanced degrees in engineering, business and science. We also have installed and continue to expand production-planning systems that are included in our integrated information and control system based on the SAP R/3 business software package from SAP AG. Worldwide, we use SAP software to integrate most of our operating subsidiaries. Capital expenditures for property, plant and equipment and software totaled $109.8 million, $90.1 million and 2018 and 2017, respectively.

We have an established quality system, including standard manufacturing and documentation procedures, intended to ensure that products are produced and tested in accordance with the FDA's Quality System Regulations, which impose current Good Manufacturing Practice (cGMP) requirements. For cGMP production, special areas were built in our facilities in Hilden, Germany, Germantown, Maryland and Shenzhen, China. These facilities operate in accordance with cGMP requirements.

The consumable products manufactured at QIAGEN GmbH in Germany, and QIAGEN Sciences LLC in Maryland, are produced under ISO 9001: 2008, ISO 13485:2012, ISO 13485:2003 CMDCAS. Our certifications form part of our ongoing commitment to provide our customers with high-quality, state-of-the-art sample and assay technologies under our Total Quality Management system.

Our facilities in Hilden, Germany, currently occupy a total of approximately 786,000 square feet. Our most recent expansion to these facilities was in 2018 and included approximately 6,400 square feet of clean room space for Stat-DX integration. Our production capacity is increased through our manufacturing and research facilities in the United States. QIAGEN Sciences, LLC owns a 24-acre site in Germantown, Maryland. The 285,000 square foot Germantown facility consists of several buildings in a campus-like arrangement and can accommodate over 500 employees. There is room for future expansion of up to 300,000 square feet of facility space. In 2015, we completed expansion of our research and production facilities in Hilden, Germany and renovations of administrative facilities in Germantown, Maryland.

We lease a facility in Frederick, Maryland comprising 42,000 square feet for manufacturing, warehousing, distribution and research operations. We also lease facilities in Massachusetts with 24,860 square feet in Waltham for NGS system development and 44,000 square feet in Beverly for enzyme manufacturing. Additionally, we have leased facilities in Redwood City, California with 12,700 square feet and Cary, North Carolina with 10,900 square feet focused on bioinformatics and 19,000 square feet in Minden, Nevada for Service Solutions. We have shared service centers which lease facilities in Wroclaw, Poland (42,100 square feet) and Manila, Philippines (20,200 square feet). Additionally, we lease facilities in Shenzhen, China and Manchester, United Kingdom for research operations. Other subsidiaries throughout the world lease smaller amounts of space. Our corporate headquarters are located in leased office space in Venlo, The Netherlands.

We believe our existing production and distribution facilities can support anticipated production needs for the next 36 months. Our production and manufacturing operations are subject to various federal, state, and local laws and regulations including environmental regulations. We do not believe we have any material issues relating to these laws and regulations.

**Operating and Financial Review and Prospects for the Period from January 1, 2018 to December 31, 2018**

**Results of Operations, Financial Position**

***Results of Operations***

*Overview*

We are a leading global provider of Sample to Insight solutions to transform biological materials into valuable molecular insights. QIAGEN sample technologies isolate and process DNA, RNA and proteins from any biological sample, such as blood or tissue. Assay technologies make these biomolecules visible and ready for analysis, such as identifying the DNA of a virus or a mutation of a gene. Bioinformatics solutions integrate software and cloud-based resources to interpret increasing volumes of biological data and report relevant, actionable insights. Our automation solutions tie these together in seamless and cost-effective molecular testing workflows.

We sell our products - consumables, automated instrumentation systems using those technologies, and bioinformatics to analyze and interpret the data - to four major customer classes:

- **Molecular Diagnostics** - healthcare providers engaged in many aspects of patient care requiring accurate diagnosis and insights to guide treatment decisions in oncology, infectious diseases and immune monitoring

- **Applied Testing** - government or industry customers using molecular technologies in non-healthcare fields, such as forensics and human identification
- **Pharma** - pharmaceutical and biotechnology companies using molecular testing to support drug discovery, translational medicine and clinical development efforts
- **Academia** - researchers exploring the secrets of life such as the mechanisms and pathways of diseases, and in some cases translating that research into drug targets or commercial applications

We market products in more than 130 countries, mainly through subsidiaries in markets we believe have the greatest sales potential in Europe, Asia, the Americas and Australia. We also work with specialized independent distributors and importers. As of December 31, 2018, we employed approximately 5,000 people in more than 35 locations worldwide.

*Recent Acquisitions*

We have made a number of strategic acquisitions and implemented other strategic transactions since 2016, aiming to achieve market-leading positions with innovative technologies in high-growth areas of molecular diagnostics and research. These transactions have enhanced our product offerings and technology platforms, as well as our geographic footprint. They include:

- In April 2018, QIAGEN acquired STAT-Dx, a privately held company with a next-generation multiplex PCR system that enables fast, cost-effective and flexible syndromic testing. Following the acquisition, we launched the novel Sample to Insight system, known as QIAstat-Dx, in Europe, delivering one-step, fully integrated molecular analysis of widespread syndromes based on QIAGEN chemistries. The first two CE-IVD marked assays provide differential diagnosis of serious respiratory and gastrointestinal infections. FDA submission was completed in late 2018, and U.S. launch is expected in 2019. A broad menu of tests is under development for syndromes in infectious disease, oncology and other areas. QIAGEN acquired STAT-Dx for approximately $149 million in cash and additional future payments of up to about $44 million based on the achievement of regulatory and commercial milestones.
- In September 2018, QIAGEN announced a strategic partnership with NeuMoDx Molecular, Inc. to commercialize two next-generation, fully integrated automation systems for PCR testing. The NeuMoDx 288 (high-throughput version) and NeuMoDx 96 (mid-throughput version) systems help clinical laboratories process increasing molecular test volumes and deliver more rapid diagnostic insights. QIAGEN is initially distributing the systems and related consumables in Europe and other major markets outside the United States, while NeuMoDx is currently distributing these instruments within the United States. The two companies entered into a merger agreement under which QIAGEN can acquire all NeuMoDx shares that it does not currently own at a price of approximately $234 million (QIAGEN currently owns 19.9% of NeuMoDx), subject to regulatory and operational milestones. The systems offer a growing menu of in vitro diagnostic tests and the ability to flexibly and efficiently process both commercial and laboratory-developed tests.
- In January 2019, QIAGEN announced plans to develop next-generation systems for digital PCR, one of the fastest-growing molecular testing applications in the life sciences industry, and acquired the digital PCR assets of Formulatrix, Inc., a developer of laboratory automation solutions. Combining the Formulatrix assets with QIAGEN technologies and automation, we expect to bring to market a fully integrated digital PCR solution with a targeted launch in 2020. The system will offer highly automated workflows, quicker time-to-result, and higher multiplexing and throughput flexibility than current digital PCR platforms. QIAGEN paid Formulatrix $125 million in cash upon closing and agreed to future milestone payments of approximately $136 million in 2020.
- Also in January 2019, QIAGEN acquired N-of-One, Inc., a pioneer in molecular oncology decision support services, to strengthen our bioinformatics leadership in clinical NGS interpretation. The acquisition enables us to offer a broader range of software, content and service-based solutions. N-of-One's services and proprietary database will be integrated into QIAGEN Clinical Insight (QCI), adding medical interpretation and real-world evidence insights and offering robust decision support in oncology. N-of-One's somatic cancer database with more than 125,000 anonymized patient samples will further increase QIAGEN's lead as provider of the industry's largest genomics knowledge base.
- In April 2018, QIAGEN took steps to streamline our presence in veterinary testing through a strategic partnership with Fidelio Capital, a Swedish firm with significant investments in animal health. QIAGEN transferred our portfolio of veterinary assays and the Leipzig site to INDICAL BIOSCIENCE GmbH, a new company created by Fidelio. Under the agreement, QIAGEN manufactures and supplies sample processing solutions for INDICAL.
- QIAGEN entered into a joint venture in May 2017 with Sichuan Maccura Biotechnology Co., Ltd., a leading in vitro diagnostics company in China, to accelerate the growth of QIAGEN's GeneReader NGS System. Known as MAQGEN China and based in Chengdu, Sichuan Province, the venture will develop local adaptations, pursue regulatory paths for the GeneReader and leverage Maccura's broad customer network to expand the system's adoption in laboratories across China. Maccura owns 60% of the joint venture and QIAGEN owns 40%. QIAGEN's own

operations in China continue as a stand-alone company, focusing on our other products and services for customers such as QuantiFERON-TB and the Life Sciences portfolio.

- QIAGEN took steps in late 2017 to streamline its product portfolio in China and focus on growth areas by discontinuing commercialization of some non-core PCR tests and externalizing the HPV test franchise for cervical cancer screening in China to a third-party company. In January 2018, a partnership became effective with a Chinese company that has taken over R&D, commercial distribution, and the related QIAGEN employees and infrastructure of the HPV test franchise in China. QIAGEN is a minority shareholder of this company.
- In January 2017, QIAGEN acquired OmicSoft Corporation, a privately held company based in the Research Triangle area of North Carolina, to expand our industry-leading bioinformatics offering with complementary solutions enabling scientists to visualize and mine large institutional and publicly available "omics" datasets. The OmicSoft software solutions meet a growing need in discovery and translational research to access and manage huge amounts of data on DNA, RNA and other biological variables generated by next-generation sequencing studies.
- In 2016, QIAGEN acquired Exiqon A/S, a publicly traded company based in Vedbaek, Denmark, expanding our leadership position in Sample to Insight solutions for RNA analysis. Exiqon's RNA analysis solutions, with proprietary Locked Nucleic Acid (LNA) technology, are used by academic, biotech and pharmaceutical researchers worldwide to explore correlations between gene activity and the development of cancer and other diseases. In two steps during 2016, we paid a total of $100.7 million for 100% of the shares of Exiqon. In 2017, Exiqon's product offering was fully integrated into QIAGEN, providing customers of both companies ready access to the combined portfolio of solutions.

Our financial results include the contributions of recent acquisitions and divestitures from their effective dates, as well as costs related to the transactions and integration of the acquired companies, such as the relocation and closure of certain facilities.

We determined that we operate as one business segment in accordance with IFRS 8 *Operating Segments*. Our chief operating decision maker (CODM) makes decisions on business operations and resource allocation based on evaluations of the QIAGEN Group as a whole. Considering the acquisitions made during 2018, we determined that we still operate as one business segment. We provide certain revenue information by customer class to allow better insight into our operations. This information is estimated using certain assumptions to allocate revenue among the customer classes.

***Year Ended December 31, 2018, Compared to 2017***

In 2018, net sales grew 6% to $1.50 billion compared to $1.42 billion in 2017 reflecting our organic business expansion in both consumables and related revenues and instruments as well as growth due to the April 2018 acquisition of STAT-Dx Life, S.L. (STAT-Dx), a privately-held company developing the next generation of multiplex diagnostics for one-step, fully integrated molecular analysis of common syndromes using a novel system based on real-time PCR technology and proven QIAGEN chemistries. We experienced good volume gains across the consumables and related revenues portfolio (+6% / 88% of sales), while instrument sales (+7% / 12% of sales) were supported by solid placements of the QIAsymphony automation system.

***Customer classes***: An overview of performance in QIAGEN's four customer classes:

**Net sales by product category and customer class**

| | Full-year 2018 | | |
|---|---|---|---|
| | **Sales (In $ m)** | **% change** | **% of sales** |
| Consumables and related revenues | $1,315 | +6% | 88% |
| Instruments | $186 | +7% | 12% |
| | | | |
| Molecular Diagnostics[(1)] | $732 | +7% | 49% |
| Applied Testing | $137 | —% | 9% |
| Pharma | $291 | +6% | 19% |
| Academia | $342 | +6% | 23% |

(1) Includes companion diagnostic co-development revenues ($58 million, +36%) and U.S. HPV sales ($19 million, -33%, 1% of sales).

**Molecular Diagnostics** grew at a 7% rate due, in part, to the QuantiFERON-TB test delivering 21% growth and a record year in Precision Medicine supported by the expansion in revenues from companion diagnostic co-development projects. This more than offset the decline in U.S. HPV sales ($19 million in 2018 as compared to $28 million in 2017), the divestment of the HPV test franchise in China to a third party in January 2018, and the accelerated reduction of low-margin, third-party instrument service contracts during the final months of 2018 to ensure service capacity for several new instrument launches.

**Applied Testing** was impacted by the April 2018 divestment of the veterinary assays portfolio in addition to changes made during the later portion of 2018 to a third-party research and development project linked to this divestment. Excluding the impact of this divestment, Applied Testing grew due to expansion of the forensics portfolio in the Americas.

**Pharma** experienced 6% sales growth 2018 as a result of solid gains in both instruments and consumables during the course of the year with gains in the Americas and Europe, Middle East and Africa regions.

**Academia** was led by a strong performance in the Asia Pacific / Japan region during 2018 with overall robust growth in instrument revenues along with more modest growth for consumables.

**Net sales by geographic region**

| | Full-year 2018 | | |
|---|---|---|---|
| | **Sales (In $ m)** | **% change** | **% of sales** |
| Americas | $693 | +6% | 46% |
| Europe / Middle East / Africa | $490 | +6% | 33% |
| Asia-Pacific / Japan | $315 | +6% | 21% |

Top 7 emerging markets: Brazil, Russia, India, China, South Korea, Mexico and Turkey ($246 million, +5%, 16% of sales)
Rest of world represented less than 1% of net sales.

***Geographic regions:*** All geographic regions grew at solid single-digit rates in 2018. The Europe / Middle East / Africa region experienced improving trends in Italy, Switzerland and Turkey during the year in addition to benefits from the geographic expansion in the Middle East. The Asia-Pacific / Japan advanced due partially to improving performance in Japan and China during the second half of 2018 despite a weaker performance in South Korea in part due to a 2017 QuantiFERON-TB tender in the country. The Americas advanced at a 6% rate due to gains in Latin America and Canada and the strong underlying U.S. performance after considering the decline in instrument service revenues in the Molecular Diagnostics customer class.

*Gross Profit*

Gross profit was $992.8 million, or 66% of net sales, in 2018, compared with $912.6 million, or 64% of net sales, in 2017. Generally, our consumables and related products have a higher gross margin than our instrumentation products and service arrangements. Fluctuations in the sales levels of these products and services can result in fluctuations in gross margin between periods. The 2018 growth in consumables contributed to the higher margin in 2018. Further, gross profit in 2018 was impacted by $1.6 million in restructuring charges while 2017 was impacted by restructuring charges of $4.4 million.

Amortization expense related to developed technology and patent and license rights, which have been acquired in business combinations, is included in cost of sales. The amortization expense on acquisition-related intangibles within cost of sales decreased to $56.7 million in 2018 from $72.7 million in 2017 reflecting the end of the amortization period of intangibles acquired in 2007. Acquisition-related intangible amortization may increase in the future should we make further acquisitions.

*Research and Development*

Research and development expenses increased by 8% to $157.9 million (11% of net sales) in 2018, compared to $146.0 million (10% of net sales) in 2017. The increase in research and development costs during 2018 reflects our ongoing investments in NGS and our life sciences portfolio, together with regulatory activity in support of new products. Research and development costs during 2018 also reflect incremental costs due to the acquisition of STAT-Dx in January 2018. Lower expense in 2017 includes a $0.7 million reduction in costs as a result of forfeitures of share-based compensation. As we continue to discover, develop and acquire new products and technologies, we expect to incur additional expenses related to facilities, licenses and employees engaged in research and development. Overall, research and development costs are expected to increase as a result of seeking regulatory approvals, including U.S. FDA Pre-Market Approval (PMA), U.S. FDA 510(k) clearance and EU CE approval of certain assays or instruments. Further, business combinations, along with the acquisition of new technologies, may increase our research and development costs in the future. We have a strong commitment to innovation and expect to continue to make investments in our research and development efforts.

*Sales and Marketing*

Sales and marketing expenses were $431.3 million (29% of net sales) in 2018 from $415.0 million (29% of net sales) in 2017. Sales and marketing expenses are primarily associated with personnel, commissions, advertising, trade shows, publications, freight and logistics expenses, and other promotional expenses. During 2018, amortization expense on acquisition-related intangibles within operating expense decreased to $39.0 million, compared to $39.4 million in 2017. We expect acquisition-related intangible amortization will increase as a result of our future acquisitions. We experienced efficiencies due to a lower

cost base following the realignment of marketing activities as part of restructuring projects which were offset by higher personnel costs, including the expansion into China and external services, as well as initiatives for new product launches. Sales and marketing expenses are primarily associated with personnel, commissions, advertising, trade shows, publications, freight and logistics expenses, and other promotional expenses. We anticipate that absolute sales and marketing costs will increase along with new product introductions and growth in sales of our products, but decrease as a percentage of sales.

*General and Administrative, Restructuring, Integration and Other*

General and administrative, restructuring, integration and other costs decreased by 24% to $147.7 million (10% of net sales) in 2018 from $193.6 million (14% of net sales) in 2017. The decrease in 2018 reflects lower litigation related charges which totaled $10.5 million in 2018 as compared to $45.3 million in 2017. Additionally, 2018 includes a $4.8 million revaluation gain of a minority interest investment in connection with the acquisition as discussed in Note 5 "Acquisitions and Divestitures", and overall lower acquisition and integration costs which were partially offset higher compensation costs. As we further integrate the acquired companies and pursue other opportunities to gain efficiencies, we expect to continue to incur additional restructuring and business integration costs in 2019. Over time, we believe the restructuring and integration activities will reduce expenses as we improve efficiency in operations.

*Financial Income (Expense)*

For the year ended December 31, 2018, financial income increased to $20.9 million from $10.6 million in 2017. Financial income includes interest earned on cash, cash equivalents and short term investments, income related to certain interest rate derivatives as discussed in Note 25 "Financial Risk Factors and Use of Derivative Financial Instruments" in the accompanying consolidated financial statements and other components including the interest portion of operating lease transactions.

Financial expense increased to $67.3 million in 2018, compared to $49.7 million in 2017. Financial expense primarily relates to debt, discussed in Note 15 "Financial Debts" in the accompanying consolidated financial statements.

QIAGEN N.V.'s presentation currency is the U.S. dollar, and most of our subsidiaries' functional currencies are the local currencies of the countries in which they are headquartered. All amounts in the financial statements of entities whose functional currency is not the U.S. dollar are translated into U.S. dollar equivalents at exchange rates as follows: (1) assets and liabilities at period-end rates, (2) income statement accounts at average exchange rates for the period, and (3) components of shareholders' equity at historical rates. Translation gains or losses are recorded in shareholders' equity, and transaction gains and losses are reflected in net income. For the year ended December 31, 2018, we recorded net losses on foreign currency of $12.3 million compared to $3.3 million in 2017 due to foreign currency rate fluctuations.

Gains from investments accounted for by the equity method in 2018, was $2.6 million compared to $3.2 million during the year December 31, 2017 as discussed further in Note 11 "Equity Accounted Investments" .

*Other Financial Income (Expense), net*

Other financial expense, net was $69.5 million for the year ended December 31, 2018 and includes losses of $65.7 million related to the fair value change in the Warrants, $76.5 million related to the embedded cash conversion option, and a loss $2.1 million related to the change in fair value of interest rate derivatives partially offset by gains of $74.7 million related to the change in the fair value of the Call Options, all discussed in Note 25 "Financial Risk Factors and Use of Derivative Financial Instruments". Other financial income, net was 39.4 million for the year ended 2017 and includes gains of $40.8 million related to the change in the fair value change in the Warrants, gains of $37.4 million related to the change in the fair value of the call option mostly offset by $36.7 million loss related to the embedded cash conversion option, and loss of $2.2 million related to the change in fair value of interest rate derivatives, all discussed in Note 25 .

*Provision for Income Taxes*

Our effective tax rates differ from The Netherlands statutory tax rate of 25% due in part to our operating subsidiaries being exposed to effective tax rates ranging from zero to more than 40%. In 2018 and 2017, our effective tax rates were 23.0% and 57.1%, respectively. During 2017, the 57.1% reflects the impacts of the U.S. tax reform. Because of the tax reform, we revalued our U.S. deferred tax assets and liabilities to reflect the corporate income tax rate change from 35% to 21%. The deferred tax asset related to U.S. interest carry forwards has been reduced from $60.8milion to zero. During 2017, we increased accruals for tax contingencies by $22.1 million, primarily related to ongoing income tax audits.

In 2018 and 2017, tax expense on foreign operations was favorably impacted by lower income tax rates and partial tax exemptions on foreign income primarily derived from operations in Germany, Singapore, Luxembourg, Ireland and Switzerland. These foreign tax benefits are due to a combination of favorable tax laws, rules, rulings, and exemptions in these jurisdictions. In particular, we have pre-tax income in Germany which is statutorily exempt from trade tax on intercompany foreign royalty income. Further, we have intercompany financing arrangements through Luxembourg and Ireland in which the intercompany income is partially exempt. See Note 16 "Income Taxes" to the consolidated financial statements for a full

reconciliation of the effective tax rate to The Netherlands statutory rate. See Note 16 "Income Taxes" to the consolidated financial statements for a full reconciliation of the effective tax rate to The Netherlands statutory rate.

In future periods, our effective tax rate may fluctuate from similar or other factors as discussed in “Changes in tax laws or their application could adversely affect our results of operations or financial flexibility” in Principle Risks and Uncertainties.

***Liquidity and Capital Resources***

To date, we have funded our business primarily through internally generated funds, debt, and private and public sales of equity. Our primary use of cash has been to support continuing operations and our investing activities including capital expenditure requirements and acquisitions. As of December 31, 2018 and 2017, we had cash and cash equivalents of $1.16 billion and $657.7 million, respectively. We also had current financial assets of $214.6 million at December 31, 2018. Cash and cash equivalents are primarily held in U.S. dollars and euros, other than those cash balances maintained in the local currency of subsidiaries to meet local working capital needs. At December 31, 2018, cash and cash equivalents had increased by $501.4 million from December 31, 2017, primarily as a result of cash provided by operating activities of $363.5 million and cash provided by financing activities of $360.4 million, partially offset cash used in investing activities of $215.3 million. As of December 31, 2018 and 2017, we had working capital of $1.143 billion and $1.304 billion, respectively.

***Operating Activities.*** For the years ended December 31, 2018 and 2017, we generated net cash from operating activities of $363.5 million and $294.8 million, respectively. While net income was $104.9 million in 2018, non-cash components in income included $214.5 million of depreciation and amortization and $17.0 million of non-cash impairments due to the impairment of cost-method investments as further discussed in Note 7 "Financial Assets" and impairments of software as discussed in Note 12 "Goodwill and Intangible Assets". Operating cash flows include a net increase in working capital of $78.3 million excluding changes in fair value of derivative instruments. The current period change in working capital is primarily due to increased inventories, accounts receivable and taxes payable, and decreased in accrued and other current liabilities. Because we rely heavily on cash generated from operating activities to fund our business, a decrease in demand for our products, longer collection cycles or significant technological advances of competitors would have a negative impact on our liquidity.

***Investing Activities.*** Approximately $215.3 million of cash was used in investing activities during 2018, compared to $472.3 million during 2017. Investing activities during 2018 consisted principally of $568.0 million for purchases of short-term investments, $55.8 million in cash paid for purchases of property and equipment, $3.5 million paid in connection with derivative collateral arrangements as well as $95.0 million paid for intangible assets and $9.4 million paid for strategic investments in privately held companies, partially offset by $691.8 million from the sale of short-term investments. Additionally, during 2018 cash paid for acquisitions, net of cash acquired, totaled $172.8 million.

***Financing Activities.*** For the year ended December 31, 2018, cash provided by financing activities was $360.4 million compared to cash used in financing activities of $387.2 million in 2017. Financing activities during 2018 consisted primarily of $494.9 million net cash proceeds from the 2018 cash convertible offering. We used $97.3 million of the proceeds from the cash convertible offering to pay the premium for a call option related to the cash convertible notes, and simultaneously received $72.4 million from the sale of Warrants, for a net cash outlay of $24.9 million for the call spread overlay. Additionally in 2018, we repurchased QIAGEN shares of $104.7 million in connection with the fifth share repurchase program discussed in Note 17 "Equity". Cash used in other financing activities during the year ended December 31, 2018, consisted primarily of $5.5 million paid for contingent consideration, together with $2.0 million paid in connection with derivative collateral arrangements.

***Other Factors Affecting Liquidity and Capital Resources***

In November 2018, we issued $500.0 million aggregate principal amount of Cash Convertible Senior Notes which is due in 2024 (2024 Notes). The net proceeds of the 2024 Notes were $470.0 million, after payment of the net cost of the Call Spread Overlay and transaction costs paid through December 31, 2018 as described more fully in Note 15 "Financial Debts". Interest on the 2024 Notes is payable semiannually in arrears at a rate of 1.000% per annum. The 2024 Notes will mature on November 13, 2024 unless repurchased or converted in accordance with their terms prior to such date.

In September 2017, we issued $400.0 million aggregate principal amount of Cash Convertible Senior Notes which are due in 2023 (2023 Notes), which are discussed fully in Note 15 "Financial Debts". Interest on the 2023 Notes is payable semiannually in arrears at a rate of 0.500% per annum. The 2023 Notes will mature on September 13, 2023 unless repurchased or converted in accordance with their terms prior to such date.

Additionally in 2017, we completed a German private placement of $329.9 million, net of issuance costs, consisting of several tranches denominated in either U.S. dollars or Euro at either floating or fixed rates and due at various dates through June 2027 as described in Note 15.

In October 2016, we extended the maturity of our €400 million syndicated revolving credit facility, which now has a contractual lifetime until December 2021 of which no amounts were utilized at December 31, 2018. The facility can be utilized in Euro,

British pounds sterling, Swiss franc or U.S. dollar and bears interest of 0.40% to 1.20% above three months EURIBOR, or LIBOR in relation to any loan not in euro, and is offered with interest periods of one, two, three or six months. We have additional credit lines totaling €26.6 million with no expiration date, none of which were utilized as of December 31, 2018. We also have capital lease obligations, including interest, in the aggregate amount of $0.1 million, and carry $2.2 billion of long-term debt, of which $503.6 million is current as of December 31, 2018.

In March 2014, we issued $730.0 million aggregate principal amount of Cash Convertible Senior Notes of which $430.0 million is due in 2019 (2019 Notes) and $300.0 million is due in 2021 (2021 Notes). We refer to the 2019 Notes and the 2021 Notes, collectively as the “Cash Convertible Notes” which are discussed fully in Note 15 of the consolidated financial statements. Interest on the Cash Convertible Notes is payable semiannually in arrears on March 19 and September 19 of each year, at rates of 0.375% and 0.875% per annum for the 2019 Notes and 2021 Notes, respectively, commencing on September 19, 2014. The 2019 Notes will mature on March 19, 2019 and the 2021 Notes will mature on March 19, 2021, unless repurchased or converted in accordance with their terms prior to such date.

In October 2012, we completed a U.S. private placement through the issuance of new senior unsecured notes at a total amount of $400 million with a weighted average interest rate of 3.66% (settled on October 16, 2012). The notes were issued in three series: (1) $73 million 7-year term due in 2019 (3.19%); (2) $300 million 10-year term due in 2022 (3.75%); and (3) $27 million 12-year term due in 2024 (3.90%).

In connection with certain acquisitions, we could be required to make additional contingent cash payments totaling up to $57.3 million based on the achievement of certain revenue and operating results milestones as further discussed in Note 19 "Commitments and Contingencies".

In January 2018, we announced our fifth share repurchase program of up to $200 million of our common shares. During 2018, we repurchased 2.9 million QIAGEN shares for $104.7 million (including transaction costs). In April 2016, we announced the launch of our fourth $100 million share repurchase program. During 2017, 1.9 million QIAGEN shares were repurchased for $61.0 million (including transaction costs). Repurchased shares will be held in treasury in order to satisfy various obligations, which include employee share-based remuneration plans.

In January 2017, we completed a synthetic share repurchase that combined a direct capital repayment with a consolidation of shares. The transaction was announced in August 2016 and involved an approach used by various large, multinational Dutch companies to provide returns to shareholders in a faster and more efficient manner than traditional open-market purchases. $243.9 million was repaid to shareholders through the transaction and the outstanding number of common shares was reduced by 8.9 million, or 3.7%. As discussed further in Note 17 "Equity", the capital repayment program was completed in January 2017.

We expect that cash from financing activities will continue to be impacted by issuances of our common shares in connection with our equity compensation plans and that the market performance of our stock will impact the timing and volume of the issuances. Additionally, we may make future acquisitions or investments requiring cash payments, the issuance of additional equity or debt financing.

We believe that funds from operations, existing cash and cash equivalents, together with the proceeds from our public and private sales of equity, and availability of financing facilities, will be sufficient to fund our planned operations and expansion during the coming year. However, any global economic downturn may have a greater impact on our business than currently expected, and we may experience a decrease in the sales of our products, which could impact our ability to generate cash. If our future cash flows from operations and other capital resources are not adequate to fund our liquidity needs, we may be required to obtain additional debt or equity financing or to reduce or delay our capital expenditures, acquisitions or research and development projects. If we could not obtain financing on a timely basis or at satisfactory terms, or implement timely reductions in our expenditures, our business could be adversely affected.

**Quantitative and Qualitative Disclosures About Market Risk**

Our market risk relates primarily to interest rate exposures on cash, short-term investments and borrowings and foreign currency exposures. Financial risk is centrally managed and is regulated by internal guidelines which require a continuous internal risk analysis. The overall objective of our risk management is to reduce the potential negative earnings effects from changes in interest and foreign exchange rates. Exposures are managed through operational methods and financial instruments relating to interest rate and foreign exchange risks. In the ordinary course of business, we use derivative instruments, including swaps, forwards and/or options, to manage potential losses from foreign currency exposures and interest rates. The principal objective of such derivative instruments is to minimize the risks and/or costs associated with global financial and operating activities. We do not utilize derivative or other financial instruments for trading or other speculative purposes. All derivatives are recognized as either assets or liabilities in the balance sheet and are measured at fair value with any change in fair value recognized in earnings in the period of change, unless the derivative qualifies as an effective hedge that offsets certain

exposures. In determining fair value, we consider both the counterparty credit risk and our own creditworthiness, to the extent that the derivatives are not covered by collateral agreements with the respective counterparties.

***Foreign Currency Derivatives.*** As a globally active enterprise, we are subject to risks associated with fluctuations in foreign currencies in our ordinary operations. This includes foreign currency-denominated receivables, payables, debt, and other balance sheet positions. We manage our balance sheet exposure on a group-wide basis primarily using foreign exchange forward contracts, options and cross-currency swaps.

***Interest Rate Derivatives.*** We are using interest rate derivatives to align our portfolio of interest bearing assets and liabilities with our risk management objectives. We have entered into interest rate swaps in which we agreed to exchange, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed-upon notional principal amount.

Further details of our derivative and hedging activities can be found in Note 25 "Financial Risk Factors and Use of Derivative Financial Instruments" to the accompanying consolidated financial statements.

***Interest Rate Risk***

At December 31, 2018, we had $1.16 billion in cash and cash equivalents as well as of $214.6 million of current financial assets. Interest income earned on our cash investments is affected by changes in the relative levels of market interest rates. We only invest in high-grade investment instruments. A hypothetical adverse 10% movement in market interest rates would not have materially impacted our financial statements.

Borrowings against lines of credit are at variable interest rates. We had no amounts outstanding against our lines of credit at December 31, 2018. A hypothetical adverse 10% movement in market interest rates would not have materially impacted our financial statements.

At December 31, 2018, we had $2.2 billion of financial debt, of which $206.9 million is at a variable rate. Through the use of interest rate derivatives we have swapped $200 million of our fixed rate debt into a variable interest rate based on the 3-months LIBOR. A hypothetical adverse 10% movement in market interest rates would not have materially impacted our financial statements, as the increased interest expense would have been off-set by increased interest income from our variable rate financial assets.

***Foreign Currency Exchange Rate Risk***

As a global enterprise, we are subject to risks associated with fluctuations in foreign currencies with regard to our ordinary operations. This includes foreign currency-denominated receivables, payables, debt, and other balance sheet positions as well as future cash flows resulting from anticipated transactions including intra-group transactions.

A significant portion of our revenues and expenses are earned and incurred in currencies other than the U.S. dollar. The euro is the most significant such currency, with others including the British pound, Japanese yen, Chinese renminbi, Swiss franc, and Canadian and Australian dollars. Fluctuations in the value of the currencies in which we conduct our business relative to the U.S. dollar have caused and will continue to cause U.S. dollar translations of such currencies to vary from one period to another. Due to the number of currencies involved, the constantly changing currency exposures, and the potential substantial volatility of currency exchange rates, we cannot predict the effect of exchange rate fluctuations upon future operating results. In general terms, depreciation of the U.S. dollar against our other foreign currencies will increase reported net sales. However, this effect is, at least partially, offset by the fact that we also incur substantial expenses in foreign currencies.

We have significant production and manufacturing facilities located in Germany and intercompany sales of inventory also expose us to foreign currency exchange rate risk. Intercompany sales of inventory are generally denominated in the local currency of the subsidiary purchasing the inventory in order to centralize foreign currency risk with the manufacturing subsidiary. We use an in-house bank approach to net and settle intercompany payables and receivables as well as intercompany foreign exchanged swaps and forward contracts in order to centralize the foreign exchange rate risk to the extent possible. We have entered in the past and may enter in the future into foreign exchange derivatives including forwards, swaps and options to manage the remaining foreign exchange exposure.

## Our Culture

QIAGEN’s culture is based on the “3I” framework that expresses the Company’s culture, leadership principles and how employees are expected to act. The 3I principles are (1) Identity - reflecting our culture and the core values of passion, quality, integrity, engagement and innovation; (2) Inspire - reflecting our leadership style that transmits our values and inspires our employees, with particular focus on influence, motivation, stimulation and development; and (3) Impact - reflecting how we manage the Company and how our value-based actions make the difference, with particular focus on entrepreneurial decision-making, accountability and focus.

QIAGEN is committed to conducting business lawfully, ethically, and with high integrity. These fundamental values and principles are the undisputed key to the long-term success of our company. Our Corporate Code of Conduct and Ethics, which is available in 11 languages and which is accompanied by a number of specific corporate compliance policies, translates the legal, regulatory and ethical requirements which apply to our business into clear, precise and understandable guidelines for our employees. These policies, as the QIAGEN Anti-Corruption Policy, are collected in a Global Policy Manual which is physically provided to all employees worldwide. Each employee must acknowledge the acceptance and understanding of the policies included in the Global Policy Manual. Compliance awareness of our employees in all areas of the world is further increased by a global training program.

***Employees***

As of December 31, 2018, we employed 4,952 individuals, of which 21% worked in research and development, 40% in sales, 22% in production/logistics, 6% in marketing and 11% in administration

| Region | Research & Development | Sales | Production | Marketing | Administration | Total |
|---|---|---|---|---|---|---|
| Americas | 231 | 559 | 277 | 77 | 86 | 1,230 |
| Europe, Middle East & Africa | 775 | 762 | 656 | 155 | 322 | 2,670 |
| Asia Pacific & Rest of World | 50 | 669 | 134 | 76 | 123 | 1,052 |
| **December 31, 2018** | **1,056** | **1,990** | **1,067** | **308** | **531** | **4,952** |

At December 31, 2017, we employed 4,688 individuals. Management believes that its relations with regional labor unions and employees are good.

Our success depends, to a significant extent, on key members of our management and our scientific staff. The loss of such employees could have a material adverse effect on QIAGEN. Our ability to recruit and retain qualified skilled personnel to perform future research and development work will also be critical to our success. Due to the intense competition for experienced scientists from numerous Pharmaceutical and biotechnology companies and academic and other research institutions, there can be no assurance that we will be able to attract and retain such personnel on acceptable terms. Our planned activities will also require additional personnel, including management, with expertise in areas such as manufacturing and marketing, and the development of such expertise by existing management personnel. The inability to acquire such personnel or develop such expertise could have a material adverse impact on our operations.

***Workforce Diversity***

We have a long-standing commitment to developing a diverse leadership team, including the Managing Board and the Supervisory Board, with a broad range of experience, skills and capabilities. In nominating candidates for these boards, we support the trend toward higher participation of women. We are committed to expanding diversity while pursuing individuals for these boards with a unique blend of scientific and commercial expertise and experience that will contribute to the future success of its business. Internally, management development programs support the career advancement of leaders regardless of gender and other factors. As a result, a number of women are in key leadership roles, particularly in commercial and operational positions around the world. In line with this long-standing commitment, the Supervisory Board will take this into account in the future when proposing members for election or re-election to its Board without compromising QIAGEN's commitment to hiring the best individuals for positions without any discrimination. The current size of the Managing Board is two members, so achieving a diversity goal as measured solely by a percentage of overall membership is difficult to achieve. At the same time, QIAGEN has increased the diversity of its senior leadership team and will continue to do so in the future.

## Compensation of Managing Board Members and Supervisory Directors

*Remuneration policy*

The objective of our remuneration policy is to attract and retain the talented, highly qualified international leaders and skilled individuals, who enable QIAGEN to achieve its short and long-term strategic initiatives and operational excellence. Our remuneration policy aligns remuneration with individual performance, corporate performance and fosters sustainable growth and long-term value creation in the context of QIAGEN’s social responsibility and stakeholders’ interest.

The remuneration policy and overall remuneration levels are benchmarked regularly, against a selected group of companies and key markets in which QIAGEN operates, to ensure overall competitiveness. QIAGEN participates in various compensation benchmarking surveys that provide information on the level, as well as the structure, of compensation awarded by various companies and industries for a broad range of positions around the world. The companies in the peer group are selected on the

basis of market capitalization, competitors for talent, similar complexity and international spread, operating in similar industries.

The performance of the Managing Board members is measured annually against a written set of goals. The remuneration of the Managing Board members is linked to the achievement of QIAGEN's strategic and financial goals. To ensure that remuneration is linked to performance, a significant proportion of the remuneration package is variable and contingent on performance of the individual and the company. These goals are set at ambitious levels each year to motivate and drive performance, with a focus on achieving both long-term strategic initiatives and short-term objectives based on the annual operative planning. Performance metrics used for these goals include the achievement of financial and non-financial targets.

The remuneration package of the Managing Board members consists of a combination of base salary, short term variable cash award and several elements of long term incentives (together, 'total direct compensation'). In addition, the members of the Managing Board receive a pension arrangement and other benefits that are standard in our industry, such as a company car.

The total target remuneration package of the Managing Board members is appropriately set against a variety of factors which includes external and internal equity, experience, complexity of the position, scope and responsibilities. We aim to provide the members of the Managing Board a total direct compensation at market median level.

The structure of the remuneration package for the Managing Board is designed to balance short-term operational excellence with long-term sustainable value creation while taking into account the interests of its stakeholders. As such a significant part of the total remuneration of the Managing Board members consist of variable remuneration which can differ substantially from year to year depending on our corporate results and individual performance and may include equity-based compensation which may be subject to vesting conditions over a period of up to 10 years.

Reference is made to the additional disclosures in the Corporate Governance Report.

***Risk Management:***

Our risk management approach embodies the key elements of a sound risk management system including (1) active Supervisory Board and senior management involvement; (2) adequate policies and procedures; (3) adequate risk management; monitoring and information systems; and (4) comprehensive internal controls.

QIAGEN is managed by a Managing Board and an independent Supervisory Board appointed by the General Meeting of Shareholders. One of the Managing Board's responsibilities is the oversight of the risk management system. The Managing Board has developed and implemented strategies, controls and mitigation measures to identify current and developing risks as part of the risk management system. Risk management policies and procedures are embodied in our corporate governance, code of ethics and financial reporting controls and procedures. A variety of functional experts evaluate these business risks, attempting to mitigate and manage these risks on an ongoing basis.

Identified risks are subdivided into three types:

- A base business risk that is specific to us or our industry and threatens our existing business;
- A business growth risk that is specific to us or our industry and threatens our future business growth; and
- An underlying business risk that is not specific to us or our industry, but applies to a larger number of public companies.

All identified risks are evaluated based on their likelihood of occurring and their potential impact (estimated in monetary terms) in disrupting our progress in achieving our business objectives. The overall risk management goal is to identify risks that could significantly threaten our success and to allow management on a timely basis the opportunity to successfully implement mitigation actions. The results of the risk assessment, and any updates, are reported to the Audit Committee of the Supervisory Board on a regular basis. A detailed risk reporting update is provided each quarter to the Audit Committee for specific risks that have been newly identified or have changed since the previous assessment. At least once on an annual basis, the Supervisory Board discusses the corporate strategy and business risks as well as the results of an assessment by the Managing Board and the Audit Committee of the structure and operations of the internal risk management and control systems, including any significant changes.

Our corporate governance structure is based on a strong framework that outlines the responsibilities of our Managing and Supervisory Boards and the function of the Audit Committee of the Supervisory Board (discussed in more detail in the Corporate Governance Report of this Annual Report). We maintain adequate internal controls over financial reporting to ensure the integrity of financial reporting. Additionally, we have a Compliance Committee that consists of senior executives from various functional areas who are responsible for ensuring compliance with legal and regulatory requirements, as well as overseeing the communication of corporate policies, including our Code of Ethics.

| Risk Types | |
|---|---|
| **Base Business Risk** | • Identification and monitoring of competitive business threats<br>• Monitoring complexity of product portfolio<br>• Monitoring dependence on key customers for single product groups<br>• Reviewing dependence on individual production sites or suppliers<br>• Evaluating purchasing initiatives, price controls and changes to reimbursements<br>• Monitoring production risks, including contamination prevention, high-quality product assurance<br>• Ensuring ability to defend against intellectual property infringements and maintain competitive advantage after expiration |
| **Business Growth Risk** | • Managing development and success of key R&D projects<br>• Managing successful integration of acquisitions to achieve anticipated benefits |
| **Underlying Business Risk** | • Evaluating financial risks, including economic risks and currency rate fluctuations<br>• Monitoring financial reporting risks, including multi-jurisdiction tax compliance<br>• Reviewing possible asset impairment events<br>• Assessing compliance and legal risks, including safety in operations and environmental hazard risks, compliance with various regulatory bodies and pending product approvals<br>• Monitoring risks of FCPA (Foreign Corrupt Practices Act) or antitrust concerns arising from a network of subsidiaries and distributors in foreign countries |

The risks described below are listed in the order of our current view of their expected significance. Describing the risk factors in order of significance does not imply that a lower listed risk factor may not have a material adverse impact on our results of operations, liquidity or capital resources.

**Our continued growth is dependent on the development and success of new products.**

Rapid technological change and frequent new product introductions are typical in the markets we serve. Our success will depend in part on continuous, timely development and introduction of new products that address evolving market requirements. We believe successful new product introductions provide a significant competitive advantage because customers make an investment of time in selecting and learning to use a new product and are reluctant to switch thereafter. To the extent that we fail to introduce new and innovative products, or such products suffer significant delays in development or are not accepted in the market, we may lose market share to our competitors, which will be difficult or impossible to regain. An inability to successfully develop and introduce new products, for technological or other reasons, could reduce our growth rate or otherwise have an adverse effect on our business. In the past, we have experienced delays in the development and introduction of products, including regulatory approvals, and we may experience delays in the future.

As a result, we cannot assure you that we will keep pace with the rapid rate of change in our markets or that our new products will adequately meet the requirements of the marketplace, achieve market acceptance or regulatory approval, or compete successfully with competitive technologies. Some of the factors affecting market acceptance of new products include:

- availability, quality and price relative to competitive products;
- the timing of introduction of the new product relative to competitive products;
- opinions of the new product's utility;
- citation of the new product in published research;
- regulatory trends and approvals; and
- general trends in life sciences research, applied markets and molecular diagnostics.

In the development of new products we may make significant investments in intellectual property and software. These investments increase our fixed costs, resulting in higher operational costs in the short term that will negatively impact our gross profit and operating income until products reach a minimum level of market acceptance. The expenses or losses associated with unsuccessful product development activities or lack of market acceptance of our new products could materially adversely affect our business, financial condition and results of operations.

Our continued growth depends significantly on the success of new products in the molecular testing markets we serve. Important new product programs underway include our modular medium-throughput QIAsymphony automation platform, GeneReader NGS System for next-generation sequencing (NGS), QIAstat-Dx system for one-step, fully integrated molecular analysis of hard-to-diagnose syndromes, the high-throughput NeuMoDx 288 and mid-throughput NeuMoDx 96 fully integrated automation systems for higher-throughput PCR testing, sample and assay technologies designed either for QIAGEN

instruments or for "universal" use on other platforms, and bioinformatics solutions to analyze and interpret genomic data. In addition, we are now developing next-generation systems for digital PCR, an emerging analytical technique in the life sciences, targeting a 2020 launch with fully-integrated solutions that simplify workflows and offer other advantages.

The speed and level of adoption of our new automation platforms will affect sales not only of instrumentation but also of consumables, sample and assay kits, designed to run on the systems. The rollouts of new automation platforms are intended to drive the dissemination and increasing sales of consumables for these systems. We are developing or co-developing new kits for each of these platforms and seeking regulatory approvals for a number of these new products. In turn, the availability and regulatory approval of more tests to run on QIAsymphony, GeneReader NGS System, QIAstat-Dx and NeuMoDx systems, as well as the planned digital PCR systems, especially molecular assays for specific diseases or companion diagnostics paired with new drugs, will influence the value of the instruments to prospective buyers. Slower adoption of QIAsymphony, including the complete QIAsymphony RGQ system, the GeneReader NGS System, the QIAstat-Dx and NeuMoDx systems, and the planned digital PCR workflows, could significantly affect sales of products designed to run on these platforms.

Our strategic initiative in NGS, including rollout of the GeneReader NGS System and related consumables, aims to drive the adoption of this technology in clinical research and diagnostics. This involves development and commercialization of universal pre-analytic and bioinformatics products for NGS, as well as commercialization of our proprietary GeneReader NGS workflow and related consumables. The market for next-generation sequencing instruments is very competitive, and the speed and level of adoption of our universal solutions and the GeneReader workflow will affect sales of our Sample to Insight solutions.

**An inability to manage our growth, manage the expansion of our operations, or successfully integrate acquired businesses could adversely affect our business.**

Our business has grown, with total net sales increasing to $1.50 billion in 2018 from $1.34 billion in 2014. We have made a series of acquisitions in recent years, including the acquisitions of STAT-Dx Life, S.L. in 2018, OmicSoft Corporation in 2017, Exiqon A/S in 2016, MO BIO Laboratories in 2015, and Enzymatics and BIOBASE in 2014. We intend to identify and acquire other businesses in the future, including the acquisition of N-of-One announced in January 2019, that support our strategy to build on our global leadership position in Sample to Insight solutions. The successful integration of acquired businesses requires a significant effort and expense across all operational areas.

We continue to make investments to expand our business operations. These projects increase our fixed costs, resulting in higher operational costs in the short term that will negatively impact our gross profit and operating income until we more fully utilize the additional capacity of these facilities. In addition, we have invested in establishing and expanding shared service centers in Poland and the Philippines, opening new commercial operations in emerging markets to expand our geographic footprint, and implementing digitization of business processes to increase efficiency and improve customer experiences. The expansion of our business and the addition of new personnel may place a strain on our management and operational systems. As we continue to upgrade our operating and financial systems and expand the geographic presence of our operations, we intend to continue to assess the need for reallocation of existing resources or the hiring of new employees as well as increased responsibilities for both existing and new management personnel.

Our future operating results will depend on our ability to continue to implement and improve our research, product development, manufacturing, sales and marketing and customer support programs, enhance our operational and financial control systems, expand, train and manage our employee base, integrate acquired businesses, and effectively address new issues related to our growth as they arise. There can be no assurance that we will be able to manage our recent or any future expansion or acquisitions successfully, and any inability to do so could have a material adverse effect on our results of operations.

**Our acquisitions expose us to new risks, and we may not achieve the anticipated benefits of acquisitions of technologies and businesses.**

During the past several years, we have acquired and integrated a number of companies through which we have gained access to new technologies, products and businesses that complement our internally developed product lines. In the future, we expect to acquire additional technologies, products or businesses to expand our operations. Acquisitions expose us to new operating and other risks, including risks associated with the:

- assimilation of new products, technologies, operations, sites and personnel;
- integration and retention of fundamental personnel and technical expertise;
- application for and achievement of regulatory approvals or other clearances;
- diversion of resources from our existing products, business and technologies;
- generation of sales;
- implementation and maintenance of uniform standards and effective controls and procedures;
- maintenance of relationships with employees, customers and suppliers, and integration of new management personnel;

- issuance of dilutive equity securities;
- incurrence or assumption of debt and contingent liabilities;
- amortization or impairment of acquired intangible assets or potential businesses; and
- exposure to liabilities of and claims against acquired entities or personnel.

Our failure to address the above risks successfully in the future may prevent us from achieving the anticipated benefits from any acquisition in a reasonable time frame, or at all.

**Global economic conditions could adversely affect our business, results of operations and financial condition.**

Our results of operations could be materially affected by adverse general conditions in the global economy and financial markets. Potentially adverse changes that may come from the United Kingdom's exit from the European Union ("Brexit") are not well understood as the actual impact from Brexit will depend on many factors including the ability of both the United Kingdom and European Union authorities to provide a path forward with minimal disruption. In the near term we anticipate the largest potential exposures to be on supply chain with our United Kingdom based suppliers and the local operations for our domestic United Kingdom business and pharma development activities. There also is risk of loss of revenue, penalties due to delayed deliveries and currency losses, or other unforeseen costs which would negatively impact margins.

During challenging economic times, access to financing in the global financial markets has also been adversely affected for many businesses. The uncertainty surrounding the resolution of the economic and sovereign debt crisis in Europe continues to have a negative impact on financial markets and economic conditions more generally. Our customers may face internal financing pressures that adversely impact spending decisions or the ability to purchase our products, or that lead to a delay in collection of receivables and thus negatively impact our cash flow. A severe or prolonged economic downturn could result in a variety of risks to our business that would adversely impact our results of operations, including the reduction or delay in planned improvements to healthcare systems in various countries, the reduction of funding for life sciences research, and intensified efforts by governments and healthcare payors regarding cost-containment efforts.

Our results of operations could also be negatively impacted by any governmental actions or inaction resulting in automatic government spending cuts (sequestration) that may take effect. These conditions may add uncertainty to the timing and budget for investment decisions by our customers, particularly researchers, universities, government laboratories and private foundations whose funding is dependent upon grants from government agencies, such as the U.S. National Institutes of Health (NIH) and similar bodies.

As is the case for many businesses, we face the following risks in regard to financial markets:

- severely limited access to financing over an extended period of time, which may affect our ability to fund our growth strategy and could result in delays to capital expenditures, acquisitions or research and development projects;
- failures of currently solvent financial institutions, which may cause losses from our short-term cash investments or our hedging transactions due to a counterparty’s inability to fulfill its payment obligations;
- inability to refinance existing debt at competitive rates, reasonable terms or sufficient amounts; and
- increased volatility or adverse movements in foreign currency exchange rates.

**We may encounter delays in receipt, or limits in the amount, of reimbursement approvals and public health funding, which will impact our ability to grow revenues in the healthcare market or may negatively impact our profitability.**

Changes in the availability or reimbursement of our diagnostic testing products by insurance providers and health maintenance organizations could also have a significant adverse impact on our results of operations. Third-party payors are often reluctant to reimburse healthcare providers for the use of medical tests that involve new technologies or provide novel diagnostic information. In addition, third-party payors are increasingly limiting reimbursement coverage for medical diagnostic products and, in many instances, are exerting pressure on suppliers to reduce their prices. Since each third-party payor often makes reimbursement decisions on an individual patient basis, obtaining such approvals is a time-consuming and costly process that requires us to provide scientific and clinical data supporting the clinical benefits of each of our products. As a result, there can be no assurance that reimbursement approvals will be obtained, and the process can delay the broad market introduction of new products. If third-party reimbursement is not consistent or financially adequate to cover the cost of our products, this could limit our ability to sell our products or cause us to reduce prices, which would adversely affect our results of operations.

Further, the ability of many of our customers to successfully market their products depends in part on the extent to which reimbursement for the costs of these products is available from governmental health administrations, private health insurers and other organizations. Governmental and other third-party payors are increasingly seeking to contain healthcare costs and to reduce the price of medical products and services. For example, in 2010, the Patient Protection and Affordable Care Act, or ACA, was enacted with the goal of expanding coverage, increasing quality of care and reducing costs through payment

innovation, among other things. With evolving political realities in the United States, including divergent efforts by the Trump Administration and members of Congress, certain sections of the ACA have not been fully implemented and the direction of healthcare policy is unpredictable. Uncertainty around the future of the ACA, and in particular the impact to reimbursement levels, may lead to uncertainty or delay in the purchasing decisions of our customers, which may in turn negatively impact our product sales. As of January 1, 2018, in accordance with the Protecting Access to Medicare Act of 2014 (PAMA), the Centers for Medicare & Medicaid Services began calculating Medicare reimbursement rates for certain clinical diagnostic tests using weighted median private payor rates, which are based on rate information reported by applicable laboratories. This new rate methodology means the lower reimbursement rates previously experienced in the field of molecular pathology testing now extends to additional diagnostic testing codes on the Clinical Laboratory Fee Schedule. If there are not adequate reimbursement levels, our business and results of operations could be adversely affected.

**Reduction in research and development budgets and government funding may result in reduced sales.**

Our customers include researchers at pharmaceutical and biotechnology companies, academic institutions, and government and private laboratories. Fluctuations in the research and development budgets of these organizations could have a significant adverse effect on demand for our products. Research and development budgets are affected by changes in available resources, the mergers of pharmaceutical and biotechnology companies, changes in spending priorities and institutional budgetary policies. Our results of operations could be adversely affected by any significant decrease in expenditures for life sciences research and development by pharmaceutical and biotechnology companies, academic institutions, and government and private laboratories. In addition, short-term changes in administrative, regulatory or purchasing-related procedures can create uncertainties or other impediments that can have an adverse impact on our results of operations.

In recent years, the pharmaceutical and biotechnology industries have undergone substantial restructuring and consolidation. Additional mergers or consolidation within the pharmaceutical and biotechnology industries could cause us to lose existing customers and potential future customers, which could have a material adverse impact on our results of operations.

Approximately 23% of our sales are generated from demand for our products used in the Academia customer class by researchers at universities, government laboratories and private foundations, and whose funding is dependent upon grants from government agencies, such as the NIH. Although the level of research funding has been increasing in recent years, we cannot assure you that this trend will continue given federal and state budget constraints. Government funding of research and development is subject to the political process, which is inherently unpredictable. Future sales may be adversely affected if our customers delay purchases as a result of uncertainties regarding the approval of government or industrial budget proposals. Also, government proposals to reduce or eliminate budgetary deficits have sometimes included reduced allocations to the NIH and government agencies in other countries that fund life sciences research and development activities. A reduction in government funding for the NIH or government research agencies in other countries could have a serious adverse impact on our results of operations.

**Competition could reduce our sales.**

The markets for most of our pre-analytical solutions and other products are very competitive. Competitors may have significant advantages in financial, operational, sales and marketing resources as well as experience in research and development. These competitors may have developed, or could develop in the future, new technologies that compete with our products or even render our products obsolete. Some competitors may obtain regulatory approval from the FDA or similar non-U.S. authorities and market approved products. Our competitors' development of alternative products offering superior technology, greater cost-effectiveness or regulatory approval could have a material adverse effect on our sales and results of operations.

The growth of our business depends in part on the continued conversion of users from competitive products to our sample and assay technologies and other solutions. Lack of conversion could have a material adverse effect on our sales and results of operations.

It can be difficult for users of sample and assay technologies to switch from their current supplier of a particular product, primarily due to the time and expense required to properly integrate new products into their operations. As a result, if we are unable to be the first to develop and supply new products, our competitive position may suffer, resulting in a material adverse effect on our sales and results of operations.

For our commercial clinical assays, we often compete with solutions developed by our laboratory customers, and driving conversion from such laboratory-developed tests to commercial diagnostics assays can be challenging.

**The time and expense needed to obtain regulatory approval and respond to changes in regulatory requirements could adversely affect our ability to commercially distribute our products and generate sales.**

We and our customers operate in a highly regulated environment characterized by frequent changes in the governing regulatory framework. Genetic research activities and products commonly referred to as "genetically engineered" (such as

certain food and therapeutic products) are subject to extensive governmental regulation in most developed countries, especially in the major markets for pharmaceutical and diagnostic products such as the European Union, the U.S., China and Japan. In recent years, several highly publicized scientific events (notably in genomic research, gene editing and cloning) have prompted intense public debates on the ethical, philosophical and religious implications of an unlimited expansion in genetic research and the use of products emerging from this research. As a result of this debate, some key countries may increase or establish regulatory barriers, which could adversely affect demand for our products and prevent us from fulfilling our growth expectations. Furthermore, there can be no assurance that any future changes in applicable regulations will not require further expenditures or an alteration, suspension or liquidation of our operations in certain areas, or even in their entirety.

Changes in the existing regulations or adoption of new requirements or policies could adversely affect our ability to sell our approved or cleared products or to seek approvals for new products in other countries around the world. Sales of certain products now in development may be dependent upon us successfully conducting pre-clinical studies, clinical trials and other tasks required to gain regulatory approvals and meet other requirements from the FDA in the U.S., and regulatory agencies in other countries. If we are not able to meet the applicable requirements, we will not be able to commercialize our products and tests, which will have a material adverse effect on our business.

Several of our key products and programs are medical devices that are subject to extensive regulation by the FDA under the U.S. Food, Drug and Cosmetic Act. We plan to apply for FDA clearance or approval of additional products in the future. Regulatory agencies in other countries also have medical device and IVD approval requirements that are becoming more extensive. These regulations govern most commercial activities associated with medical devices, including indications for the use of these products as well as other aspects that include product development, testing, manufacturing, labeling, storage, record-keeping, advertising and promotion. Compliance with these regulations is expensive and time-consuming.

Our cleared or approved devices, including diagnostic tests and related equipment, are subject to numerous post-approval requirements. We are subject to inspection and marketing surveillance by the FDA to determine our compliance with regulatory requirements. If the FDA determines that we have failed to comply, it can institute a wide variety of enforcement actions, ranging from warning letters to more severe sanctions such as fines, injunctions and civil penalties, recalls or seizures of our products, operating restrictions, partial suspension or total shutdown of production, denial of our requests for 510(k) clearance or pre-market approval of product candidates, withdrawal of 510(k) clearance or pre-market approval already granted and civil or criminal prosecution. Any enforcement action by the FDA may affect our ability to commercially distribute these products in the U.S.

Some of our products are sold for research purposes in the U.S. We do not promote these products for clinical diagnostic use, and they are labeled “For Research Use Only” (RUO) or “for molecular biology applications.” If the FDA were to disagree with our designation of a product as an RUO product, we could be forced to stop selling it until appropriate regulatory clearance or approval has been obtained.

**Changes in tax laws or their application or the termination or reduction of certain government tax incentives, could adversely impact our overall effective tax rate, results of operations or financial flexibility.**

Our effective tax rate reflects the benefit of some income being partially exempt from income taxes due to various intercompany operating and financing activities. The benefit also derives from our global operations, where certain income or loss is taxed at rates higher or lower than The Netherlands’ statutory rate of 25%. Changes in tax laws or their application with respect to matters such as changes in tax rates, transfer pricing and income allocation, utilization of tax loss carryforwards, intercompany dividends, controlled corporations, and limitations on the deductibility of interest and foreign related-party expenses, and changes to tax credit mechanisms, could increase our effective tax rate and adversely affect our results of operations and limit our ability to repurchase our Common Shares without experiencing adverse tax consequences. The increased tax burden as a result of changes in law may adversely affect our results of operations. Additionally, if our tax positions are challenged by tax authorities or other governmental bodies, such as the European Commission, we could incur additional tax liabilities, which could have an adverse effect on our results of operations or financial flexibility.

**We are subject to risks associated with patent litigation.**

The biotechnology industry has been characterized by extensive litigation regarding patents and other intellectual property rights, particularly since industry competitors gravitate around common technology platforms. We are aware that patents have been applied for and/or issued to third parties claiming technologies for sample and assay technologies that are closely related to those we use. From time to time, we receive inquiries requesting confirmation that we do not infringe patents of third parties. We endeavor to follow developments in this field, and we do not believe that our technologies or products infringe any proprietary rights of third parties. However, there can be no assurance that third parties will not challenge our activities or, if so challenged, that we will prevail. In addition, the patent and proprietary rights of others could require that we alter our products or processes, pay licensing fees or cease certain activities, and there can be no assurance that we will be able to license any

technologies that we may require on acceptable terms. In addition, litigation, including proceedings that may be declared by the U.S. Patent and Trademark Office or the International Trade Commission, may be necessary to respond to any assertions of infringement, enforce our patent rights and/or determine the scope and validity of our proprietary rights or those of third parties. Litigation, or threatened litigation, could involve substantial cost, and there can be no assurance that we would prevail in any proceedings.

**We rely on collaborative commercial relationships to develop and/or market some of our products.**

Our long-term business strategy involves entering into strategic alliances as well as marketing and distribution arrangements with academic, corporate and other partners relating to the development, commercialization, marketing and distribution of certain of our existing and potential products. In 2017, we entered a new joint venture with Sichuan Maccura Biotechnology Co., Ltd. (Maccura) for the distribution of our GeneReader NGS System in China and entered a new partnership with a Chinese company in 2018 that took over the commercial distribution and infrastructure of the HPV test franchise in China. We may be unable to continue to negotiate these collaborative arrangements on acceptable terms, and these relationships also may not be scientifically or commercially successful. In addition, we may be unable to maintain these relationships, and our collaborative partners may pursue or develop competing products or technologies, either on their own or in collaboration with others.

Our Precision Medicine business includes projects with pharmaceutical and biotechnology companies to co-develop companion diagnostics paired with drugs that those companies either market currently or are developing for future use. The success of these co-development programs, including regulatory approvals for the companion diagnostics, depends upon the continued commitment of our partners to development of their drugs, the outcome of clinical trials for the drugs and diagnostics, and regulatory approvals of the tests and drugs. In addition, the future level of sales for companion diagnostics depends to a high degree on the commercial success of the related medicines for which the tests have been designed. More companion diagnostics would be sold in combination with a widely prescribed drug than one with limited use.

The successful marketing of QIAGEN products, in some cases, depends on commercial relationships such as joint ventures or distributorships, particularly in emerging markets where we partner with local companies to augment our less-established commercial relationships and infrastructure. The continued commitment of our partners to these ventures, as well as the management of the commercial efforts, will influence QIAGEN's sales and profitability in these markets.

**We have made investments in and are expanding our business into emerging markets, which exposes us to risks.**

Our top seven emerging markets are Brazil, Russia, India, China, South Korea, Mexico and Turkey, which together accounted for approximately 16% of total sales in 2018, and we expect to continue to focus on expanding our business in these or other fast-growing markets, including those in the Middle East and Asia. In addition to the currency and operating risks described above, our international operations are subject to a variety of risks that include those arising out of the economy, political outlook, language and cultural barriers in countries where we have operations or do business. In many of these emerging markets, we may be faced with several risks that are more significant than in other countries in which we have a history of doing business. These risks include economies that may be dependent on only a few products and are therefore subject to significant fluctuations, weak legal systems which may affect our ability to enforce contractual rights, exchange controls, unstable governments, and privatization or other government actions affecting the flow of goods and currency. In conducting our business, we move products from one country to another and may provide services in one country from a subsidiary located in another country. Accordingly, we are vulnerable to abrupt changes in customs and tax regimes that could have significant negative impacts on our results of operations.

**Some of our customers are requiring us to change our sales arrangements to lower their costs, and this may limit our pricing flexibility and harm our business.**

Some of our customers have developed purchasing initiatives to reduce the number of vendors from which they purchase products to lower their supply costs. In some cases, these customers have established agreements with large distributors, which include discounts and direct involvement in the distributor’s purchasing process. These activities may force us to supply large distributors with our products at discounts in order to continue providing products to some customers. For similar reasons, many larger customers, including the U.S. government, have requested, and may request in the future, special pricing arrangements, which can include blanket purchase agreements. These agreements may limit our pricing flexibility, which could harm our business and affect our results of operations. For a limited number of customers, and at the customers' request, we have conducted sales transactions through distribution and other value-added partners. If sales grow through these intermediaries, it could have an adverse impact on our results of operations, particularly a negative impact on our gross profit.

**We are subject to privacy and data security laws and rely on secure communication and information systems which, in the event of a breach or failure, expose us to risks.**

We rely heavily on communications and information systems to conduct our business. In the ordinary course of business, we collect and store sensitive data, including our intellectual property and other proprietary business information and that of our

customers, suppliers and business partners, and personally identifiable information of our customers and employees, in our data centers and on our networks. Our operations rely on the secure processing, storage and transmission of confidential and other information on our computer systems and networks. We are transforming to a digital, cloud-leveraging organization, which places our assets, customer data, and personally identifiable data at a higher risk than in previous years. We have made significant investments to ensure our employees are aware of cybersecurity risks facing our company and how to prevent data breaches, including but not limited to, mandatory yearly trainings that are continually updated. We have modernized our cyber security tools, and are continually modernizing our cybersecurity processes, in an attempt to keep pace with evolving cybersecurity risks. In spite of our efforts, we are unable to completely eliminate these risks and occasionally experience minor cybersecurity incidents. External phishing emails (occurring outside of our computer services) are a growing threat that our customers are facing. These emails could lead to the disclosing of intellectual property or personally identifiable information, which could lead to financial harm or reputational damage. While our cybersecurity team works diligently with our customers to mitigate these threats by helping to identify and analyze phishing emails, we cannot guarantee that sensitive data will not be lost or stolen.

A breach in cybersecurity due to unauthorized access to our computer systems or misuse could include the misappropriation of assets or sensitive information, the corruption data or other operational disruption. Failures to our computer systems and networks could be caused by internal or external events, such as incursions by intruders or hackers, computer viruses, failures in hardware or software, or cyberterrorists. If we do experience a breach or failure of our systems, we could experience operational delays resulting from the disruption of systems, loss due to theft or misappropriation of assets or data, or negative impacts from the loss of confidential data or intellectual property. We may face significant liability in the event any of the personal information we maintain is lost or otherwise subject to misuse or other wrongful use, access or disclosure. Further, we could experience negative publicity resulting in reputation or brand damage with customers or partners.

Additionally, we are subject to privacy and data security laws across multiple jurisdictions, including those relating to the storage of health information, which are complex, overlapping and rapidly evolving. For example, the California Consumer Privacy Act of 2018, set to take effect on January 1, 2020, imposes expansive new requirements and protections upon the processing of personal data, aimed at giving California consumers more visibility and control over their personal information There are also non-U.S. privacy laws, such as the General Data Protection Regulation (GDPR) of the European Union, that impose restrictions on the transfer, access, use, and disclosure of health and other personal information. We implemented the requirements set forth by the European Union General Data Protection Regulation (GDPR), which took effect on May 25, 2018. As our activities continue to evolve and expand, we may be subject to additional laws which impose further restrictions on the transfer, access, use, and disclosure of health and other personal information which may impact our business either directly or indirectly. A failure to comply with applicable privacy or security laws or significant changes in these laws could significantly impact our business and future business plans. For example, we may be subject to regulatory action or lawsuits in the event we fail to comply with applicable privacy laws.

**Exchange rate fluctuations may adversely affect our business and operating results.**

Because we currently market our products throughout the world, a significant portion of our business is conducted in currencies other than the U.S. dollar, our reporting currency. As a result, fluctuations in value relative to the U.S. dollar of the currencies in which we conduct our business have caused and will continue to cause foreign currency transaction gains and losses. Foreign currency transaction gains and losses arising from normal business operations are charged against earnings in the period when incurred. Due to the number of currencies involved, the variability of currency exposures and the potential volatility of currency exchange rates, we cannot predict the effects of future exchange rate fluctuations. While we may engage in foreign exchange hedging transactions to manage our foreign currency exposure, there can be no assurance that our hedging strategy will adequately protect our operating results from the effects of future exchange rate fluctuations.

**Our global operations may be affected by actions of governments, global or regional economic developments, weather or transportation delays, natural disasters or other force majeure events (collectively, unforeseen events) which may negatively impact our suppliers, our customers or us.**

Our business involves operations around the world. Our consumable manufacturing facilities are located in Germany, the U.S. and China. We have established sales subsidiaries in numerous countries and our products are sold through independent distributors serving more than 40 additional countries. Our facilities may be harmed by unforeseen events, and in the event that we or our customers are affected by a disaster, we may experience delays or reductions in sales or production, increased costs, or may be required to identify alternate suppliers and/or rely on third-party manufacturers.

To the extent that our suppliers are impacted by a natural disaster or other disruption, we may experience periods of reduced production. Any unexpected interruptions in our production capabilities may lead to delayed or lost sales and may adversely affect our results of operations for the affected period.

In addition, to the extent we temporarily shut down any facility following such an unforeseen event, we may experience disruptions in our ability to manufacture or ship products to customers or otherwise operate our business. Many of our products are manufactured in a single location and we may experience adverse effects to the extent these manufacturing operations are disrupted. While our global operations give us the ability to ship product from alternative sites, we may not be able to do so because our customers' facilities are shut down or the local logistics infrastructure is not functioning, and our sales will suffer.

Damage to our property due to unforeseen events and the disruption of our business from casualties may be covered by insurance, but this insurance may not be sufficient to cover all of our potential losses, and such insurance may not continue to be available to us on acceptable terms, or at all. In addition, we may incur incremental costs following an unforeseen event, which will reduce profits and adversely affect our results of operations.

**We depend on suppliers for materials used to manufacture our products, and if shipments from these suppliers are delayed or interrupted, we may be unable to manufacture our products.**

We buy materials to create our products from a number of suppliers and are not dependent on any one supplier or group of suppliers for our business as a whole. However, key components of certain products, including certain instrumentation and chemicals, are available only from a single source. If supplies from these vendors are delayed or interrupted for any reason, we may not be able to obtain these materials timely or in sufficient quantities or qualities to produce certain products, and this could have an adverse impact on our results of operations.

**We heavily rely on air cargo carriers and other overnight logistics services, and shipping delays or interruptions could harm our business.**

Our customers in the scientific research markets typically keep only a modest inventory of our products on hand, and consequently require overnight delivery of purchases. As a result, we heavily rely on air cargo carriers and logistic suppliers. If overnight services are suspended or delayed, and other delivery carriers and logistic suppliers cannot provide satisfactory services, customers may suspend a significant amount of their work. The lack of adequate delivery alternatives would have a serious adverse impact on our results of operations.

**Our success depends on the continued employment of qualified personnel, any of whom we may lose at any time.**

Although we have not experienced any difficulties attracting or retaining management and scientific staff, our ability to recruit and retain qualified, skilled employees will continue to be critical to our success. Given the intense competition for experienced scientists and managers among pharmaceutical and biotechnology companies, as well as academic and other research institutions, there can be no assurance that we will be able to attract and retain employees critical to our success on acceptable terms. Initiatives to expand QIAGEN will also require additional employees, including management with expertise in areas such as research and development, manufacturing, digitization, sales and marketing, and the development of existing managers to lead a growing organization. The failure to recruit and retain qualified employees, or develop existing employees, could have a material adverse impact on our results of operations.

**Our ability to accurately forecast our results during each quarter may be negatively impacted by the fact that a substantial percentage of our sales may be recorded in the final weeks or days of the quarter.**

The markets we serve are typically characterized by a high percentage of purchase orders being received in the final few weeks or days of each quarter. Although this varies from quarter to quarter, many customers make a large portion of their purchase decisions late in each quarter, in particular because they receive new information during this period on their budgets and requirements. Additionally, volatility in the timing of milestones from companion diagnostic partnerships can be difficult to predict. As a result, even late in each quarter, we cannot predict with certainty whether our sales forecasts for the quarter will be achieved.

Historically, we have been able to rely on the overall pattern of customer purchase orders during prior periods to project with reasonable accuracy our anticipated sales for the current or coming quarters. However, if customer purchasing trends during a quarter vary from historical patterns as may occur with changes in market conditions, our quarterly financial results could deviate significantly from our projections. As a result, our sales forecasts for any given quarter may prove not to have been accurate. We also may not have sufficient, timely information to confirm or revise our sales projections for a specific quarter. If we fail to achieve our forecasted sales for a particular quarter, the value of our Common Shares could be adversely affected.

**We have a significant amount of debt that may adversely affect our financial condition and flexibility.**

We have a significant amount of debt and debt service obligations as well as restrictive covenants imposed by our lenders. A high level of indebtedness increases the risk that we may default on our debt obligations and restrictive covenants may prevent us from borrowing additional funds. There is no assurance that we will be able to generate sufficient cash flow to pay the interest on our debt and comply with our debt covenants or that future working capital, borrowings or equity financing will be available to repay or refinance our debt. If we are unable to generate sufficient cash flow to pay the interest on our debt and

comply with our debt covenants, we may have to delay or curtail our research and development programs. The level of our indebtedness could, among other things:

- make it difficult for us to make required payments on our debt;
- make it difficult for us to obtain financing in the future necessary for working capital, capital expenditures, debt service requirements or other purposes;
- limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we compete; and
- make us more vulnerable in the event of a downturn in our business.

The Financial Conduct Authority of the United Kingdom plans to phase out the London Interbank Offered Rate (LIBOR) by the end of 2021. Presently, we do hold debt and derivative instruments which use LIBOR. While certain of these agreements do contain language for the determination of interest rates in the event the LIBOR rate is not available, changes to these agreements may be required and we could be negatively impacted by any newly determined alternative benchmark.

**Our business may require substantial additional capital, which we may not be able to obtain on terms acceptable to us, if at all.**

Our future capital requirements and level of expenses will depend upon numerous factors, including the costs associated with:

- marketing, sales and customer support efforts;
- research and development activities;
- expansion of our facilities;
- consummation of possible future acquisitions of technologies, products or businesses;
- demand for our products and services;
- repayment or refinancing of debt; and
- payments in connection with our hedging activities and/or taxes.

We currently anticipate that our short-term capital requirements will be satisfied by cash flow from our operations and/or cash on hand. As of December 31, 2018, we had outstanding long-term debt of approximately $2.2 billion, of which 503.6 million was current. Furthermore, as of December 31, 2018, we had capital lease obligations, including the current portion, of $0.1 million, that expire in various years through 2020. We may need to refinance all or part of these liabilities before or at their contractual maturities.

If at some point in time our existing resources should be insufficient to fund our activities, we may need to raise funds through public or private debt or equity financings. The funds for the refinancing of existing liabilities or for the ongoing funding of our business may not be available or, if available, not on terms acceptable to us. If adequate funds are not available, we may be required to reduce or delay expenditures for research and development, production, marketing, capital expenditures and/or acquisitions, which could have a material adverse effect on our business and results of operations. To the extent that additional capital is raised through the sale of equity or convertible securities, the issuance of any securities could result in dilution to our shareholders.

**The accounting for the cash convertible notes we have issued will result in recognition of interest expense significantly greater than the stated interest rate of the notes and may result in volatility to our Consolidated Statements of Income.**

We will settle any conversions of the Cash Convertible Notes described under the heading “Other Factors Affecting Liquidity and Capital Resources” elsewhere in this report, entirely in cash. Accordingly, the conversion option that is part of the Cash Convertible Notes will be accounted for as a derivative pursuant to accounting standards relating to derivative instruments and hedging activities. Refer to Note 25 "Financial Risk Factors and Use of Derivative Financial Instruments" and Note 15 "Financial Debts", of the Notes to Consolidated Financial Statements. In general, this resulted in an initial valuation of the conversion option separate from the debt component of the Cash Convertible Notes, resulting in an original issue discount. The original issue discount will be accreted to interest expense over the term of the Cash Convertible Notes, which will result in an effective interest rate reported in our financial statements significantly in excess of the stated coupon rates of the Cash Convertible Notes. This accounting treatment will reduce our earnings. For each financial statement period after the issuance of the Cash Convertible Notes, a gain (or loss) will be reported in our financial statements to the extent the valuation of the conversion option changes from the previous period. The Call Options issued in connection with the Cash Convertible Notes will also be accounted for as derivative instruments, substantially offsetting the gain (or loss) associated with changes to the valuation of the conversion option. This may result in increased volatility to our results of operations.

**The cash convertible note hedge and warrant transactions we entered into in connection with the issuance of our Cash Convertible Notes may not provide the benefits we anticipate, and may have a dilutive effect on our common stock.**

Concurrently with the issuance of the Cash Convertible Notes, we entered into Call Options and issued Warrants. We entered into the Call Options with the expectation that they would offset potential cash payments by us in excess of the principal amount of the Cash Convertible Notes upon conversion of the Cash Convertible Notes. In the event that the hedge counterparties fail to deliver potential cash payments to us, as required under the Call Options, we would not receive the benefit of such transaction. Separately, we also issued Warrants. The Warrants could separately have a dilutive effect to the extent that the market price per share of our common stock, as measured under the terms of the Warrants, exceeds the strike price of the Warrants.

**An impairment of goodwill and intangible assets could reduce our earnings.**

At December 31, 2018, our consolidated balance sheet reflected approximately $2.1 billion of goodwill and approximately $675.0 million of intangible assets. Goodwill is recorded when the purchase price of a business exceeds the fair value of the tangible and separately measurable intangible net assets. International Financial Reporting Standards (IFRS) require us to test goodwill for impairment on an annual basis or when events or circumstances occur indicating that goodwill might be impaired. Long-lived assets, such as intangible assets with finite useful lives, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. The impairment review often cannot be done at the level of the individual asset and it must instead be applied to a group of assets. For the purpose of our annual goodwill impairment testing based on the current circumstances of how we manage our business, this group of assets is the Company as a whole. If we determine that any of our goodwill or intangible assets were impaired, we will be required to take an immediate charge to earnings and our results of operations could be adversely affected.

**Our strategic equity investments may result in losses.**

We have made, and may continue to make, strategic investments in businesses as opportunities arise. We periodically review the carrying value of these investments for impairment, considering factors that include the most recent stock transactions, book values from the most recent financial statements, and forecasts and expectations of the investee. The results of these valuations may fluctuate due to market conditions and other conditions over which we have no control.

Estimating the fair value of non-marketable equity investments in life science companies is inherently subjective. If actual events differ from our assumptions and unfavorable fluctuations in the valuations of the investments are indicated, we could be required to write down the investment. This could result in future charges on our earnings that could materially adversely affect our results of operations. It is uncertain whether or not we will realize any long-term benefits from these strategic investments.

**Doing business internationally creates certain risks.**

Our business involves operations in several countries outside of the U.S. Our consumable manufacturing facilities are located in Germany, China and the U.S. We source raw materials and subcomponents to manufacture our products from different countries. We have established sales subsidiaries in many countries. In addition, our products are sold through independent distributors serving more than 40 other countries. Conducting and launching operations on an international scale requires close coordination of activities across multiple jurisdictions and time zones and consumes significant management resources. We have invested heavily in computerized information systems in order to manage more efficiently the widely dispersed components of our operations. If we fail to coordinate and manage these activities effectively, our business and results of operations will be adversely affected.

Our operations are subject to other risks inherent in international business activities, such as general economic conditions in the countries in which we operate, trade restrictions and changes in tariffs, longer accounts receivable payment cycles in certain countries, overlap of different tax structures, unexpected changes in regulatory requirements, and compliance with a variety of foreign laws and regulations. Other risks associated with international operations include import and export licensing requirements, exchange controls and changes in freight rates, as may occur as a result of rising energy costs. As a result of these conditions, an inability to successfully manage our international operations could have a material adverse impact on our business and results of operations.

**Unethical behavior and non-compliance with laws by our sales agents, consultants, distributors or employees could seriously harm our business.**

Our business in countries with a history of corruption and transactions with foreign governments increases the risks associated with our international activities. Based on our international operations, we are subject to the U.S. Foreign Corrupt Practices Act (FCPA), the U.K. Bribery Act and other laws that prohibit improper payments or offers of payments to foreign governments and their officials and political parties by business entities for the purpose of obtaining or retaining business. We have operations, agreements with third parties and sales in countries known to experience corruption. Further international expansion may involve increased exposure to such practices. Our activities in these countries and others create risks of unauthorized payments or offers of payments, non-compliance with laws, or other unethical behavior by any of our employees, consultants, sales agents or distributors, that could be in violation of various laws, including the FCPA, even though these parties are not always

subject to our control. Our policy is to implement safeguards to discourage these or other unethical practices by our employees and distributors including online and in-person employee trainings, periodic internal audits and standard reviews of our distributors. However, our existing safeguards and any future improvements may not prove to be effective, and our employees, consultants, sales agents or distributors may engage in conduct for which we might be held responsible. Violations of the FCPA and other laws may result in criminal or civil sanctions, which could be severe, and we may be subject to other liabilities, which could negatively affect our business, results of operations and financial condition.

**We depend on patents and proprietary rights that may fail to protect our business.**

Our success depends to a large extent on our ability to develop proprietary products and technologies and to establish and protect our patent and trademark rights in these products and technologies. As of December 31, 2018, we owned 340 issued patents in the United States, 277 issued patents in Germany and 1,786 issued patents in other major industrialized countries. In addition, at December 31, 2018, we had 576 pending patent applications, and we intend to file applications for additional patents as our products and technologies are developed. The patent positions of technology-based companies involve complex legal and factual questions and may be uncertain, and the laws governing the scope of patent coverage and the periods of enforceability of patent protection are subject to change. In addition, patent applications in the United States are maintained in secrecy until patents issue, and publication of discoveries in the scientific or patent literature tends to lag behind actual discoveries by several months. Therefore, no assurance can be given that patents will issue from any patent applications that we own or license, or if patents do issue, that the claims allowed will be sufficiently broad to protect our technology. In addition, no assurance can be given that any issued patents that we own or license will not be challenged, invalidated or circumvented, or that the rights granted thereunder will provide us competitive advantages. Further, as issued patents expire, we may lose some competitive advantage as others develop competing products and as a result, we may lose revenue.

Certain of our products incorporate patents and technologies that are licensed from third parties and for certain products, these in-licensed patents together with other patents provide us with a competitive advantage. These licenses impose various commercialization, sublicensing and other obligations on us. Our failure to comply with these requirements could result in the conversion of the applicable license from being exclusive to non-exclusive or, in some cases, termination of the license, and as a result, we may lose some competitive advantage and experience a loss of revenue.

We also rely on trade secrets and proprietary know-how, which we seek to protect through confidentiality agreements with our employees and consultants. There can be no assurance that any confidentiality agreements that we have with our employees, consultants, outside scientific collaborators and sponsored researchers and other advisors will provide meaningful protection for our trade secrets or adequate remedies in the event of unauthorized use or disclosure of such information. There also can be no assurance that our trade secrets will not otherwise become known or be independently developed by competitors.

We currently engage in, and may continue to engage in, collaborations with academic researchers and institutions. There can be no assurance that under the terms of such collaborations, third parties will not acquire rights in certain inventions developed during the course of these collaborations.

**Our business exposes us to potential product liability.**

The marketing and sale of our products and services for certain applications entail a potential risk of product liability. Although we are not currently subject to any material product liability claims, product liability claims may be brought against us in the future. Further, there can be no assurance that our products will not be included in unethical, illegal or inappropriate research or applications, which may in turn put us at risk of litigation. We carry product liability insurance coverage, which is limited in scope and amount. There can be no assurance that we will be able to maintain this insurance at a reasonable cost and on reasonable terms, or that this insurance will be adequate to protect us against any or all potential claims or losses.

We are subject to various laws and regulations generally applicable to businesses in the different jurisdictions in which we operate, including laws and regulations applicable to the handling and disposal of hazardous substances. The risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of such an accident, we could be held liable for any damages that result, and any such liability could have a material adverse impact on us.

**Our operating results may vary significantly from period to period and this may affect the market price of our Common Shares.**

Our operating results may vary significantly from quarter to quarter, and also year to year, since they are dependent upon a broad range of factors that include demand for our products, the level and timing of customer research budgets and commercialization efforts, the timing of government funding budgets of our customers, the timing of our research and development activities and related regulatory approvals, the impact of sales and marketing expenses, restructuring activities, introduction of new products by us or our competitors, competitive market conditions, exchange rate fluctuations and general economic conditions. Our expense levels are based in part on our expectations as to future sales trends. As a result, sales and earnings may vary significantly from quarter to quarter or from year to year, and actual sales and earnings results in any one

period will not necessarily be indicative of results to be anticipated in subsequent periods. Our results may also fail to meet or exceed the expectations of securities analysts or investors, which could cause a decline in the market price of our Common Shares.

**Our holding company structure makes us dependent on the operations of our subsidiaries.**

QIAGEN N.V. is incorporated under Dutch law as a public limited liability company (*naamloze vennootschap*), and is organized as a holding company. Currently, the material assets are the outstanding shares of the QIAGEN subsidiaries, intercompany receivables and other financial assets such as cash, short-term investments and derivative instruments. As a result, QIAGEN N.V. is dependent upon payments, dividends and distributions from the subsidiaries for funds to pay operating and other expenses as well as to pay future cash dividends or distributions, if any, to holders of our Common Shares. Dividends or distributions by subsidiaries in a currency other than the U.S. dollar may result in a loss upon a subsequent conversion into U.S. dollars.

**Our Common Shares may have a volatile public trading price.**

The market price of our Common Shares since our initial public offering in September 1996 has increased significantly and been highly volatile. In the last two years, the price of our Common Shares has ranged from a high of $39.45 to a low of $27.40 on NASDAQ to January 9, 2018 and the New York Stock Exchange (NYSE) from January 10, 2018, and a high of €34.05 to a low of €25.22 on the Frankfurt Stock Exchange. In addition to overall stock market fluctuations, factors that may have a significant impact on the price of our Common Shares include:

- announcements of technological innovations or the introduction of new products by us or our competitors;
- developments in our relationships with collaborative partners;
- quarterly variations in our operating results or those of our peer companies;
- changes in government regulations, tax laws or patent laws;
- developments in patent or other intellectual property rights;
- developments in government spending budgets for life sciences-related research;
- general market conditions relating to the diagnostics, applied testing, pharmaceutical and biotechnology industries; and
- impact from foreign exchange rates.

The stock market has from time to time experienced extreme price and trading volume fluctuations that have particularly affected the market for technology-based companies. These fluctuations have not necessarily been related to the operating performance of these companies. These broad market fluctuations may adversely affect the market price of our Common Shares.

**Holders of our Common Shares should not expect to receive dividend income.**

In January 2017 we completed a synthetic share repurchase that combined a direct capital repayment with a reverse stock split, and in early 2018 we announced plans to return up to an additional $200.0 million through open-market purchases. We do not anticipate paying any cash dividends on our Common Shares for the foreseeable future, and until the January 2017 distribution in connection with a synthetic share repurchase, we have not paid cash dividends since our inception. Although we do not anticipate paying any cash dividends on a regular basis, the distribution of any cash dividends in a currency other than the U.S. dollar will be subject to the risk of foreign currency transaction losses. Investors should not invest in our Common Shares if they are seeking dividend income; the only return that may be realized through investing in our Common Shares would be through an appreciation in the share price.

**Holders of our Common Shares may not benefit from continued stock repurchase programs.**

In January 2017, we completed a synthetic share repurchase that combined a direct capital repayment with a reverse stock split. The transaction was announced in August 2016 and involved an approach used by various large, multinational Dutch companies to provide returns to all shareholders in a faster and more efficient manner than traditional open-market purchases. $243.9 million was returned to shareholders through the transaction, which reduced the total number of issued common shares by approximately 3.7% or 8.9 million shares as of January 31, 2017.

The purpose of our share repurchases has been to hold the shares in treasury in order to satisfy obligations from exchangeable debt instruments, warrants and/or employee share-based remuneration plans and thus to reduce dilution to existing holders of our Common Shares. We may decide not to continue such programs in the future, our covenants with lenders may limit our ability to use available cash to do so, or the market price of our Common Shares may make such repurchases less desirable. In any of these cases, holders of our Common Shares may suffer dilution from conversion of our indebtedness or issuance of shares pursuant to employee remuneration plans that would otherwise be at least partially offset by repurchased shares.

**Future sales and issuances of our Common Shares could adversely affect our stock price.**

Any future sale or issuance of a substantial number of our Common Shares in the public market, or any perception that a sale may occur, could adversely affect the market price of our Common Shares. Under Dutch law, a company can issue shares up to its authorized share capital provided for in its Articles of Association. Pursuant to our Articles of Association, our authorized share capital amounts to EUR 9.0 million, which is divided into 410.0 million common shares, 40.0 million financing preference shares and 450.0 million preference shares, with all shares having a EUR 0.01 par value. As of December 31, 2018, a total of approximately 225.5 million Common Shares were outstanding along with approximately 9.2 million additional shares reserved for issuance upon exercise or release of outstanding stock options and awards, of which 0.9 million were vested. A total of approximately 19.9 million Common Shares are reserved and available for issuances under our stock plans as of December 31, 2018, including the shares subject to outstanding stock options and awards. The majority of our outstanding Common Shares may be sold without restriction, except shares held by our affiliates, which are subject to certain limitations on resale. Additionally, the Warrants issued in connection with the Cash Convertible Notes Call Spread Overlays cover an aggregate of 46.3 million shares of our common stock (subject to customary adjustments under certain circumstances).

**Shareholders who are United States residents could be subject to unfavorable tax treatment.**

We may be classified as a "passive foreign investment company," or a PFIC, for U.S. federal income tax purposes if certain tests are met. Our treatment as a PFIC could result in a reduction in the after-tax return to holders of Common Shares and would likely cause a reduction in the value of these shares. If we were determined to be a PFIC for U.S. federal income tax purposes, highly complex rules would apply to our U.S. shareholders. We would be considered a PFIC with respect to a U.S. shareholder if for any taxable year in which the U.S. shareholder held the Common Shares, either (i) 75% or more of our gross income for the taxable year is passive income; or (ii) the average value of our assets (during the taxable year) which produce or are held for the production of passive income is at least 50% of the average value of all assets for such year. Based on our income, assets and activities, we do not believe that we were a PFIC for U.S. federal income tax purposes for our taxable year ended December 31, 2018, and do not expect to be a PFIC for the current taxable year or any future taxable year. No assurances can be made, however, that the Internal Revenue Service will not challenge this position or that we will not subsequently become a PFIC.

**Provisions of our Articles of Association and Dutch law and an option we have granted may make it difficult to replace or remove management and may inhibit or delay a takeover.**

Our Articles of Association (Articles) provide that our shareholders may only suspend or dismiss our Managing Directors and Supervisory Directors against their wishes with a vote of two-thirds of the votes cast if such votes represent more than 50% of our issued share capital. If the proposal was made by the joint meeting of the Supervisory Board and the Managing Board, a simple majority is sufficient. The Articles also provide that if the members of our Supervisory Board and our Managing Board have been nominated by the joint meeting of the Supervisory Board and Managing Board, shareholders may only overrule this nomination with a vote of two-thirds of the votes cast if such votes represent more than 50% of our issued share capital.

Certain other provisions of our Articles allow us, under certain circumstances, to prevent a third party from obtaining a majority of the voting control of our Common Shares through the issuance of Preference Shares. Pursuant to our Articles and the resolution adopted by our General Meeting of Shareholders, our Supervisory Board is entitled to issue Preference Shares in case of an intended takeover of our company by (i) any person who alone or with one or more other persons, directly or indirectly, have acquired or given notice of an intent to acquire (beneficial) ownership of an equity stake which in aggregate equals 20% or more of our share capital then outstanding or (ii) an "adverse person" as determined by the Supervisory Board. If the Supervisory Board opposes an intended takeover and authorizes the issuance of Preference Shares, the bidder may withdraw its bid or enter into negotiations with the Managing Board and/or Supervisory Board and agree on a higher bid price for our Shares.

In 2004, we granted an option to the Stichting Preferente Aandelen QIAGEN, or the Foundation (*Stichting*), subject to the conditions described in the paragraph above, which allows the Foundation to acquire Preference Shares from us. The option enables the Foundation to acquire such number of Preference Shares as equals the number of our outstanding Common Shares at the time of the relevant exercise of the option, less one Preference Share. When exercising the option and exercising its voting rights on these Preference Shares, the Foundation must act in our interest and the interests of our stakeholders. The purpose of the Foundation option is to prevent or delay a change of control that would not be in the best interests of our stakeholders. An important restriction on the Foundation's ability to prevent or delay a change of control is that a public offer must be announced by a third party before it can issue (preference or other) protective shares that would enable the Foundation to exercise rights to 30% or more of the voting rights without an obligation to make a mandatory offer for all shares held by the remaining shareholders. In addition, the holding period for these shares by the Foundation is restricted to two years, and this protective stake must fall below the 30% voting rights threshold before the two-year period ends.

**Note Regarding Forward-Looking Statements and Risk Factors**

Our future operating results may be affected by various risk factors, many of which are beyond our control. Certain statements included in this Annual Report and the documents incorporated herein by reference may be forward-looking statements within the meaning of Section 27A of the U.S. Securities Act of 1933, as amended, and Section 21E of the U.S. Securities Exchange Act of 1934, as amended, including statements regarding potential future net sales, gross profit, net income and liquidity. These statements can be identified by the use of forward-looking terminology such as "believe," "hope," "plan," "intend," "seek," "may," "will," "could," "should," "would," "expect," "anticipate," "estimate," "continue" or other similar words. Reference is made in particular to the description of our plans and objectives for future operations, assumptions underlying such plans and objectives, and other forward-looking statements. Such statements are based on management's current expectations and are subject to a number of factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. We caution investors that there can be no assurance that actual results or business conditions will not differ materially from those projected or suggested in such forward-looking statements as a result of various factors. Factors which could cause such results to differ materially from those described in the forward-looking statements include those set forth in the risk factors below. As a result, our future success involves a high degree of risk. When considering forward-looking statements, you should keep in mind that the risk factors could cause our actual results to differ significantly from those contained in any forward-looking statement.

**Significant direct and indirect shareholdings**

The following table sets forth certain information as of December 31, 2018, concerning the ownership of Common Shares of each holder of greater than 5% ownership. None of these holders have any different voting rights than other holders of our Common Shares.

| | Shares Beneficially Owned | | |
|---|---|---|---|
| Name and Country of Residence | Number | | Percent Ownership [1] |
| BlackRock, Inc., United States | 21,835,286 | (2) | 9.68% |
| PRIMECAP Management Company, United States | 15,905,399 | (3) | 7.05% |
| Massachusetts Financial Services Company, United States | 13,110,410 | (4) | 5.81% |

(1) The percentage ownership was calculated based on 225,509,286 Common Shares outstanding as of December 31, 2018.

(2) Of the 21,835,286 shares attributed to BlackRock, Inc., it has sole voting power over 20,049,694 and sole dispositive power over all 21,835,286 shares. This information is based solely on the Schedule 13G filed by BlackRock, Inc. with the Securities and Exchange Commission on February 6, 2019, which reported ownership as of December 31, 2018.

(3) Of the 15,905,399 shares attributed to PRIMECAP Management Company, it has sole voting power over 7,478,790 and sole dispositive power over all 15,905,399 shares. This information is based solely on the Schedule 13G filed by PRIMECAP Management Company with the Securities and Exchange Commission on February 8, 2019, which reported ownership as of December 31, 2018.

(4) Of the 13,110,410 shares attributed to Massachusetts Financial Services Company, it has sole voting power over 10,185,707 and sole dispositive power over all 13,110,410 shares. This information is based solely on the Schedule 13G filed by Massachusetts Financial Services Company with the Securities and Exchange Commission on February 13, 2019, which reported ownership as of December 31, 2018.

Our common stock is traded on the New York Stock Exchange in the United States and on the Prime Standard Segment of the Frankfurt Stock Exchange in Germany. A significant portion of our shares are held electronically in the account of a stockbroker, therefore we generally have no way of determining who our shareholders are, their geographical location or how many shares a particular shareholder owns. As of January 31, 2019, there were 119 shareholders of record of our Common Shares.

**Holders of any securities with special control rights**

Not applicable.

**System of control of any employee share scheme where the control rights are not exercised directly by the employees**

Not applicable.

**Restrictions on voting rights**

At the General Meeting, each share shall confer the right to cast one vote, unless otherwise provided by law or our Articles. No votes may be cast in respect of shares that we or our subsidiaries hold, or by usufructuaries and pledgees. All shareholders and other persons entitled to vote at General Meetings are entitled to attend General Meetings, to address the meeting and to vote. They must notify the Managing Board in writing of their intention to be present or represented not later than on the third day prior to the day of the meeting, unless the Managing Board permits notification within a shorter period of time prior to any such meeting. Subject to certain exceptions, resolutions may be passed by a simple majority of the votes cast.

**Agreements between shareholders which are known to the Company and may result in restrictions on the transfer of securities and/or voting rights**

Not applicable.

**Rules governing the appointment and replacement of board members and the amendment of the articles of association**

Supervisory Directors and Managing Directors are appointed annually for the period beginning on the date following the Annual General Meeting up to and including the date of the Annual General Meeting held in the following fiscal year.

Managing Directors shall be appointed by the General Meeting upon the joint meeting of the Supervisory Board and the Managing Board (Joint Meeting), having made a binding nomination for each vacancy. However, the General Meeting may at all times overrule the binding nature of such a nomination by a resolution adopted by at least a two-thirds majority of the votes cast, if such majority represents more than half the issued share capital. This is different from the provisions of many American corporate statutes, including the Delaware General Corporation Law, which give the directors of a corporation greater authority in choosing the executive officers of a corporation. Under our Articles, the General Meeting may suspend or dismiss a managing director at any time. The Supervisory Board shall also at all times be entitled to suspend (but not to dismiss) a Managing Director. The Articles provide that the Supervisory Board may adopt management rules governing the internal organization of the Managing Board.

The Supervisory Directors shall be appointed by the General Meeting upon the Joint Meeting having made a binding nomination for each vacancy. If during a financial year a vacancy occurs in the Supervisory Board, the Supervisory Board may appoint a Supervisory Director who will cease to hold office at the next Annual General Meeting. Under Dutch law, in the event that there is a conflict of interest between a Supervisory Director and us and our business on a certain matter, that Supervisory Director shall not participate in the discussions and voting on that matter. Under the Dutch Code, a Supervisory Director should report any conflict of interest or potential conflict of interest in a transaction that is of material significance to the Company and/or to such Supervisory Director to the Chairman of the Supervisory Board without delay. The Supervisory Board should decide, outside the presence of the Supervisory Director concerned, whether there is a conflict of interest. If all Supervisory Directors have a conflict of interest, the relevant resolution shall be adopted by the General Meeting. Decisions to enter into transactions under which a Supervisory Director would have a conflict of interest that are of material significance to QIAGEN and/or to the Supervisory Director concerned, require the approval of the Supervisory Board.

The Selection and Appointment (Nomination) Committee is primarily responsible for the preparation of selection criteria and appointment procedures for members of the Supervisory Board and Managing Board as well as the periodic evaluation of the scope and composition of the Managing Board and the Supervisory Board, including the profile of the Supervisory Board. Additionally, the Selection and Appointment Committee periodically evaluates the functioning of individual members of the Managing Board and Supervisory Board, reporting these results to our Supervisory Board. It also proposes the (re-)appointments of members of our Managing Board and Supervisory Board and supervises the policy of our Managing Board in relation to selection and appointment criteria for senior management.

A resolution of the General Meeting to amend our Articles, dissolve QIAGEN, issue shares or grant rights to subscribe for shares or limit or exclude any pre-emptive rights to which shareholders shall be entitled is valid only if proposed to the General Meeting by the Supervisory Board.

A resolution of the General Meeting to amend our Articles is further only valid if the complete proposal has been made available for inspection by the shareholders and the other persons entitled to attend General Meetings at our offices as from the day of notice convening such meeting until the end of the meeting. A resolution to amend our Articles to change the rights attached to the shares of a specific class requires the approval of the relevant class meeting.

**Powers of board members and in particular the power to issue or buy back shares**

The Managing Board manages QIAGEN and is responsible for defining and achieving QIAGEN's aims, strategy, policies and results. The Managing Board is also responsible for complying with all relevant legislation and regulations as well as for managing the risks associated with the business activities and the financing of QIAGEN. It reports related developments to and discusses the internal risk management and control systems with the Supervisory Board and the Audit Committee. The Managing Board is accountable for the performance of its duties to the Supervisory Board and the General Meeting of Shareholders (General Meeting). The Managing Board provides the Supervisory Board with timely information necessary for

the exercise of the duties of the Supervisory Board. In discharging its duties, the Managing Board takes into account the interests of QIAGEN, its enterprises and all parties involved in QIAGEN, including shareholders and other stakeholders.

The members of our Supervisory Board have the powers assigned to them by Dutch law and the Articles. The Supervisory Board assists the Managing Board by providing advice relating to the business activities of QIAGEN. In discharging its duties, the Supervisory Board takes into account the interests of QIAGEN, its enterprise and all parties involved in QIAGEN, including shareholders and other stakeholders. In particular, the Supervisory Board has the authority to (i) issue common shares up to its presently authorized capital of 410 million, (ii) issue Financing Preference Shares up to its presently authorized capital of 40 million (iii) grant rights to subscribe for such common shares and Financing Preference Shares and (iv) exclude or limit the pre-emptive rights of existing shareholders relating to up to 50% of the number of common shares to be issued or rights to subscribe for common shares.

We may acquire our own shares, subject to certain provisions of Dutch law and our Articles, if (i) shareholders' equity less the payment required to make the acquisition does not fall below the sum of paid-up and called-up capital and any reserves required by Dutch law or the Articles and (ii) we and our subsidiaries would not thereafter hold shares with an aggregate nominal value exceeding half of our issued share capital. Shares that we hold in our own capital or shares held by one of our subsidiaries may not be voted. The Managing Board, subject to the approval of the Supervisory Board, may affect our acquisition of shares in our own capital. Our acquisitions of shares in our own capital may only take place if the General Meeting has granted to the Managing Board the authority to effect such acquisitions. Such authority may apply for a maximum period of 5 years and must specify the number of shares that may be acquired, the manner in which shares may be acquired and the price limits within which shares may be acquired. Dutch corporate law allows for the authorization of the Managing Board to purchase a number of shares equal to up to 50% of the Company's issued share capital on the date of the acquisition. On June 19, 2018, the General Meeting resolved to extend the authorization of the Managing Board in such manner that the Managing Board may cause us to acquire shares in our own share capital, for an 18-month period beginning June 19, 2018 until December 21, 2019, without limitation at a price between one Euro cent (Euro 0.01) and one hundred ten percent (110%) of the price for such shares on the New York Stock Exchange or, as applicable, the Frankfurt Stock Exchange, for the five trading days prior to the day of purchase, or, with respect to Preference and Finance Preference shares, against a price between one Euro cent (Euro 0.01) and three times the issuance price and in accordance with applicable provisions of Dutch law and our Articles.

**Significant agreements to which the Company is a party and which take effect after or terminate upon a change of control of the Company following a takeover bid**

Certain other provisions of our Articles allow us, under certain circumstances, to prevent a third party from obtaining a majority of the voting control of our Common Shares through the issuance of Preference Shares. Pursuant to our Articles and the resolution adopted by our General Meeting of Shareholders, our Supervisory Board is entitled to issue Preference Shares in case of an intended takeover of our company by (i) any person who alone or with one or more other persons, directly or indirectly, have acquired or given notice of an intent to acquire (beneficial) ownership of an equity stake which in aggregate equals 20% or more of our share capital then outstanding or (ii) an "adverse person" as determined by the Supervisory Board. If the Supervisory Board opposes an intended takeover and authorizes the issuance of Preference Shares, the bidder may withdraw its bid or enter into negotiations with the Managing Board and/or Supervisory Board and agree on a higher bid price for our Shares.

In 2004 (as amended in 2008), we granted an option to the Stichting Preferente Aandelen QIAGEN (the "Foundation" (Stichting)), whereby the exercise of the option by the Foundation is subject to the conditions described in the paragraph above and which option allows the Foundation to acquire preference shares from us. The option enables the Foundation to acquire such number of preference shares as equals the number of our outstanding common shares at the time of the relevant exercise of the right less one share. When exercising the option and exercising its voting rights on such shares, the Foundation must act in our interest and the interests of our stakeholders. The purpose of the Foundation option is to prevent or delay a change of control that would not be in the best interests of us and our stakeholders. An important restriction on the Foundation's ability to prevent or delay a change of control is that issuing (preference or other) protective shares enabling the Foundation to exercise 30% or more of the voting rights without the obligation to make a mandatory offer for all shares held by the remaining shareholders, is only allowed after a public offer has been announced by a third party. In addition, the holding of such a block of shares by the Foundation is restricted to two years and as a consequence, the size of the protective stake will need to be decreased below the 30% voting rights threshold before the two year period lapses.

We adopted the QIAGEN N.V. Amended and Restated 2005 Stock Plan (the 2005 Plan) which was approved by our shareholders on June 14, 2005. It expired by its terms in April 2015, at which time no further awards will be able to be granted under the 2005 Plan. On June 25, 2014, our shareholders approved the QIAGEN N.V. 2014 Stock Plan (the 2014 Plan), which replaced the 2005 Plan in April 2015. An aggregate of 16.7 million Common Shares were reserved for issuance pursuant to the 2014 Stock Plan, subject to certain antidilution adjustments.

Pursuant to the 2014 Plan, stock rights, which include options to purchase our Common Shares, stock grants and stock-based awards, may be granted to employees and consultants of QIAGEN and its subsidiaries and to Supervisory Directors. The vesting and exercisability of certain stock rights will be accelerated in the event of a Change of Control, as defined in the agreements under the 2014 Plan. A “Change of Control” means the occurrence of a merger or consolidation of QIAGEN, whether or not approved by the Board of Directors, other than a merger or consolidation which would result in the voting securities of QIAGEN outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or the parent of such corporation) at least 50% of the total voting power represented by the voting securities of QIAGEN or such surviving entity or parent of such corporation, as the case may be, outstanding immediately after such merger or consolidation, or the stockholders of QIAGEN approve an agreement for the sale or disposition by QIAGEN of all or substantially all of QIAGEN’s assets.

Certain of our employment contracts contain provisions which guarantee the payments of certain amounts in the event of a change in control, as defined in the agreements, or if the executive is terminated for reasons other than cause, as defined in the agreements. At December 31, 2018, the commitment under these agreements totaled $16.9 million (2017: 16.8 million).

**Agreements between the Company and its board members or employees providing for compensation if they resign or are made redundant without valid reason or if their employment ceases because of a takeover bid**

The members of the Managing Board are appointed annually by the General Meeting of Shareholders based on the nomination of the Joint Meeting. Further, the members of the Managing Board have entered into employment agreements with QIAGEN N.V. and other QIAGEN affiliates. The term of these agreements varies for each Managing Board member due to individual arrangements and goes beyond the one year term of appointment by the General Meeting of Shareholders. These agreements cannot be terminated without cause and, absent such cause, have to be fulfilled during their stated term. These agreements contain provisions which guarantee the payments of certain amounts in the event of a change in control, as defined in the agreements. There are no arrangements for any extra compensation in case of resignation or redundancy.

The members of the Supervisory Board are also appointed annually by the General Meeting of Shareholders based on the nomination of the Joint Meeting. There are no additional employments in place and there are no arrangements for any extra compensation in case of resignation or redundancy. The General Meeting determines the remuneration of the members of the Supervisory Board.

**Reporting in accordance with Directive 2004/25/EC of the European Parliament and of the Council of April 21. 2004, on takeover bids**

Not applicable.

**Structure of our capital, including securities which are not admitted to trading on a regulated market in a Member State of the European Union**

The authorized classes of our shares consist of common shares, Financing Preference Shares and Preference Shares. No Financing Preference Shares or Preference Shares have been issued.

As of December 31, 2018, a total of approximately 225.5 Common Shares were outstanding along with approximately 9.2 million additional shares reserved for issuance upon exercise or release of outstanding stock options and awards, of which 0.9 million were vested. A total of approximately 19.9 million Common Shares are reserved and available for issuances under our stock plans as of December 31, 2018, including the shares subject to outstanding stock options and awards. Additionally, holders of the Warrants issued as part of the Call Spread Overlays discussed further in Note 15 "Financial Debts", cover an aggregate of 46.3 million shares of our Common Stock (subject to adjustments under certain circumstances).

**Common Shares - Restrictions on the transfer of securities**

Common Shares are issued in registered form only. Until January 24, 2017, Common Shares were available either without issue of a share certificate, or Type I shares, or with issue of a share certificate, or Type II shares, in either case in the form of an entry in the share register. At the discretion of the Supervisory Board, Type I shares may be issued and the holders of such Type I shares will be registered in either our shareholders register with American Stock Transfer & Trust Company, or New York Transfer Agent, our transfer agent and registrar in New York, or our shareholder register with TMF FundServices B.V., Westblaak 89, NL-3012 KG Rotterdam, The Netherlands. The Type II shares were registered with our New York Transfer Agent.

The transfer of registered shares requires that we issue a written instrument of transfer and the written acknowledgment of such transfer by us or the New York Transfer Agent (in our name). Until January 24, 2017 the corresponding share certificates of Type II Shares had to be delivered to us or to the New York Transfer Agent (in our name). Acknowledgement of the transfer of Type II shares took place by us or the New York Transfer Agent (in our name) by endorsement on the share certificate or by issuance of a new share certificate to the transferee, at the discretion of the Managing Board.

**Non-Financial Statement**

**Our approach to sustainability**

For QIAGEN, sustainability means long-term economic success combined with respect for the natural environment and healthy, high-performance workplaces, with the aim to make improvements in life possible as a good corporate citizen.

Our commitment to sustainability goes beyond formal regulations. As a market and innovation leader in life sciences and molecular diagnostics, we believe there is room for innovation in driving sustainable development in our industry, and we are resolved to continue moving forward.

To achieve this, QIAGEN has integrated sustainability throughout its value chain. We pledge to continually evaluate the potential environmental impact of our business, saving energy and reducing negative environmental impacts of our operations. We look after the welfare of our employees, taking care of their developmental needs and supporting them in every way to become and remain committed and responsible. We extend our commitment to sustainability into the supply chain, committing our business partners to sign up to our environmental, social and human-rights related standards.

We recognize that ongoing success for QIAGEN also depends on the sustainability of society's resources. This is why we engage in dialogue with our various stakeholders - employees, customers, patients, suppliers, shareholders, non-governmental organizations (NGOs) and communities - in order to gain a better understanding of our operating environment, including market developments and cultural dynamics. Depending on the subject matter, we use different approaches ranging from standardized questionnaires to one-to-one conversations.

Please find information about our business model, organizational structure, products, customers, business strategy, as well as main trends and issues pertaining to the reporting year, in our Management Report.

**Material non-financial information**

For guidance on materiality and non-financial disclosure, we base our non-financial reporting on the Sustainability Reporting Standards (SRS) of the Global Reporting Initiative (GRI Standards 2016) as well as on the sustainability accounting standards for Medical Equipment and Supplies and Biotechnology of the Sustainability Accounting Standards Board (SASB).

To identify the relevant information, we have conducted a systematic materiality analysis. For each thematic aspect prescribed in the European Commission's CSR Directive 2014/95/EU (environmental, social and employee matters, respect for human rights, anti-corruption and bribery) we identified a series of topics, which possess high business relevance, strongly influence the decisions of our stakeholders, and where QIAGEN's activities have significant impact on the thematic aspects. In a joint workshop with representatives from our different departments, the various perspectives had been assessed and discussed. The final list had been validated by our senior management and resulted in the following material topics:

- **Environmental matters:** energy consumption, emissions
- **Employee matters:** training, diversity, employee satisfaction, employee retention
- **Social matters:** quality and product safety, customer satisfaction, access to healthcare
- **Respect for human rights:** conflict minerals
- **Anti-corruption and bribery matters:** antitrust, anti-corruption

**Business ethics**

For QIAGEN, conducting business in a responsible way includes looking beyond our day-to-day business operations into the ethical foundations of our company. This means, in particular, the respect for human rights and legally compliant business behavior.

**Human rights**

QIAGEN believes that the respect for human rights is an essential component of promoting sustainability in our global business. As a publicly listed company with international operations, we regard ourselves as a responsible corporate citizen in all the countries and regions where we do business. This role includes rights and obligations governed by international and national law, with human rights as one of the foundations of international law.

In this sense, we acknowledge and endorse the UN Universal Declaration of Human Rights, the European Convention on Human Rights, and the business-related OECD Guidelines for Multinational Enterprises, the ILO Declaration on Fundamental Principles and Rights at Work, and the UN Guiding Principles on Business and Human Rights and its application in National Actions Plans of our relevant jurisdictions.

In 2018, QIAGEN began developing a Human Rights Policy, which is expected to be adopted during 2019 and become part of our Global Policy Manual. It is designed to provide guidance to all human rights issues in our sphere of influence, such as in

our relationship with customers, on the employee level, and in our supply chain. The policy is available in the sustainability section of our corporate website.

**Compliance**

As a publicly listed company with international operations, QIAGEN is subject to regulation in various jurisdictions. Unethical behavior and non-compliance with laws and regulations have the potential to seriously harm our business, our reputation and our shareholders and to expose our employees to personal liability. QIAGEN has established a comprehensive Compliance Program which translates legal and regulatory requirements as well as our fundamental values into clear, precise and understandable guidelines as our Corporate Code of Conduct and Ethics and supplementing specific policies for our employees. The policies include, but are not limited to aspects as conflicts of interest, insider trading, revenue recognition, interactions with healthcare professionals, confidentiality and social media.

Special attention is paid to antitrust and anti-corruption laws (see “Opportunities and Risks” section in the Management Report). Our specific antitrust and anti-corruption policies set forth our commitment to ensure that QIAGEN and its subsidiaries abide by the antitrust and anti-corruption laws of the countries in which we operate.

We extend our Compliance Program not only to our management and employees, but also to third-party intermediaries as distributors or agents. Third-party due diligence lies in the remit of the Sales Compliance Manager. This contains the following five elements:

1. Anti-corruption questionnaire and certification for new distributors, resellers and agents;
2. Risk assessment based on a calculated risk score, which factors location of business (Transparency International Index Score, TIIS) and annual sales revenue for distributing QIAGEN products by multiplying total revenues of the prior calendar year with the inverse of the TIIS;
3. Training;
4. Contractual obligations;
5. Due diligence;

also including payment monitoring.

All our policies are provided to all employees worldwide. Online training reaches all employees in local language, supported by multiple communication resources. All new employees are required to take online training on our Corporate Code of Conduct and Ethics at a minimum. Additional trainings which are customized to the specific area of responsibility are mandatory. All employees in Sales and Marketing as well as Upper Management are required to take training on anti-corruption and antitrust laws. Such basic trainings are followed by refresher courses on a regular basis. In addition, employees are informed through the company’s Compliance@QIAGEN intranet page and regular updates on compliance topics via the company’s internal communication platform Yammer.

We have established a hotline for reporting accounting-related concerns on an anonymous basis in good faith. We also offer a direct email and telephone hotline for employees to address questions or make suggestions for our Compliance Program.

Our Compliance Program is overseen by the Compliance Committee under the leadership of the Head of Global Legal Affairs and Compliance, who reports in this function directly to the Audit Committee of the Supervisory Board. The Compliance Committee consists of managers from Legal, Internal Audit, Human Resources, Commercial Operations, Trade Compliance and Regulatory functions.

In the reporting period QIAGEN had no legal actions pending or completed with regard to antitrust or corruption.

**Environment**

Environmental protection is an issue of continued and committed concern for QIAGEN. As an international pioneer in our industry when it comes to eliminating harmful substances and waste products in laboratories, we have seen the value of environmentally responsible solutions as a source of competitive advantage, as well as an act of corporate citizenship.

We strive to reduce the consumption of energy and water and to impose limits on packaging, waste, and transportation. With these efforts, we aim to operate in the most cost-efficient and environmentally friendly way possible. To support these aims, our key production facility in Hilden, Germany, is currently being recertified according to the international energy management norm ISO 50001. To best cater to the specific nature of our industry, at other sites we work according to our own environmental guidelines.

As concerns about climate change and effects of dwindling natural resources continue to impact pricing, we will be exposed to fluctuations in costs of these key inputs. By being able to improve our manufacturing efficiencies and limit our dependence on finite resources, we are engaging in active risk management, serving our customers and enhancing the value of our company.

For QIAGEN, the commitment to safe and environmentally sound practices comes with a culture of operational excellence - reinforced by training, decision-making and standard procedures. Operations employ a concept we called QIAzen, derived from the Japanese word “kaizen” (continuous improvement). Key employees in Operations have received QIAzen training to identify and prioritize avenues to improve our manufacturing organization, initiate projects, and monitor implementation with cross-functional teams. This includes issues of environmental concern such as transportation and the consumption of energy and natural resources. This applies, in particular, to our sites in Hilden (Germany), Köping (Sweden), Germantown (USA), as well as Shenzhen and Beijing (China).

QIAGEN is acting proactively to minimize its contribution to climate change. We recognize consumer and customer awareness of our corporate environmental stewardship as an opportunity and a way to differentiate from our competitors. Investments in renewable energies serve to maintain our competitive advantage by protecting against the rising costs of conventional energy.

QIAGEN recognizes material climate change risks such as intensified weather events, e.g. severe rainstorms or power outages that might impact our manufacturing operations. Operations also could be negatively impacted by volatility in the cost of raw materials, components, freight and energy. New laws or regulations adopted in response to climate change could increase energy costs, the costs of certain raw materials, components, packaging and transportation. In line with the development of a <2°C climate target (limiting global warming to less than 2 degrees Celsius), QIAGEN will develop a company strategy for the reduction of climate risks, covering both physical and transitional risks.

**Environmental performance**

To increase transparency regarding our own global energy consumption and greenhouse gas emissions, QIAGEN has extended the coverage of the energy consumption data in 2018 by the integration of a centralized data collection process management for all production sites, research centers and major offices. As a result, our global data collection coverage was increased from 30% in 2017 to more than 95% in 2018. The consideration of additional sites led to an increase in our total energy consumption of 91.3 GWh in 2018 compared to an energy consumption in the reporting year 2017 of 35.3 GWh as shown in the table below.

In addition to our energy and climate management activities, we have started to collect data regarding fresh water consumption and waste for the two largest production sites in the USA and Germany. The table below lists figures for the 2017 and 2018 reporting years and puts our consolidated environmental data in relation to our production volume sold to establish a basis for a long-term monitoring system. With the help of these key performance indicators (KPIs), we will be able to target reduction potential for energy, climate emissions, fresh water as well as waste. We are in the process of implementing additional procedures, including dashboards and other tools, to enable improvements in measurement and monitoring of these metrics during 2019.

| | **2018** | **KPI 2018** | | **2017** | **KPI 2017** | |
|---|---|---|---|---|---|---|
| Energy (in MWh) | **91,300** | **0.02622** | **MWh/ Unit** | 35,300 | 0.01198 | MWh/ Unit |
| GHG (in tCO2) | **30,587** | **0.00878** | **tCO2/ Unit** | 12,512 | 0.00425 | tCO2/ Unit |
| Fresh Water (in t) | **119,621** | **0.03435** | **m3/Unit** | n/a | n/a | m3/ Unit |
| Waste (in kg) | **632,530** | **0.18162** | **kg/ Unit** | 569,720 | 0.19341 | kg/ Unit |
| Haz. Waste (in kg) | **249,990** | **0.07178** | **kg/ Unit** | 183,170 | 0.06218 | kg/ Unit |

The expansion in the collection of our energy data enabled us to calculate our corporate carbon footprint (CCF) more accurately in the reporting year according to ISO 14064. As of 2018, all relevant scope 1+2 emissions are included in the CCF. Scope 1 covers direct greenhouse gas emissions (GHG emissions) from combustion of fossil fuels on our own premises; scope 2 are indirect emissions originating from external generation of electricity for our operations. In 2018, QIAGEN emitted 13,150 tCO2 in scope 1, corresponding to 43% of the total GHG emissions (2017: 3,661 tCO2). For the scope 2 emissions, 17,430 tCO2 occurred, representing 57% of the total GHG emissions (2017: 8,851 tCO2). Our total carbon footprint amounted to 30,587 in 2018 (2017: 12,512 tCO2). This increase is again attributable to the expansion of our data scope.

The now almost complete coverage of our scope 1 and 2 emissions offers a good starting point for the development of a <2°C compatible climate target in 2019 together with the identification of climate-related risks and opportunities. In addition, we have started to collect data for calculating GHG emissions in scope 3. These emissions occur along our value chain, for example through transport services, suppliers or the use of our products. We are currently collecting the relevant data and will integrate the first scope 3 categories into our CCF in 2019.

At our Hilden site, action plans have already been drawn up to achieve reduction targets. On the basis of this experience, we can now develop concrete action plans for other sites, research centers and offices. They will be developed simultaneously with the establishment of the <2°C climate target, since we will be investigating long-term mitigation reduction potential as well as interim solutions, e.g. purchase of green electricity.

To limit the footprint of our business on the environment, we have already introduced a broad panel of activities and programs. We run simulations to reduce energy consumption and have installed energy recovery and control systems to provide only the minimum power required for operations. Improvements encompass energy extraction from co-generators, better insulation, heat recovery and installation of intelligent building systems.

As a significant part of the energy consumption associated with our business occurs beyond our own premises, transportation of people and cargo is an additional focus. In 2018, we have started to change our transports from air to sea freight wherever it is reasonable and possible. We have currently been able to convert around 150 tonnes per year to sea freight. In the next phase, which we will start in 2019, we expect to convert 100 additional tonnes per year.

At QIAGEN's headquarters, discounted train and bus tickets encourage employees to use public transportation, and we have installed charging stations for electric cars and bikes. The pool of company cars has been changed to ecological and CO2-efficient models in a continuous adjustment process. Low emissions play a critical role in the decision process for new company cars. At most sites, video conferencing systems have been installed to encourage virtual team meetings and reduce travel between sites.

**Plastic Footprint Reduction**

The use of plastic materials is increasingly being questioned in public debates. QIAGEN currently uses plastics in many our products and production support materials, as well as for transport and packaging purposes. We are aware of our responsibility in this respect and are working intensively with a special internal team focusing on solutions to avoid and reduce the usage of plastic, or at least improve the recyclability of the plastic used.

The reduction of plastic materials presents us and our industry with a number of challenges: Due to the use of our products in laboratory or medical applications, these products are subject to strict functional and legal requirements so in many cases other materials cannot simply be substituted for plastics. In the case of packaging materials, we must ensure that appropriate safety and hygiene standards are met.

In 2018 we set up a global, cross-departmental "Plastic Footprint Reduction" focus team to analyze the use of plastics and specifically identify reduction potential for QIAGEN. Our approach is to completely avoid unnecessary materials, develop more environmentally friendly alternatives or, where possible, optimize recyclability. As a first step, we have targeted polystyrene foam boxes that are used within the cold chain packaging of our products and are currently working on reducing the size of the boxes while optimizing the way the contents are structured. Our ultimate goal is to replace polystyrene foam boxes to a more environmentally friendly alternatives wherever possible.

In order to also identify starting points within our supply chain, we have initiated a query with suppliers about the use of plastic materials. We are currently exploring ways to establish a "box cycle" where supplies are packaged directly by our suppliers and the packaging material is returned to them. In addition, we are in discussions with suppliers in order to achieve a better recyclability of their products.

As a medium-term objective we will investigate our product kits with regards to the plastic materials used and evaluate potential alternatives for material components, e.g. bioplastics or biodegradable plastics, that are not in direct contact with the product. At the same time, we are working on establishing a material identification system that will make recycling of unavoidable plastics easier worldwide.

**Employees**

QIAGEN's long-term success and growth are shaped decisively by the knowledge, skill and passion of our employees. Focusing on human capital therefore drives our economic performance and considerably influences the sustainability of our operations. We are convinced that the professional and personal development of our employees is an integral factor in creating value for our customers, patients, colleagues, partners and shareholders. Being the industry's employer of choice by attracting and developing top talent is one of our global goals. To achieve that, QIAGEN creates a work environment that empowers and involves employees at all levels.

As a company headquartered in the European Union, freedom of association and collective bargaining are cornerstones of the good relationship between management and representatives of employees. We don't have significant operations in countries with severe legal limitations to freedom of association and collective bargaining. In all regions where we operate we respect local laws and regulations concerning labor relations.

Among all QIAGEN guidelines, the following policies aim to incorporate QIAGEN's culture and values into all of our internal and external relationships. These are available internally for all employees.

Our Ethical Standards Policy: QIAGEN's cultural norms and values are defined in the "3I's: Identity, Inspire, Impact." Our values form the basis of our business success and every employee is expected to treat everyone in an open, honest, and respectful manner.

Our Diversity & Inclusion Philosophy: At QIAGEN, we are committed to the richness of diversity. Diverse teams strengthen our organization through the variety of ideas of opinions. In addition, teams outperform and succeed when they are composed of individuals with the widest possible range of personalities, backgrounds and traits. Therefore, we are committed to maintaining an environment where all individuals have the opportunity to grow and contribute to our progress.

All our employees in the various regions of the world are covered by the relevant local laws or by our voluntary corporate guidelines to the greatest possible extent, which guarantee freedom of association and/or collective bargaining mechanisms.

Depending on local law and custom, there are different types of employment ranging from long-term fixed contracts to temporary positions, also including flexible time and programs for parents returning from childcare. In 2018, we employed 5.57% part-time employees and 1.26% temporary employees (with QIAGEN contract / fixed-term work contract).

**Employee training**

As a fast-growing technology and knowledge-based company, we consider high-quality training and career development to be an integral part of our success. The QIAGEN Academy provides the possibility to either take part in e-learning sessions globally or to participate in personal trainings. The focus is on job-specific skills, competencies and leadership development.

In 2018, 87% of all QIAGEN employees completed internal training. In addition 87 employees participated in our advanced leadership development programs.

In 2018, we ran a mix of instructor-led, virtual instructor-led and e-learning courses attended by 4,892 employees. The company also organized 20 development centers with almost 150 participants designed to assesses leaders and future leaders' competencies and identify development opportunities.

As part of our talent and succession management, we have established transparent career paths with the QIAGEN Profile Navigator (QPN). It defines jobs, core competencies and approaches to advancement across the global organization.

In addition, QIAGEN’s global Performance Enhancement System (PES) creates a clear framework of regular, one-on-one review sessions for each employee and their manager to discuss career development. These include discussions of goals and achievement levels, assessment of relevant competencies, as well as training needs and career planning steps.

The supervisor feedback process provides the opportunity for employees to provide anonymized feedback to their supervisors. For 2018 as in previous years employees provided overall very positive feedback.

QIAGEN has implemented a program to develop promising specialists and managers to prepare for senior positions in cooperation with the University of Wu?rzburg, Germany (QIAGEN Executive MBABusiness Integration Program). Participants not only benefit from a curriculum providing a wide range of management skills and knowledge, but they also experience an international environment, learning with colleagues from around the world. In 2018 another class of 16 participants graduated.

**Diversity**

We are committed to create a working environment where all individuals have the opportunity to grow and contribute to our progress, regardless of age, educational background, gender, nationality, physical abilities, racial and ethnic background, religion, or sexual orientation. Strategic consideration of diversity not only makes QIAGEN a better place to work. We also consider it to be a key success factor on the path to achieving our mission and goals.

In 2018, the gender split across the whole company was at 51% men and 49% women. The participation of women in leadership roles was at 28%. Specific information about the diversity policy for the composition of the Managing Board and the Supervisory Board can be found in the Corporate Governance Report.

In 2018, QIAGEN introduced the Diversity Ambassador program, selecting more than 20 QIAGEN employees from across the world to champion diversity in the sites and countries they are based in. Training has been developed to help address unconscious bias, including an online assessment, and is aimed at all managers of people, including all individuals involved in Recruiting & Hiring. Our recruitment team members have all undertaken training aimed at helping to identify unconscious bias and eliminate it from the hiring process. QIAGEN remains committed to diversity, and we continue to develop and implement additional programs to promote awareness and are working to implement additional procedures to enable improvements in measurement and monitoring of diversity in future periods.

**Employee satisfaction and retention**

Recognizing that QIAGEN’s employees are the key to our success, we seek to be a great place to work. QIAGEN offers opportunities to work on exciting tasks and projects in an engaging work environment. Employees join QIAGEN and stay with QIAGEN because they can see how their work makes a difference to people`s life everywhere in the world. Internal and external ratings have improved significantly and show QIAGEN’s reputation and preferred position in the global working environment.

A prudent work-life balance is an important measure to create and maintain employee satisfaction. We provide services to help employees balance their personal lives with the company's dynamic work environment, including in-house childcare, sabbatical programs, and flexible working hours.

QIAGEN has implemented frameworks for performance-based compensation, equity-based compensation, and incentive programs for new ideas and innovation. These programs aim to ensure fair and attractive compensation and to encourage each employee to work for the company's long-term benefit.

An essential component of QIAGEN's efforts to maintain a high level of satisfaction at work is our corporate health and safety management. We offer a wide range of measures and tools, from annual "health days" with free counseling, screening and medical check-ups to sports opportunities in the form of in-house gyms, on-site soccer fields and beach volleyball courts.

QIAGEN's commitment to being an employer of choice is also reflected in the high number of applications for open positions, which exceeded 40,000 applications in 2018. At the same time, the average voluntary annual turnover rate remained largely unchanged.

**Occupational safety and health protection**

QIAGEN recognizes its responsibilities with respect to health and occupational safety in all our operations and meets all applicable governmental requirements. We prepare hazard analyses and risk assessments, carry out occupational safety and health audits and implement improvement measures in which all our divisions are involved. All employees of the company are obliged to actively work for occupational safety and to follow relevant instructions and regulations. Safety, orderliness and cleanliness are demanded by management as a key success factor.

The figures in the below table are based on our production sites and major non-production sites in the regions and countries indicated for the year ended December 31, 2018. Recordable accidents includes the following incidents: lost workdays; restricted work; and medical treatment beyond first aid.

| Recordable Accidents | 2018 |
|---|---|
| Germany | **29.0** |
| United States of America | **10.0** |
| Japan | **4.0** |
| China | **—** |
| Sweden | **—** |
| United Kingdom | **—** |
| Total | **43.0** |

Information from the comparable year is not included as our process for of implementing additional procedures to enable improvements in measurement and monitoring is currently underwear. We expect to provide recordable accidents and additional metrics for current and future periods.

**Customers and products**

QIAGEN's mission is to make improvements in life possible by enabling our customers to achieve outstanding success and breakthroughs in life sciences, applied testing, pharma and molecular diagnostics. We are committed to customers and their patients to deliver innovative solutions that unlock new insights for scientific research, forensics, food safety or better treatment decisions. We understand and live up to our responsibility to customers and patients who depend on us for reliable, efficient and safe workflows.

**Customer satisfaction**

Customer satisfaction is an integral part of the QIAGEN mission of making improvements in life possible which is therefore the direct responsibility of the Chief Executive Officer. Our customers have high expectations on reliability, safety and the environment-friendly manufacturing of our products. We develop our products and services in close contact with our customers and incorporate their feedback into our processes.

Our commitment is to continually improve the customer experience, taking into account their evolving needs and expectations. QIAGEN has established a global systematic approach to measure customer experience in the form of an aggregated Customer Experience Indicator (CEI). The CEI is measured on a monthly basis through a set of internal KPIs (product and delivery performance, phone support, etc.) that are directly linked to customer experience in our transactions. Thus, we are able to identify quickly and systematically areas for improvement while staying closely connected with our customers. Employee

performance in relation to the CEI is embedded into our annual goal setting process. With an average CEI of 1,515 of possible 2,000 points in 2018, we have managed to further increase our strong performance compared to the previous year.

**Quality and product safety**

QIAGEN stands for quality. Since QIAGEN's founding 30 years ago, we have always been committed to the highest quality, and we always strive to exceed our customers' expectations. QIAGEN's reputation as a quality supplier is best-in-class in our industry and the foundation of our loyal global customer base.

To achieve and maintain our quality standards, we established Total Quality Management (TQM) systems in all of our manufacturing facilities around the globe. These assure constant high quality as well as safe and effective medical devices. QIAGEN's TQM systems are certified according ISO 9001, ISO 13485, ISO 18385, as well as 21 CFR 820 and all other applicable medical device standards around the globe (see "Government Regulations" section in the Management Report).

QIAGEN products and their components are safe to use by customers, as well by our employees in Research and Development (R&D). We use a list of qualified substances (the "MDx Toolbox"), specifically excluding any substances of concern. Our transparent and responsible product and development policy also includes the communication and marketing of products. As with all companies in the medical device/in vitro diagnostics industry, product claims and product properties are verified and validated during development and approved by regulatory bodies around the world as part of the product submission process.

QIAGEN, like other companies, is exposed to the financial implications of potential recalls and other adverse events due to equipment failures, manufacturing defects, design flaws, or inadequate disclosure of product-related risks. In the event of a recall, QIAGEN has established global procedures applicable to all QIAGEN sites. Processes, responsibilities and improvements programs are defined as required by regulating authorities to avoid the reoccurrence of recalls. There is full traceability of each product to the final customer; therefore, any recalls are executed by direct customer notifications. Due to QIAGEN's stringent quality management, recalls rarely occur: 2018 (4), 2017 (0), 2016 (3), 2015 (1). The percentage of affected product is low as well: 2018 (0.09%), 2017 (0%), 2016 (0.21%), 2015 (0.022%). In past recalls, 90% to 100% of customers have been reached and confirmed recall notification.

The safe use of our electronic devices in terms of cybersecurity is another high-priority area at QIAGEN. All relevant employees are regularly trained in the latest technology and applications to ensure that our customers do not face any risks related to cybercrimes.

**Access to healthcare**

QIAGEN is aware of the importance of providing access to healthcare and research products around the world. In developing countries with scarce resources, new ways are needed to ensure access to affordable diagnostics that play a critical role in helping to prevent and treat diseases. In particular, infectious diseases and various malignancies can be treated much more cost-effectively through early and precise detection - and with improved patient outcomes. However, many emerging countries lack properly trained lab personnel and technical infrastructure to utilize the latest molecular testing technologies.

For QIAGEN, a strategic approach to providing access to diagnostic technologies can yield opportunities for growth, innovation and unique public-private partnerships. To support our growth strategy in emerging markets, we are expanding our presence in these markets and adapting our products to local needs, where necessary. An example is the development of *careHPV* as an adaptation of our gold standard *digene HC2* test for detection of high-risk human papillomavirus (HPV), which has been shown to be the primary cause of cervical cancer. In cooperation with PATH, an NGO, and support from the Bill & Melinda Gates Foundation, QIAGEN developed this dedicated testing system for use in regions with limited healthcare resources. The main advantages of decentralized HPV testing are:

- immediate analysis at the point of care
- instant treatment decisions
- higher compliance of patients

Our *careHPV* Test is currently available in more than 25 countries worldwide. Since its launch through the end of 2018, more than 3 million tests have been distributed.

Another example is our effort to advance diagnostics for tuberculosis (TB) in low-resource, high disease burden countries. Based on a five-year memorandum of understanding signed in 2015, QIAGEN is cooperating with FIND, an NGO, to develop innovative and affordable tests to detect people with latent TB infections who are at risk of developing active TB.

Furthermore, we are providing financial support to several organizations and initiatives focused on global health projects. In 2018, among the projects that we continued to support were the International Agency for Research on Cancer in Tanzania, Basic Health International in El Salvador, and the Pink Ribbon Red Ribbon initiative in different countries.

**Sustainable supply chain management**

QIAGEN strives to ensure that its quality standards, compliance with laws and regulations, as well as ecological and social standards, are maintained along the entire value chain of suppliers and partners. For us, organic growth is the goal, not maximum profit. We demand the same from our business partners. In 2018, we revised our procurement policy to include specific requirements for corporate governance, environmental and social standards, which we expect from our suppliers as minimum standards. The policy is publicly available on the QIAGEN Website.

In alignment with QIAGEN's Compliance Program (especially QIAGEN's Corporate Code of Conduct and Ethics), every QIAGEN employee must conduct themselves honestly, fairly, and objectively in all business relationships with suppliers and all others with whom QIAGEN maintains business relationships. Employees in the Procurement organization, especially, must understand our revised procurement guidelines and comply with them.

**Structure of our supply chain**

QIAGEN operates in over 35 locations worldwide. Our sites are supported by a global supplier network that includes approximately 9,000 suppliers in over 60 countries, supplying resources such as chemicals and bioreagents, plastics, packaging materials, as well as other materials and services essential to our business. In 2018, 89.7% of our overall purchasing volume came from OECD countries.

**Region of origin of suppliers**

| Region of origin | % |
|---|---|
| Europe | 47% |
| North America | 24% |
| Asia | 23% |
| South America | 3% |
| Australia | 2% |
| Africa | 0.4% |

**Due diligence process**

In order to minimize compliance, environmental and social risks in our supply chain, we introduced a multi-stage vendor selection process in 2018. As a first step, existing suppliers were subjected to a risk analysis with regard to ecological and social criteria based on their geographic location. These criteria were supported by information from the MVO Nederlands platform financed by the Dutch Foreign Ministry, as well as the Bertelsmann Stiftung foundation's Sustainable Development Goals Index. As a result, 70 suppliers were identified for whom potential risks exist due to geographic location and sales to QIAGEN.

The revised procurement policy was then sent to these suppliers with the request to sign. All new suppliers must also sign this policy in order to be approved as QIAGEN suppliers. In detail, the policy contains requirements with regard to legal compliance, bribery and corruption, labor rights, non-discrimination and fair treatment, health and safety as well as environmental protection and conservation. In addition, first-tier suppliers must confirm REACH, RoHS and SEC compliance as appropriate.

As part of our supplier selection process, we additionally assess the suppliers' policy with a perspective on QIAGEN's requirements. Supplier audits are conducted if non-compliance is suspected. To our knowledge, there were no violations regarding corporate governance, environmental and social standards in the reporting period.

**Conflict minerals**

The sourcing of certain minerals (known as "conflict minerals") has been linked with human rights abuses in the Democratic Republic of Congo ("DRC") and other conflict zones. QIAGEN has performed an extensive inquiry into the company's supply chain to confirm that the products supplied to us are either DRC conflict-free or that the suppliers are not aware of any non-compliance in their supply base. QIAGEN has no indication that any conflict minerals from the Democratic Republic of Congo or adjoining countries are used in the company's laboratory instruments.

Our products consist of sample and assay kits, known as consumables, and automated instrumentation systems. We do not believe that any Conflict Minerals are necessary to the production or functionality of any of our consumable products. We conduct due diligence measures annually to determine the presence of Conflict Minerals in our instrumentation products and the source of any such Conflict Minerals. Because we do not purchase Conflict Minerals directly from smelters or refineries, we rely on our suppliers to specify to us their Conflict Minerals sources and declare their Conflict Minerals status. We disclosed our Conflict Minerals findings to the U.S. Securities and Exchange Commission ("SEC") for the calendar year ending December 31, 2017, on Form SD on May 17, 2018, and will provide updated disclosure to the SEC annually.

**Outlook**

**QIAGEN Perspectives for 2019**

With a dynamic and disruptive portfolio of Sample to Insight solutions for molecular testing, QIAGEN expects to sustain its growth in sales and earnings in 2019 and beyond. QIAGEN serves more than 500,000 customers across the value chain, from researchers in Academia and the pharmaceutical industry to healthcare providers using molecular diagnostics to bring state-of-the-art care to patients. QIAGEN is executing on mid-term strategic plans to enhance financial performance and returns to shareholders from 2016 through 2020. Investments in innovation and commercial support are paying off in a faster sales trajectory for growth drivers, while efficiency and capital allocation initiatives enhance operating leverage and profitability.

QIAGEN continues its focus on differentiated solutions in fast-growing markets and made significant progress in enlarging and transforming its portfolio in 2018. Growth engines in 2019 include expanding the market for QuantiFERON-TB technology; driving the adoption of novel solutions in next-generation sequencing (NGS); enabling precision medicine with insights to guide treatment decisions; delivering valuable insights through automation systems; integrating bioinformatics to analyze and interpret genomic data; and deepening QIAGEN's leadership in core technologies for sample processing. QIAGEN continues to build its innovative portfolio through research and development, external partnerships and targeted acquisitions.

Sales of QuantiFERON-TB, the gold-standard blood test for latent tuberculosis (TB) infection, grew 21% in 2018 - tracking toward a target of $300 million by 2020. As global efforts to control tuberculosis continue to intensify, QuantiFERON-TB Gold Plus (QFT-Plus) is gaining adoption worldwide to replace the time-consuming, unreliable 120-year-old tuberculin skin test. QIAGEN is adding automation options for QFT-Plus through partnerships with DiaSorin, Hamilton and Tecan to enhance the efficiency of screening, particularly for large TB programs. The company also is developing QuantiFERON-TB Access to make blood-based latent TB detection accessible to low-resource regions with a high disease burden (launch expected in 2020).

With next-generation sequencing emerging from elite research labs into clinical research and diagnostics, QIAGEN's portfolio of NGS solutions grew rapidly to over $140 million in 2018 sales, about 10% of total revenues. A new target of $190 million was set for 2019. QIAGEN continues to add to its "universal solutions," industry-leading sample technologies, "Digital NGS" assays and bioinformatics, reaching into nearly every NGS lab around the world. The GeneReader NGS System, a complete Sample to Insight solution for benchtop sequencing, is benefiting from new placements and growing consumable sales. After adding new GeneRead QIAact gene panels in 2018, QIAGEN continues to develop innovative content for the platform.

QIAGEN's Precision Medicine franchise, marshaling genomic insights to enable personalized treatment decisions for patients with cancer and other diseases, exceeded $100 million in sales in 2018 and offers dynamic growth potential. More than 25 partnerships with Pharma and biotech companies make QIAGEN the global leader in creating companion diagnostics for selection of the most appropriate therapies based on genetic variations. In 2019, QIAGEN expects a stream of companion diagnostic launches in oncology and hematology.

QIAGEN is commercializing disruptive new automation systems to expand its reach in large, growing markets - and is leveraging a rich pipeline of molecular content through assay development efforts. The focus in 2019 is on execution across these platforms:

- QIAsymphony, the flagship modular system for Sample to Insight analysis with polymerase chain reaction (PCR), surpassed its target of 2,300 cumulative placements around the world in 2018, and a new target of over 2,500 was set for 2019. The QIAsymphony SP module is the market-leading "front end" solution for automated processing of samples - a critical need as laboratories handle growing volumes for NGS and PCR testing.

- The GeneReader NGS System continues to gain share in the benchtop NGS market with a full menu of cancer gene panels for clinical research, plus selected forensics applications. New panels for immuno-oncology and liquid biopsy monitoring of lung cancer are expected to launch in 2019, as well as custom panels and improvements in automation.

- QIAstat-Dx, a one-step, fully integrated system for syndromic testing, is gaining momentum after its April 2018 launch in Europe. A U.S. launch and additional diagnostic panels are expected in 2019. QIAstat-Dx delivers cost-efficient diagnosis in about an hour, with less than one minute of hands-on time. The addressable market is estimated at $800 million.

- The NeuMoDx 288 and 96 systems, launched in Europe in late 2018, offer a disruptive new platform in the fully integrated PCR market for higher-throughput diagnostics, estimated at $2.7 billion. The Sample to Insight NeuMoDx

systems automate the otherwise expensive, time-consuming liquid handling process and speed up analysis for labs. QIAGEN plans to expand the assay menu in 2019 and begin to drive NeuMoDx adoption globally.

- In 2019, QIAGEN is investing to develop disruptive new solutions for digital PCR, a fast-growing molecular technology among Life Sciences customers. QIAGEN is targeting a 2020 launch with fully integrated systems that simplify digital PCR workflows, offer higher throughput and multiplexing, and provide favorable economics for customers.

Bioinformatics solutions are growing rapidly as QIAGEN software and knowledge bases deliver the real value of molecular testing: actionable insights. In 2018, launches included major enhancements to QIAGEN Clinical Insight (QCI); easy-to-use new CLC Genomics Workbench software; and other solutions. So far in 2019, QIAGEN has acquired N-of-One, adding powerful real-world evidence in oncology to QCI, and partnered with Ares Genetics to advance the fight against antibiotic-resistant infections. Bioinformatics is a key strategic advantage for QIAGEN.

QIAGEN's differentiated core technologies for sample processing continue to drive growth, with a focus on emerging applications such as liquid biopsies and microbiome research. In 2019, QIAGEN is launching QIAcube Connect, a next-generation solution for automated sample processing that delivers digitization and ease of use to help labs process increasing volumes.

Ongoing actions to improve efficiency are expected to continue to benefit results in 2019. Key actions include consolidating activities into shared service centers and global centers of excellence, and embracing digital tools across the business. Digital channels account for a growing portion of sales, exceeding 40% in 2018 and moving toward a goal of 50% in 2020.

**Global Economic Perspectives for 2019**

Global economic growth slowed in 2018 and is expected to decelerate further in 2019, as well as facing downside risks from geopolitical and financial uncertainties. The World Bank forecasts global GDP growth of 2.9% in 2019, down from 3.0% in 2018, easing further to 2.8% in 2020 and 2021. Although no recession is predicted near-term, risks include increasing tariffs and other trade barriers, a chill in emerging-market economies, the United Kingdom's move to leave the European Union, shifts toward normalizing monetary policy and the chance of a financial market disruption. U.S. growth remains solid but slower in 2019, after the 2018 surge triggered by tax reform. Growth in Europe has slowed as exports soften in an uncertain trade climate. China's rapid growth is expected to continue to moderate amid weaker exports, though supported by domestic consumption. Japan remains in a slow-growth mode. Economic momentum tends to benefit the business environment for QIAGEN, while a downturn could hurt customer funding budgets. Currency exchange rates also affect results reported in U.S. dollars.

**Industry Perspectives for 2019**

Genomic insights today are moving rapidly from basic research laboratories into applications in medicine and other fields, delivering ever-greater value for patients and other users. Multiple segments of molecular testing are growing at double-digit rates. As innovation drives market expansion, QIAGEN has a fertile environment to sustain its growth in 2019 and beyond.

Molecular diagnostics, in particular, is growing briskly as healthcare providers adopt genomic testing to evaluate and monitor patients for cancer, infectious diseases and other conditions. Molecular medicine is migrating from research-based institutions into hospitals and reference laboratories in need of quick, accurate results, increasing the demand for standardized tests and automated workflows. Customers, meanwhile, embrace diverse technologies based on different needs - from low-throughput to high-throughput, and from single-target or multiplex PCR analysis to in-depth next-generation sequencing. Common themes across different customer types are need for easy-to-use technologies and decision-support software.

Life science researchers in Academia and the Pharma industry rely on novel sample and sequencing technologies to explore disease pathways and biomarkers, and increasingly to guide drug development and clinical trials as well. Developments in the science presage a wave of new therapies based on genomic insights. Applications of molecular testing also are expanding for public safety needs such as forensics and environmental monitoring.

QIAGEN is executing on a strategy to engage customers across the continuum, from discovery to routine molecular testing, and to create value with differentiated solutions and automation systems that make improvements in life possible.

**Subsequent Events**

On January 7, 2019, we announced the acquisition of N-of-One, Inc, a privately-held U.S. molecular decision support company and pioneer in clinical interpretation services for complex genomic data. The cash consideration totaled approximately $26.0 million. The acquisition included contingent consideration which is recorded as part of the purchase price based on the acquisition date fair value. The addition of N-of-One will enable QIAGEN to significantly expand its decision-support solutions while offering a broader range of software, content and service-based solutions. It will also enable QIAGEN to provide customers with greater access to valuable genomic data assets and service offerings. N-of-One is not expected to provide a significant contribution to our results in 2019.

On January 31, 2019, we acquired the digital PCR assets of Formulatrix, Inc., a developer of laboratory automation solutions. Combining the Formulatrix assets with QIAGEN technologies and automation, we expect to bring to market a fully integrated digital PCR solution with a targeted launch in 2020. We agreed to pay Formulatrix $125.0 million in cash upon closing and future milestone payments of $135.9 million in 2020.

Venlo, the Netherlands, April 29, 2019

QIAGEN N.V.

| | |
|---|---|
| Peer M. Schatz | Roland Sackers |
| Chief Executive Officer | Chief Financial Officer |

**Corporate Governance Report**

We recognize the importance of clear and straightforward rules on corporate governance and, where appropriate, have adapted our internal organization and processes to these rules. This section provides an overview of QIAGEN's corporate governance structure and includes details of the information required under the Dutch Corporate Governance Code (the Dutch Code). The Dutch Code is applicable to QIAGEN N.V. (in the following also referred to as the "Company"), as it is a publicly listed company incorporated under the laws of The Netherlands with a registered seat in Venlo, The Netherlands. The Dutch Code contains the principles and concrete provisions which the persons involved in a listed company (including Managing Board members and Supervisory Board members) and stakeholders should observe in relation to one another.

Our corporate governance practices generally derive from the provisions of the Dutch Civil Code and the Dutch Corporate Governance Code. Further, due to our listing on the New York Stock Exchange in the U.S., the Managing Board and the Supervisory Board of QIAGEN N.V. declared their intention to disclose in QIAGEN's Annual Reports the Company's compliance with the corporate governance practices followed by U.S. companies under the New York Stock Exchange listing standards or state the deviations recorded in the period.

A brief summary of the principal differences follows.

**Corporate Structure**

QIAGEN is a 'Naamloze Vennootschap,' or N.V., a Dutch public limited liability company similar to a corporation in the United States. QIAGEN has a two-tier board structure. QIAGEN is managed by a Managing Board consisting of executive management acting under the supervision of a Supervisory Board (non-executives), similar to a Board of Directors in a U.S. corporation. It is in the interest of QIAGEN and all its stakeholders that each Board performs its functions appropriately and that there is a clear division of responsibilities between the Managing Board, the Supervisory Board, the general meeting of shareholders (General Meeting) and the external auditor in a well-functioning system of checks and balances.

**Managing Board**

**General**

The Managing Board manages QIAGEN and is responsible for defining and achieving QIAGEN's aims, strategy, policies and results and is expected to act in a sustainable manner by focusing on long-term value creation in the performance of their work. The Managing Board is also responsible for complying with all relevant legislation and regulations as well as for managing the risks associated with the business activities and the financing of QIAGEN. It reports related developments to and discusses the internal risk management and control systems with the Supervisory Board and the Audit Committee. Under Dutch Law, QIAGEN's Managing Board, which has two members, has chosen to work with an Executive Committee and is accountable for the actions and decisions of the Executive Committee, which is comprised of the CEO, the CFO and certain experienced leaders who have responsibilities for the operational management of the Company and the achievement of its objectives and results. The Managing Board has ultimate responsibility for the Company's external reporting and is answerable to shareholders of the Company at the Annual General Meeting of Shareholders. Pursuant to the two-tier corporate structure, the Managing Board is required to render account for the performance of its duties to the Supervisory Board and the General Meeting of Shareholders (General Meeting). The Managing Board provides the Supervisory Board with timely information necessary for the exercise of the duties of the Supervisory Board. In discharging its duties, the Managing Board takes into account the interests of QIAGEN, its enterprises and all parties involved in QIAGEN, including shareholders and other stakeholders.

**Composition and Appointment**

The Managing Board consists of one or more members as determined by the Supervisory Board. The members of the Managing Board are appointed by the General Meeting upon the joint meeting of the Supervisory Board and the Managing Board (the Joint Meeting) having made a binding nomination for each vacancy. However, the General Meeting may at all times overrule the binding nature of such a nomination by a resolution adopted by at least a two-thirds majority of the votes cast, if such majority represents more than half the issued share capital. Managing Directors are appointed annually for the period beginning on the date following the Annual General Meeting up to and including the date of the Annual General Meeting held in the following year.

Members of the Managing Board may be suspended and dismissed by the General Meeting by a resolution adopted by a two-thirds majority of the votes cast, if such majority represents more than half of the issued share capital, unless the proposal was made by the Joint Meeting, in which case a simple majority of votes cast is sufficient. Furthermore, the Supervisory Board may at any time suspend (but not dismiss) a member of the Managing Board.

Our Managing Directors for the year ended December 31, 2018 and their ages as of January 31, 2019, are as follows:

**Managing Directors:**

| Name | Age | Position |
|---|---|---|
| Peer M. Schatz | 53 | Managing Director, Chief Executive Officer |
| Roland Sackers | 50 | Managing Director, Chief Financial Officer |

The following is a brief summary of the background of each of the Managing Directors. References to "QIAGEN" and the "Company" in relation to periods prior to April 29, 1996 mean QIAGEN GmbH and its consolidated subsidiaries:

**Peer M. Schatz**, 53, joined QIAGEN in 1993, when the Company had just 30 employees and revenues of approximately $2 million, and has been Chief Executive Officer since January 1, 2004. He was Chief Financial Officer between 1993 and 2003 and became a member of the Managing Board in 1998. Mr. Schatz was previously a partner in a private management buyout group in Switzerland, worked in finance and systems positions in Sandoz, Ltd. and Computerland AG, and participated in the founding of start-up companies in the computer and software trading industry in Europe and the United States. Mr. Schatz graduated from the University of St. Gallen, Switzerland, with a Master's degree in Finance in 1989 and obtained an M.B.A. in Finance from the University of Chicago Graduate School of Business in 1991. Mr. Schatz served as a member of the German Corporate Governance Commission from 2002 to 2012. He is Managing Director of PS Capital Management GmbH. He is a board member of AdvaMedDx, an advocacy dedicated to issues facing the in vitro diagnostics industry in the United States and Europe, and ALDA (the Analytical, Life Science and Diagnostics Association), a trade association of developers and suppliers in these fields.

**Roland Sackers**, 50, joined the Company in 1999 as Vice President Finance and has been Chief Financial Officer since 2004. In 2006, Mr. Sackers became a member of the Managing Board. Between 1995 and 1999, he served as an auditor with Arthur Andersen Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft. Mr. Sackers earned his Diplom-Kaufmann from University of Münster, Germany. He is a former member of the Supervisory Board and Audit Committee of IBS AG and a former member of the board of directors of Operon Biotechnologies, Inc. Mr. Sackers is a board member of the industry association BIO Deutschland. He was previously a non-executive director and chair of the audit committee from 2011 to 2018 of Immunodiagnostic Systems Holding PLC (IDS), a leading producer of immunological tests for research and diagnostic applications publicly listed in the United Kingdom.

**Conflicts of Interest, Loans or Similar Benefits**

Resolutions to enter into transactions under which members of the Managing Board could have a conflict of interest with QIAGEN, and which are of material significance to QIAGEN and/or the relevant member of the Managing Board, require the approval of the Supervisory Board. A Managing Director that has a personal conflict of interest will not participate in the decision making process regarding such item. QIAGEN has not entered into any such transactions in 2018. No credit, loans or similar benefits were granted to members of the Managing Board. Additionally, the Managing Board Members did not receive any benefits from third parties that were either promised or granted in view of their position as members of the Managing Board.

**Supervisory Board**

**General**

The Supervisory Board supervises the policies of the Managing Board, the general course of QIAGEN's affairs and the manner in which the Management Board implements the long-term value creation strategy and the business enterprises which we operate. The Supervisory Board assists the Managing Board by providing advice relating to the business activities of QIAGEN. In 2018, the Supervisory Board had five regular meetings that were held with the attendance of the Managing Board, while certain agenda items were discussed exclusively between the Supervisory Board members. In discharging its duties, the Supervisory Board takes into account the interests of QIAGEN, its enterprise and all parties involved in QIAGEN, including shareholders and other stakeholders. The Supervisory Board is responsible for the quality of its own performance. In this respect, the Supervisory Board conducts a self-evaluation on an annual basis. Our Supervisory Board has specified matters requiring its approval, including decisions and actions which would fundamentally change the company's assets, financial position or results of operations. The Supervisory Board has appointed an Audit Committee, a Compensation Committee, a Selection and Appointment (Nomination) Committee and a Science and Technology Committee from among its members and can appoint other committees as deemed beneficial. The Supervisory Board has approved charters pursuant to which each of the committees operates.

**Composition and Appointment**

The Supervisory Board consists of at least three members, or a larger number as determined by the Joint Meeting. Members of the Supervisory Board are appointed by the General Meeting upon the Joint Meeting having made a binding nomination for

each vacancy. However, the General Meeting may at all times overrule the binding nature of such a nomination by a resolution adopted by at least a two-thirds majority of the votes cast, if such majority represents more than half the issued share capital.

The Supervisory Board shall be composed in a way that enables it to carry out its duties properly and enables its members to act critically and independently of one another and of the Managing Board and any particular interests. To that effect, the Supervisory Board has adopted a profile of its size and composition that takes into account the nature of our business, our activities and the desired diversity, expertise and background of the members of the Supervisory Board. The current profile of the Supervisory Board can be found on our website. The Supervisory Board has appointed a chairman from its members who has the duties assigned to him by the Articles of Association and the Dutch Code.

Members of the Supervisory Board are appointed annually for the period beginning on the date following the General Meeting up to and including the date of the General Meeting held in the following year. Members of the Supervisory Board may be suspended and dismissed by the General Meeting by a resolution adopted by a two-thirds majority of the votes cast, if such majority represents more than half of the issued share capital, unless the proposal was made by the Managing Board and the Supervisory Board in which case a simple majority of votes cast is sufficient.

Our Supervisory Directors for the year ended December 31, 2018 and their ages as of January 31, 2019, are as follows:

**Supervisory Directors:**

| Name | Age | Nationality | Gender | Position |
|---|---|---|---|---|
| Stéphane Bancel | 46 | French | Male | Supervisory Director, Member of the Compensation Committee, Audit Committee and Science and Technology Committee |
| Dr. Håkan Björklund | 62 | Swedish | Male | Chairman of the Supervisory Board, Member of the Compensation Committee and Selection and Appointment Committee |
| Dr. Metin Colpan | 64 | German | Male | Supervisory Director, Chairman of the Science and Technology Committee and Member of the Selection and Appointment Committee |
| Dr. Ross L. Levine | 47 | U.S. | Male | Supervisory Director and Member of the Science and Technology Committee |
| Dr. Elaine Mardis | 56 | U.S. | Female | Supervisory Director and Member of the Science and Technology Committee |
| Lawrence A. Rosen | 61 | U.S. | Male | Supervisory Director and Chairman of the Audit Committee |
| Elizabeth E. Tallett | 69 | U.S. | Female | Supervisory Director, Chairwoman of the Compensation Committee, Member of the Audit Committee and Member of the Selection and Appointment Committee |

The following is a brief summary of the background of each of the Supervisory Directors. References to “QIAGEN” and the “Company” in relation to periods prior to April 29, 1996 mean QIAGEN GmbH and its consolidated subsidiaries:

**Stéphane Bancel,** 46, joined the Company's Supervisory Board as well as the Compensation Committee in 2013 and joined the Audit Committee and Science and Technology Committee in 2014. He is Chief Executive Officer of Moderna Therapeutics, Inc., a clinical-stage biotechnology company based in Cambridge, Massachusetts, which is advancing multiple drug development programs involving messenger RNA therapeutics. Before joining Moderna, Mr. Bancel served for five years as Chief Executive Officer of the French diagnostics company bioMérieux SA. Prior to bioMérieux, he was Managing Director of Eli Lilly in Belgium and Executive Director of Global Manufacturing Strategy and Supply Chain at Eli Lilly in Indianapolis, Indiana, after having started at Lilly in Great Britain. Before joining Eli Lilly, Mr. Bancel served as Asia-Pacific Sales and Marketing Director for bioMérieux while based in Tokyo, Japan. He holds a Master of Engineering degree from École Centrale Paris (ECP), a Master of Science in Chemical Engineering from the University of Minnesota and an M.B.A. from Harvard Business School.

**Dr. Håkan Björklund,** 62, was appointed as a new Supervisory Board Member in March 2017 and as Chairman of the Supervisory Board in June 2018. He is a member of the Compensation Committee and the Selection and Appointment Committee. Dr. Björklund brings an extensive international background in the life science industry to QIAGEN, in particular through his current role as Operating Executive at Avista Capital Partners, as well as through previous roles as CEO of the global pharmaceutical company Nycomed, Regional Director at Astra (now AstraZeneca) and President of Astra Draco. Under Mr. Björklund’s leadership, Nycomed grew from a predominantly Scandinavian business into a global pharmaceutical company. In addition to QIAGEN, he currently serves as Chairman of the Board of Directors at Acino International AG, Swedish Orphan Biovitrum AB (Sobi), BONESUPPORT AB and Trimb Healthcare AB. Dr. Björklund earlier served as

Chairman of the Board of Directors of Lundbeck A/S, and was also a Member of the Board of Directors of several international life science companies, including Alere, Atos, Coloplast and Danisco. Dr. Björklund has a Ph.D. in Neuroscience from Karolinska Institutet in Sweden.

**Dr. Metin Colpan**, 64, is a co-founder of QIAGEN and was the Company's Chief Executive Officer and a Managing Director from 1985 through 2003. Dr. Colpan has been a member of the Supervisory Board since 2004 and has served as Chairman of the Science and Technology Committee since 2014. He has been a member of the Selection and Appointment Committee since 2015. Dr. Colpan obtained his Ph.D. and M.S. in Organic Chemistry and Chemical Engineering from the Darmstadt Institute of Technology in 1983. Prior to founding QIAGEN, Dr. Colpan was an Assistant Investigator at the Institute for Biophysics at the University of Düsseldorf. Dr. Colpan has had wide experience in separation techniques and in the separation and purification of nucleic acids in particular, and has filed many patents in the field. Dr. Colpan also serves as a Supervisory Board member of Qalovis Farmer Automatic Energy GmbH, Laer, Germany. Dr. Colpan previously served as a Supervisory Board member of Ingenium Pharmaceuticals AG, GenPat77 Pharmacogenetics AG, GPC Biotech AG and Morphosys AG, each in Munich, Germany.

**Dr. Ross L. Levine,** 47, joined the Supervisory Board and its Science and Technology Committee in 2016. He is a physician-scientist focused on researching and treating blood and bone marrow cancers as the Laurence Joseph Dineen Chair in Leukemia Research, the Director of the Center for Hematologic Malignancies, and an Attending Physician at Memorial Sloan Kettering Cancer Center, as well as Professor of Medicine at Weill Cornell Medical College. He leads a research lab investigating genetics and targeted therapies in myeloid malignancies and is interested in application of next-generation sequencing technology in the practice of medicine in hematologic cancers. He trained in internal medicine at Massachusetts General Hospital and in hematology-oncology at the Dana-Farber Cancer Institute, earning board certification in these specialties. He received his M.D. from the Johns Hopkins University School of Medicine and his A.B. degree from Harvard College.

**Dr. Elaine Mardis,** 56, joined the Company’s Supervisory Board and its Science and Technology Committee in 2014. Dr. Mardis is the Co-Executive Director of the Institute for Genomic Medicine at Nationwide Children’s Hospital in Columbus, OH. She also is Professor of Pediatrics at the Ohio State University College of Medicine. Dr. Mardis has research interests in the application of genomic technologies to improve our understanding of human disease, and toward improving the precision of medical diagnosis, prognosis and treatment. Dr. Mardis is the former Robert E. and Louise F. Dunn Distinguished Professor of Medicine at Washington University School of Medicine in St. Louis, MO, where she was on the faculty for 22 years. As Co-Director of the McDonnell Genome Institute, she devised methods and automation that contributed to the Human Genome Project and has since played key roles in the 1000 Genomes Project, The Cancer Genome Atlas, and the Pediatric Cancer Genome Project. Prior to joining the Washington University faculty, she was a senior research scientist at BioRad Laboratories in Hercules, CA. Dr. Mardis is a board member of the American Association for Cancer Research, and has scientific advisory roles at the Regeneron Genomics Center, PACT Pharma LLC, and Interpreta LLC. She also serves the U.S. government as a scientific advisor to the Veteran’s Administration for the Million Veterans Program. Dr. Mardis received her Bachelor of Science degree in Zoology in 1984 and her Ph.D. in Chemistry and Biochemistry in 1989, both from the University of Oklahoma.

**Lawrence A. Rosen,** 61, joined the Company's Supervisory Board as well as the Audit Committee in 2013 and has served as the committee's chairman since 2014. Mr. Rosen was a member of the Board of Management and Chief Financial Officer of Deutsche Post DHL until September 2016. Holding this position since 2009, Mr. Rosen was in charge of controlling, corporate accounting and reporting, investor relations, corporate finance, corporate internal audit and security, taxes, as well as the group’s global business services. Prior to joining Deutsche Post DHL, Mr. Rosen served as Chief Financial Officer of Fresenius Medical Care AG & Co. KGaA in Germany from 2003 to 2009. Prior to that, he was Senior Vice President and Treasurer for Aventis SA in Strasbourg, France. Between 1984 and 2000, Mr. Rosen held different positions at the Aventis predecessor companies Hoechst AG and American Hoechst/Hoechst Celanese Inc. Since 2015, Mr. Rosen has served as a member of the board of Lanxess AG and previously served on the board of Postbank AG from 2009 until 2015. Mr. Rosen, who is a U.S. citizen, holds a Bachelor's degree in Economics from the State University of New York and an M.B.A. from the University of Michigan.

**Elizabeth E. Tallett,** 69, joined the Company's Supervisory Board as well as the Audit Committee and Compensation Committee in 2011 and since 2016 has served as Chairwoman of the Compensation Committee. She is a member of the Selection and Appointment Committee. Ms. Tallett was a Principal of Hunter Partners, LLC, a management company for early to mid-stage pharmaceutical, biotechnology and medical device companies, from 2002 until February 2015. Ms. Tallett continues to consult with early stage health care companies. Her senior management experience includes President and CEO of Transcell Technologies Inc., President of Centocor Pharmaceuticals, member of the Parke-Davis Executive Committee, and Director of Worldwide Strategic Planning for Warner-Lambert Company. Ms. Tallett graduated from Nottingham University, England with dual Bachelor's degrees with honors in mathematics and economics. She is a member of the board of directors of Principal Financial Group, Inc. (where she is currently the Lead Director), Meredith Corp and is chair of the board of Anthem,

Inc. She is a former director of Coventry Health Care, Inc. Ms. Tallett was a founding board member of the Biotechnology Council of New Jersey and is a Trustee of Solebury School in Pennsylvania.

**Professor Dr. Manfred Karobath**, 78, had been a member of the Supervisory Board since 2000 and joined the Compensation Committee in 2005. In 2016, Prof. Karobath was appointed as Chairman of the Supervisory Board. He joined the Science and Technology Committee in 2014 and the Compensation Committee in 2016. He was also the Chairman of the Selection and Appointment Committee. Prof. Dr. Karobath studied medicine, and from 1967 to 1980 he worked first in the Dept. of Biochemistry of the University of Vienna and, after a stage as postdoctoral fellow, he joined the Dept. of Psychiatry where he became Professor of Biological Psychiatry. In 1980, he joined Sandoz Pharma in Basel, first in drug discovery, and later becoming Senior Vice President and head of R&D. In 1992, Prof. Dr. Karobath joined Rhone Poulenc Rorer (RPR) as President of R&D and Executive Vice President, and later, he became a member of the boards of directors of RPR, Pasteur Mérieux Connought, Centeon and Rhone Poulenc Pharma. He has received several scientific awards and has published 92 scientific papers. Prof. Dr. Karobath did not stand for re-election at the Company's Annual General Meeting in June 2018.

**Conflicts of Interest, Loans or Similar Benefits**

Resolutions to enter into transactions under which members of the Supervisory Board could have a conflict of interest with QIAGEN, and which are of material significance to QIAGEN and/or the relevant member of the Supervisory Board, must be reported and require the approval of the Supervisory Board plenum. A Supervisory Director that has a personal conflict of interest will not participate in the decision making process regarding such item. In 2018 neither QIAGEN nor its Supervisory Board members have entered into any such transactions. No credit, loans or similar benefits were granted to members of the Supervisory Board. Additionally, the Supervisory Board Members did not receive any benefits from third parties that were either promised or granted in view of their position as members of the Supervisory Board.

**Committees of the Supervisory Board**

The Supervisory Board has established an Audit Committee, a Compensation Committee, a Selection and Appointment Committee and a Science and Technology Committee from among its members and can establish other committees as deemed beneficial. The Supervisory Board has approved charters under which each of the committees operates. These charters are published on our website www.qiagen.com. The committees are comprised of the following members:

| Name of Supervisory Director[(1)] | Member of Audit Committee | Member of Compensation Committee | Member of Selection and Appointment Committee | Member of Science and Technology Committee |
|---|---|---|---|---|
| Stéphane Bancel | • | • | | • |
| Dr. Håkan Björklund | | • | • (Chairman) | |
| Dr. Metin Colpan | | | • | • (Chairman) |
| Dr. Ross L. Levine | | | | • |
| Dr. Elaine Mardis | | | | • |
| Lawrence A. Rosen | • (Chairman) | | | |
| Elizabeth E. Tallett | • | • (Chairwoman) | • | |

(1) Prof. Dr. Manfred Karobath served as a member of the Compensation Committee, as a member of the Science and Technology Committee and as the Chairman of the Selection and Appointment Committee until June 2018.

We believe that all of our Supervisory Directors meet the independence requirements set forth in the Dutch Corporate Governance Code (the Dutch Code). We further believe that all Supervisory Board Directors qualify as independent under the independence standards set forth in the New York Stock Exchange (NYSE) Listed Company Manual. Pursuant to the NYSE rules, a majority of the Supervisory Directors must qualify as independent, as defined in the Rules.

**Audit Committee**

The Audit Committee currently consists of three members, Mr. Rosen (Chairman), Ms. Tallett and Mr. Bancel, and meets at least quarterly. The Audit Committee members are appointed by the Supervisory Board and serve for a term of one year. We believe that all members of our Audit Committee meet the independence requirements as set forth in Rule 10A-3 of the Securities Exchange Act of 1934, as amended, and the New York Stock Exchange Listed Company Manual. The Board has designated Mr. Rosen as an "audit committee financial expert" as that term is defined in the United States Securities and

Exchange Commission rules adopted pursuant to the Sarbanes-Oxley Act of 2002 and as defined in provisions III.3.2 and III. 5.7 of the Dutch Code. The Audit Committee performs a self-evaluation of its activities on an annual basis.

The Audit Committee's primary duties and responsibilities include, among other things, to serve as an independent and objective party to monitor QIAGEN's accounting and financial reporting process and internal risk management, control and compliance systems. The Audit Committee also is directly responsible for proposing the external auditor to the Supervisory Board, which then proposes the appointment of the external auditor to the General Meeting. Further, the Audit Committee is responsible for the compensation and oversight of QIAGEN's external auditor and for providing an open avenue of communication among the external auditor as well as the Management Board and the Supervisory Board. Our Internal Audit department operates under the direct responsibility of the Audit Committee. Further, the Audit Committee is responsible to establish procedures to allow for the confidential and or anonymous submission by employees of concerns. Additionally, this includes the receipt, retention and treatment of submissions received regarding accounting, internal accounting controls, or auditing matters. The Audit Committee discusses our financial accounting and reporting principles and policies and the adequacy of our internal accounting, financial and operating controls and procedures with the external auditor and management; considers and approves any recommendations regarding changes to our accounting policies and processes; reviews with management and the external auditor our quarterly earnings reports prior to their release to the press; and reviews the quarterly and annual reports (reported on Forms 6-K and 20-F) to be furnished to or filed with the Securities and Exchange Commission and the Deutsche Boerse. The Audit Committee met seven times in 2018 and met with the external auditor excluding members of the Managing Board in July 2018. The Audit Committee reviews major financial risk exposures, pre-approves related-party transactions between the Company and Supervisory Board or Managing Board, and reviews any legal matter including compliance topics that could have a significant impact on the financial statements.

**Compensation Committee**

The Compensation Committee's primary duties and responsibilities include, among other things, the preparation of a proposal for the Supervisory Board concerning the Remuneration Policy for the Managing Board to be adopted by the General Meeting, the preparation of a proposal concerning the individual compensation of Managing Board members to be adopted by the Supervisory Board and the preparation of the Remuneration Report on compensation policies for the Managing Board to be adopted by the Supervisory Board. The Compensation Committee reviews and approves all equity-based compensation, reviews and approves the annual salaries, bonuses and other benefits of executive officers, and reviews general policies relating to employee compensation and benefits. The Remuneration Report reviews the implementation of the Remuneration Policy in the most recent year and provides an outline of the Remuneration Policy for the future. The Compensation Committee engages external consultants to ensure that the overall remuneration levels are benchmarked regularly, against a selected group of companies and key markets in which QIAGEN operates. The Compensation Committee currently consists of three members, Ms. Tallett (Chairwoman), Mr. Bancel and Dr. Björklund. Members are appointed by the Supervisory Board and serve for a term of one year. The Compensation Committee met five times in 2018.

**Selection and Appointment Committee**

The Selection and Appointment (Nomination) Committee is primarily responsible for the preparation of selection criteria and appointment procedures for members of the Supervisory Board and Managing Board as well as the periodic evaluation of the scope and composition of the Managing Board and the Supervisory Board, including the profile of the Supervisory Board. Additionally, the Selection and Appointment Committee periodically evaluates the functioning of individual members of the Managing Board and Supervisory Board, reporting these results to our Supervisory Board. It also proposes the (re-)appointments of members of our Managing Board and Supervisory Board and supervises the policy of our Managing Board in relation to selection and appointment criteria for senior management. Current members of the Selection and Appointment Committee are Dr. Björklund (Chairman), Dr. Colpan, and Ms. Tallett. Members are appointed by the Supervisory Board and serve for a one-year term. The Selection and Appointment Committee did not meet in 2018.

**Science and Technology Committee**

The Science and Technology Committee is primarily responsible for reviewing and monitoring research and development projects, programs, budgets, infrastructure management and overseeing the management risks related to the Company's portfolio and information technology platforms. The Science and Technology Committee provides understanding, clarification and validation of the fundamental technical basis of the Company's businesses in order to enable the Supervisory Board to make informed, strategic business decisions and vote on related matters, and to guide the Managing Board to ensure that powerful, global, world-class science is developed, practiced and leveraged throughout the Company to create shareholder value. The current members of the Science and Technology Committee are Dr. Colpan (Chairman), Dr. Levine, Mr. Bancel and Dr. Mardis. Members are appointed by the Supervisory Board and serve for a term of one year. The Science and Technology Committee met four times in 2018.

**Diversity within the Management Board and Supervisory Board**

The Dutch Civil Code provided for statutory provisions to ensure a balanced representation of men and women on the Management Board and Supervisory Boards until January 1, 2016. These statutory rules have expired, but a new bill entered into force on April 13, 2017, extending the provision on gender balance to December 31, 2019. Balanced representation of men and women is deemed to exist if at least 30 percent of the seats were filled by men and at least 30 percent are filled by women. Within the meaning of the new legislation, our Management Board and Supervisory Board currently do not qualify as balanced. QIAGEN recognizes the benefits of diversity, including gender balance. In nominating candidates for these boards, QIAGEN supports the trend toward higher participation of women. QIAGEN feels that gender is only one part of diversity and strives for a diverse composition in the Managing Board and Supervisory Board also in terms of other factors such as age, nationality, public reputation, industry or academic background. QIAGEN is committed to expanding diversity while pursuing individuals for these boards with a unique blend of scientific and commercial expertise and experience that will contribute to the future success of its business. Management development programs support the career advancement of leaders regardless of gender and other factors. As a result a number of women are in key leadership roles, particularly in leading commercial and operational positions around the world. In line with this commitment, QIAGEN's Selection and Appointment committee will continue selecting future members of the Managing Board and Supervisory Board with due observance of its aim to have a diverse leadership team on the basis of gender, but also on the basis of age, wide ranging experience, backgrounds, skills, knowledge and insight. This all without compromising QIAGEN's commitment to hiring the best individuals for those positions. More information about diversity within the Board other than gender, can be found in below under the section *Dutch Corporate Governance Code - Comply or explain*.

**Compensation of Managing Board Members and Supervisory Directors**

*Remuneration policy*

The objective of our remuneration policy is to attract and retain the talented, highly qualified international leaders and skilled individuals, who enable QIAGEN to achieve its short and long-term strategic initiatives and operational excellence. Our remuneration policy aligns remuneration with individual performance, corporate performance and fosters sustainable growth and long-term value creation in the context of QIAGEN’s social responsibility and stakeholders’ interest.

The remuneration policy and overall remuneration levels are benchmarked regularly, against a selected group of companies and key markets in which QIAGEN operates, to ensure overall competitiveness. QIAGEN participates in various compensation benchmarking surveys that provide information on the level, as well as the structure, of compensation awarded by various companies and industries for a broad range of positions around the world. The companies in the peer group are selected on the basis of market capitalization, competitors for talent, similar complexity and international spread, operating in similar industries.

The performance of the Managing Board members is measured annually against a written set of goals. The remuneration of the Managing Board members is linked to the achievement of QIAGEN’s strategic and financial goals. To ensure that remuneration is linked to performance, a significant proportion of the remuneration package is variable and contingent on performance of the individual and the company. These goals are set at ambitious levels each year to motivate and drive performance, with a focus on achieving both long-term strategic initiatives and short-term objectives based on the annual operative planning. Performance metrics used for these goals include the achievement of financial and non-financial targets.

The remuneration package of the Managing Board members consists of a combination of base salary, short term variable cash award and several elements of long term incentives (together, ‘total direct compensation’). In addition, the members of the Managing Board receive a pension arrangement and other benefits that are standard in our industry, such as a company car.

The total target remuneration package of the Managing Board members is appropriately set against a variety of factors which includes external and internal equity, experience, complexity of the position, scope and responsibilities. We aim to provide the members of the Managing Board a total direct compensation at market median level.

The structure of the remuneration package for the Managing Board is designed to balance short-term operational excellence with long-term sustainable value creation while taking into account the interests of its stakeholders. As such a significant part of the total remuneration of the Managing Board members consist of variable remuneration which can differ substantially from year to year depending on our corporate results and individual performance and may include equity-based compensation which may be subject to vesting conditions over a period of up to 10 years.

The remuneration policies for the Managing Board and for other senior management members of QIAGEN are generally aligned and consistent.

*Managing Board compensation*

The compensation granted to the members of the Managing Board in 2018 consisted of a fixed salary and variable components, with the significant majority of compensation awarded in the form of QIAGEN stock units that are restricted for a long multi-year period to align management with the interests of shareholders and other stakeholders. Variable compensation included

long-term equity incentives that were awarded based on individual performance as well as equity awards in lieu of the value of the annual cash bonus.

In 2014, the General Meeting of Shareholders approved a new remuneration policy for the Managing Board which provides that future annual regular equity-based compensation grants to members of the Managing Board will primarily consist of performance stock units. Grants of stock options and restricted stock units which are based on time vesting only shall no longer be granted on a regular basis and shall be reserved for use as special equity incentive rewards in certain situations.

Stock options, if granted, to the Managing Board members must have an exercise price that is higher than the market price at the time of grant. Restricted Stock Units granted to the Managing Board members, vest over a 10-year period. Performance Stock Units are subject to long-term vesting periods and contingent upon the achievement of several financial goals over a multi-year period.

In 2018, a grant of Performance Stock Units with mandatory minimum holding levels of QIAGEN shares was made under the Commitment Program linked to achievement of a three-year plan covering 2019 and 2021 including quantitative goals for net sales, earnings before interest and taxes (EBIT), QIAGEN Value Added (QVA), a steering metric that measures the ability of QIAGEN to generate returns and exceed its cost of capital and share price development as compared to peer companies. Under the Commitment Program, the financial targets for vesting are based on three-year goals as defined within QIAGEN's five-year business plan covering the period from 2019 until the end of 2023. The targets for vesting were set and approved by the Supervisory Board.

The table below state the amounts earned on an accrual basis by our Managing Board members in 2018.

| **For the year ended December 31, 2018 (in US$ thousands, except for number of award grants)** | **Peer M. Schatz** | **Roland Sackers** |
|---|---|---|
| Fixed Salary | $ 1,281 | $ 575 |
| Other [3] | 5 | 37 |
| Total fixed income 2018 | $ 1,286 | $ 612 |
| Short-term variable cash bonus [1] | — | — |
| Total short-term income 2018 | $ 1,286 | $ 612 |
| Defined contribution on benefit plan | $ 78 | $ 80 |
| *Number of performance stock units granted 2018 [2]* | *661,315* | *197,000* |
| Related recognized compensation expense | $ 2,645 | $ 763 |

(1) The Variable Cash Bonus does not include values which were converted to equity-based compensation for each Managing Board member at his election in lieu of the value of the cash bonus earned by such Managing Board member in 2018. In 2019, Mr. Schatz will receive a grant of 60,982 performance stock units and Mr. Sackers will receive a grant of 21,131 performance stock units. The performance stock units will vest 40% over three years and 60% over five years from the date of grant, with the final performance measurement aligned to achievement of 2019 performance goals.

(2) The Performance Stock Units Granted amount includes the number of performance stock units granted to each Managing Board member under the Company's Commitment Program. In 2018, Mr. Schatz received a grant of 307,000 performance stock units and Mr. Sackers received a grant of 97,000 performance stock units.

(3) Amounts include, among others, car lease and reimbursed personal expenses such as tax consulting. We also occasionally reimburse our Managing Directors' personal expenses related to attending out-of-town meetings but not directly related to their attendance. Amounts do not include the reimbursement of certain expenses relating to travel incurred at the request of QIAGEN, other reimbursements or payments that in total did not exceed $10,000 or tax amounts paid by the Company to tax authorities in order to avoid double-taxation under multi-tax jurisdiction employment agreements.

The total recognized compensation expense in accordance with IFRS 2 in the year 2018 (2017) for stock units including recognized expenses for equity awards granted in previous years as well as for any non-periodical share-based payments in kind of a bonus amounted to $12.3 million ($10.7 million) for Mr. Schatz and $3.6 million ($3.2 million) for Mr. Sackers.

Based on such valuations the total compensation including recognized compensation expenses in the year 2018 (2017) for members of the Managing Board was $18.0 million ($16.7 million), and amounts $13.7 million ($12.6 million) for Mr. Schatz and $4.3 million ($4.1 million) for Mr. Sackers. Total non-periodical remuneration according Dutch Civil Code included in total compensation for the Managing Board was $3.4 million ($3.1 million) and amounts $2.6 million ($2.4 million) for Mr. Schatz and $0.8 million ($0.7 million) for Mr. Sackers.

Further details on the composition of remuneration for the Managing Board, and the implementation of the Remuneration Policy during 2018, are disclosed in the Remuneration Report of the Compensation Committee as published on our website at www.qiagen.com.

*Supervisory Board compensation*

The Supervisory Board remuneration is aligned to the applicable market standards, considering peer companies of similar size and complexity in similar industries, including biotechnology, life science supplies, diagnostics and pharmaceuticals, to reflect our nexus to the European Markets as a Dutch company as well as our U.S. focus as a NYSE listed company subject to U.S. regulations and the fact that several of the Supervisory Board members are residing in the United States.

The Supervisory Board compensation for 2018 consists of fixed retainer compensation and additional retainer amounts for Chairman and Vice Chairman. Annual remuneration of the Supervisory Board members is as follows:

| | |
|---|---|
| Fee payable to the Chairman of the Supervisory Board | $150,000 |
| Fee payable to the Vice Chairman of the Supervisory Board | $90,000 |
| Fee payable to each member of the Supervisory Board | $57,500 |
| Additional compensation payable to members holding the following positions: | |
| Chairman of the Audit Committee | $25,000 |
| Chairman of the Compensation Committee | $18,000 |
| Chairman of the Selection and Appointment Committee and other board committees | $12,000 |
| Fee payable to each member of the Audit Committee | $15,000 |
| Fee payable to each member of the Compensation Committee | $11,000 |
| Fee payable to each member of the Selection and Appointment Committee and other board committees | $6,000 |

Further, the Supervisory Board members will be reimbursed for tax consulting costs incurred in connection with the preparation of their tax returns up to an amount of €5,000 per person per fiscal year.

Supervisory board members also receive a variable component, in the form of share-based compensation. We did not pay any agency or advisory service fees to members of the Supervisory Board.

The following table summarizes the total compensation paid to the members of the Supervisory Board in 2018:

| **For the year ended December 31, 2018 (in US$ thousands, except for number of share grants)** | **Fixed remuneration** | **Chairman / Chairwoman** | **Committee membership** | **Total [2]** | ***Number of restricted stock units granted*** | **Related recognized compensation expense [2]** |
|---|---|---|---|---|---|---|
| Stéphane Bancel | $ 57.5 | — | 32.0 | $ 89.5 | *9,866* | $ 58.3 |
| Dr. Håkan Björklund | $ 103.8 | 6.0 | 14.0 | $ 123.8 | *9,866* | $ 58.3 |
| Dr. Metin Colpan | $ 57.5 | 12.0 | 6.0 | $ 75.5 | *9,866* | $ 58.3 |
| Prof. Dr. Manfred Karobath[1] | $ 75.0 | 6.0 | 8.5 | $ 89.5 | *9,866* | $ 133.0 |
| Dr. Ross L. Levine | $ 57.5 | — | 6.0 | $ 63.5 | *9,866* | $ 58.3 |
| Dr. Elaine Mardis | $ 57.5 | — | 6.0 | $ 63.5 | *9,866* | $ 58.3 |
| Lawrence A. Rosen | $ 57.5 | 25.0 | — | $ 82.5 | *9,866* | $ 58.3 |
| Elizabeth E. Tallett | $ 57.5 | 18.0 | 21.0 | $ 96.5 | *9,866* | $ 158.8 |

(1) Prof. Dr. Manfred Karobath was a member of the Supervisory Board since 2000 and did not stand for re-election at the Company's Annual General Meeting in June 2018.

(2) Supervisory Directors are reimbursed for travel costs and for any value-added tax to be paid on their remuneration. These reimbursements are excluded from the amounts presented herein.

The total recognized compensation expense in accordance with IFRS 2 in the year 2018 (2017) for long-term compensation of restricted stock units including recognized expenses for equity awards granted in previous years as well as for any non-periodical share-based payments in kind of a bonus amounted to $1.5 million ($1.6 million) and includes $259.0 thousand ($269.0 thousand) for Mr. Bancel, $58.3 thousand ($0) for Mr. Björklund, $270.6 thousand ($339.4 thousand) for Mr. Colpan,

$120.2 thousand ($201.9 thousand) for Mr. Karobath, $128.0 thousand ($55.4 thousand) for Mr. Levine, $227.6 thousand ($218.8 thousand) for Ms. Mardis, $259.0 thousand ($268.9 thousand) for Mr. Rosen and $201.4 thousand ($201.9 thousand) for Ms. Tallett.

The total recognized compensation expenses for members of the Supervisory Board in 2018 (2017) for short-term and long-term compensation totaled $2.2 million ($2.3 million) and includes amounts of $348.5 thousand ($358.5 thousand) for Mr. Bancel, $182.1 thousand ($55.9 thousand) for Mr. Björklund, $346.1 thousand ($414.9 thousand) for Mr. Colpan, $209.7 thousand ($380.9 thousand) for Mr. Karobath, $191.5 thousand ($118.9 thousand) for Mr. Levine, $291.1 thousand ($282.3 thousand) for Ms. Mardis, $341.5 thousand ($351.4 thousand) for Mr. Rosen, and $297.9 thousand ($298.4 thousand) for Ms. Tallett.

Total non-periodical remuneration according Dutch Civil Code included in total compensation in 2018 (2017), which includes the expense related to the short-term variable cash bonus and the expense related to the long-term compensation of equity awards granted in 2018 (2017), totaled $0.6 million ($0.6 million) and includes amounts of $58.3 thousand ($55.4 thousand) for Mr. Bancel, $58.3 thousand ($0) for Mr. Björklund, $58.3 thousand ($55.4 thousand) for Mr. Colpan, $133.0 thousand ($147.0 thousand) for Mr. Karobath, $58.3 thousand ($55.4 thousand) for Mr. Levine, $58.3 thousand ($55.4 thousand) for Ms. Mardis, $58.3 thousand ($55.4 thousand) for Mr. Rosen, and $158.8 thousand ($147.0 thousand) for Ms. Tallett.

**Share Ownership**

The following table sets forth certain information as of January 31, 2019 concerning the ownership of Common Shares by our directors and officers. In preparing the following table, we have relied on information furnished by such persons.

| | Shares Beneficially Owned [1] | | |
|---|---|---|---|
| **Name and Country of Residence** | **Number [2]** | | **Percent Ownership** |
| Peer M. Schatz, Germany | 2,732,805 | (3) | 1.21% |
| Roland Sackers, Germany | 40,000 | (4) | * |
| Stéphane Bancel, United States | 4.429 | (5) | * |
| Dr. Håkan Björklund, Sweden | — | | — |
| Dr. Metin Colpan, Germany | 3,539,784 | (6) | 1.57% |
| Dr. Ross L. Levine, United States | — | | — |
| Dr. Elaine Mardis, United States | — | (7) | — |
| Lawrence A. Rosen, United States | — | (8) | — |
| Elizabeth Tallett, United States | 16,103 | (9) | * |

* Indicates that the person beneficially owns less than 0.5% of the Common Shares issued and outstanding as of January 31, 2019.

(1) The number of Common Shares outstanding as of January 31, 2019 was 225,512,336. The persons and entities named in the table have sole voting and investment power with respect to all shares shown as beneficially owned by them and have the same voting rights as shareholders with respect to Common Shares.

(2) Does not include Common Shares subject to options or awards held by such persons at January 31, 2019. See footnotes below for information regarding options now exercisable or that could become exercisable within 60 days of the date of this table.

(3) Does not include 505,524 shares issuable upon the exercise of options now exercisable having exercise prices ranging from $15.59 to $22.25 per share. Options expire in increments during the period between February 2020 and February 2023. Does not include 386,571 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table. Includes 1,477,171 shares held by PS Capital Management, of which Mr. Schatz is the sole stockholder. 350,000 of the shares beneficially owned by Mr. Schatz have been pledged by him as security for an obligation.

(4) Does not include 135,739 shares issuable upon the exercise of options now exercisable having exercise prices ranging from $15.59 to $22.25 per share. Options expire in increments during the period between February 2020 and February 2023. Does not include 125,688 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

(5) Does not include 10,296 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

(6) Does not include 7,893 shares issuable upon the exercise of options now exercisable having exercise prices ranging from $15.59 to $22.43 per share. Options expire in increments during the period between February 2019 and February 2022. Includes 2,741,579 shares held by CC Verwaltungs GmbH, of which Dr. Colpan is the sole stockholder and 770,370 shares held by Colpan GbR. Does not include 10,833 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

(7) Does not include 4,296 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

(8) Does not include 10,296 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

(9) Does not include 1,563 shares issuable upon the exercise of options now exercisable having exercise prices of $15.59 per share. Options expire on February 2022. Does not include 10,296 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

The following table sets forth the options of our officers and directors as of January 31, 2019:

| Name | Total Vested Options | Expiration Dates | Exercise Prices |
|---|---|---|---|
| Peer M. Schatz | 505,524 | 2/26/2020 to 2/28/2023 | $15.59 to $22.25 |
| Roland Sackers | 135,739 | 2/26/2020 to 2/28/2023 | $15.59 to $22.25 |
| Dr. Metin Colpan | 7,893 | 2/27/2019 to 2/28/2022 | $15.59 to $22.43 |
| Elizabeth E. Tallett | 1,563 | 2/28/2022 | $15.59 |

**Additional Information**

**Shareholders**

Our shareholders exercise their voting rights through Annual and Extraordinary General Meetings. Resolutions of the General Meeting are adopted by an absolute majority of votes cast, unless a different majority of votes or quorum is required by Dutch law or the Articles of Association. Each common share confers the right to cast one vote.

Furthermore, the Managing Board, or where appropriate, the Supervisory Board, shall provide all shareholders and other parties in the financial markets with equal and simultaneous information about matters that may influence QIAGEN's share price.

QIAGEN is required to convene an Annual General Meeting in The Netherlands no later than six months following the end of each year. The agenda for the Annual General Meeting must contain certain matters as specified in QIAGEN's Articles of Association and under Dutch law, including, among other things, the adoption of QIAGEN's annual financial statements.

Additional Extraordinary General Meetings may be requested and/or convened at any time by the Managing Board, the Supervisory Board or by one or more shareholders jointly representing at least 40% of QIAGEN's issued share capital. Furthermore, one or more shareholders, who jointly represent at least 10% of QIAGEN's issued share capital may, on their application, be authorized by the district court judge having applications for interim relief, to convene a General Meeting. Shareholders are entitled to propose items for the agenda of the General Meeting provided that they hold at least 3% of the issued share capital. Proposals for agenda items for the General Meeting must be submitted at least 60 days prior to the meeting date. The notice convening a General Meeting, accompanied by the agenda, shall be sent no later than 42 days prior to the meeting. QIAGEN informs the General Meeting by means of explanatory notes to the agenda, providing all facts and circumstances relevant to the proposed resolutions.

Pursuant to the Dutch Code, all transactions between the company and legal or natural persons who hold at least ten percent of the shares in the company shall be agreed on terms that are customary in the sector concerned. Decisions to enter into transactions in which there are conflicts of interest with such persons that are of material significance to the company and/or to such persons require the approval of the Supervisory Board. QIAGEN has not entered into any such transactions in 2017.

**Stock Plans**

We adopted the QIAGEN N.V. Amended and Restated 2005 Stock Plan (the 2005 Plan) which was approved by our shareholders on June 14, 2005. The 2005 Plan expired by its terms in April 2015 and no further awards will be granted under the 2005 Plan. On June 25, 2014, our shareholders approved the QIAGEN N.V. 2014 Stock Plan (the 2014 Plan), which replaced the 2005 Plan in April 2015. An aggregate of 16.7 million Common Shares were reserved for issuance pursuant to the

2014 Plan, subject to certain antidilution adjustments. We issue Treasury Shares to satisfy option exercises and award releases and had approximately 19.9 million Common Shares reserved and available for issuance under the 2005 and 2014 Plans at December 31, 2018.

Pursuant to the 2014 Plan, stock rights, which include options to purchase our Common Shares, stock grants and stock-based awards, may be granted to employees and consultants of QIAGEN and its subsidiaries and to Supervisory Directors. Options granted pursuant to the 2014 Plan may either be incentive stock options within the meaning of Section 422 of the United States Internal Revenue Code of 1986, as amended (the Code), or non-qualified stock options. Options granted to members of the Supervisory Board and the Managing Board must have an exercise price that is higher than the market price at the time of grant. Generally, each of the options has a term of ten years, subject to earlier termination in the event of death, disability or other termination of employment. The vesting and exercisability of certain stock rights will be accelerated in the event of a Change of Control, as defined in the agreements under the 2014 Plan.

The Plan is administered by the Compensation Committee of the Supervisory Board, which selects participants from among eligible employees, consultants and directors and determines the number of shares subject to the stock-based award, the length of time the award will remain outstanding, the manner and time of the award's vesting, the price per share subject to the award and other terms and conditions of the award consistent with the Plan. The Compensation Committee's decisions are subject to the approval of the Supervisory Board.

The Compensation Committee has the power, subject to Supervisory Board approval, to interpret the plans and to adopt such rules and regulations (including the adoption of “sub plans” applicable to participants in specified jurisdictions) as it may deem necessary or appropriate. The Compensation Committee or the Supervisory Board may at any time amend the plans in any respect, subject to Supervisory Board approval, and except that (i) no amendment that would adversely affect the rights of any participant under any option previously granted may be made without such participant's consent and (ii) no amendment shall be effective prior to shareholder approval to the extent such approval is required to ensure favorable tax treatment for incentive stock options or to ensure compliance with Rule 16b-3 under the United States Securities Exchange Act of 1934, as amended (the Exchange Act) at such times as any participants are subject to Section 16 of the Exchange Act.

As of January 31, 2019, there were 0.9 million options outstanding with exercise prices ranging between $14.91 and $23.16 and expiring between February 27, 2019 and October 31, 2023. The exercise price of the options is the fair market value of the Common Shares as of the date of grant or a premium above fair market value. Additionally, there were 8.3 million stock unit awards outstanding as of January 31, 2019. These awards will be released between February 15, 2019 and May 31, 2028. As of January 31, 2019, options to purchase 0.7 million Common Shares and 3.8 million stock unit awards were held by the officers and directors of QIAGEN, as a group.

Further detailed information regarding stock options and awards granted under the plan can be found in Note 21 "Share-Based Payments" included in the Consolidated Financial Statements.

**Independence**

Unlike the New York Stock Exchange listing standards which require a majority of the Supervisory Board members to be independent, the Dutch Corporate Governance Code distinguishes between certain independence criteria which may be fulfilled by not more than one Supervisory Board Members (as e.g. prior employment with the Company, receiving personal financial an important business relationship with the Company) and other criteria which may not be fulfilled by more than the majority of the Supervisory Board members. In some cases the Dutch independence requirement is more stringent, such as by requiring a longer “look back” period (five years) for former executive directors. In other cases, the New York Stock Exchange rules are more stringent, such as a broader definition of disqualifying affiliations. Currently, all members of our Supervisory Board are “independent” under both the New York Stock Exchange and Dutch definitions.

**Risk Management**

Reference is made to the discussion in the section "Principle Risks and Uncertainties" above.

**Disclosure Controls and Procedures**

Our Managing Directors, with the assistance of other members of management, performed an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures. Based on that evaluation, they concluded that as of December 31, 2018, our disclosure controls and procedures were effective to ensure that information required to be disclosed by us in the reports that we file is recorded, processed, summarized and reported in a timely manner, and is accumulated and communicated to our management, including our Managing Directors, as appropriate to allow timely decisions regarding required disclosure.

There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, no matter how well designed, such as the possibility of human error and the circumvention or overriding of the controls and procedures. Therefore, even those systems determined to be effective may not prevent or detect misstatements and can provide only reasonable

assurance of achieving their control objectives. In addition, any determination of effectiveness of controls is not a projection of any effectiveness of those controls to future periods, as those controls may become inadequate because of changes in conditions or the degree of compliance with the policies or procedures may deteriorate.

**Report of Management on Internal Control over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. The Company's system of internal controls over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the consolidated financial statements in accordance with generally accepted accounting principles.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements and even when determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2018. In making this assessment, management used the updated criteria set forth in 2013 by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework.

Based on our assessment under the COSO Internal Control-Integrated Framework, management believes that, as of December 31, 2018, our internal control over financial reporting is effective**.**

**Changes in Internal Control over Financial Reporting**

There has been no change in our internal control over financial reporting during 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**Independent Auditors**

In accordance with the requirements of Dutch law, our independent registered public accounting firm for our statutory consolidated financial statements prepared in accordance with International Financial Reporting Standards and filed with the Netherlands Authority for the Financial Markets (AFM), is appointed, and may be removed by, the General Meeting. The Supervisory Board nominates a candidate for the appointment as external auditor, for which purpose both the Audit Committee and the Managing Board advise the Supervisory Board. At the Annual General Meeting in 2018, KPMG Accountants N.V. was appointed as external auditor for the Company for 2018 year. The external auditor is invited to attend the meeting of the Supervisory Board at which the statutory financial statements prepared in accordance with International Financial Reporting Standards and filed with the AFM shall be approved and is furthermore invited to attend the General Meeting at which the statutory financial statements are adopted and may be questioned by the General Meeting on its statement on the fairness of our annual accounts prepared in accordance with International Financial Reporting Standards.

The remuneration of the external auditor, and instructions to the external auditor to provide non-audit services, shall be approved by the Supervisory Board on the recommendation of the Audit Committee and after consultation with the Managing Board. At least once every four years, the Supervisory Board and the Audit Committee shall conduct a thorough assessment of the functioning of the external auditor. The main conclusions of this assessment shall be communicated to the General Meeting for the purposes of assessing the nomination for the appointment of the external auditor. The external auditor is invited to attend the meeting of the Supervisory Board at which the financial statements shall be approved and is furthermore invited to attend the General Meeting at which the financial statements are adopted and may be questioned by the General Meeting on its statement on the fairness of our annual accounts.

**Whistleblower Policy and Code of Conduct**

We have a formal Whistleblower Policy concerning the reporting of alleged irregularities within QIAGEN of a general, operational or financial nature. Furthermore, we have a published Code of Conduct that outlines business principles for our employees and rules of conduct. The Code of Conduct can be found on our website at www.qiagen.com.

**Anti-Takeover Measures**

In 2004, the Supervisory Board granted an option to the Dutch Foundation Stichting Preferente Aandelen QIAGEN that allows the Foundation to acquire preference shares from QIAGEN if (i) a person has (directly or indirectly) acquired or has expressed a desire to acquire more than 20% of our issued share capital, or (ii) a person holding at least a 10% interest in the share capital has been designated as a hostile person by our Supervisory Board. The option enables the Foundation to acquire preference shares equal to the number of our outstanding common shares at the time of the relevant exercise of the right, less one share. When exercising the option and exercising its voting rights on these shares, the Foundation must act in the interest of QIAGEN and the interests of our stakeholders. No preference shares are currently outstanding.

**Dutch Corporate Governance Code - Comply or Explain**

The corporate governance structure and compliance with the Dutch Code is the joint responsibility of the Managing Board and the Supervisory Board. They are accountable for this responsibility to the General Meeting. We continue to seek ways to improve our corporate governance by measuring itself against international best practice. The Dutch Code was last amended on December 8, 2016, and applicable as of the financial year 2018 and can be found at www.commissiecorporategovernance.nl.

Non-application of a specific best practice provision is not in itself considered objectionable by the Dutch Code and may well be justified because of particular circumstances relevant to a company. In accordance with Dutch law, we disclose in our Annual Report the application of the Dutch Code's principles and best practice provisions.

To the extent that we do not apply certain principles and best practice provisions, or do not intend to apply these in the current or the subsequent year, we state the reasons.

We take a positive view of the Dutch Code and apply nearly all of the best practice provisions. However, we prefer not to apply some provisions due to the international character of our business as well as the fact - acknowledged by the Commission that drafted the Dutch Code - that existing contractual agreements between QIAGEN and individual members of the Managing Board cannot be set aside at will.

The following provides an overview of exceptions that we have identified:

1. *Best practice provision 2.2.2 recommends that a supervisory board member is appointed for a period of four years. A member may be reappointed for a term of additional two years, which appointment may be extended by at most two years. Best practice provision 2.2.2 does not apply to supervisory board members, who as of the date of the entry into force of this Code, have already held office for more than eight years, provided that best practice provision III.3.5 of the Dutch Code adopted in 2008, that is replaced by the Dutch Code 2016 is being complied with. Best practice provision III.3.5. of the Dutch Code 2008 recommends that a supervisory board member is appointed for a maximum of three 4-year terms.*

   Members of the Supervisory Board are appointed annually for a one-year period beginning on the day following the General Meeting up to and including the day of the General Meeting held in the following year. Further, Dr. Metin Colpan has joined the Supervisory Board in 2004. We value the profound industry experience of Dr. Colpan and his in-depth knowledge of QIAGEN. QIAGEN therefore supports the reappointment of Dr. Colpan beyond the eight-year term as recommended by the Dutch Code.

2. *Best practice provision 2.1.5 recommends that the Supervisory Board should draw up a diversity policy for the composition of the Management Board, the Supervisory Board and, if applicable, the Executive Committee. The policy should address concrete targets relating to diversity and the diversity aspects to the Company, such as nationality, age, gender and education and work background.*

   While QIAGEN strives for a diverse composition of the Supervisory Board, Managing Board, Executive Committee and in all other management levels of the Company, we do not consider the definition of concrete targets relating to diversity useful. We are committed to creating an environment where all individuals have the opportunity to grow and contribute to our progress, regardless of their age, educational background, gender, nationality, physical abilities, race and ethical background, religion, or sexual orientation. We consider it to be a key success factor on the path to achieving our mission and goals. Individuals and teams alike understand the diverse needs of our customers, identify and realize cross-functional opportunities for our business areas, and can quickly adapt to a fast changing environment. In 2018, our multicultural workforce was composed of 71 nationalities with an average age of 40.1. With 49% women, we are well balanced in terms of gender on an aggregate level. Information on the composition of our Managing and Supervisory Boards can be found above and more information on gender diversity within the Managing and Supervisory Board can be found about under the section "*Diversity within the Management Board and Supervisory Board*."

3. *Best practice provision 3.1.2 vi. recommends that when formulating the remuneration policy, it should be considered that shares awarded to management board should be held for a period of at least five years*

   Pursuant to the Company's Remuneration Policy, long-term equity-based grants to members of the Managing Board under the 2014 Plan primarily consist of an award of performance stock units, i.e. long-term incentive awards which are dependent upon the achievement of pre-defined performance goals. Grants of restricted stock units, which are based on time vesting only, are no longer to be granted on a regular basis and shall be reserved for use as special equity incentive rewards in certain situations. Performance stock units and restricted stock units granted until February 2018 are basically structured so that 40% of a grant vests after three years, 50% after five years and the remaining 10% after ten years. Grants of performance stock units and restricted stock units granted after February 2018 vest 40% after three years, 60% after five years. In 2019, the members of the Managing Board elected to receive in lieu of their 2018 cash bonus the value earned in the year in performance stock units which vest over five years from the grant date.

4. *Best practice provision 3.2.3 recommends that the maximum remuneration in the event of dismissal of a management board member may not exceed one year's salary (the "fixed" remuneration component).*

   Our Managing Board members have entered into employment agreements with QIAGEN N.V. and some QIAGEN affiliates for which they hold managing positions. In case of termination of an agreement without serious cause as defined by the applicable law, the respective affiliate would remain obliged to compensate the Managing Board member for the remaining term of the employment agreement. QIAGEN believes that these contractual arrangements are well justified due to the long tenures of the Managing Board members.

5. *Best practice provision 2.2.4 recommends that the supervisory board should draw up a retirement schedule in order to avoid, as far as possible, a situation in which many supervisory board members retire simultaneously. The retirement schedule should be made generally available and should be posted on the company's website.*

   The Supervisory Board follows the practice to discuss retirement plans of individual members early to proactively manage continuity within the Supervisory Board. QIAGEN believes that this practice provides a more flexible and better succession planning than a fixed retirement schedule.

6. *Best practice provision 3.3.2 recommends that a supervisory board member may not be granted any shares and/or rights to shares by way of remuneration.*

   QIAGEN has granted stock options to the members of the Supervisory Board as a remuneration component since its establishment until 2013 when we stopped granting stock options. Since 2007, Supervisory Board members have been granted restricted stock units. We believe that the reasonable level of equity-based compensation which we practice allows a positive alignment of shareholder interests with the other duties of the Supervisory Board and that this practice is necessary to attract and retain Supervisory Board members as the granting of share-based compensation to Supervisory Board members is a common practice in our industry.

**NYSE Exemptions**

Exemptions from the NYSE corporate governance standards are available to foreign private issuers, such as QIAGEN when those standards are contrary to a law, rule or regulation of any public authority exercising jurisdiction over such issuer or contrary to generally accepted business practices in the issuer's country of domicile. In connection with QIAGEN's listing on the NYSE, the NYSE accepted QIAGEN's exemptions from certain corporate governance standards that are contrary to the laws, rules, regulations or generally accepted business practices of The Netherlands. These exemptions and the practices followed by QIAGEN are described below:

- QIAGEN is exempt from NYSE's quorum requirements applicable to meetings of ordinary shareholders. In keeping with the law of The Netherlands and generally accepted business practices in The Netherlands, QIAGEN's Articles of Association provide that there are no quorum requirements generally applicable to meetings of the General Meeting.
- QIAGEN is exempt from NYSE's requirements that shareholder approval be obtained prior to the establishment of, or material amendments to, stock option or purchase plans and other equity compensation arrangements pursuant to which options or stock may be acquired by directors, officers, employees or consultants. QIAGEN is also exempt from NYSE's requirements that shareholder approval be obtained prior to certain issuances of stock resulting in a change of control, occurring in connection with acquisitions of stock or assets of another company or issued at a price less than the greater of book or market value other than in a public offering. QIAGEN's Articles of Association do not require approval of the General Meeting prior to the establishment of a stock plan. The Articles of Association also permit the General Meeting to grant the Supervisory Board general authority to issue shares without further approval of the General Meeting. QIAGEN's General Meeting has granted the Supervisory Board general authority to issue up to a maximum of our authorized capital without further approval of the General Meeting. QIAGEN plans to seek approval of the General Meetings for stock plans and stock issuances only where required under the law of The Netherlands or under QIAGEN's Articles of Association.

**Corporate Governance Statement**

This is a statement concerning corporate governance as referred to in article 2a of the decree on additional requirements for annual reports (Vaststellingsbesluit nadere voorschriften inhoud jaarverslag) effective as of January 1, 2010 (the “Decree”). The information required to be included in this corporate governance statement as described in articles 3, 3a and 3b of the Decree can be found in the following sections of this Annual Report:

- The information concerning compliance with the Dutch Corporate Governance Code (published at www.commissiecorporategovernance.nl), as required by article 3 of the Decree, can be found in the relevant sections under "Corporate Governance Report" in this Annual Report;
- The information concerning QIAGEN's risk management and control frameworks relating to the financial reporting process, as required by article 3a sub a of the Decree, can be found in the relevant sections under "Corporate Governance Report" in this Annual Report;
- The information regarding the functioning of QIAGEN's General Meeting of Shareholders, and the authority and rights of QIAGEN's shareholders, as required by article 3a sub b of the Decree, can be found in the relevant sections under "Corporate Governance Report" in this Annual Report;
- The information regarding the composition and functioning of QIAGEN's Managing Board, the Supervisory Board and its committees, as required by article 3a sub c of the Decree, can be found in the relevant sections under "Corporate Governance Report " and the Report of the Supervisory Board in this Annual Report;
- The information concerning the inclusion of the information required by the Decree Article 10 EU Takeover Directive, as required by article 3b of the Decree, can be found in the relevant sections under "Corporate Governance Report" in this Annual Report;
- The information concerning the powers to issue and repurchase shares can be found under "Shareholdings and Other Information" in this Annual Report.

*Requirements – Germany*

QIAGEN is required, as a company of which the shares are listed on the Frankfurt Stock Exchange, to follow the applicable German capital market laws, in particular the Wertpapierhandelsgesetz.

*Requirements – the United States*

QIAGEN’s shares are listed on the New York Stock Exchange (NYSE) and must therefore comply with such of the requirements of US legislation, such as the Sarbanes-Oxley Act of 2002, regulations enacted under US securities laws and the listing standards of the NYSE as are applicable to foreign private issuers.

**Responsibility Statement of the Management Board**

In accordance with best practice II.1.5 of the Dutch corporate governance code of December 2008, taking into account the recommendation of the Corporate Governance Code Monitoring Committee on the application thereof, the Managing Board confirms that internal controls over financial reporting provide a reasonable level of assurance that the financial reporting does not contain any material inaccuracies, and confirms that these controls functioned properly in the year under review and that there are no indications that they will not continue to do so. The financial statements fairly represent the Company's financial condition and the results of the Company's operations and provide the required disclosures.

It should be noted that the above does not imply that these systems and procedures provide absolute assurance as to the realization of operational and strategic business objectives, or that they can prevent all misstatements, inaccuracies, errors, fraud and non-compliances with legislation, rules and regulations.

In accordance with Article 5.25c of the Financial Markets Supervisory Act, and in view of all of the above the management board confirms that, to the best of its knowledge, the financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Company and the annual report includes a fair review of the position at the balance sheet date and the development and performance of the business during the financial year together with a description of the principal risks and uncertainties that the Company faces.

QIAGEN N.V.

| | |
|---|---|
| Peer M. Schatz | Roland Sackers |
| Chief Executive Officer | Chief Financial Officer |

# QIAGEN N.V.

# CONSOLIDATED FINANCIAL STATEMENTS

**QIAGEN N.V.**

**CONSOLIDATED BALANCE SHEETS**
**(in thousands)**

| | Note | December 31, 2018 | December 31, 2017 |
|---|---|---|---|
| **Assets** | | | |
| Current assets: | | | |
| Cash and cash equivalents | **(3)** | **$ 1,159,079** | $ 657,714 |
| Current financial assets | **(7)** | **214,568** | 359,198 |
| Trade accounts receivable | **(8)** | **351,612** | 329,138 |
| Income taxes receivable | | **34,936** | 39,509 |
| Inventories | **(3)** | **162,912** | 155,927 |
| Fair value of derivative financial instruments | **(24, 25)** | **102,754** | 7,480 |
| Other current assets | **(9)** | **89,795** | 74,654 |
| **Total current assets** | | **2,115,656** | 1,623,620 |
| Non-current assets: | | | |
| Property, plant and equipment | **(10)** | **340,012** | 324,011 |
| Goodwill | **(12)** | **2,134,125** | 2,038,180 |
| Other intangible assets | **(12)** | **674,997** | 703,014 |
| Equity accounted investments | **(11)** | **14,845** | 18,462 |
| Non-current financial assets | **(7)** | **81,639** | 36,813 |
| Deferred tax assets | **(16)** | **57,851** | 67,985 |
| Fair value of derivative financial instruments | **(24, 25)** | **295,363** | 224,398 |
| Other non-current assets | **(9)** | **83,329** | 48,629 |
| **Total non-current assets** | | **3,682,161** | 3,461,492 |
| **Total assets** | | **$ 5,797,817** | $ 5,085,112 |

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

**QIAGEN N.V.**

**CONSOLIDATED BALANCE SHEETS**
**(in thousands, except par value)**

| | Note | December 31, 2018 | December 31, 2017 |
|---|---|---|---|
| **Liabilities and equity** | | | |
| Current liabilities: | | | |
| Current financial debts | **(15)** | **$ 503,589** | $ — |
| Trade and other accounts payable | | **69,415** | 59,205 |
| Provisions | **(13)** | **4,237** | 4,853 |
| Income tax payable | | **30,047** | 22,632 |
| Fair value of derivative financial instruments | **(24, 25)** | **107,027** | 2,424 |
| Other current liabilities | **(14)** | **258,780** | 230,243 |
| **Total current liabilities** | | **973,095** | 319,357 |
| Non-current liabilities: | | | |
| Non-current financial debts | **(15)** | **1,671,811** | 1,757,402 |
| Deferred tax liabilities | **(16)** | **70,617** | 85,053 |
| Fair value of derivative financial instruments | **(24, 25)** | **614,200** | 412,536 |
| Other non-current liabilities | **(14)** | **89,279** | 84,354 |
| **Total non-current liabilities** | | **2,445,907** | 2,339,345 |
| Equity: | | | |
| Common Shares, 0.01 EUR par value, authorized — 410,000 shares, issued — 230,829 shares in 2018 and 2017 | **(17)** | **2,702** | 2,702 |
| Share premium | | **1,727,922** | 1,687,564 |
| Retained earnings | **(17)** | **1,133,682** | 1,071,393 |
| Reserves | | **(306,588)** | (216,262) |
| Less treasury shares, at cost — 5,320 and 4,272 shares in 2018 and 2017, respectively | **(17)** | **(178,903)** | (118,987) |
| **Total equity** | | **2,378,815** | 2,426,410 |
| **Total liabilities and equity** | | **$ 5,797,817** | $ 5,085,112 |

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

**QIAGEN N.V.**

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

| | Note | Years ended December 31, 2018 | 2017 |
|---|---|---|---|
| **Net sales** | **(4, 20)** | **$ 1,501,848** | $ 1,417,536 |
| Cost of sales | | **(509,069)** | (504,948) |
| **Gross profit** | | **992,779** | 912,588 |
| Operating expenses: | | | |
| Other operating income | | **29,764** | 5,326 |
| Research and development expense | | **(157,877)** | (146,046) |
| Sales and marketing expense | | **(431,313)** | (414,960) |
| General and administrative, restructuring, integration and other expense | | **(147,690)** | (193,622) |
| Other operating expense | | **(13,117)** | (6,336) |
| **Total operating expenses, net** | **(10, 12, 22)** | **(720,233)** | (755,638) |
| **Income from operations** | | **272,546** | 156,950 |
| Financial income | | **20,851** | 10,645 |
| Financial expense | **(15)** | **(67,293)** | (49,685) |
| Foreign currency losses, net | | **(12,257)** | (3,259) |
| Gain from equity accounted investments | **(11)** | **2,592** | 3,165 |
| Other financial (expense) income, net | **(25)** | **(69,544)** | 39,408 |
| **Total finance (expense) income, net** | | **(125,651)** | 274 |
| **Income before income taxes** | | **146,895** | 157,224 |
| Income taxes | **(16)** | **(42,001)** | (89,846) |
| **Net income** | | **$ 104,894** | $ 67,378 |
| | | | |
| Basic earnings per common share | | **$ 0.46** | $ 0.30 |
| Diluted earnings per common share | | **$ 0.45** | $ 0.29 |
| | | | |
| Weighted average shares outstanding (in thousands) | | | |
| Basic | | **226,640** | 228,074 |
| Diluted | | **233,456** | 233,009 |

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

**QIAGEN N.V.**

**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)**
**(in thousands)**

| | Note | Years ended December 31, 2018 | 2017 |
|---|---|---|---|
| Net income | | **$ 104,894** | $ 67,378 |
| Other comprehensive income (loss) not reclassified to profit or loss in subsequent periods: | | | |
| Gain on pensions, before tax | | **1,325** | 886 |
| Other comprehensive income (loss) to be reclassified to profit or loss in subsequent periods: | | | |
| Foreign currency translation adjustments, before tax | | **(108,486)** | 136,910 |
| Gains (losses) on cash flow hedges, before tax | **(25)** | **11,368** | (30,310) |
| Reclassification adjustments on cash flow hedges, before tax | **(25)** | **(9,774)** | 26,136 |
| Net investment hedge | **(25)** | **13,839** | (19,757) |
| Net change in fair value of financial assets, before tax | **(7)** | **—** | (854) |
| Other comprehensive (loss) income, before tax | | **(91,728)** | 113,011 |
| Income tax relating to components of other comprehensive loss | | **460** | 1,034 |
| Total other comprehensive (loss) income, after tax | | **(91,268)** | 114,045 |
| Comprehensive income | | **13,626** | 181,423 |

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

**QIAGEN N.V.**
**CONSOLIDATED STATEMENTS OF CASH FLOWS**
**(in thousands)**

| | Note | Years ended December 31, 2018 | 2017 |
|---|---|---|---|
| Net income | | **$ 104,894** | $ 67,378 |
| Adjustments to reconcile net income to net cash provided by operating activities: | | | |
| Depreciation and amortization | **(10, 12)** | **214,547** | 226,491 |
| Non-cash impairments | **(6)** | **17,020** | 5,137 |
| Amortization of debt discount and issuance costs | | **36,393** | 24,773 |
| Deferred income taxes | **(16)** | **(12,990)** | 55,773 |
| Share based compensation | **(21)** | **40,113** | 34,442 |
| (Gain) loss on financial assets | **(7)** | **(2,725)** | 1,055 |
| Reversals of contingent consideration | | **—** | (3,269) |
| Other non-cash items, including fair value changes in derivatives | **(15, 25)** | **58,470** | (42,829) |
| Changes in operating assets and liabilities: | | | |
| Accounts receivable | **(8)** | **(41,813)** | (34,165) |
| Inventories | **(3)** | **(36,918)** | (21,633) |
| Other current assets | | **(9,942)** | (5,245) |
| Other non-current assets | | **(29,883)** | (441) |
| Accounts payable | | **6,993** | 4,321 |
| Accrued and other liabilities | **(14)** | **1,153** | 9,056 |
| Other non-current liabilities | | **15,911** | 24,090 |
| Income taxes | **(16)** | **39,489** | 3,156 |
| Interest paid | | **(25,902)** | (20,252) |
| Interest received | | **17,978** | 7,478 |
| Income taxes paid, net of refunds | | **(29,317)** | (40,499) |
| **Net cash provided by operating activities** | | **363,471** | 294,817 |
| Cash flows from investing activities: | | | |
| Purchases of property, plant and equipment | **(10)** | **(55,774)** | (27,225) |
| Purchases of intangible assets | **(12)** | **(94,989)** | (97,180) |
| Development expenses | **(12)** | **(3,975)** | (8,038) |
| Proceeds from sale of equipment | | **—** | 42 |
| Purchases of financial assets | **(7)** | **(568,002)** | (450,564) |
| Proceeds from financial assets | **(7)** | **691,765** | 189,006 |
| Purchase of investments | **(11)** | **(9,398)** | (4,777) |
| Cash paid for acquisitions, net of cash acquired | **(5)** | **(172,832)** | (50,549) |
| Proceeds from divestiture | **(5)** | **16,394** | — |
| Cash paid for collateral asset | | **(3,461)** | (20,707) |
| Other investing activities | | **(15,059)** | (2,310) |
| **Net cash used in investing activities** | | **(215,331)** | (472,302) |
| Cash flows from financing activities: | | | |
| Capital repayment | **(15)** | **—** | (243,945) |
| Proceeds from issuance of cash convertible notes, net of issuance costs | **(15)** | **494,879** | 394,391 |
| Proceeds from long-term debt, net of issuance costs | **(15)** | **—** | 329,875 |
| Purchase of call option related to cash convertible notes | **(15)** | **(97,277)** | (73,646) |
| Proceeds from issuance of warrants | **(15)** | **72,406** | 45,396 |
| Principal payments on finance leases | | **(1,308)** | (1,402) |
| Proceeds from issuance of common shares | | **4,412** | 6,075 |
| Purchase of treasury shares | **(17)** | **(104,685)** | (60,970) |
| Other financing activities | | **(8,019)** | (8,587) |
| **Net cash provided by financing activities** | | **360,408** | 387,187 |
| Effect of exchange rate changes on cash and cash equivalents | | **(7,183)** | 8,832 |
| Net increase in cash and cash equivalents | | **501,365** | 218,534 |
| Cash and cash equivalents, beginning of period | | **657,714** | 439,180 |
| Cash and cash equivalents, end of period | | **$ 1,159,079** | $ 657,714 |
| Supplemental disclosure of non-cash investing activities: | | | |
| Equipment purchased through capital lease | | $ — | $ 88 |

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

**QIAGEN N.V.**
**CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY**
**(in thousands)**

| | Note | Common Shares | | Share premium | Retained earnings | Cash flow hedge reserve | Revaluation reserve | Pension reserve | Foreign currency translation | Treasury Shares | | Total equity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Shares | Amount | | | | | | | Shares | Amount | |
| **Balance at January 1, 2017** | | 239,707 | $ 2,812 | $ 1,897,399 | $ 1,059,927 | $ (7,600) | $ (156) | $ (1,498) | $ (321,053) | (5,147) | $ (120,006) | $ 2,509,825 |
| Net income | | — | — | — | 67,378 | — | — | — | — | — | — | 67,378 |
| Other comprehensive income (loss) | | — | — | — | — | (22,887) | (786) | 620 | 137,098 | — | — | 114,045 |
| **Total comprehensive income** | | — | — | — | 67,378 | (22,887) | (786) | 620 | 137,098 | — | — | 181,423 |
| Capital Repayment | (17) | (8,878) | (110) | (244,319) | — | — | — | — | — | 191 | — | (244,429) |
| Purchase of treasury shares | (17) | — | — | — | — | — | — | — | — | (1,909) | (60,970) | (60,970) |
| Tax benefit of employee stock plans | (21) | — | — | 42 | — | — | — | — | — | — | — | 42 |
| Share-based payments | (21) | — | — | 34,442 | — | — | — | — | — | — | — | 34,442 |
| Employee stock plans | (21) | — | — | — | (55,912) | — | — | — | — | 2,593 | 61,989 | 6,077 |
| **Balance at December 31, 2017** | | 230,829 | $ 2,702 | $ 1,687,564 | $ 1,071,393 | $(30,487) | $ (942) | $ (878) | $ (183,955) | (4,272) | $ (118,987) | $ 2,426,410 |
| Balance at January 1, 2018, as previously reported | | **230,829** | **$ 2,702** | **$ 1,687,564** | **$ 1,071,393** | **$(30,487)** | **$ (942)** | **$ (878)** | **$ (183,955)** | **(4,272)** | **$ (118,987)** | **$ 2,426,410** |
| IFRS 9 impact of change in accounting policy | **(2)** | **—** | **—** | **—** | **(942)** | **—** | **942** | **—** | **—** | **—** | **—** | **—** |
| IFRS 15 impact of change in accounting policy | **(4)** | **—** | **—** | **—** | **(1,306)** | **—** | **—** | **—** | **—** | **—** | **—** | **(1,306)** |
| Adjusted balance at January 1, 2018 | | **230,829** | **$ 2,702** | **$ 1,687,564** | **$ 1,069,145** | **$(30,487)** | **$ —** | **$ (878)** | **$ (183,955)** | **(4,272)** | **$ (118,987)** | **2,425,104** |
| Net income | | — | — | — | **104,894** | — | — | — | — | — | — | **104,894** |
| Other comprehensive income (loss) | | — | — | — | — | **15,034** | — | **754** | **(107,056)** | — | — | **(91,268)** |
| **Total comprehensive income** | | — | — | — | **104,894** | **15,034** | — | **754** | **(107,056)** | — | — | **13,626** |
| Purchase of treasury shares | **(17)** | **—** | **—** | **—** | **—** | **—** | **—** | **—** | **—** | **(2,871)** | **(104,685)** | **(104,685)** |
| Tax benefit of employee stock plans | **(21)** | — | — | **245** | — | — | — | — | — | — | — | **245** |
| Share-based payments | **(21)** | **—** | **—** | **40,113** | **—** | **—** | **—** | **—** | **—** | **—** | **—** | **40,113** |
| Employee stock plans | **(21)** | — | — | — | **(40,357)** | — | — | — | — | **1,823** | **44,769** | **4,412** |
| **Balance at December 31, 2018** | | **230,829** | **$ 2,702** | **$ 1,727,922** | **$ 1,133,682** | **$(15,453)** | **$ —** | **$ (124)** | **$ (291,011)** | **(5,320)** | **$ (178,903)** | **$ 2,378,815** |

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

**QIAGEN N.V.**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**

**FOR THE YEAR ENDED DECEMBER 31, 2018**

## 1. Corporate Information, Basis of Presentation and Statement of Compliance

QIAGEN N.V. is a public limited liability company ('naamloze vennootschap') under Dutch law with registered office at Hulsterweg 82, 5912 PL Venlo, The Netherlands. QIAGEN N.V., a Netherlands holding company, and subsidiaries (we, our or the Company) is the leading global provider of Sample to Insight solutions that are used by over 500,000 customers worldwide to transform biological materials into valuable molecular insights. Our sample technologies isolate and process DNA, RNA and proteins - the building blocks of life - from blood, tissue and other materials. Assay technologies are used to make these biomolecules visible and ready for analysis. Bioinformatics software and knowledge bases are used to analyze and interpret complex genomic data to report relevant, actionable insights. Automation solutions are used to tie these together in seamless and cost-effective workflows. We provide this portfolio to four major customer classes: Molecular Diagnostics (human healthcare), Applied Testing (forensics and food safety), Pharma (pharmaceutical and biotechnology companies) and Academia (life sciences research). With approximately 5,000 employees in over 35 locations worldwide, we market our products in more than 130 countries.

The accompanying consolidated financial statements were prepared in accordance with International Financial Reporting standards (IFRS) as endorsed by the European Union (EU) and all amounts are presented in U.S. dollars rounded to the nearest thousand, unless otherwise indicated. The consolidated financial statements have been prepared on a historical cost basis, except for derivative financial instruments, contingent consideration and financial assets that have been measured at fair value. The financial statements of the Company have been prepared on the basis of the going concern assumption. The consolidated financial statements also comply with the financial reporting requirements included in Section 9 in Book 2 of the Netherlands Civil Code, as far as applicable.

We undertake acquisitions to complement our own internal product development activities. On April 27, 2018, we acquired all shares in STAT-Dx Life, S.L. (STAT-Dx), a privately-held company located in Barcelona, Spain and on April 19, 2018, we acquired all remaining shares of a privately held entity in which we held a minority interest. On January 6, 2017, we acquired OmicSoft Corporation, located in Cary, North Carolina (U.S.). Accordingly, at their respective acquisition dates, all the assets acquired and liabilities assumed were recorded at their respective fair values and our consolidated results of operations include the operating results from the acquired companies from the acquisition dates.

The consolidated financial statements of QIAGEN for the year ended December 31, 2018, were authorized for issue in accordance with a resolution of the Supervisory Board on April 25, 2019.

## 2. Effects of New Accounting Policies and Disclosures

The new accounting policies adopted in 2018 did not have a material impact to the condensed consolidated financial statements.

- In June 2016, the IASB issued three amendments to IFRS 2, *Share-based Payment,* to eliminate diversity in practice in the classification and measurement of particular share-based payment transactions. The amendments are narrow in scope and address specific areas of classification and measurement and are intended to eliminate diversity in practice in three main areas:
    - The effects of vesting conditions on the measurement of a cash-settled share-based payment transaction;
    - The classification of a share-based payment transaction with net settlement features for withholding tax obligations; and
    - The accounting where a modification to the terms and conditions of a share-based payment transaction changes its classification from cash-settled to equity-settled.

  The amendments to IFRS 2 are effective for accounting periods beginning on or after January 1, 2018. Entities are required to apply the amendments without restating prior periods, but retrospective application is permitted if elected for all three amendments and other criteria are met. We adopted the amendments on January 1, 2018 without any impact on our financial position, results of operations or cash flows at adoption.
- The IASB completed its process to replace IAS 39, *Financial Instruments: Recognition and Measurement,* with the issuance of the final amendments to IFRS 9. The IASB issued the fourth and final version of IFRS 9, *Financial Instruments*, which we adopted on January 1, 2018 using a cumulative-effect adjustment to the balance sheet as of the beginning of the fiscal year of adoption. IFRS 9 contains three principal classification categories for financial assets: measured at amortized cost, fair value through other comprehensive income (FVOCI), and fair value through the P&L

(FVTPL). IFRS 9 largely retains the former IAS 39 requirements for the classification and measurement of financial liabilities. Upon adoption, we recorded a cumulative effect adjustment to decrease opening retained earnings at January 1, 2018 by $0.9 million as required for our equity investments recorded at fair value. The implementation of the amendments is expected to increase the volatility of net income as gains or losses will be recognized in net income; however, the extent of any volatility will be dependent upon the significance of the equity investments. The adoption of IFRS 9 has not had a significant effect on the Company's accounting policies related to financial liabilities and derivative financial instruments.

- In May 2014, the IASB issued IFRS 15, *Revenue from Contracts with Customers* and the standard is effective for annual periods beginning on or after January 1, 2018. This standard could impact in particular in the areas of allocating revenue to the different performance obligations under one contract and the timing of revenue recognition. We adopted this standard on its effective date, January 1, 2018 using the modified retrospective method, by recognizing the cumulative effect of initially applying IFRS 15 to incomplete contracts as a $1.3 million adjustment to the opening balance of equity at January 1, 2018. The details of the changes and quantitative impact are discussed in Note 4.

**New and amended standards and interpretations not yet adopted:**

We have not early adopted the following new and amended standard. We will adopt the new and amended standard at their effective dates.

- In January 2016, the IASB published IFRS 16 *Leases.* Under the new guidance, lessees will be required to present right-of-use assets and lease liabilities on the balance sheet. This new lease guidance requires that a lessee recognize the following for leases at the commencement date:
    - A lease liability, which is a lessee‘s obligation to make lease payments arising from a lease, measured on a discounted basis; and
    - A right-of-use asset, which is an asset that represents the lessee’s right to use, or control the use of, a specified asset for the lease term.

  IFRS 16 is effective for annual reporting periods beginning on or after January 1, 2019. A lessee should apply IFRS 16 to its leases either: *(a)* retrospectively to each prior reporting period presented applying IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors;* or *(b)* retrospectively with the cumulative effect of initially applying IFRS 16 recognized at the date of initial application. A lessor is not required to make any adjustments on transition for leases in which it is a lessor and should account for those leases applying IFRS 16 from the date of initial application. We elected the package of practical expedients which allows us to not reassess (1) whether existing contracts contain leases, (2) the lease classification for existing leases, and (3) whether existing initial direct costs meet the new definition. We also elected the hindsight practical expedient which permits entities to use hindsight in determining the lease term when transitioning IFRS 16. We adopted IFRS 16 as per the effective date of January 1, 2019, retrospectively with the cumulative effect in retained earnings and we will not restate comparative periods. Our initial lease liability and right-of-use asset will each be approximately $57 million on our consolidated balance sheet as of January 1, 2019, primarily relating to leased office space. The standard did not materially impact our consolidated net earnings or cash flows.

## 3. Summary of Significant Accounting Policies, Estimates and Judgments

### Significant Accounting Policies

### 3.1 Consolidation Principles

The consolidated financial statements comprise the financial statements of the Company and its subsidiaries as at December 31, 2018 and for the year then ended.

Subsidiaries are fully consolidated from the date of acquisition, being the date on which the Company obtains control, and continue to be consolidated until the date that such control ceases. An entity is controlled when the Company has power over the entity, exposure or rights to variable returns from its involvement with the entity, and the ability to affect those returns through its power over the entity. In determining whether control exists, potential voting rights must be taken into account if those rights are substantive, in other words they can be exercised on a timely basis when decisions about the relevant activities of the entity are to be taken. Entities consolidated by the Company are referred to as "subsidiaries." The financial statements of the subsidiaries are prepared for the same reporting period as the parent company, using consistent accounting policies. All intra-Company balances, income and expenses, unrealized gains and losses and dividends resulting from intra-Company transactions are eliminated in full.

Profit or loss and each component of other comprehensive income are attributed to the owners of the parent and to the noncontrolling interest. Total comprehensive income is attributed to the owners of the parent and to the noncontrolling interest even this results in a deficit balance.

A change in the ownership interest of a subsidiary, without a change of control, is accounted for as an equity transaction.

If the Company loses control over a subsidiary, it derecognizes the assets (including goodwill) and liabilities of the subsidiary, the carrying amount of any noncontrolling interest, the cumulative translation differences, recorded in equity, recognizes the fair value of the consideration received, recognizes the fair value of any investment retained, any surplus or deficit in profit or loss and reclassifies the parent's share of components previously recognized in other comprehensive income to profit or loss.

**3.2 Business Combinations and Goodwill**

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at acquisition date fair value and the amount of any noncontrolling interest in the acquiree. The Company measures the noncontrolling interest in the acquiree at fair-value. Acquisition related costs incurred are expensed.

When the Company acquires a business, it assesses the financial assets and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances and pertinent conditions as at the acquisition date.

Any contingent consideration to be transferred by the acquirer will be recognized at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration which is deemed to be an asset or liability will be recognized either in profit or loss or as change to other comprehensive income. If the contingent consideration is classified as equity, it shall not be remeasured until it is finally settled within equity.

Goodwill is initially measured at cost being the excess of the consideration transferred and the amount recognized for noncontrolling interest over the Company's net identifiable assets acquired and liabilities assumed. If this consideration is lower than the fair value of the net assets of the subsidiary acquired, the difference is recognized as profit.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the Company's cash generating units that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill forms part of a cash-generating unit and part of the operation within that unit is disposed of, the goodwill associated with the operation disposed of is included in the carrying amount of the operation when determining the gain or loss on disposal of the operation. Goodwill disposed of in this circumstance is measured based on the relative values of the operation disposed of and the portion of the cash-generating unit retained.

Management monitors and makes decisions regarding the Company's operations on a functional specific and global level. Therefore, we concluded that the consolidated Company as a whole qualifies as one cash generating unit.

**3.3 Equity Accounted Investments**

Investments in entities in which the Company has significant influence, generally participations of 20% or more of the voting power, but over which it does not exercise management control are accounted for using the equity method.

Under the equity method, the investment is carried in the statement of financial position at cost plus post acquisition changes in the Company's share of net assets of the associate.

After application of the equity method, the Company determines whether it is necessary to recognize an additional impairment loss on the Company's investment. The Company determines at each reporting date whether there is any objective evidence that the investment is impaired. If this is the case the Company calculates the amount of impairment as the difference between the recoverable amount of the investment and its carrying value and recognizes the amount in the income statement.

Upon loss of significant influence over the associate, the Company measures and recognizes any retaining investment at its fair value.

**3.4 Foreign Currency Translation**

The Company's presentation currency is the U.S. dollar (US$) which is also the parent company's functional currency. The subsidiaries' functional currencies are the local currency of the respective country with the exception of QIAGEN U.S. Finance Holdings (Luxembourg) SARL and QIAGEN Finance (Ireland) Ltd. which functional currencies are the U.S. dollar. Statements of financial position prepared in the functional currencies are translated to the presentation currency at exchange rates in effect at the end of the accounting period except for shareholders' equity accounts, which are translated at rates in

effect when these balances were originally recorded. Revenue and expense accounts are translated at a weighted average of exchange rates during the period. The cumulative effect of translation is included in shareholders' equity. On disposal of a subsidiary, such translation differences are recognized in the income statement as part of the gain or loss on sale.

Foreign currency transactions involving monetary assets and liabilities denominated in a currency other than the functional currency of the entity are translated using the exchange rate prevailing at the dates of the transactions. Foreign currency transaction gains and losses realized until settlement are included in the income statement, except for those related to intercompany transactions of a long-term investment nature which represent in substance part of the reporting entity's net investment in a foreign entity; such gains and losses are included in the cumulative foreign currency translation adjustments component of shareholders' equity. The net loss on foreign currency transactions in 2018 was $(12.3) million, and in 2017 was $(3.3) million.

The exchange rates of key currencies affecting the Company were as follows:

| | Closing rate as at December 31, | | Annual average rate | |
|---|---|---|---|---|
| (US$ equivalent for one) | 2018 | 2017 | 2018 | 2017 |
| Euro (EUR) | **1.1450** | 1.1993 | **1.1813** | 1.1292 |
| Pound Sterling (GBP) | **1.2800** | 1.3517 | **1.3356** | 1.2882 |
| Swiss Franc (CHF) | **1.0161** | 1.0249 | **1.0228** | 1.0156 |
| Australian Dollar (AUD) | **0.7059** | 0.7815 | **0.7478** | 0.7666 |
| Canadian Dollar (CAD) | **0.7337** | 0.7975 | **0.7719** | 0.7710 |
| Japanese Yen (JPY) | **0.0091** | 0.0089 | **0.0091** | 0.0089 |
| Chinese Yuan (CNY) | **0.1454** | 0.1537 | **0.1514** | 0.1480 |

### 3.5 Revenue Recognition

Beginning January 1, 2018, we recognize revenues when control of promised goods or services transfers to our customers in an amount that reflects the consideration that is expected to be received in exchange for those goods or services. The majority of our sales revenue continues to be recognized when products are shipped to the customers. Prior to January 1, 2018, payments for milestones, generally based on the achievement of substantive and at-risk performance criteria, were recognized in full at such time as the specified milestone had been achieved according to the terms of the agreement. See Note 4 "Revenue".

*Shipping and Handling Income and Costs*

Shipping and handling costs charged to customers are recorded as revenue in the period that the related product sale revenue is recorded. Associated costs of shipping and handling are included in sales and marketing expenses. For the years ended December 31, 2018 and 2017, shipping and handling costs totaled $28.4 million and $28.6 million, respectively.

### 3.6 Operating Expenses

*Advertising Costs*

The costs of advertising are expensed as incurred and are included as a component of sales and marketing expense. Advertising costs for the years ended December 31, 2018 and 2017 were $8.1 million and $7.2 million, respectively.

*General and Administrative, Restructuring, Integration and Other*

General and administrative expenses primarily represent the costs required to support administrative infrastructure. In addition, we incur indirect acquisition and business integration costs in connection with business combinations. These costs represent incremental costs that we believe would not have been incurred absent the business combinations. Major components of these costs include payroll and related costs for employees remaining with the Company on a transitional basis; public relations, advertising and media costs for re-branding of the combined organization; and, consulting and related fees incurred to integrate or restructure the acquired operations.

Restructuring costs include personnel costs (principally termination benefits), facility closure and contract termination costs. Termination benefits are recorded when it is probable that employees will be entitled to benefits and the amounts can be reasonably estimated. Estimates of termination benefits are based on the frequency of past termination benefits, the similarity of benefits under the current plan and prior plans, and the existence of statutory required minimum benefits. Facility closure and other costs are recorded when the liability is incurred. The specific restructuring measures and associated estimated costs are based on management's best business judgment under the existing circumstances at the time the estimates are made. If future events require changes to these estimates, such adjustments will be reflected in the period of the revised estimate. See Note 6 "Restructuring" for the details.

*Research and Development*

Research costs are expensed as incurred. Development expenditures on an individual project are recognized as an intangible asset when the Company can demonstrate:

- The technical feasibility of completing the intangible asset so that it will be available for use or sale.
- Its intention to complete and its ability to use or sell the asset.
- How the asset will generate probable future economic benefits.
- The availability of resources to complete the asset and to use or sell the intangible asset.
- The ability to measure reliably the expenditure during development.

Following initial recognition of the development expenditure as an asset, the cost model is applied requiring the asset to be carried at cost less any accumulated amortization and accumulated impairment losses.

Amortization of the asset begins when development is complete and the asset is available for use. It is amortized over the period of expected future benefit. Amortization is recorded in cost of sales. During the period of development, the asset is tested for impairment annually. The capitalized expenses are amortized on a straight-line basis over their estimated useful lives (between three and five years).

**3.7 Government Grants**

We recognize government grants when there is reasonable assurance that all conditions will be complied with and the grant will be received. Our government grants generally represent subsidies for specified activities and are therefore recognized when earned as a reduction of the expenses recorded for the activity that the grants are intended to compensate. Thus, when the grant relates to research and development expense, the grant is recognized over the same period that the related costs are incurred. Otherwise, amounts received under government grants are recorded as liabilities in the statement of financial position. When the grant relates to an asset, the value of the grant is deducted from the carrying amount of the asset and recognized over the same period that the related asset is depreciated or amortized.

The Company has received cost grants and investment grants. In 2018, the Company recorded income from government grants in the amount of $1.2 million (2017: $1.6 million). As of December 31, 2018, liabilities in the amount of $1.0 million (2017: $1.8 million) are recorded with respect to grants which have been received but for which not all conditions have been met.

**3.8 Borrowing Costs**

Borrowing costs directly attributable to the acquisition, construction or production of an asset that takes a substantial period of time to get ready for its intended use or sale are capitalized as part of the cost of the respective assets (qualifying asset) when such borrowing costs are significant. All other borrowing costs are expensed in the period they occur.

**3.9 Post-Employment Benefits**

The Company operates a number of defined benefit and defined contribution plans. For defined benefit plans, the Company provides for benefits payable to their employees on retirement by charging current service costs to income. The defined benefit liability comprises the present value of the defined benefit obligation less past service cost and actuarial gains and losses not yet recognized and less the fair value of plan assets out of which the obligations are to be settled directly. The Company's contributions to the defined contribution pension plans are charged to the income statement in the year to which they relate. Refer to Note 22 "Employee Benefits and Personnel Costs" for more details.

**3.10 Share-Based Payments**

The Company has a stock option plan, which is described in detail under Note 21 "Share-Based Payments". A compensation charge is calculated at the date the options are granted. This charge is recognized over the stock option's vesting period. When the option is exercised, the proceeds received net of any transaction costs are credited to share capital and share premium.

**3.11 Taxation**

Taxes reported in the consolidated income statements include current and deferred income taxes.

*Current income tax*

Current income tax assets and liabilities for the current and prior periods are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted, by the reporting date, in the countries where the Company operates and generates taxable income.

Current income tax relating to items recognized directly in equity is recognized in equity and not in the income statement. Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

*Deferred tax*

Deferred tax is provided using the liability method on temporary differences at the reporting date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date.

Deferred tax relating to items recognized outside profit or loss is recognized outside profit or loss. Deferred tax items are recognized in correlation to the underlying transaction either in other comprehensive income or directly in equity.

Deferred tax assets and deferred tax liabilities are offset, if a legally enforceable right exists to set off current tax assets against current income tax liabilities and the deferred taxes relate to the same taxable entity and the same taxation authority.

*Income tax exposure*

Uncertainties exist with respect to the interpretation of complex tax regulations, changes in tax laws, and the amount and timing of future taxable income. Given the wide range of international business relationships and the long-term nature and complexity of existing contractual agreements, differences arising between the actual results and the assumptions made, or future changes to such assumptions, could necessitate future adjustments to tax income and expense already recorded.

The Company establishes provisions, based on reasonable estimates, for possible consequences of audits by the tax authorities of the respective counties in which it operates. The amount of such provisions is based on various factors, such as experience of previous tax audits and differing interpretations of tax regulations by the taxable entity and the responsible tax authority. Such differences of Interpretation may arise on a wide variety of issues depending on the conditions prevailing in the respective Company's domicile.

**3.12 Financial Instruments**

*Recognition and initial measurement*

The Company's financial assets include cash and short-term deposits, trade and other receivables, loan and other receivables, quoted and unquoted financial instruments, and derivative financial instruments. The Company's financial liabilities include trade and other payables, bank overdraft, loans and borrowings, and derivative financial instruments.

Trade receivables and debt securities issued are initially recognized when they are originated. All other financial assets and financial liabilities are initially recognized when the Company becomes a party to the contractual provisions of the instrument.

A financial asset (unless it is a trade receivable without a significant financing component) or financial liability is initially measured at fair value plus, for an item not at FVTPL, transaction costs that are directly attributable to its acquisition or issue. A trade receivable without a significant financing component is initially measured at the transaction price.

**3.13 Financial Instruments - Classification and Subsequent Measurement**

*Financial assets - Policy applicable from 1 January 2018*

On initial recognition, a financial asset is classified as measured at: amortized costs; FVOCI - debt investment; FVOCI - equity investment; or FVTPL.

Financial assets are not reclassified subsequent to their initial recognition unless the Company changes its business model for managing financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

A financial asset is measured at amortized cost if if meets both of the following conditions and is not designated as an FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Company may irrevocably elect to present subsequent changes in the investment's fair value in OCI. This election is made on an investment-by-investment basis.

All financial assets not classified as measured at amortized cost or FVOCI as described above are measured at FVTPL. This includes all derivative financial assets (see Note 25). On initial recognition, the Company may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortized cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

*Financial assets - Business model assessment: Policy applicable from 1 January 2018*

The Company makes an assessment of the objective of the business model in which a financial asset is held at a portfolio level because this best reflects the way the business is managed and information is provided to management. The information considered includes:

- the stated policies and objectives for the portfolio and the operation of those policies in practice. These include whether management's strategy focuses on earning contractual interest income, maintaining a particular interest rate profile, matching the duration of the financial assets to the duration of any related liabilities or expected cash outflows or realizing cash flows through the sale of the assets;
- how the performance of the portfolio is evaluated and reported to the Company's management;
- the risks that affect the performance of the business model (and the financial assets held within that business model) and how those risks are managed;
- how managers of the business are compensated - e.g. whether compensation is based on the fair value of the assets managed or the contractual cash flows collected; and
- the frequency, volume and timing of sales of financial assets in prior periods, the reasons for such sales and expectations about future sales activity.

Transfers of financial assets to third parties in transactions that do not qualify for derecognition are not considered sales for this purpose, consistent with the Company's continuing recognition of the assets.

Financial assets that are held for trading or are managed and whose performance is evaluated on a fair value basis are measured at FVTPL.

*Financial assets - Assessment whether contractual cash flows are solely payments of principal and interest: Policy applicable from 1 January 2018*

For the purposes of this assessment, 'principal' is defined as the fair value of the financial asset on initial recognition. 'Interest' is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs (e.g. liquidity risk and administrative costs), as well as a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Company considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition. In making this assessment, the Company considers:

- contingent events that would change the amount or timing of cash flows;
- terms that may adjust the contractual coupon rate, including variable‑rate features;
- prepayment and extension features; and
- terms that limit the Company's claim to cash flows from specified assets (e.g. non‑recourse features).

A prepayment feature is consistent with the solely payments of principal and interest criterion if the prepayment amount substantially represents unpaid amounts of principal and interest on the principal amount outstanding, which may include reasonable additional compensation for early termination of the contract. Additionally, for a financial asset acquired at a discount or premium to its contractual par amount, a feature that permits or requires prepayment at an amount that

substantially represents the contractual par amount plus accrued (but unpaid) contractual interest (which may also include reasonable additional compensation for early termination) is treated as consistent with this criterion if the fair value of the prepayment feature is insignificant at initial recognition.

*Financial assets - Subsequent measurement and gains and losses: Policy applicable from 1 January 2018*

| | |
|---|---|
| **Financial assets at FVTPL** | These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognized in profit or loss. However, see Note 25 for derivatives designated as hedging instruments. |
| **Financial assets at amortised cost** | These assets are subsequently measured at amortized cost using the effective interest method. The amortized cost is reduced by impairment losses. Interest income, foreign exchange gains and losses and impairment are recognized in profit or loss. Any gain or loss on derecognition is recognized in profit or loss. |
| **Debt investments at FVOCI** | These assets are subsequently measured at fair value. Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment are recognized in profit or loss. Other net gains and losses are recognized in OCI. On derecognition, gains and losses accumulated in OCI are reclassified to profit or loss. |
| **Equity investments at FVOCI** | These assets are subsequently measured at fair value. Dividends are recognized as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognized in OCI and are never reclassified to profit or loss. |

The Company does not hold any debt or equity investments at FVOCI as of December 31, 2018.

*Financial assets - Policy applicable before 1 January 2018*

The Company classified its financial assets into one of the following categories:

- loans and receivables;
- held to maturity;
- available for sale; and
- at FVTPL, and within this category as:
  - held for trading;
  - derivative hedging instruments; or
  - designated as at FVTPL.

*Financial assets - Subsequent measurement and gains and losses: Policy applicable before 1 January 2018*

| | |
|---|---|
| **Financial assets at FVTPL** | Measured at fair value and changes therein, including any interest or dividend income, were recognised in profit or loss. However, see Note 25 for derivatives designated as hedging instruments. |
| **Held-to-maturity financial assets** | Measured at amortised cost using the effective interest method. |
| **Loans and receivables** | Measured at amortised cost using the effective interest method. |
| **Available-for-sale financial assets** | Measured at fair value and changes therein, other than impairment losses, interest income and foreign currency differences on debt instruments, were recognised in OCI and accumulated in the fair value reserve. When these assets were derecognised, the gain or loss accumulated in equity was reclassified to profit or loss. |

*Financial liabilities - Classification, subsequent measurement and gains and losses*

Financial liabilities are classified as measured at amortized cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held‑for‑trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognized in profit or loss. Other financial liabilities

are subsequently measured at amortized cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognized in profit or loss. Any gain or loss on derecognition is also recognized in profit or loss.

See Note 25 for financial liabilities designated as hedging instruments.

**3.14 Derecognition**

*Financial assets*

The Company derecognizes a financial asset when the contractual rights to the cash flows from the financial asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset

are transferred or in which the Company neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial asset.

The Company enters into transactions whereby it transfers assets recognized in its statement of financial position, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognized.

*Financial liabilities*

The Company derecognizes a financial liability when its contractual obligations are discharged or canceled, or expire. The Company also derecognizes a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognized at fair value.

On derecognition of a financial liability, the difference between the carrying amount extinguished and the consideration paid (including any non‑cash assets transferred or liabilities assumed) is recognized in profit or loss.

### 3.15 Offsetting

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Company currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

### 3.16 Derivative Financial Instruments and Hedge Accounting

The Company holds derivative financial instruments to hedge its foreign currency and interest rate risk exposures. Embedded derivatives are separated from the host contract and accounted for separately if the host contract is not a financial asset and certain criteria are met.

Derivatives are initially measured at fair value. Subsequent to initial recognition, derivatives are measured at fair value, and changes therein are generally recognized in profit or loss.

At inception of designated hedging relationships, the Company documents the risk management objective and strategy for undertaking the hedge. The Company also documents the economic relationship between the hedged item and the hedging instrument, including whether the changes in cash flows of the hedged item and hedging instrument are expected to offset each other.

*Cash flow hedges*

When a derivative is designated as a cash flow hedging instrument, the effective portion of changes in the fair value of the derivative is recognised in OCI and accumulated in the hedging reserve. The effective portion of changes in the fair value of the derivative that is recognised in OCI is limited to the cumulative change in fair value of the hedged item, determined on a present value basis, from inception of the hedge. Any ineffective portion of changes in the fair value of the derivative is recognized immediately in profit or loss.

The Company designates only the change in fair value of the spot element of forward exchange contracts as the hedging instrument in cash flow hedging relationships. The change in fair value of the forward element of forward exchange contracts (‘forward points’) is separately accounted for as a cost of hedging and recognized in a costs of hedging reserve within equity.

When the hedged forecast transaction subsequently results in the recognition of a non‑financial item such as inventory, the amount accumulated in the hedging reserve and the cost of hedging reserve is included directly in the initial cost of the non‑financial item when it is recognized.

For all other hedged forecast transactions, the amount accumulated in the hedging reserve and the cost of hedging reserve is reclassified to profit or loss in the same period or periods during which the hedged expected future cash flows affect profit or loss.

If the hedge no longer meets the criteria for hedge accounting or the hedging instrument is sold, expires, is terminated or is exercised, then hedge accounting is discontinued prospectively. When hedge accounting for cash flow hedges is discontinued, the amount that has been accumulated in the hedging reserve remains in equity until, for a hedge of a transaction resulting in the recognition of a non‑financial item, it is included in the non‑financial item’s cost on its initial recognition or,

for other cash flow hedges, it is reclassified to profit or loss in the same period or periods as the hedged expected future cash flows affect profit or loss.

If the hedged future cash flows are no longer expected to occur, then the amounts that have been accumulated in the hedging reserve and the cost of hedging reserve are immediately reclassified to profit or loss.

*Net investment hedges*

When a derivative instrument or a non‑derivative financial liability is designated as the hedging instrument in a hedge of a net investment in a foreign operation, the effective portion of, for a derivative, changes in the fair value of the hedging instrument or, for a non‑derivative, foreign exchange gains and losses is recognised in OCI and presented in the translation reserve within equity. Any ineffective portion of the changes in the fair value of the derivative or foreign exchange gains and losses on the non‑derivative is recognized immediately in profit or loss. The amount recognised in OCI is reclassified to profit or loss as a reclassification adjustment on disposal of the foreign operation.

*Derivative financial instruments and hedge accounting - Policy applicable before 1 January 2018*

The policy applied in the comparative information presented for 2017 is similar to that applied for 2018. However, for all cash flow hedges, including hedges of transactions resulting in the

recognition of non‑financial items, the amounts accumulated in the cash flow hedge reserve were reclassified to profit or loss in the same period or periods during which the hedged expected future cash flows affected profit or loss. Furthermore, for cash flow hedges that were terminated before 2017, forward points were recognized immediately in profit or loss.

Refer to Note 25 "Financial Risk Factors and Use of Derivative Financial Instruments" for more details.

### 3.17 Cash and Cash Equivalents

Cash and cash equivalents consist of cash on deposit in banks and other cash invested temporarily in various instruments that are short-term and highly liquid, and having an original maturity of less than 90 days at the date of purchase.

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Cash at bank and on hand | **$ 208,083** | $ 139,597 |
| Short-term bank deposits | **950,996** | 518,117 |
| Cash and Cash Equivalents | **$ 1,159,079** | $ 657,714 |

### 3.18 Inventories

Inventories are stated at the lower of cost and net realizable value. The moving average method of valuation is used. The cost of work in process and finished goods includes raw materials, direct labor and production overhead expenditure based upon normal operating capacity. Net realizable value is the estimated selling price in the ordinary course of business less the cost of completion and distribution expenses. Provisions are established for slow-moving and obsolete inventory.

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Raw materials | **$ 25,819** | $ 23,717 |
| Work in process | **38,659** | 33,153 |
| Finished goods | **98,434** | 99,057 |
| Inventories | **$ 162,912** | $ 155,927 |

Included in inventories as of December 31, 2018, are $14.4 million (2017: $18.9 million) of inventory provisions. The movement in inventory provisions was recorded under cost of sales. During 2018 inventories in the amount of $180.3 million have been recognized as cost of sales (2017: $182.5 million).

### 3.19 Property, Plant and Equipment

Property, plant and equipment, including equipment under finance lease, are stated at cost of acquisition or construction cost less accumulated depreciation and accumulated impairment in value. Depreciation is computed using the straight-line and declining balance methods over the following estimated useful lives of the assets:

| | |
|---|---|
| Buildings and improvements | 5-40 years |
| Machinery and equipment | 3-10 years |
| Furniture and office equipment | 3-10 years |

Land is not depreciated. Construction costs include borrowing costs and operating expenses that are directly attributable to items of property, plant and equipment capitalized during construction. Subsequent expenditure on an item of property, plant and equipment is capitalized at cost only when it is probable that future economic benefits associated with the item will flow to the Company and the cost of the item can be measured reliably. Repair and maintenance costs are expensed as incurred. Gains and losses on disposal or retirement of items of property, plant and equipment are determined by comparing the

proceeds received with the carrying amounts and are included in the consolidated income statements. The asset's residual values, useful lives and methods of depreciation are reviewed, and adjusted if appropriate, at each financial year end.

**3.20 Leases**

The determination of whether an arrangement is, or contains, a lease is based on the substance of the arrangement at inception date: whether fulfillment of the arrangement is dependent on the use of a specific asset or assets or the arrangement conveys a right to use the asset.

*Company as a lessee*

Finance leases, which transfer to the Company substantially all the risks and benefits incidental to ownership of the leased item, are capitalized at the commencement of the lease at the fair value of the leased property or, if lower, at the present value of the minimum lease payments. Lease payments are apportioned between finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are recognized in the income statement.

Leased assets are depreciated over the useful life of the asset. However, if there is no reasonable certainty that the Company will obtain ownership by the end of the lease term, the asset is depreciated over the shorter of the estimated useful life of the asset and the lease term.

Operating lease payments are recognized as an expense in the income statement on a straight line basis over the lease term.

*Company as a lessor*

Leases where the Company does not transfer substantially all the risks and benefits of ownership of the asset are classified as operating leases. Initial direct costs incurred in negotiating an operating lease are added to the carrying amount of the leased asset and recognized over the lease term on the same bases as rental income. Contingent rents are recognized as revenue in the period in which they are earned.

**3.21 Intangible Assets**

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is its fair value as at the date of acquisition. Expenditure on acquired technology rights, patents, trademarks and licenses are capitalized as intangible assets when it is probable that future economic benefits will flow to the Company and the cost can be measured reliably. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and any accumulated impairment losses.

Amortization expense related to developed technology and patent and license rights acquired in a business combination is included in cost of sales. Amortization of trademarks and customer base acquired in a business combination is recorded in sales and marketing expense. Amortization expenses of intangible assets not acquired in a business combination are recorded within cost of sales, research and development, or sales and marketing line items based on the nature and use of the asset.

The useful lives of intangible assets are assessed as either finite or indefinite. Intangible assets with finite lives are amortized over the useful economic life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at least at each financial year end. Changes in the expected useful life or the expected pattern of consumption of future economic benefits embodied in the asset is accounted for by changing the amortization period or method, as appropriate, and are treated as changes in accounting estimates. The amortization expense on intangible assets with finite lives is recognized in the income statement in the expense category consistent with the function of the intangible asset.

Developed technology, patents and license rights, computer software, development costs and other intellectual properties are amortized on a straight-line basis over their estimated useful lives as follows:

| | |
|---|---|
| Developed technology, patents and license rights | 5-15 years |
| Computer software | 3-7 years |
| Development costs | 3-5 years |
| Other intellectual properties | 5-15 years |

**3.22 Impairment**

*Impairment of financial assets*

The Company recognizes an allowance for expected credit losses (ECLs) for trade receivables, contract assets, and debt investments carried and amortized cost. ECLs are based on the difference between the contractual cash flows due in

accordance with the contract and all the cash flows that the company expects to receive, discounted at an approximation of the original effective interest rate.

ECLs are recognized in two stages. For credit risk exposures for which there has not been a significant increase in credit risk since initial recognition, ECLs are provided for credit losses that result from default events that are possible within the next 12 months (12-month ECLs). The company considers a financial asset to be in default when the counterparty is unlikely to pay its credit obligations to the company in full or when the financial asset is past due. For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure, irrespective of the timing of the default (lifetime ECLs). When determining whether the credit risk of a financial asset has increased significantly since initial recognition, the Company considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the company's historical experience and informed credit assessment and including forward-looking information, such as forecast economic conditions.

The Company assess the trade receivables allowance by applying the IFRS 9 simplified approach to measuring expected credit losses (ECLs), which uses the lifetime ECL allowance. To measure the ECLs on trade receivables, the Company considers any credit-risk concentration, collective debt risk based on historical losses, specific circumstances considering the market information on a country specific basis, and other forward looking information. Trade receivables are written off when there is no reasonable expectation of recovery of the asset (for example because of bankruptcy).

*Impairment of non-financial assets*

The Company assesses at each reporting date whether there is an indication that an asset may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the Company estimates the asset's recoverable amount. An asset's recoverable amount is the higher of an asset's or cash-generating unit's (CGU) fair value less costs to sell and its value in use and is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or the Company's assets. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In determining fair value less costs to sell, an appropriate valuation model is used. These calculations are corroborated by valuation multiples, quoted share prices for publicly traded subsidiaries or other available fair value indicators.

Impairment losses are recognized in the income statement in those expense categories consistent with the function of the impaired asset, except for property previously revalued where the revaluation was taken to other comprehensive income. In this case, the impairment is also recognized in other comprehensive income up to the amount of any previous revaluation.

For assets excluding goodwill, an assessment is made at each reporting date as to whether there is any indication that previously recognized impairment losses may no longer exist or may have decreased. If such indication exists, the Company estimates the asset's or cash-generating unit's recoverable amount. A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognized for the asset in prior years. Such reversal is recognized in the income statement unless the asset is carried at a revalued amount, in which case the reversal is treated as a revaluation increase.

*Goodwill*

Goodwill is subject to impairment tests annually, as of October 1, or earlier if indicators of potential impairment exist. We assess goodwill for impairment at least annually in the absence of an indicator of possible impairment and immediately upon an indicator of possible impairment.

Impairment is determined for goodwill by assessing the recoverable amount of each cash-generating unit (or Company of cash-generating units) to which the goodwill relates. Where the recoverable amount of the cash generating unit is less than their carrying amount an impairment loss is recognized. Impairment losses relating to goodwill cannot be reversed in future periods.

*Intangible assets*

Intangible assets with indefinite useful lives are tested for impairment annually as of October 1 either individually or at the cash generating unit level, as appropriate and when circumstances indicate that the carrying value may be impaired.

**3.23 Provisions**

Provisions are recognized by the Company when a present legal or constructive obligation exists as a result of past events, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate of the amount of the obligation can be made. Where the effect of the time value of money is material, the amount of a provision is the present value of the expenditures expected to be required to settle the obligation. Where discounting is used, the increase in the provision due to the passage of time is recognized as a financing cost.

Restructuring provisions are recorded in the period in which management has committed to a detailed formal plan, has raised a valid expectation in those affected that it will carry out the restructuring and it becomes probable that a liability will be incurred and the amount can be reasonably estimated. Restructuring provisions comprise lease termination penalties, other penalties and employee termination payments.

**3.24 Segment Reporting**

We determined that we operate as one operating segment. Our chief operating decision maker (CODM) makes decisions based on the Company as a whole. In addition, we have a common basis of organization and types of products and services which derive revenues and consistent product margins. Accordingly, we operate and make decisions as one cash generating unit.

**3.25 Cash Flow Statement**

The cash flow statement provides an explanation of the changes in cash and cash equivalents. It is prepared on the basis of a comparison of the statements of financial position as of January 1 and December 31 using the indirect method. Investing and financing transactions that do not require the use of cash or cash equivalents have been excluded from the cash flow statement. In 2018 and 2017 such eliminations primarily related to non-cash impacts from the convertible bonds.

**Significant Accounting Estimates and Judgments**

The preparation of the consolidated financial statements in conformity with IFRS requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are described below.

*Purchase Price Allocation*

The purchase price allocation for acquisitions requires extensive use of accounting estimates and judgments to allocate the purchase price to the identifiable tangible and intangible assets acquired, including in-process research and development, and liabilities assumed based on their respective fair values. An acquisition may include contingent consideration as part of the purchase price. Contingent consideration is accounted for at fair value at the acquisition date with subsequent changes to the fair value being recognized in earnings. Additionally, we must determine whether an acquired entity is considered to be a business or a set of net assets, because a portion of the purchase price can only be allocated to goodwill in a business combination.

We have made several acquisitions in recent years. The purchase prices for the acquisitions were allocated to tangible and intangible assets acquired and liabilities assumed based on their estimated fair values at the acquisition dates. We engaged an independent third-party valuation firm to assist us in determining the estimated fair values of in-process research and development and identifiable intangible assets. Such a valuation requires significant estimates and assumptions, including but not limited to determining the timing and estimated costs to complete the in-process projects, projecting regulatory approvals, estimating future cash flows, and developing appropriate discount rates. We believe the estimated fair values of contingent consideration and assets acquired and liabilities assumed are based on reasonable assumptions. However, the fair value estimates for the purchase price allocations may change during the allowable allocation period, which is up to one year from the acquisition dates, if additional information becomes available.

*Fair Value Measurements*

We have categorized our assets and liabilities that are measured at fair value, based on the priority of the inputs to the valuation techniques, in a three-level fair value hierarchy: Level 1 - using quoted prices in active markets for identical assets or liabilities; Level 2 - using observable inputs other than quoted prices; and Level 3 – using unobservable inputs. We primarily apply the market approach for recurring fair value measurements, maximize our use of observable inputs and minimize our use of unobservable inputs. We utilize the mid-point price between bid and ask prices for valuing the majority of our assets and liabilities measured and reported at fair value. In addition to using market data, we make assumptions in valuing assets and liabilities, including assumptions about risk and the risks inherent in the inputs to the valuation technique.

Certain of our derivative instruments, which are classified in Level 2 of the fair value hierarchy, are valued using industry-standard models that consider various inputs, including time value, volatility factors, and current market and contractual prices for the underlying instruments, as well as other relevant economic measures. Substantially all of these inputs are observable in

the marketplace throughout the full term of the instrument, can be derived from observable data or are supported by observable prices at which transactions are executed in the marketplace.

Certain of our acquisitions involve contingent consideration, the payment of which is contingent on the occurrence of future events. Contingent consideration is classified in Level 3 of the fair value hierarchy and is initially recognized at fair value as a cost of the acquisition. After the acquisition, the contingent consideration liability is remeasured each reporting period. The fair value of contingent consideration is measured predominantly on unobservable inputs such as assumptions about the likelihood of achieving specified milestone criteria, projections of future financial performance, assumed discount rates and assumed weightings applied to potential scenarios in deriving a probability weighted fair value. Significant judgment is used in developing these estimates and assumptions both at the acquisition date and in subsequent periods. If actual events differ from management's estimates, or to the extent these estimates are adjusted in the future, our financial condition or results of operations could be affected in the period of any change.

For other fair value measurements, we generally use an income approach to measure fair value when there is not a market observable price for an identical or similar asset or liability. This approach utilizes management’s best assumptions regarding expectations of projected cash flows, and discounts the expected cash flows using a commensurate risk-adjusted discount rate.

*Impairment of Intangible Assets*

Assets are tested or reviewed for impairment in accordance with the accounting policy stated under Note 3.22 "Impairment".

In the fourth quarter of 2018, we performed our annual impairment assessment of goodwill (using data as of October 1, 2018). We performed our goodwill impairment testing on a single cash generating unit basis which is consistent with our reporting structure. Differences in assumptions used in projecting future operating cash flows and cost of funds could have a significant impact on the determination of impairment amounts. In estimating future cash flows, we used our internal five-year projections. Our projections were based on recent sales data for existing products, planned timing of new product launches or capital projects, and customer commitments related to new and existing products. These projections also included assumptions of future production volumes and pricing. Based on the sensitivity analysis performed, we determined that in the event that our estimates of projected future cash flows, growth rates and weighted average cost of capital were too high by 10%, there would still be no impact on the reported value of goodwill. We concluded that no impairment existed at October 1, 2018 or through December 31, 2018.

Due to the numerous variables associated with our judgments and assumptions relating to the valuation of the cash generating unit and the effects of changes in circumstances affecting these valuations, both the precision and reliability of the resulting estimates are subject to uncertainty, and as additional information becomes known, we may change our estimates.

*Development Costs*

Development costs are capitalized in accordance with the accounting policy stated under Note 3.6 "Research and Development". Determining the amounts to be capitalized requires management to make assumptions regarding the expected future cash generation of the assets, discount rates to be applied and the expected period of benefits. At least annually, management reviews the carrying amount of projects and assessed whether they were impaired or not.

*Income Taxes*

The Company is subject to income taxes in numerous jurisdictions that require estimates to be made based on interpretations of laws or regulations. Various internal and external factors, such as changes in tax laws, regulations and rates, changing interpretations of existing tax laws or regulations, future level of research and development spending and changes in overall levels of pre-tax income may have favorable or unfavorable effects on the income tax and deferred tax provisions in the period in which such determination is made.

Deferred tax assets are recognized in accordance with the accounting policy stated in Note 3.11 "Taxation". Deferred tax assets are recognized for net operating loss carry-forwards to the extent that it is probable that taxable profit will be available against which the losses can be utilized. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized based upon the likely timing and level of future taxable profits.

*Share-Based Payments - Stock Options*

The Company utilizes the Black-Scholes-Merton valuation model for estimating the fair value of its stock options as stated under Note 21 "Share-Based Payments". Option valuation models, including Black-Scholes-Merton, require the input of highly subjective assumptions, and changes in the assumptions used can materially affect the grant date fair value of an award.

*Share-Based Payments - Restricted Stock Units and Performance Stock Units*

Restricted stock units and performance stock units represent rights to receive Common Shares at a future date. The fair market value is determined based on the number of stock units granted and the fair market value of our shares on the grant date. The

fair market value at the time of the grant, less an estimate for pre-vesting forfeitures, is recognized in expense over the vesting period. We grant performance-based stock units subject to performance periods of one-year up to three years. Thus the estimates of performance achieved during the performance period may be subject to significant changes from period to period as the performance is completed.

## 4. Revenue

***Accounting Policies***

We adopted IFRS 15 *Revenue from Contracts with Customer*s with a date of initial application of January 1, 2018. The comparative information has not been adjusted and continues to be reported under IAS 18 *Revenue*. As a result, we changed our accounting policy for revenue recognition as detailed below.

We applied IFRS 15 using the modified retrospective method by recognizing the effect of initially applying IFRS 15 as an $1.3 million adjustment to the opening balance of retained earnings at January 1, 2018 for all contracts not completed at January 1, 2018. The following table presents the impact from the adoption of IFRS 15 on our consolidated balance sheet:

| (in thousands) | Balance at December 31, 2017 | IFRS 15 Adjustments | Balance at January 1, 2018 |
|---|---|---|---|
| Trade accounts receivable | $ 329,138 | $ 160 | $ 329,298 |
| Other current liabilities | $ 230,243 | $ 765 | $ 231,008 |
| Non-current deferred tax assets | $ 67,985 | $ (701) | $ 67,284 |
| Retained earnings | $ 1,071,393 | $ (1,306) | $ 1,070,087 |

The adoption of IFRS 15 resulted in higher revenues of $9.4 million for the year ended December 31, 2018 following primarily the change in the timing of the recognition of milestone payments. The following table summarizes the impacted line items from our consolidated statements of income for the year ended December 31, 2018:

| (in thousands, except per share amounts) | Twelve months ended December 31, 2018 under previous standard | Effect of IFRS 15 | December 31, 2018 As Reported |
|---|---|---|---|
| Net sales | $ 1,492,464 | $ 9,384 | $ 1,501,848 |
| Income taxes | $ (40,531) | $ (1,470) | $ (42,001) |
| Net income | $ 96,980 | $ 7,914 | $ 104,894 |
| Basic earnings per common share | $ 0.43 | $ 0.03 | $ 0.46 |
| Diluted earnings per common share | $ 0.42 | $ 0.03 | $ 0.45 |

The impact from the adoption of IFRS 15 on our consolidated balance sheet as of December 31, 2018 and consolidated statements of cash flows for the year ended December 31, 2018 was not material.

***Nature of Goods and Services***

Our revenues are reported net of sales and value added taxes and accruals for estimated rebates and returns and are derived primarily from the sale of consumable and instrumentation products, and to a much lesser extent, from the sale of services, intellectual property and technology. Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration we expect to receive in exchange for those products or services. We enter into contracts that can include various combinations of products and services, which are generally distinct and accounted for as separate performance obligations. The transaction price is allocated to performance obligations based on their relative stand-alone selling prices.

We offer warranties on our products. Certain of our warranties are assurance-type in nature and do not cover anything beyond ensuring that the product is functioning as intended. Based on the guidance in IFRS 15, assurance-type warranties do not represent separate performance obligations. The Company also sells separately-priced service contracts which qualify as service-type warranties and represent separate performance obligations.

We sell our products and services both directly to customers and through distributors generally under agreements with payment terms typically less than 90 days and in most cases not exceeding one year and therefore contracts do not contain a significant financing component.

***Consumable and Related Revenue***

***Consumable Products:*** In the last three years, revenue from consumable product sales has accounted for approximately 78-80% of our net sales and revenue is recognized when performance obligations under the terms of a contract with a customer are satisfied. The majority of our contracts have a single performance obligation to transfer a product or multiple performance obligations to transfer multiple products concurrently. Accordingly, we recognize revenue when control of the products has transferred to the customer, which is generally at the time of shipment of products as this is when title and risk of loss have been transferred. In addition, invoicing typically occurs at this time so this is when we have a present right to payment. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring products and is generally based upon a negotiated formula, list or fixed price.

***Related Revenue:*** Revenues from related products include software-as-a-service (SaaS), licenses, intellectual property and patent sales, royalties and milestone payments and over the last three years has accounted for approximately 7-9% of our net sales.

*SaaS arrangements:* Revenue from SaaS arrangements, which allow customers to use hosted software over the contract period without taking possession of the software, is recognized over the duration of the agreement unless the terms of the agreement indicate that revenue should be recognized in a different pattern, for example based on usage.

*Licenses*: Licenses for on-site software, which allow customers to use the software as it exists when made available, are sold as perpetual licenses or subscriptions. Revenue from on-site licenses are recognized upfront at the point in time at the later of when the software is made available to the customer and the beginning of the license term. When a portion of the transaction price is allocated to a performance obligation to provide support and/or updates, revenue is recognized as the updates/support are provided, generally over the life of the license. Fees from research collaborations include payments for technology transfer and access rights. Royalties from licensees of intellectual property are based on sales of licensed products and revenues are recognized at the later of (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied).

*Milestone Payments:* At the inception of each companion diagnostic co-development arrangement that includes development milestone payments, which represent variable consideration, we evaluate whether the milestones are probable of being reached and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within our control, such as milestones which are achieved through regulatory approvals, are considered to be constrained and excluded from the transaction price until those approvals are received. Revenue is recognized following the input method as this is considered to best depict the timing of the transfer of control. This involves measuring actual hours incurred to date as a proportion of the total budgeted hours of the project. At the end of each subsequent reporting period, the proportion of completion is trued-up. We also re-evaluate the probability of achievement of development milestones and any related constraint on a periodic basis, and if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and earnings in the period of adjustment.

***Instruments***

Revenue from instrumentation includes the instrumentation equipment, installation, training and other instrumentation services, such as extended warranty services or product maintenance contracts and over the last three years has accounted for approximately 12-13% of net sales. Revenue from instrumentation equipment is recognized when the customer obtains control of the instrument which is predominantly at the time of delivery or when title has transferred to the customer. Service revenue is recognized over the term of the service period as the customers benefit from the service throughout the service period. Revenue related to services performed on a time-and-materials basis is recognized when performed.

***Contract Estimates***

The majority of our revenue is derived from contracts (i) with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount in which we have the right to invoice as product is delivered. We have elected the practical expedient not to disclose the value of remaining performance obligations associated with these types of contracts. In addition, we have elected the practical expedient not to disclose the value of remaining performance obligations associated with licenses of intellectual property for which payment is based on sales of the licensed products.

However, we have certain companion diagnostic co-development contracts to provide research and development activities in which our performance obligations extend over multiple years. As of December 31, 2018, we had $36.6 million of remaining performance obligations for which the transaction price is not constrained related to these contracts of which we expect to recognize approximately 50% over the next 12 months and the remainder thereafter.

Revenue expected to be recognized in any future year related to remaining performance obligations, excluding revenue pertaining to contracts that have an original expected duration of one year or less, contracts where revenue is recognized as invoiced, contracts for licenses of intellectual property where payment is based on sales of the licensed products and contracts

with variable consideration related to undelivered performance obligations, is not material. Additionally, revenue recognized in the reporting period from performance obligations satisfied, or partially satisfied, in a previous period, is not material.

***Contract Balances***

The timing of revenue recognition, billings and cash collections can result in billed accounts receivable, unbilled receivables (contract assets), and customer advances and deposits (contract liabilities) in the consolidated balance sheet.

Contract assets as of December 31, 2018 totaled $6.9 million and are included in other current assets in the accompanying consolidated balance sheet and relate to the companion diagnostic co-development contracts discussed above. There were no material contract assets as of January 1, 2018.

Contract liabilities primarily relate to advances or deposits received from customers before revenue is recognized and is primarily related to instrument service and software subscription revenue. As of December 31, 2018 and January 1, 2018, the amount of deferred revenue reported as other current liabilities totaled to $45.4 million and $49.4 million, respectively, and $9.0 million and $6.2 million are reported as other non-current liabilities, respectively. During the year ended December 31, 2018, we satisfied the associated performance obligations and recognized revenue of $44.5 million, respectively, related to advance customer payments previously received.

***Practical Expedients and Accounting Policy Elections***

We exclude from net sales any value add, sales and other taxes which we collect concurrent with revenue-producing activities. If we perform shipping and handling activities after the transfer of control to the customer (e.g., when control transfers prior to delivery), they are considered as fulfillment activities, and accordingly, the costs are accrued when the related revenue is recognized. As such, shipping and handling fees billed to customers in a sales transaction are recorded in net sales and shipping and handling costs incurred are recorded in sales and marketing expenses. We recognize the incremental costs of obtaining contracts (commissions) as an expense when incurred for contracts that have a duration of one year or less. There were no deferred contract costs recorded at December 31, 2018. We apply the practical expedient to not disclose information about remaining performance obligations from contracts that have original expected duration of one year or less, revenue that is recognized as invoiced and revenue that is recognized based on the sales of the licensed products.

***Disaggregation of Revenue***

We disaggregate our revenue based on product categories and customer class as shown in the tables below for the years ended December 31, 2018 and 2017:

| | 2018 | | |
|---|---|---|---|
| | **Consumables and related** | **Instruments** | **Total** |
| Molecular Diagnostics | **$ 649,602** | **$ 82,197** | **$ 731,799** |
| Applied Testing | **109,196** | **27,962** | **137,158** |
| Pharma | **258,487** | **32,061** | **290,548** |
| Academia | **298,174** | **44,169** | **342,343** |
| Total | **$ 1,315,459** | **$ 186,389** | **$ 1,501,848** |

| | 2017 | | |
|---|---|---|---|
| **(in thousands)** | **Consumables and related** | **Instruments** | **Total** |
| Molecular Diagnostics | $ 605,462 | $ 77,702 | $ 683,164 |
| Applied Testing | 106,380 | 30,654 | 137,034 |
| Pharma | 245,187 | 29,642 | 274,829 |
| Academia | 285,686 | 36,823 | 322,509 |
| Total | $ 1,242,715 | $ 174,821 | $ 1,417,536 |

Refer to Note 20 "Segment Information" for disclosure of revenue by geographic region.

**5. Acquisitions and Divestitures**

Acquisitions have been accounted for as business combinations, and the acquired companies' results have been included in the accompanying consolidated income statements from their respective dates of acquisition. Our acquisitions have historically been made at prices above the fair value of the acquired net assets, resulting in goodwill, due to expectations of synergies of combining the businesses. These synergies include use of our existing infrastructure, such as sales force, shared service centers, distribution channels and customer relations, to expand sales of the acquired businesses' products; use of the infrastructure of the acquired businesses to cost-effectively expand sales of our products; and elimination of duplicative facilities, functions and staffing.

***2018 Acquisition***

In April 2018, we acquired all shares in STAT-Dx Life, S.L. (STAT-Dx), a privately-held company located in Barcelona, Spain, which is developing the next generation of multiplex diagnostics for one-step, fully integrated molecular analysis of common syndromes using a novel system based on real-time PCR technology and proven QIAGEN chemistries.

The cash consideration totaled $148.8 million. The acquisition included contingent consideration which is recorded as part of the purchase price based on the acquisition date fair value. Under the purchase agreement, potential contingent payments through 2022 total $44.3 million, of which the fair value of $37.4 million was recorded as purchase price using a probability-weighted analysis of the future milestones applying discount rates between 6.5% and 6.9%. For the year ended December 31, 2018, acquisition-related costs total $7.1 million, of which $4.8 million are included in general and administrative, restructuring, integration and other expenses, net and $2.3 million are included in cost of sales in the accompanying consolidated statements of income.

The allocation of the purchase price is preliminary and is not yet finalized. The preliminary allocation of the purchase price is based upon preliminary estimates which used information that was available to management at the time the consolidated financial statements were prepared and these estimates and assumptions are subject to change within the measurement period, up to one year from the acquisition date. Accordingly, the allocation may change. We continue to gather information about the acquired tax balances.

The preliminary purchase price allocation as of December 31, 2018 differed from the initial preliminary purchase price allocation as follows:

| (in thousands) | As of December 31, 2018 | As of April 27, 2018 | Difference |
|---|---|---|---|
| Purchase Price: | | | |
| Cash consideration | $ 148,780 | $ 148,780 | $ — |
| Fair value of contingent consideration | 37,377 | 36,751 | 626 |
| | $ 186,157 | $ 185,531 | $ 626 |
| | | | |
| Preliminary Allocation: | | | |
| Cash and cash equivalents | $ 7,357 | $ 7,357 | $ — |
| Prepaid expenses and other current assets | 1,432 | 1,432 | — |
| Inventories | 1,868 | 1,868 | — |
| Income tax receivables | 2,213 | 2,213 | — |
| Accounts payable | (1,412) | (1,412) | — |
| Accruals and other current liabilities | (1,785) | (560) | (1,225) |
| Fixed and other long-term assets | 6,306 | 6,434 | (128) |
| Developed technology | 31,300 | 80,100 | (48,800) |
| In-process research and development | 24,300 | — | 24,300 |
| Goodwill | 117,621 | 97,268 | 20,353 |
| Deferred tax liability on fair value of identifiable intangible assets acquired | (3,043) | (9,169) | 6,126 |
| Total | $ 186,157 | $ 185,531 | $ 626 |

The in-process research and development recognized relates to technologies that remain in development and have not yet obtained regulatory approval. The technologies within in-process research and development are expected to be completed within the next two years.

The changes in the values of in-process research and development assets and developed technology relate to new information obtained regarding key assumptions in the valuation model since the initial purchase price allocation. This resulted in an immaterial impact to the amortization expense recorded during 2018. The weighted average amortization period for the developed technology is 10 years. The goodwill acquired is not deductible for tax purposes.

Revenue and earnings in the reporting periods since the acquisition date have not been significant. No pro forma financial information has been provided herein as the acquisition of STAT-Dx did not have a material impact to net sales, net income or earnings per share on a pro forma basis.

***Other 2018 Acquisition***

In April 2018, we acquired all remaining shares of a privately held entity in which we held a minority interest. The value of the minority interest investment was revalued in connection with the acquisition by $4.8 million and a corresponding gain was recorded in general and administrative, restructuring, integration and other, net in the accompanying consolidated statement of income for the year ended December 31, 2018. The allocation of the purchase price is preliminary and is based upon preliminary estimates which used information that was available to management at the time the financial statements were prepared and these estimates and assumptions are subject to change within the measurement period, up to one year from the acquisition date. Accordingly, the allocation may change. We continue to gather information about the acquired tax balance. This acquisition was not significant to the overall consolidated financial statements and the acquisition did not have a material impact to net sales, net income or earnings per share and therefore no pro forma information has been provided herein.

***2017 Acquisitions***

In January 2017, we acquired OmicSoft Corporation, a leading provider of omics data management solutions located in Cary, North Carolina (U.S.). This acquisition was not significant to the overall consolidated financial statements and as of December 31, 2017, the allocation of the purchase price was final. The acquisition did not have a material impact to net sales, net income or earnings per share and therefore no pro forma information has been provided herein.

**Divestitures**

***2018 Divestitures***

In April 2018, we sold a portfolio of veterinary testing products for a total of €15.1 million ($18.5 million), of which $16.4 million was received in cash and the balance due in April 2020. An $8.0 million gain was recorded on the sale to other operating income in the accompanying consolidated income statement for the year-ended December 31, 2018.

## 6. Restructuring

*2017 Restructuring*

During the fourth quarter of 2017, we initiated restructuring initiatives to mitigate the negative impacts stemming from the U.S. tax legislation as further discussed in Note 16 "Income Tax". Total pre-tax costs for the program were $25 million and no additional costs will be incurred related to this program. Cumulative costs for this program were as follows:

| (in thousands) | Personnel Related | Contract and Other Costs | Inventory Write-offs & Asset Impairments | Total |
|---|---|---|---|---|
| Cost of sales | $ — | $ — | $ 3,039 | $ 3,039 |
| General and administrative, restructuring, integration and other, net | — | 4,583 | — | 4,583 |
| Total 2017 costs | — | 4,583 | 3,039 | 7,622 |
| Cost of sales | **424** | **1,193** | **—** | **1,617** |
| General and administrative, restructuring, integration and other, net | **10,381** | **4,232** | **1,610** | **16,223** |
| Total 2018 costs | **10,805** | **5,425** | **1,610** | **17,840** |
| Total cumulative costs | **$ 10,805** | **$ 10,008** | **$ 4,649** | **$ 25,462** |

The following table summarizes the cash components of the restructuring activity.

| (in thousands) | Personnel Related | Contract and Other Costs | Total |
|---|---|---|---|
| Costs incurred in 2017 | $ — | $ 4,583 | $ 4,583 |
| Foreign currency translation adjustment | — | 2 | 2 |
| Liability at December 31, 2017 | — | 4,585 | 4,585 |
| Additional costs in 2018 | **12,642** | **5,554** | **18,196** |
| Release of excess accrual | **(1,837)** | **(129)** | **(1,966)** |
| Payments | **(6,892)** | **(7,149)** | **(14,041)** |
| Foreign currency translation adjustment | **(93)** | **(17)** | **(110)** |
| Liability at December 31, 2018 | **$ 3,820** | **$ 2,844** | **$ 6,664** |

During 2018, fixed asset impairments of $1.6 million were recorded in connection with this initiative and are included within general and administration, restructuring, integration and other in the accompanying consolidated income statement. As of December 31, 2018 and 2017, liabilities of $6.7 million and $4.6 million, respectively, are included in other current liabilities in the accompanying consolidated balance sheets.

*2016 Restructuring*

During the fourth quarter of 2016, we initiated a series of targeted actions to support faster sales momentum and improve efficiency and accountability. The objective with these actions is to ensure that we grow sustainably and consistently in the coming years. Measures include simplifying our geographic presence with site reductions, focusing resources to shared service centers, and streamlining selected organizational structures. No additional costs will be incurred related to this program. Cumulative costs for this program were as follows:

| (in thousands) | Personnel Related | Facility Related | Contract and Other Costs | Asset Impairments & Disposals | Total |
|---|---|---|---|---|---|
| Cost of sales | $ 1,222 | $ 205 | $ 43 | $ 11,553 | $ 13,023 |
| General and administrative, restructuring, integration and other, net | 17,998 | 6,960 | 8,272 | 22,963 | 56,193 |
| Other expense | — | — | — | 10,946 | 10,946 |
| Total 2016 costs | 19,220 | 7,165 | 8,315 | 45,462 | 80,162 |
| Cost of sales | 1,071 | — | 238 | — | 1,309 |
| General and administrative, restructuring, integration and other, net | 8,097 | 350 | 9,612 | — | 18,059 |
| Total 2017 costs | 9,168 | 350 | 9,850 | — | 19,368 |
| General and administrative, restructuring, integration and other, net | **29** | **(838)** | **(546)** | **—** | **(1,355)** |
| Total 2018 costs (releases) | **29** | **(838)** | **(546)** | **—** | **(1,355)** |
| Total cumulative costs | **$ 28,417** | **$ 6,677** | **$ 17,619** | **$ 45,462** | **$ 98,175** |

Personnel Related expenses during 2017 and 2016 includes reductions in costs of $0.7 million and $2.0 million, respectively, as a result of forfeitures of share-based compensation in connection with terminations. During the year ended December 31, 2016, Asset Impairments and Disposals include $31.4 million for intangible asset impairments, $2.0 million for fixed asset abandonments, and $1.1 million primarily in connection with the write-off of prepaid contract costs. The total $10.9 million of expense, includes $8.3 million associated with an impairment of an equity method investment and $2.6 million disposal of goodwill, included in gain (loss) from equity accounted investments and other operating expenses, respectively, in the consolidated income statement for the year ended December 31, 2016.

The following table summarizes the cash components of the restructuring activity.

| (in thousands) | Personnel Related | Facility Related | Contract and Other Costs | Total |
|---|---|---|---|---|
| Liability at December 31, 2016 | $ 18,480 | $ 7,882 | $ 5,943 | $ 32,305 |
| Additional costs in 2017 | 12,985 | 1,798 | 9,883 | 24,666 |
| Release of excess accrual | (3,083) | (1,448) | (30) | (4,561) |
| Payments | (25,586) | (7,478) | (14,887) | (47,951) |
| Facility deferred rent reclassified to restructuring liability | — | 241 | — | 241 |
| Foreign currency translation adjustment | 1,126 | 57 | 157 | 1,340 |
| Liability at December 31, 2017 | $ 3,922 | $ 1,052 | $ 1,066 | $ 6,040 |
| Additional costs in 2018 | **372** | — | — | **372** |
| Release of excess accrual | **(343)** | **(838)** | **(546)** | **(1,727)** |
| Payments | **(3,648)** | **(214)** | **(494)** | **(4,356)** |
| Foreign currency translation adjustment | **(48)** | — | **(26)** | **(74)** |
| Liability at December 31, 2018 | **$ 255** | **$ —** | **$ —** | **$ 255** |

At December 31, 2018, $0.3 million of the liability is included in other current liabilities in the accompanying consolidated balance sheet. At December 31, 2017, $5.2 million of the liability is included in other current liabilities and $0.8 million is included in other non-current liabilities in the accompanying consolidated balance sheet.

## 7. Financial Assets

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Current financial assets: | | |
| Unquoted debt securities | **$ 214,568** | $ 359,198 |
| Quoted equity securities | **350** | — |
| **Current Financial Assets** | **$ 214,918** | $ 359,198 |
| Non-current financial instruments: | | |
| Unquoted debt securities | **$ 20,038** | $ — |
| Quoted equity securities | **2,117** | 3,208 |
| Unquoted equity securities | **59,484** | 33,605 |
| **Non-current Financial Assets** | **$ 81,639** | $ 36,813 |
| **Total Financial Assets** | **$ 296,557** | $ 396,011 |

*Unquoted Debt Securities*

At December 31, 2018 and 2017, we had $234.3 million and $359.2 million, respectively, of loan receivables and commercial paper due from financial institutions. These loan receivables and commercial paper are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market and are measured at fair market value with gains and losses recorded in earnings. At December 31, 2018, these loans consist of $134.1 million and €87.5 million ($100.2 million as of December 31, 2018) which mature at various dates through October 2020.

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Balance at beginning of the year | **$ 359,198** | $ 89,300 |
| Unquoted debt securities acquired | **568,002** | 450,564 |
| Unquoted debt securities sold | **(691,765)** | (184,882) |
| Gain (loss) on sales of unquoted debt securities | **2,725** | (1,055) |
| Translation | **(3,554)** | 5,271 |
| Balance at end of the year | **$ 234,606** | $ 359,198 |

*Quoted Equity Securities*

A summary of our investments in quoted equity securities that have readily determinable fair values follows below. These investments are reported at fair value with gains and losses recorded in earnings beginning in January 2018 upon adoption of

IFRS 9. Prior to adoption, these investments were reported at fair value with unrealized gains and losses recognized in accumulated other comprehensive income on the balance sheet. Accordingly, upon adoption, we recorded a cumulative effect adjustment to decrease opening retained earnings at January 1, 2018 by a net of tax amount of $0.9 million (pre-tax $1.1 million) for unrealized losses as of the adoption date.

| (in thousands, except shares held) | As of December 31, | |
|---|---|---|
| HTG Molecular Diagnostics, Inc (HTGM) | 2018 | 2017 |
| Shares held | **833,333** | 833,333 |
| Cost basis | **$ 2,000** | $ 2,000 |
| Fair value | **$ 2,117** | $ 1,692 |
| Total recognized gain during the period | **$ 425** | $ — |
| Total cumulative unrealized gain (loss) | **$ 117** | $ (308) |

During the year ended December 31, 2018, the increase of $0.4 million in fair market value was recognized as a gain in other operating income in the accompanying consolidated statement of income. These marketable securities are included in non-current financial assets in the accompanying consolidated balance sheets.

| (in thousands, except shares held) | As of December 31, | |
|---|---|---|
| Curetis N.V. | 2018 | 2017 |
| Shares held | **204,000** | 320,424 |
| Cost basis | **$ 1,444** | $ 2,268 |
| Fair value | **$ 350** | $ 1,516 |
| Total recognized loss during the period | **$ (572)** | $ — |
| Total cumulative unrealized loss | **$ (1,094)** | $ (752) |

During the year ended December 31, 2018, we sold 116,424 shares of Curetis N.V. and recognized a gain of $0.3 million in other operating income in the accompanying consolidated statement of income in connection with the sale of these shares. The fair market value of shares held during the year decreased by $0.6 million and was recognized as a loss in other operating expense in the accompanying consolidated statement of income. As of December 31, 2018 and 2017, these marketable securities are included in current financial assets and non-current financial assets, respectively, in the accompanying consolidate balance sheets.

*Unquoted Equity Securities*

At December 31, 2018 and 2017, we had investments in non-publicly traded companies that do not have readily determinable fair values with carrying amounts that totaled $59.5 million and $33.6 million, respectively. Upon adoption of IFRS 9 in 2018, these investments are required to be accounted for at fair value through profit and loss unless the investment is not held for trading, and the holder elects at initial recognition to account for it at fair value through other comprehensive income. As this election has not been made, these investments are accounted for at fair value through profit and loss.

Changes in these investments for the years ended December 31, 2018 and 2017 are as follows:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Balance at beginning of year | **$ 33,605** | $ 38,173 |
| Cash investments in equity securities | **9,633** | 278 |
| Net increases due to observable price changes | **13,104** | — |
| Conversion of note receivable to equity securities | **11,369** | — |
| Sale of equity securities | **(5,400)** | — |
| Impairments | **—** | (5,137) |
| Full acquisition of equity securities | **(2,710)** | — |
| Foreign currency translation adjustments | **(117)** | 291 |
| Balance at end of year | **$ 59,484** | $ 33,605 |

During 2018, we made investments of $9.6 million in equity securities, of which $9.3 million was an additional investment in NeuMoDx Molecular, Inc. (NeuMoDx). The investment is part of a strategic partnership with NeuMoDx to commercialize two

new fully integrated systems for automation of PCR (polymerase chain reaction) testing. Under the agreement, we will initially distribute the NeuMoDx™ 288 (high-throughput version) and NeuMoDx™ 96 (mid-throughput version) in Europe and other major markets worldwide outside of the United States. NeuMoDx will distribute these instruments within the United States directly. The two companies have also entered into an agreement under which we can acquire all NeuMoDx shares not currently owned by QIAGEN at a predetermined price of approximately $234 million, subject to the achievement of certain regulatory and operational milestones.

For the year ended December 31, 2018, we recognized a gain of $13.1 million in other operating income in the accompanying consolidated statement of income due to upward adjustments resulting from observable price changes. These adjustments were due to equity offerings at a higher price from the issuer in orderly transactions for identical or similar investments as those we hold.

During 2018, we converted a note receivable from a non-publicly traded company, considered a related party, into an equity interest in that company and is currently held at the value of the shares received. This note held a balance of $11.4 million including principal balance and accrued interest at conversion which was a non-cash investing activity and is therefore not included in the consolidated statement of cash flows. Also during 2018, we sold our interest in a non-publicly traded company which had a book value of $5.4 million. Proceeds from the sale totaled $10.5 million in cash resulting in a corresponding gain of $5.1 million recorded in other operating income in the accompanying consolidated statement of income. Additionally during 2018, we acquired all remaining shares of a privately held entity in which we held a minority interest as discussed in Note 5 "Acquisitions and Divestitures".

One of our investments in unquoted equity securities is a structured entity that we do not have the ability to affect the variable returns through power over the entity. Therefore, this investment is not consolidated. As of December 31, 2018 and 2017, this investment had a total carrying value of $41.0 million and $20.0 million, respectively, which is included in non-current financial assets in the consolidated balance sheets, representing our maximum exposure to loss.

In 2017, we recorded total impairments to unquoted equity securities of $5.1 million in other operating expense in the accompanying consolidated statement of income.

## 8. Trade Accounts Receivable

We sell our products worldwide through sales subsidiaries and distributors. There is no concentration of credit risk with respect to trade accounts receivable as we have a large number of internationally dispersed customers. Trade accounts receivable are non-interest bearing and mostly have payment terms of 30-90 days.

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Trade accounts receivable | **$ 342,849** | $ 319,913 |
| Notes receivable | **18,033** | 17,233 |
| Allowance for credit loss | **(9,270)** | (8,008) |
| Trade Accounts Receivable, net | **$ 351,612** | $ 329,138 |

The notes receivable represent a written promise from customers to pay definite amounts of money on specific future dates.

The following table provides a breakdown of trade accounts receivable which are current and overdue but not fully impaired receivables.

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Current | **$ 229,839** | $ 206,578 |
| overdue 1-30 days | **42,781** | 49,379 |
| overdue 31-90 days | **28,623** | 27,105 |
| overdue > 90 days | **50,369** | 46,076 |
| Trade accounts receivable, net | **$ 351,612** | $ 329,138 |

The changes in the allowance for doubtful accounts receivable are as follows:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Balance as of January 1 | **$ 8,008** | $ 7,614 |
| Additions charged to expense | **4,448** | 3,094 |
| Deductions from allowance [1] | **(2,827)** | (3,233) |
| Currency translation adjustments and other | **(359)** | 533 |
| Balance as of December 31 | **$ 9,270** | $ 8,008 |

[1] Write-offs for which an allowance was previously provided.

Included in the above balances as per December 31, 2018 are allowances for individually impaired receivables of $3.2 million (2017: $3.0 million).

## 9. Other Current and Non-current Assets

Other current assets at December 31, 2018 and 2017 consist of the following:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Prepaid expenses | **$ 28,884** | $ 17,422 |
| Cash collateral | **25,368** | 21,907 |
| Value added tax | **24,416** | 17,870 |
| Other receivables | **11,127** | 17,455 |
| Other Current Assets | **$ 89,795** | $ 74,654 |

Other non-current assets at December 31, 2018 and 2017 consist of the following:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Prepaid licenses and royalties | **$ 39,697** | $ 11,261 |
| Non-current loans receivable with related parties including interest | **24,300** | 17,713 |
| Other non-current assets | **10,420** | 11,177 |
| Prepayment of intangibles | **7,884** | 7,167 |
| Non-current deposits and escrow payments | **1,028** | 1,311 |
| Other Non-current Assets | **$ 83,329** | $ 48,629 |

Prepaid licenses and royalties include $30.0 million of prepaid royalties to Natera in 2018 for a partnership to develop genetic assays for the GeneReader NGS System.

## 10. Property, Plant and Equipment

| Cost (in thousands) | Land and buildings | Machinery and equipment | Furniture and office equipment | Leasehold improvements | Construction in progress | Total |
|---|---|---|---|---|---|---|
| January 1, 2017 | $ 284,710 | $ 257,348 | $ 89,560 | $ 32,709 | $ 7,324 | $ 671,651 |
| Currency adjustments | 21,079 | 22,129 | 6,874 | 2,413 | 518 | 53,013 |
| Additions | 3,788 | 24,451 | 6,148 | 1,770 | 11,112 | 47,269 |
| Business combinations | — | — | — | 80 | — | 80 |
| Disposals | (148) | (7,768) | (5,625) | (246) | (42) | (13,829) |
| Transfers | 324 | 3,015 | 6,300 | 646 | (10,285) | — |
| December 31, 2017 | 309,753 | 299,175 | 103,257 | 37,372 | 8,627 | 758,184 |
| Currency adjustments | **(8,091)** | **(15,892)** | **(3,354)** | **(1,348)** | **(206)** | **(28,891)** |
| Additions | **947** | **31,125** | **10,121** | **1,470** | **29,388** | **73,051** |
| Business combinations | **—** | **4,506** | **316** | **894** | **—** | **5,716** |
| Disposals | **—** | **(15,248)** | **(5,835)** | **(1,252)** | **(441)** | **(22,776)** |
| Transfers | **96** | **3,084** | **5,265** | **848** | **(9,293)** | **—** |
| **December 31, 2018** | **$ 302,705** | **$ 306,750** | **$ 109,770** | **$ 37,984** | **$ 28,075** | **$ 785,284** |

| Depreciation (in thousands) | Land and buildings | Machinery and equipment | Furniture and office equipment | Leasehold improvements | Construction in progress | Total |
|---|---|---|---|---|---|---|
| January 1, 2017 | $ (74,371) | $ (195,089) | $ (69,394) | $ (24,089) | — | $ (362,943) |
| Currency adjustments | (7,294) | (16,181) | (6,518) | (1,853) | — | (31,846) |
| Depreciation | (8,118) | (30,092) | (9,953) | (1,876) | — | (50,039) |
| Disposals | 108 | 5,443 | 4,967 | 137 | — | 10,655 |
| December 31, 2017 | (89,675) | (235,919) | (80,898) | (27,681) | — | (434,173) |
| Currency adjustments | **2,882** | **12,365** | **2,702** | **959** | **—** | **18,908** |
| Depreciation | **(8,244)** | **(28,853)** | **(9,884)** | **(2,293)** | **—** | **(49,274)** |
| Disposals | **—** | **13,334** | **5,719** | **214** | **—** | **19,267** |
| December 31, 2018 | **(95,037)** | **(239,073)** | **(82,361)** | **(28,801)** | **—** | **(445,272)** |
| Net book value | | | | | | |
| December 31, 2017 | $ 220,078 | $ 63,256 | $ 22,359 | $ 9,691 | $ 8,627 | $ 324,011 |
| **December 31, 2018** | **$ 207,668** | **$ 67,677** | **$ 27,409** | **$ 9,183** | **$ 28,075** | **$ 340,012** |

No property, plant and equipment were pledged as security against non-current financial debts at December 31, 2018 and 2017. The net carrying amount of property, plant and equipment under finance lease contracts, primarily buildings, amounts to $0.1 million as of December 31, 2018 (2017: $1.4 million).

The asset's residual values, useful lives and methods of depreciation are reviewed, and adjusted if appropriate, at each financial year end. For the years ended December 31, 2018 and 2017, interest capitalized in connection with construction projects was not significant.

## 11. Equity Accounted Investments

We have made strategic investments in certain companies that are accounted for using the equity method of accounting. The method of accounting for an investment depends on the level of influence. We monitor changes in circumstances that may require a reassessment of the level of influence. We periodically review the carrying value of these investments for impairment, considering factors such as the most recent stock transactions and book values from the recent financial statements.

Amounts from equity method investments considered in the financial statements are as follows:

| | | Equity investments as of December 31, | | Share of income (loss) for the years ended December 31, | |
|---|---|---|---|---|---|
| **($ in thousands)** | **Ownership Percentage** | **2018** | **2017** | **2018** | **2017** |
| PreAnalytiX GmbH | 50.00% | **$ 5,405** | $ 7,562 | **$ 4,062** | $ 3,818 |
| MAQGEN Biotechnology Co., Ltd | 40.00% | **5,154** | 3,285 | **(579)** | (542) |
| Suzhou Fuda Business Management and Consulting Partnership | 33.67% | **3,138** | — | **—** | — |
| Apis Assay Technologies Ltd | 19.00% | **770** | — | **—** | — |
| Hombrechtikon Systems Engineering AG | 19.00% | **378** | 1,155 | **(668)** | (346) |
| Biotype Innovation GmbH | 0.00% | **—** | 3,821 | **(123)** | 39 |
| Pyrobett | 19.00% | **—** | 2,639 | **(100)** | 195 |
| | | **$ 14,845** | $ 18,462 | **$ 2,592** | $ 3,164 |

These equity method investments are included in equity accounted investments in the consolidated balance sheets for the years ended December 31, 2018 and 2017.

During the year ended December 31, 2018, we recorded impairments to the Biotype and Pyrobett investments totaling $6.1 million in other operating expense in the accompanying consolidated statements of income following changes in the investee's circumstances that indicated the carrying value was no longer recoverable. Accordingly, the investments were fully impaired. We retain a QIAGEN representative on the board at Pyrobett and therefore have significant influence and account for this as an equity method investment in spite of the fact our share is below 20%.

Also during 2018, we acquired a 19% interest in Apis Assay Technologies Ltd. for $0.8 million and due to the expected business activity, QIAGEN has significant influence. Accordingly, the investment in this company is recorded at equity. As of December 31, 2018, this investment had a carrying value of $0.8 million, which is included in other non-current assets in the consolidated balance sheet, representing our maximum exposure to loss.

During 2017, we acquired a 40% interest in MAQGEN Biotechnology Co., Ltd. for $4.0 million and contributed an additional $3.2 million during 2018. We have a commitment to contribute an additional $4.8 million in future periods. Also, during 2017, we sold our interest in QIAGEN (Suzhou) Institute of Translation Research Co., Ltd., which had no book value at the time of sale, for $3.5 million and recorded a corresponding gain in other income, net in the accompanying statement of income.

As of December 31, 2018 and 2017, the investment in Hombrechtikon Systems Engineering AG (HSE) had a carrying value of $0.4 million and $1.2 million, respectively. In 2016, we transferred the research and development activities of our instrumentation business to a new company and also acquired a 19.0% interest in HSE. Due to the ongoing business activity, QIAGEN has significant influence. Accordingly, the investment in this company is recorded at equity in spite of the fact that QIAGEN's share is below 20%.

The below tables shows the changes in our equity method investments for the years ended December 31, 2018 and 2017:

| **(in thousands)** | **2018** | **2017** |
|---|---|---|
| Equity method investments as at January 1st | **$ 18,462** | $ 10,826 |
| Acquisition of shares | **7,181** | 4,000 |
| Impairment | **(6,142)** | — |
| Dividend distribution received | **(6,059)** | — |
| Share of profit | **2,592** | 3,164 |
| Exchange rate differences / other | **(1,189)** | 472 |
| Equity method investments as at December 31st | **$ 14,845** | $ 18,462 |

The following overview reflects 100% of the balances of the relating companies:

| (in millions) | 2018 | 2017 |
|---|---|---|
| Total assets | $ 57.0 | $ 56.5 |
| Shareholders' equity | $ 48.0 | $ 48.0 |
| Net sales | $ 30.9 | $ 28.8 |
| Net result | $ 10.4 | $ 4.0 |

## 12. Goodwill and Other Intangible Assets

The changes in the carrying amount of goodwill for the years ended December 31, 2018 and 2017 are as follows:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Goodwill as at January1st | **$ 2,038,180** | $ 1,951,660 |
| Goodwill acquired during the year | **142,287** | 26,934 |
| Purchase adjustments | **—** | — |
| Disposals | **(5,682)** | — |
| Currency adjustments | **(40,660)** | 59,586 |
| Goodwill as at December 31st | **$ 2,134,125** | $ 2,038,180 |

The changes in the carrying amount of goodwill during the years ended December 31, 2018 resulted primarily from the acquisition of STAT-Dx and other acquisitions and divestitures discussed in Note 5 "Acquisitions and Divestitures" and changes in foreign currency translation. The changes in goodwill during the year ended December 31, 2017 resulted primarily from changes in foreign currency translation together with acquired goodwill from the 2017 acquisition of OmicSoft.

In the fourth quarter of 2018, we performed our annual impairment assessment of goodwill (using data as of October 1, 2018) in accordance with the provisions of IAS 36. No events or changes in circumstances indicated that the acquired goodwill might be impaired.

Management monitors and makes decisions regarding the Company's operations on a functional specific and global level. Therefore, we concluded that the goodwill impairment test needs to be performed on the level of the consolidated Group as a whole (one cash generating unit). In testing for potential impairment, we measured the estimated fair value of the cash generating unit based upon discounted future operating cash flows using a discount rate reflecting our estimated average cost of funds.

For impairment testing, the recoverable amount of goodwill allocated to the cash generating unit (higher of the cash generating unit's fair value less selling costs and its value in use) is compared to the carrying amount of the net assets employed (including goodwill) of the cash generating unit. Value in use is normally assumed to be higher than the fair value less selling costs; therefore, fair value less selling costs is only investigated when value in use is lower than the carrying amount of the cash generating unit.

*Key assumptions used in the value in use calculations*

The value in use is calculated based on estimated future cash flow projections expected to result from the use of the cash generating unit, discounted using an appropriate long-term pre-tax discount rate. The value in use calculations use cash flow projections based on financial budgets and models over the projection period (five years) as available for internal reporting purposes and in accordance with standard valuation practices. The growth rates used are based on industry growth forecasts for the projected period as well as for the subsequent period (long-term growth rate of 3% in 2018 and 2017). The discount rates used are based on the pre-tax weighted average cost of capital (2018: 7.70%; 2017: 7.10%) and are verified against external analyst reports.

*Sensitivity to changes in assumptions*

Changes in assumptions used in projecting future operating cash flows and cost of funds could have a significant impact on the determination of impairment amounts. In estimating future cash flows, we used our internal budgets. Our budgets were based on recent sales data for existing products, planned timing of new product launches or capital projects, and customer commitments related to new and existing products. These budgets also included assumptions of future production volumes and pricing. The calculation of value in use is most sensitive to discount rates and growth rates used.

Discount rates reflect management's estimate of the risks profile for the respective valuation object. The growth rates used are based on industry growth forecasts for the projected period as well as for the subsequent period.

We concluded that no impairment existed. We believe that any reasonably possible change in the key assumptions would not have an impact on reported goodwill. Even if our estimates of projected future cash flows in respect of discount and growth

rates were too high by 10%, there would be no impact on the reported value of goodwill at December 31, 2018. Due to the numerous variables associated with our judgments and assumptions relating to the valuation of the cash generating unit and the effects of changes in circumstances affecting these valuations, both the precision and reliability of the resulting estimates are subject to uncertainty, and as additional information becomes known, we may change our estimates.

**Other Intangible Assets**

| Cost (in thousands) | Developed technology, patent and license rights | Computer software | Development costs | Other intellectual properties | Total |
|---|---|---|---|---|---|
| January 1, 2017 | $ 1,081,722 | $ 216,163 | $ 123,494 | $ 423,509 | $ 1,844,888 |
| Currency adjustments | 56,994 | 23,386 | 8,088 | 17,097 | 105,565 |
| Additions | 14,679 | 62,856 | 8,038 | 849 | 86,422 |
| Business combinations | 28,000 | — | — | 700 | 28,700 |
| Disposals | (2,670) | (1,681) | (276) | (4,137) | (8,764) |
| December 31, 2017 | 1,178,725 | 300,724 | 139,344 | 438,018 | 2,056,811 |
| Currency adjustments | **(27,695)** | **(11,327)** | **(3,103)** | **(10,224)** | **(52,349)** |
| Additions | **32,139** | **53,999** | **3,975** | **19** | **90,132** |
| Business combinations | **53,900** | **208** | **—** | **27,300** | **81,408** |
| Disposals | **(18,662)** | **(13,799)** | **—** | **(3,797)** | **(36,258)** |
| **December 31, 2018** | **$ 1,218,407** | **$ 329,805** | **$ 140,216** | **$ 451,316** | **$ 2,139,744** |

| Amortization (in thousands) | Developed technology, patent and license rights | Computer software | Development costs | Other intellectual properties | Total |
|---|---|---|---|---|---|
| January 1, 2017 | $ (702,006) | $ (88,215) | $ (90,305) | $ (246,067) | $ (1,126,593) |
| Currency adjustments | (31,323) | (10,178) | (5,886) | (10,099) | (57,486) |
| Amortization | (92,685) | (32,465) | (10,044) | (41,111) | (176,305) |
| Disposals | 1,750 | 444 | 276 | 4,117 | 6,587 |
| December 31, 2017 | (824,264) | (130,414) | (105,959) | (293,160) | (1,353,797) |
| Currency adjustments | **16,965** | **5,626** | **2,161** | **6,322** | **31,074** |
| Amortization | **(79,106)** | **(38,593)** | **(8,111)** | **(39,470)** | **(165,280)** |
| Impairment losses | **—** | **(7,890)** | **—** | **—** | **(7,890)** |
| Disposals | **15,519** | **13,113** | **—** | **2,514** | **31,146** |
| **December 31, 2018** | **(870,886)** | **(158,158)** | **(111,909)** | **(323,794)** | **(1,464,747)** |
| Net book value | | | | | |
| December 31, 2017 | 354,461 | 170,310 | 33,385 | 144,858 | 703,014 |
| **December 31, 2018** | **$ 347,521** | **$ 171,647** | **$ 28,307** | **$ 127,522** | **$ 674,997** |

Amortization expense on intangible assets is included in the line items cost of sales, research and development expense, sales and marketing expense or general and administrative expense in the accompanying consolidated statements of income depending on the nature and use of the asset. In 2018, purchased intangibles amortization related to developed technology and patent and license rights acquired in a business combination is included in cost of sales in the amount of $56.7 million (2017: $72.7 million) and purchased intangibles amortization of trademarks and customer base acquired in a business combination is recorded in sales and marketing expense in the amount of $39.0 million (2017: $39.4 million).

Amortization of capitalized development costs have been recorded to cost of sales in the amount of $8.1 million in 2018 (2017: $10.0 million).

Cash paid for purchases of intangible assets during the year ended December 31, 2018 totaled $95.0 million, of which $11.9 million is related to current year payments for licenses that were accrued as of December 31, 2017 and $3.3 million is related to prepayments recorded in other non-current assets in the accompanying consolidated balance sheet. Intangible asset additions of $86.2 million includes $79.8 million of cash paid during the year ended December 31, 2018, together with $4.2 million of

additions that were accrued as of December 31, 2018 and $2.2 million of additions which were previously recorded as prepayments. Cash paid for intangible assets during the year ended December 31, 2017 totaled $97.2 million of which $16.5 million is related to current year payments for licenses that were accrued as of December 31, 2016 and $5.8 million is related to prepayments recorded in other non-current assets in accompanying consolidated balance sheet. Intangible asset additions of $78.3 million includes $74.9 million of cash paid during the year ended December 31, 2017, together with $3.5 million of additions which were previously recorded as prepayments.

In 2018, we recorded asset impairment charges of $7.9 million of computer software of which $1.6 million related to the 2017 Restructuring program discussed in Note 6 "Restructuring" and $6.3 million related to strategic shifts in our business.

## 13. Provisions

For the years ended December 31, 2018 and 2017, provisions as per the accompanying consolidated statements of financial position totaled $4.2 million and $4.9 million, respectively, and included amounts related to our warranty and acquisition related provisions.

*Warranty provision*

In the ordinary course of business, we provide a warranty to customers that our products are free of defects and will conform to published specifications. Generally, the applicable product warranty period is one year from the date of delivery of the product to the customer or of site acceptance, if required. Additionally, we typically provide limited warranties with respect to our services. From time to time, we also make other warranties to customers, including warranties that our products are manufactured in accordance with applicable laws and not in violation of third-party rights. We provide for estimated warranty costs at the time of the product sale. A provision for estimated future warranty costs is recorded in cost of sales at the time product revenue is recognized. Product warranty obligations are included in provisions in the accompanying consolidated statement of financial position. We believe our warranty reserves as of December 31, 2018 and 2017 appropriately reflect the estimated cost of such warranty obligations. The changes in the carrying amount of warranty obligations are as follows:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Warranty obligation as at January 1st | **$ 3,051** | $ 2,779 |
| Provision charged to cost of sales | **2,892** | 3,024 |
| Usage | **(2,760)** | (2,859) |
| Adjustments to previously provided warranties, net | **(243)** | (54) |
| Currency translation | **(92)** | 161 |
| Warranty obligation as at December 31st | **$ 2,848** | $ 3,051 |

*Acquisition related cost*

The provision for acquisition and related costs primarily relates to personnel and consulting costs.

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Acquisition related costs as at January 1st | **$ 1,802** | $ 1,885 |
| Provision charged to expenses | **3,564** | 7,233 |
| Usage | **(3,938)** | (7,386) |
| Currency adjustments and other | **(39)** | 70 |
| Acquisition related costs as at December 31st | **$ 1,389** | $ 1,802 |

For all provisions it is expected that the respective amounts will be utilized in the next financial year.

## 14. Other Current and Non-current Liabilities

Other current liabilities at December 31, 2018 and 2017 consist of the following:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Accrued expenses and other liabilities | **$ 88,640** | $ 69,250 |
| Payroll and related accrued liabilities | **66,871** | 63,525 |
| Deferred revenue | **45,358** | 49,357 |
| Accrued contingent consideration | **27,820** | 11,539 |
| Future license payments | **10,511** | 11,883 |
| Restructuring | **6,850** | 8,073 |
| Accrued interest on non-current financial debt | **6,200** | 5,543 |
| Royalties | **5,469** | 6,714 |
| Cash collateral liability | **1,000** | 3,000 |
| Current finance lease obligations | **61** | 1,359 |
| Other current liabilities | **$ 258,780** | $ 230,243 |

Other non-current liabilities at December 31, 2018 and 2017 consist of the following:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Accrued expenses | **$ 24,520** | $ 31,899 |
| Future license payments | **24,266** | 35,329 |
| Accrued contingent consideration | **21,466** | — |
| Non-current employee benefit obligations | **10,033** | 10,101 |
| Deferred revenue | **8,972** | 6,158 |
| Non-current finance lease obligation | **22** | 57 |
| Restructuring | **—** | 810 |
| Other non-current liabilities | **$ 89,279** | $ 84,354 |

Please refer to Note 19 "Commitments and Contingencies" for additional information.

## 15. Financial Debts

Our credit facilities available and undrawn at December 31, 2018 total €426.6 million (approximately $488.5 million). This includes a €400.0 million syndicated multi-currency revolving credit facility expiring December 2021 of which no amounts were utilized at December 31, 2018 or at December 31, 2017, and three other lines of credit amounting to €26.6 million with no expiration date, none of which were utilized as of December 31, 2018 or as of December 31, 2017. The €400.0 million facility can be utilized in Euro, British pounds sterling, Swiss franc or U.S. dollar and bears interest of 0.4% to 1.2% above three months EURIBOR, or LIBOR in relation to any loan not in euro, and is offered with interest periods of one, two, three or six months. The commitment fee is calculated based on 35% of the applicable margin. In 2018 and 2017, $1.0 million and $0.9 million of commitment fees were paid, respectively. The revolving facility agreement contains certain financial and non-financial covenants, including but not limited to, restrictions on the encumbrance of assets and the maintenance of certain financial ratios. We were in compliance with these covenants at December 31, 2018. The credit facilities are for general corporate purposes.

At December 31, 2018 and December 31, 2017, total long-term debt, net of debt issuance costs of $14.2 million and $12.4 million, respectively, consists of the following:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| 0.375% Senior Unsecured Cash Convertible Notes due 2019 | **$ 427,445** | $ 414,843 |
| 0.875% Senior Unsecured Cash Convertible Notes due 2021 | **279,492** | 270,762 |
| 0.500% Senior Unsecured Cash Convertible Notes due 2023 | **335,201** | 322,902 |
| 1.000% Senior Unsecured Cash Convertible Notes due 2024 | **397,793** | — |
| 3.19% Series A Senior Notes due October 16, 2019 | **72,956** | 72,903 |
| 3.75% Series B Senior Notes due October 16, 2022 | **299,412** | 299,259 |
| 3.90% Series C Senior Notes due October 16, 2024 | **26,933** | 26,921 |
| German Private Placement (Schuldschein) | **336,168** | 349,812 |
| Total current and non-current financial debts | **2,175,400** | 1,757,402 |
| Less: current portion of financial debts | **503,589** | — |
| Total non-current financial debts | **$ 1,671,811** | $ 1,757,402 |
| Total amount secured | **—** | — |
| Unused lines of credit for short-term financing | **488,457** | 511,621 |

The notes are all unsecured obligations that rank pari passu. Interest expense on non-current debt was $61.2 million for the year ended December 31, 2018 (2017: $43.6 million).

Future maturities (stated at the carrying values) and future interest as of December 31, 2018 and 2017 is as follows:

| As of December 31, 2018 (in thousands) | Carrying value | Loans (fixed and floating-rate) | Convertible notes (fixed-rate) | Total future contractual cash obligations |
|---|---|---|---|---|
| 2019 | $ 503,589 | $ 91,058 | $ 440,612 | $ 531,670 |
| 2020 | — | 16,259 | 9,625 | 25,884 |
| 2021 | 315,732 | 55,565 | 283,880 | 339,445 |
| 2022 | 471,092 | 484,380 | 7,000 | 491,380 |
| 2023 | 335,201 | 2,368 | 341,601 | 343,969 |
| Thereafter | 549,786 | 154,311 | 402,126 | 556,437 |
| **Total financial debts 2018** | **$ 2,175,400** | **$ 803,941** | **$ 1,484,844** | **$ 2,288,785** |

| As of December 31, 2017 (in thousands) | Carrying value | Loans (fixed and floating-rate) | Convertible notes (fixed-rate) | Total future contractual cash obligations |
|---|---|---|---|---|
| 2018 | $ — | $ 18,189 | $ 6,238 | $ 24,427 |
| 2019 | 487,746 | 90,445 | 419,822 | 510,267 |
| 2020 | — | 15,860 | 4,625 | 20,485 |
| 2021 | 311,743 | 56,712 | 273,338 | 330,050 |
| 2022 | 478,053 | 491,835 | 2,000 | 493,835 |
| Thereafter | 479,860 | 162,026 | 324,301 | 486,327 |
| **Total financial debts 2017** | **$ 1,757,402** | **$ 835,067** | **$ 1,030,324** | **$ 1,865,391** |

***Cash Convertible Notes due 2019, 2021, 2023 and 2024***

On March 19, 2014, we issued $730.0 million aggregate principal amount of Cash Convertible Senior Notes of which $430.0 million is due in 2019 (2019 Notes) and $300.0 million is due in 2021 (2021 Notes). The aggregate net proceeds of the 2019 and 2021 Convertible Notes were $680.7 million, after payment of the net cost of the Call Spread Overlay described below and transaction costs. Additionally, we used $372.5 million of the net proceeds to repay other debt.

On September 13, 2017, we issued $400.0 million aggregate principal amount of Cash Convertible Senior Notes which is due in 2023 (2023 Notes). The net proceeds of the 2023 Notes were $365.6 million, after payment of the net cost of the Call Spread Overlay described below and transaction costs paid through December 31, 2018.

On November 13, 2018, we issued $500.0 million aggregate principal amount of Cash Convertible Senior Notes which is due in 2024 (2024 Notes). The net proceeds of the 2024 Notes were $470.0 million, after payment of the net cost of the Call Spread Overlay described below and transaction costs paid through December 31, 2018.

We refer to the 2019 Notes, 2021 Notes 2023 Notes and 2024 Notes, collectively as the "Cash Convertible Notes". Interest on the Cash Convertible Notes is payable semi-annually in arrears and will mature on the maturity date unless repurchased or converted with their terms prior to such date. The interest rate and corresponding maturity of each Note are summarized as follows:

| Cash Convertible Notes | Annual Interest Rate | Date of Interest Payments | Interest Payment Start Date | Maturity Date |
|---|---|---|---|---|
| 2019 Notes | 0.375% | March 19 and September 19 | September 19, 2014 | March 19, 2019 |
| 2021 Notes | 0.875% | March 19 and September 19 | September 19, 2014 | March 19, 2021 |
| 2023 Notes | 0.500% | March 13 and September 13 | March 13, 2018 | September 13, 2023 |
| 2024 Notes | 1.000% | May 13 and November 13 | May 13, 2019 | November 13, 2024 |

The Cash Convertible Notes are solely convertible into cash in whole, but not in part, at the option of noteholders under the circumstances described below and during the following contingent conversion periods:

| Cash Convertible Notes | Contingent Conversion Period |
|---|---|
| 2019 Notes | From April 29, 2014 to September 18, 2018 |
| 2021 Notes | From April 29, 2014 to September 18, 2020 |
| 2023 Notes | From October 24, 2017 to March 13, 2023 |
| 2024 Notes | From December 24, 2018 to August 2, 2024 |

Additionally, conversion may occur at any time following a Contingent Conversion Period through the fifth business day immediately preceding the applicable maturity date. The Contingent Conversion Period for the 2019 Notes has passed and the noteholders may convert at anytime until March 14, 2019.

Upon conversion, noteholders will receive an amount in cash equal to the Cash Settlement Amount, calculated as described below. The Cash Convertible Notes are not convertible into shares of our common stock or any other securities.

Noteholders may convert of the Cash Convertible Notes into cash at their option at any time during the Contingent Conversion Periods described above only under the following circumstances (Contingent Conversion Conditions):

- during any calendar quarter commencing after the calendar quarter (and only during such calendar quarter) ending on March 31, 2014 for 2019 and 2021 Cash Convertible Notes, on September 30, 2017 for 2023 Cash Convertible Notes, and on September 30, 2018 for 2024 Cash Convertible Notes; if the last reported sale price of our common stock for at least 20 trading days during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- if we undergo certain fundamental changes as defined in the agreement;
- during the five business day period immediately after any 10 consecutive trading day period in which the quoted price for the 2019 Cash Convertible Notes or the 2021 Cash Convertible Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day;
- if parity event or trading price unavailability event, as the case maybe occurs for the 2023 Cash Convertible Notes and 2024 Cash Convertible Notes during the period of 10 days, including the first business day following the relevant trading price notification date.
- if we elect to distribute assets or property to all or substantially all of the holders of our common stock and those assets or other property have a value of more than 25% of the average daily volume-weighted average trading price of our common stock for the prior 20 consecutive trading days;
- if we elect to redeem the Cash Convertible Notes; or
- if we experience certain customary events of default, including defaults under certain other indebtedness until such event has been cured or waived or the payment of the Notes have been accelerated.

The Contingent Conversion Conditions in the 2019, 2021, 2023 and 2024 Notes noted above have been analyzed under IFRS 9, *Financial Instruments*, and, based on our analysis, we determined that each of the embedded features listed above are clearly and closely related to the 2019, 2021, 2023 and 2024 Notes (i.e., the host contract). As a result, pursuant to the accounting provisions of IFRS 9, *Financial Instruments*, these features noted above are not required to be bifurcated as separate instruments. As of December 31, 2018, no contingent conversion condition was triggered.

The initial conversion rate for 2024 Notes is 4,360.3098 shares of our common stock per $200,000 principal amount of 2024 Notes (reflecting an initial conversion price of approximately $45.8683 per share of common stock). For the 2023 Notes, the

initial conversion rate is 4,829.7279 shares of our common stock per $200,000 principal amount of the 2023 Notes (reflecting an initial conversion price of approximately $42.4102 per share of common stock). As adjusted by the synthetic share repurchase discussed in Note 17 "Equity", the conversion rate for the 2019 Notes and 2021 Notes is 7,063.1647 shares of our common stock per $200,000 principal amount of Cash Convertible Notes (reflecting an adjusted conversion price of approximately $28.32 per share of common stock). Upon conversion, holders are entitled to a cash payment (Cash Settlement Amount) equal to the average of the conversion rate multiplied by the daily volume-weighted average trading price for our common stock over a 50-day period. The conversion rate is subject to adjustment in certain instances but will not be adjusted for any accrued and unpaid interest. In addition, following the occurrence of certain corporate events that may occur prior to the applicable maturity date, we may be required to pay a cash make-whole premium by increasing the conversion rate for any holder who elects to convert Cash Convertible Notes in connection with the occurrence of such a corporate event.

We may redeem the Cash Convertible Notes in their entirety at a price equal to 100% of the principal amount of the applicable Cash Convertible Notes plus accrued interest at any time when 20% or less of the aggregate principal amount of the applicable Cash Convertible Notes originally issued remain outstanding.

Because the Cash Convertible Notes contain an embedded cash conversion option, we have determined that the embedded cash conversion option is a derivative financial instrument, which is required to be separated from the Cash Convertible Notes and accounted for separately as a derivative liability, with changes in fair value reported in our consolidated statements of income until the cash conversion option transaction settles or expires. The initial fair value liability of the embedded cash conversion option was $105.2 million for the 2019 and 2021 Notes, $74.5 million for the 2023 Notes, and $98.5 million for the 2024 Notes, which simultaneously reduced the carrying value of the Cash Convertible Notes (effectively an original issuance discount). For further discussion of the derivative financial instruments relating to the Cash Convertible Notes, refer to Note 25 "Financial Risk Factors and Use of Derivative Financial Instruments".

As noted above, the reduced carrying value on the Cash Convertible Notes resulted in a debt discount that is amortized to the principal amount through the recognition of non-cash interest expense using the effective interest method over the expected life of the debt, which is five and seven for the 2019 Notes and 2021 Notes, and six years for the 2023 Notes and 2024 Notes, respectively. This resulted in our recognition of interest expense on the Cash Convertible Notes at an effective rate approximating what we would have incurred had nonconvertible debt with otherwise similar terms been issued. The effective interest rate of the 2019 Notes, 2021 Notes, 2023 Notes and 2024 Notes is 2.937%, 3.809%, 3.997% and 4.782% respectively, which is imputed based on the amortization of the fair value of the embedded cash conversion option over the remaining term of the Cash Convertible Notes.

Beginning on October 1, 2018 and ending at the close of business on December 31, 2018, the 2021 Notes became convertible pursuant to the indenture. The 2021 Notes became convertible pursuant to Section 12.01(b)(iv) of the indenture because the arithmetic mean of the last reported sale prices of our common stock, in each trading day in at least one 20 consecutive trading day period during the 30 consecutive trading day period ending on the last trading day of the preceding fiscal quarter, was greater than 130% of the conversion price in effect on such last trading day. The 2021 Notes were convertible at a conversion ratio of 7,063.1647 per $200,000 principal amount of 2021 Notes, which is equivalent to a conversion price of approximately $28.32 per share of our common stock. During this period, $3.2 million of our 2021 Notes was converted and will be paid in March of 2019.

No Contingent Conversion Conditions were triggered for the Cash Convertible Notes as of December 31, 2018.

In connection with the issuance of the 2019 and 2021 Cash Convertible Notes, we incurred approximately $13.1 million in transaction costs. We incurred approximately $6.2 million in transaction costs for the 2023 Cash Convertible Notes. For 2024 Cash Convertible Notes, we incurred $5.7 million transaction costs of which $0.6 million was accrued as of December 31, 2018. Such costs have been allocated to the Cash Convertible Notes and deferred and are being amortized to interest expense over the terms of the Cash Convertible Notes using the effective interest method.

Interest expense related to the Cash Convertible Notes was comprised of the following:

| | Year-Ended December 31 | |
|---|---|---|
| **(in thousands)** | **2018** | **2017** |
| Coupon interest | **$ 6,890** | $ 4,832 |
| Amortization of original issuance discount | **32,114** | 21,377 |
| Amortization of debt issuance costs | **3,485** | 2,615 |
| Total interest expense related to the Cash Convertible Notes | **$ 42,489** | $ 28,824 |

***Cash Convertible Notes Call Spread Overlay***

Concurrent with the issuance of the Cash Convertible Notes, we entered into privately negotiated hedge transactions (Call Options) with, and issued warrants to purchase shares of our common stock (Warrants) to, certain financial institutions. We refer to the Call Options and Warrants collectively as the "Call Spread Overlay." The Call Options are intended to offset any cash payments payable by us in excess of the principal amount due upon any conversion of the Cash Convertible Notes. We used $105.2 million of the proceeds from the issuance of the 2019 and 2021 Cash Convertible Notes to pay for the Call Options, and simultaneously received $69.4 million from the sale of the Warrants, for a net cash outlay of $35.8 million for the Call Spread Overlay.

During 2017, we used $73.7 million of the proceeds from the from the issuance of the 2023 Cash Convertible Notes to pay for the premium for the Call Option, and simultaneously received $45.3 million from the sale of Warrants, for a net cash outlay of $28.3 million for the Call Spread Overlay. Issuance costs incurred in connection with the Warrant and the Call Option were $0.3 million and $0.1 million respectively.

In November 2018, we used $97.3 million of the proceeds from the issuance of the 2024 Cash Convertible Notes to pay for the premium for the Call Option, and simultaneously received $72.4 million from the sale of Warrants, for a net cash outlay of $24.9 million for the Call Spread Overlay. Issuance costs incurred in connection with the Warrant and the Call Option were $0.5 million and $0.5 million respectively, of which $0.8 million was accrued as of December 31, 2018.

The Call Options and Warrants are derivative financial instruments and are discussed further in Note 25 "Financial Risk Factors and Use of Derivative Financial Instruments".

Aside from the initial payment of a premium of $105.2 million (2019 and 2021 Notes), $73.7 million (2023 Notes), and $97.3 million (2024 Notes) for the Call Option, we will not be required to make any cash payments under the Call Options, and will be entitled to receive an amount of cash, generally equal to the amount by which the market price per share of our common stock exceeds the exercise price of the Call Options during the relevant valuation period. The exercise price under the Call Options is initially equal to the conversion price of the Cash Convertible Notes.

We issued Warrants as summarized in the table below. The number of warrants and exercise prices are subject to customary adjustments under certain circumstances. The proceeds, net of issuance costs, from the sale of the Warrants are included as additional paid in capital in the accompanying consolidated balance sheets.

| Cash convertible notes | Issued on | Number of share warrants (in millions) | Exercise price per share | Proceeds from issuance of warrants, net of issuance costs (in millions) | Warrants expire over a period of 50 trading days beginning on |
|---|---|---|---|---|---|
| 2019 | March 19, 2014 | 15.2 | $32.0560 | $40.6 | December 27, 2018 |
| 2021 | March 19, 2014 | 10.6 | $32.0560 | $28.3 | December 29, 2020 |
| 2023 | September 13, 2017 | 9.7 | $50.9664 | $45.3 | June 26, 2023 |
| 2024 | November 13, 2018 | 10.9 | $52.1639 | $72.4 | August 27, 2024 |

The Warrants that were issued with our Cash Convertible Notes discussed above, could have a dilutive effect to the extent that the price of our common stock exceeds the applicable strike price of the Warrants. For each Warrant that is exercised, we will deliver to the holder a number of shares of our common stock equal to the amount by which the settlement price exceeds the exercise price, plus cash in lieu of any fractional shares. The Warrants are exercisable only upon expiration and we will not receive any proceeds if the Warrants are exercised.

***Private Placement***

In October 2012, we completed a private placement through the issuance of new senior unsecured notes at a total amount of $400.0 million with a weighted average interest rate of 3.66% (settled on October 16, 2012). The notes were issued in three series: (1) $73.0 million 7-year term due in 2019 (3.19%); (2) $300.0 million 10-year term due in 2022 (3.75%); and (3) $27.0 million 12-year term due in 2024 (3.90%). We paid $2.1 million in debt issue costs which will be amortized through interest expense over the lifetime of the notes. The note purchase agreement contains certain financial and non-financial covenants, including but not limited to, restrictions on priority indebtedness and the maintenance of certain financial ratios. Based on an estimation using the changes in the U.S. Treasury rates, the Level 2 fair value of these senior notes as of December 31, 2018 and December 31, 2017 was approximately $391.7 million and $394.7 million, respectively.

***German Private Placement (Schuldschein)***

In 2017, we completed a German private placement bond ("Schuldschein") which was issued in several tranches totaling $331.1 million due in various periods through 2027. The Schuldschein consists of U.S. dollar and Euro denominated tranches. The

Euro tranches are designated as a foreign currency non-derivative hedging instrument that qualifies as a net investment hedge as described in Note 25 "Financial Risk Factors and Use of Derivative Financial Instruments". Based on the spot rate method, the change in the carrying value of the Euro denominated tranches attributed to the net investment hedge as of December 31, 2018 totaled $5.9 million of unrealized loss and is recorded in equity. We paid $1.2 million in debt issuance costs which are being amortized through interest expense over the lifetime of the notes. A summary of the tranches as of December 31, 2018 is as follows:

| Currency | Notional Amount | Interest Rate | Maturity | Carrying Value as of December 31, 2018 (in thousands) |
|---|---|---|---|---|
| EUR | €11.5 million | Fixed 0.4% | March 2021 | **$ 13,143** |
| EUR | €23.0 million | Floating EURIBOR + 0.4% | March 2021 | **26,286** |
| EUR | €21.5 million | Fixed 0.68% | October 2022 | **24,561** |
| EUR | €64.5 million | Floating EURIBOR + 0.5% | October 2022 | **73,684** |
| USD | $45.0 million | Floating LIBOR + 1.2% | October 2022 | **44,891** |
| EUR | €25.0 million | Floating EURIBOR + 0.5% | October 2022 | **28,543** |
| EUR | €64.0 million | Fixed 1.09% | June 2024 | **73,097** |
| EUR | €31.0 million | Floating EURIBOR + 0.7% | June 2024 | **35,406** |
| EUR | €14.5 million | Fixed 1.61% | June 2027 | **16,557** |
| | | | | **$ 336,168** |

The Financial Conduct Authority of the United Kingdom plans to phase out the London Interbank Offered Rate (LIBOR) by the end of 2021. Presently, the future of LIBOR is unclear, yet the Schuldschein agreements do contain language for the determination of interest rates in the event the LIBOR rate is not available. Changes to these agreements may be required should an alternative benchmark be required.

## 16. Income Tax

Major components of income tax expense as presented in the income statement for the years ended December 31, 2018 and 2017, are:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Current income tax charge | **$ 54,497** | $ 36,392 |
| Adjustment in respect of current income tax of previous years | **494** | (2,319) |
| Current Income Tax | **54,991** | 34,073 |
| Relating to origination and reversal of temporary differences | **(14,897)** | 42,815 |
| Relating to changes in tax rates | **1,907** | 12,958 |
| Deferred Income Tax | **(12,990)** | 55,773 |
| Total Income Tax | **$ 42,001** | $ 89,846 |

Deferred tax related to items charged or credited directly to equity during 2018 and 2017 shown in the statement of comprehensive income totaled $0.5 million and $1.0 million, respectively.

The applicable statutory income tax rate in The Netherlands was 25% in 2018 and in 2017. The principal items comprising the differences between income taxes computed at the Netherlands statutory rate and the effective tax rate for the years ended December 31, 2018 and 2017 is as follows:

| (in thousands) | 2018 Amount | 2018 Percent | 2017 Amount | 2017 Percent |
|---|---|---|---|---|
| Income before Tax | **$ 146,895** | **—** | $ 157,224 | — |
| At Dutch statutory income tax rate of 25.0% | **36,724** | **25.0 %** | 39,306 | 25.0 % |
| Taxation of foreign operations, net[1] | **(34,066)** | **(23.2)%** | (38,563) | (24.5)% |
| Income taxes related to prior years | **494** | **0.3 %** | (2,319) | (1.5)% |
| Changes in tax rates impacting deferred taxes[2] | **1,907** | **1.3 %** | 12,958 | 8.2 % |
| Tax impact from non-deductible items[3] | **17,687** | **12.0 %** | 36,261 | 23.1 % |
| Tax impact from tax exempt income[4] | **14,714** | **10.0 %** | (11,135) | (7.1)% |
| Other[5] | **4,541** | **3.1 %** | 53,338 | 33.9 % |
| Total Income Tax | **$ 42,001** | **28.6 %** | $ 89,846 | 57.1 % |

[1] Our effective tax rate reflects the benefit of our global operations where certain income or loss is taxed at rates higher or lower than The Netherlands' statutory rate of 25% as well as the benefit of some income being partially exempt from income taxes due to various intercompany operating and financing activities. The most significant tax benefits from these foreign operating and financing activities are attributable to subsidiaries in Germany, Singapore, Switzerland, Ireland and Luxembourg. These foreign tax benefits are due to a combination of favorable tax laws, regulations, rulings, and exemptions in these jurisdictions. Additionally in 2016, in certain foreign jurisdictions (primarily Germany and the U.S.), we recorded acquisition related and impairment charges which reduced pretax income in these higher tax jurisdictions.

[2] The Netherlands' top statutory corporate income tax rate will be reduced in steps from 25% to 22.55% in 2020 and to 20.5% in 2021. In 2017, we revalued our U.S. deferred tax assets and liabilities to reflect the corporate income tax rate change from 35% to 21% as a result of U.S. tax reform.

[3] During 2017, we recorded an additional $21.0 million accrual for tax contingencies, primarily related to ongoing income tax audits.

[4] Tax impacts include income/loss related to the change in fair value of the Warrants for the Cash Convertible Notes. In 2018 and 2017, this fair value change results in a gain and loss, respectively.

[5] In 2017, the deferred tax asset related to U.S. interest carry forward of $60.8 million has been reduced to zero.

We conduct business globally and, as a result, file numerous consolidated and separate income tax returns in the Netherlands, Germany, Switzerland and the U.S. federal jurisdiction, as well as in various other state and foreign jurisdictions. In the normal course of business, we are subject to examination by taxing authorities throughout the world. Tax years in the Netherlands are potentially open back to 2006 for income tax examinations by tax authorities. The German group is open to audit for the tax years starting in 2010. The U.S. consolidated group is subject to Federal and most state income tax examinations by tax authorities beginning with the year ending December 21, 2015 through the current period. Our subsidiaries, with few exceptions, are no longer subject to income tax examinations by tax authorities for years before 2014.

In February 2014, the U.S. tax authorities (Internal Revenue Service) began the audit of our U.S. Federal tax returns for 2011 and 2012 years and the audit was closed in 2016 without any tax adjustments. As a result, we released $6.6 million of unrecognized tax benefit due to closure of the tax audit. In February 2016, German tax authorities began the audit of the German tax returns for the 2010-2013 tax years and we expect the audit to close in the first half of 2019. The German Tax authority began the audit for the 2014-2016 tax years beginning in February 2019.

Changes in the gross amount of unrecognized tax benefits are as follows:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Balance at beginning of year | **$ 44,033** | $ 18,294 |
| Additions based on tax positions related to the current year | **3,359** | 12,212 |
| Additions for tax positions of prior years | **11,984** | 9,933 |
| Reductions due to lapse of statute of limitations | **(1,238)** | — |
| (Decrease) increase from currency translation | **(2,358)** | 3,594 |
| Balance at end of year | **$ 55,780** | $ 44,033 |

At December 31, 2018 and 2017, our net unrecognized tax benefits totaled approximately $55.8 million and $44.0 million, respectively, of which $55.8 million and $44.0 million in benefits, if recognized, would favorably affect our effective tax rate in any future period. It is reasonably possible that approximately $22.5 million of the unrecognized tax benefits may be released during the next 12 months due to lapse of statute of limitations or settlements with tax authorities; however, various events could cause our current expectations to change in the future. The above unrecognized tax benefits, if ever recognized in the financial statements, would be recorded in the statement of income as part of the income tax expense.

Our policy is to recognize interest accrued related to unrecognized tax benefits in interest expense and penalties within income tax expense. For the years ended, December 31, 2018 and 2017, we have net interest expense and penalties of $1.1 million and $1.5 million, respectively. At December 31, 2018 and 2017, we have accrued interest of $4.1 million and $3.0 million, respectively, which are not included in the table above.

We have recorded net deferred tax liabilities of $12.8 million and had deferred tax assets of $17.1 million at December 31, 2018 and 2017, respectively. The components of the net deferred asset and liability at December 31, 2018 and December 31, 2017 are as follows:

| (in thousands) | 2018 | 2017 | Change |
|---|---|---|---|
| Accrued liabilities | **$ 15,480** | $ 15,199 | $ 281 |
| Equity awards | **22,857** | 23,164 | (307) |
| Bad debts, inventory and revaluation | **26,638** | 32,203 | (5,565) |
| Net operating loss and credit carryforward | **12,861** | 25,470 | (12,609) |
| Intangibles | **1,721** | 2,243 | (522) |
| Depreciation and amortization | **3,604** | 1,103 | 2,501 |
| Convertible debt | **8,102** | 10,865 | (2,763) |
| Other | **4,788** | 3,163 | 1,625 |
| Offsetting | **(38,200)** | (45,425) | 7,225 |
| Deferred Tax Asset | **57,851** | 67,985 | (10,134) |
| Intangibles | **(71,196)** | (102,096) | 30,900 |
| Depreciation and amortization | **(25,448)** | (23,649) | (1,799) |
| Bad debts, inventory and revaluations | **(7,074)** | (1,420) | (5,654) |
| Other | **(5,099)** | (3,313) | (1,786) |
| Offsetting | **38,200** | 45,425 | (7,225) |
| Deferred Tax (Liability) | **$ (70,617)** | $ (85,053) | $ 14,436 |
| | | | |
| **Net Deferred Tax (Liability) / Asset** | **$ (12,766)** | $ (17,068) | $ 4,302 |

The movement in deferred income tax assets and liabilities during the year is as follows:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Change in deferred tax recognized in income | **$ 12,990** | $ (55,773) |
| Change in deferred tax related to business combinations [(1)] | **(7,602)** | — |
| Change in deferred tax recognized in equity [(2)] | **(1,086)** | (5,337) |
| Change in Deferred Tax | **$ 4,302** | $ (61,110) |

[1] The change in deferred tax related to business combinations represents the deferred tax liability on fair value of identifiable intangible assets acquired and deferred tax asset on tax loss carry forwards as discussed in Note 5 "Acquisitions and Divestitures".

[2] The change deferred tax recognized in equity represents changes in components of other comprehensive income or loss, equity awards and translation adjustment.

At December 31, 2018 and 2017, we had $408.7 million and $432.7 million in total worldwide net operating loss (NOL) carryforwards. Included in these amounts at December 31, 2018 and 2017, we had $56.5 million and $20.9 million of unused tax losses for which no deferred tax asset is recognized in the statement of financial position, most of which do not expire. At December 31, 2018 and 2017, we had $112.2 million and $108.5 million of U.S. federal (NOL) carryforwards. At December 31, 2018, the entire NOLs in the U.S. are subject to limitations under Section 382 of the Internal Revenue Code. The NOLs in the U.S. will expire beginning December 31, 2024 through December 31, 2034. Also included in the above amount as of December 31, 2018 and 2017, were other foreign NOL carryforwards totaling approximately $240.0 million and $303.2 million, respectively. As of December 31, 2018, we had NOL carryforwards in Germany of $214.2 million predominantly trade tax NOLs, which we expect to be utilized in 2019 due to the closure of the tax audit. Of the total $240.0 million NOL carryforward, a portion of the foreign NOLs will be expiring beginning 2027.

At December 31, 2018, we had temporary differences of $232.9 million related to U.S. interest carryforwards which do not expire and for which no deferred taxes were recognized.

## 17. Equity

### *Common Shares*

The authorized classes of our shares consist of Common Shares (410 million authorized), Preference Shares (450 million authorized) and Financing Preference Shares (40 million authorized). All classes of shares have a par value of €0.01. No Financing Preference Shares or Preference Shares have been issued. Like all shareholders' equity accounts, common shares are translated to U.S. dollars at the foreign exchange rates in effect when the shares are issued.

### *Retained Earnings*

At the Annual General Meeting of Shareholders on June 17, 2019, the Board of Directors will propose to carry forward the profit for the year of QIAGEN N.V., the holding company of the Group, which is determined in accordance with the legal provisions of the Dutch Civil Code.

### *Share Repurchase Programs*

On January 31, 2018, we announced our fifth share repurchase program of up to $200 million of our common shares. During 2018, we repurchased 2.9 million QIAGEN shares for $104.7 million (including transaction costs).

On April 27, 2016, we announced the launch of our fourth $100 million share repurchase program which was expected to be completed by the end of 2017. During 2017, 1.9 million QIAGEN shares were repurchased for $61.0 million (including transaction costs).

The cost of repurchased shares is included in treasury stock and reported as a reduction in total equity when a repurchase occurs. Repurchased shares will be held in treasury in order to satisfy various obligations, which include exchangeable debt instruments, warrants and employee share-based remuneration plans.

### *Synthetic Share Repurchase*

In August 2016, we announced our plan to return approximately $250.0 million to shareholders through a synthetic share repurchase program that combines a direct capital repayment with a reverse stock split. The synthetic share repurchase was implemented through a series of amendments to our Articles of Association which were approved by our shareholders at an Extraordinary General Meeting (EGM) held on October 26, 2016. The first amendment involved an increase in share capital by an increase in the nominal value per common share from EUR 0.01 to EUR 1.04 and a corresponding reduction in additional paid in capital. The second amendment involved a reduction in stock whereby 27 existing common shares with a nominal value of EUR 1.04 each were consolidated into 26 new common shares with a nominal value of EUR 1.08 each. The third amendment was a reduction of the nominal value per common share from EUR 1.08 to EUR 0.01. As a result of these amendments, which in substance constitute a synthetic share buyback, $243.9 million was repaid to our shareholders and the outstanding number of common shares was reduced by 8.9, or 3.7%. The capital repayment program was completed in January 2017. Expenses incurred related to the capital repayment and share consolidation amounted to $0.5 million and were charged to equity.

## 18. Earnings per Common Share

We present basic and diluted earnings per share. Basic earnings per share is calculated by dividing the net income attributable to the owners of QIAGEN N.V. by the weighted average number of common shares outstanding. Diluted earnings per share reflect the potential dilution that would occur if all “in the money” securities to issue common shares were exercised.

The following schedule summarizes the information used to compute earnings per common share:

| | Years ended December 31, | |
|---|---|---|
| **(in thousands, except per share data)** | **2018** | **2017** |
| Net income attributable to the owners of QIAGEN N.V. | **$ 104,894** | $ 67,378 |
| Weighted average number of common shares used to compute basic net income per common share | **226,640** | 228,074 |
| Dilutive effect of stock options and awards | **4,613** | 4,760 |
| Dilutive effect of outstanding warrants | **2,203** | 175 |
| Weighted average number of common shares used to compute diluted net income per common share | **233,456** | 233,009 |
| Outstanding options and awards having no dilutive effect, not included in above calculation | **272** | 52 |
| Basic earnings per common share attributable to the owners of QIAGEN N.V. | **$ 0.46** | $ 0.30 |
| Diluted earnings per common share attributable to the owners of QIAGEN N.V. | **$ 0.45** | $ 0.29 |

## 19. Commitments and Contingencies

*Lease commitments*

We lease facilities and equipment under operating lease arrangements expiring in various years through 2028. Certain rental commitments provide for escalating rental payments or have renewal options extending through various years. Certain facility and equipment leases constitute finance leases expiring in various years through 2020. The accompanying consolidated financial statements include the assets and liabilities arising from these capital lease obligations. Rent expense under non-cancelable operating lease agreements not including facility related costs accrued in association with the restructuring activities discussed in Note 6 "Restructuring" was $25.1 million in 2018 and $24.5 million in 2017.

Minimum future obligations under finance and operating leases at December 31, 2018, are as follows:

| **(in thousands)** | **Finance Leases** | **Operating Leases** |
|---|---|---|
| 2019 | $ 63 | $ 20,235 |
| 2020 | 23 | 14,845 |
| 2021 | — | 10,745 |
| 2022 | — | 6,839 |
| 2023 | — | 3,854 |
| Thereafter | — | 4,148 |
| Total minimum lease obligations at December 31, 2018 | 86 | $ 60,666 |
| Less: amount representing interest | (3) | |
| Less: current portion | (61) | |
| Present value of minimum lease obligations at December 31, 2018 | $ 22 | |

The information for the comparative period is provided below:

| (in thousands) | Finance Leases | Operating Leases |
|---|---|---|
| 2018 | $ 1,411 | $ 18,483 |
| 2019 | 45 | 16,011 |
| 2020 | 14 | 11,762 |
| 2021 | — | 8,457 |
| 2022 | — | 6,126 |
| Thereafter | — | 4,038 |
| Total minimum lease obligations at December 31, 2017 | 1,470 | $ 64,877 |
| Less: amount representing interest | (54) | |
| Less: current portion | (1,359) | |
| Present value of minimum lease obligations at December 31, 2017 | $ 57 | |

*Licensing and Purchase Commitments*

We have licensing agreements with companies, universities and individuals, some of which require certain up-front payments. Royalty payments are required on net product sales ranging from 0.45 percent to 25 percent of covered products or based on quantities sold. Several of these agreements have minimum royalty requirements. The accompanying consolidated financial statements include accrued royalties relating to these agreements in the amount of $5.5 million and $6.7 million at December 31, 2018 and 2017, respectively. Royalty expense relating to these agreements amounted to $14.0 million and $16.8 million, for the years ended December 31, 2018 and 2017, respectively. Royalty expense is primarily recorded in cost of sales, with a small portion recorded as research and development expense depending on the use of the technology under license. Some of these agreements also have minimum raw material purchase requirements and requirements to perform specific types of research.

At December 31, 2018, we had commitments to purchase goods or services, and for future minimum guaranteed royalties. They are as follows:

| (in thousands) | Purchase Commitments | License & Royalty Commitments |
|---|---|---|
| 2019 | $ 93,214 | $ 11,973 |
| 2020 | 20,804 | 11,613 |
| 2021 | 8,883 | 9,167 |
| 2022 | 2,690 | 6,731 |
| 2023 | 2,690 | 4,704 |
| Thereafter | — | 4,443 |
| Total licensing and purchase commitments at December 31, 2018 | $ 128,281 | $ 48,631 |

As of December 31, 2018, future license payments of $10.5 million and $24.3 million are included in other current liabilities and other non-current liabilities, respectively.

The information for the comparative period is provided below:

| (in thousands) | Purchase Commitments | License & Royalty Commitments |
|---|---|---|
| 2018 | $ 65,073 | $ 12,907 |
| 2019 | 22,556 | 11,858 |
| 2020 | 10,472 | 11,558 |
| 2021 | 943 | 8,860 |
| 2022 | 11 | 6,161 |
| Thereafter | 434 | 3,748 |
| Total licensing and purchase commitments at December 31, 2017 | $ 99,489 | $ 55,092 |

*Contingent Consideration Commitments*

Pursuant to the purchase agreements for certain acquisitions and other contractual arrangements, we could be required to make additional contingent cash payments totaling up to $57.3 million based on the achievement of certain revenue and operating results milestones as follows: $23.7 million in 2019, $22.7 million in 2020, $5.9 million in 2022 and $5.0 million, payable in any 12-month period from now until 2028 based on the accomplishment of certain revenue or other milestones, regulatory approvals or clearances. Of the $57.3 million total contingent obligation as discussed further in Note 24 "Fair Value Measurements", we have assessed the fair value at December 31, 2018 to be $49.0 million, of which $27.5 million is included

in other current liabilities and $21.5 million is included in other non-current liabilities in the accompanying consolidated balance sheet.

*Employment Agreements*

Certain of our employment contracts contain provisions which guarantee the payments of certain amounts in the event of a change in control, as defined in the agreements, or if the executive is terminated for reasons other than cause, as defined in the agreements. At December 31, 2018, the commitment under these agreements totaled $16.9 million (2017: $16.8 million). The employment agreements with the Managing Directors and the German affiliate include a clause, whereby the affiliate will compensate the Managing Directors for potential deductions under Dutch law which, since 2014, has introduced a duty to deduct from a Managing Director's remuneration any increase in the value of shares or options that were part of his pay to the extent that such increase is based on a public offer, merger or other identity changing transaction.

*Litigation*

From time to time, we may be party to legal proceedings incidental to our business. As of December 31, 2018, certain claims, suits or legal proceedings arising out of the normal course of business have been filed or were pending against QIAGEN or our subsidiaries. These matters have arisen in the ordinary course and conduct of business, as well as through acquisition. Although it is not possible to predict the outcome of such litigation, we assess the degree of probability and evaluate the reasonably possible losses that we could incur as a result of these matters. We accrue for any estimated loss when it is probable that a liability has been incurred and the amount of probable loss can be estimated.

Litigation accruals recorded in accrued and other current liabilities totaled $6.0 million as of December 31, 2018. The estimated amount of a range of possible losses is between $5.7 million and $7.4 million. Based on the facts known to QIAGEN and after consultation with legal counsel, management believes that such litigation will not have a material adverse effect on our financial position or results of operations above the amounts accrued. However, the outcome of these matters is ultimately uncertain, thus any settlements or judgments against us in excess of management's expectations could have a material adverse effect on our financial position, results of operations or cash flows.

For the year ended December 31, 2017, we had settlement amounts related to various acquisition-related litigation matters totaling $49.2 million, primarily related to PCR-based biomarker disputes and patent litigation, which were settled during 2017 of which $45.3 million was recorded to general and administrative, restructuring, integration and other expense and $3.9 million was recorded as a license right. $44.8 million of the settlement amounts were paid during 2017 and as of December 31, 2017, $4.4 million was accrued in other current liabilities.

## 20. Segment Information

Considering the acquisitions made during 2018, we determined that we still operate as one business segment in accordance with IFRS 8 *Operating Segments*. As a result of our continued restructuring and streamlining of the growing organization, our chief operating decision maker (CODM) continues to make decisions with regards to business operations and resource allocation based on evaluations of QIAGEN as a whole. Accordingly, we operate as one business segment. Summarized product category and geographic information and operating income is shown in the tables below.

**Product Category Information**

Net sales for the product categories are attributed based on those revenues related to sample and assay products and similarly related revenues including bioinformatics solutions, and revenues derived from instrumentation sales. Refer to Note 4 "Revenue" for disaggregation of revenue based on product categories and customer class.

**Geographical Information**

Net sales are attributed to countries based on the location of the customer. QIAGEN operates manufacturing facilities in Germany, China, and the United States that supply products to customers as well as QIAGEN subsidiaries in other countries. The intersegment portions of such net sales are excluded to derive consolidated net sales. No single customer represents more than ten percent of consolidated net sales. Our country of domicile is the Netherlands, which reported net sales of $15.9 million and $15.0 million for the years ended 2018 and 2017, respectively, and these amounts are included in the line item Europe, Middle East and Africa as shown in the table below.

| (in thousands) | 2018 | 2017 |
|---|---|---|
| **Net Sales** | | |
| Americas: | | |
| United States | **$ 632,660** | $ 579,906 |
| Other Americas | **60,359** | 73,478 |
| Total Americas | **693,019** | 653,384 |
| Europe, Middle East and Africa | **490,301** | 462,980 |
| Asia Pacific and Rest of World | **318,528** | 301,172 |
| Total | **$ 1,501,848** | $ 1,417,536 |

Long-lived assets include property, plant and equipment, goodwill, other intangible assets, equity accounted investments, non-current financial assets and other non-current assets. The Netherlands, which is included in the balances for Europe, reported long-lived assets of $47.6 million and $21.9 million for the years ended 2018 and 2017, respectively.

| (in thousands) | 2018 | 2017 |
|---|---|---|
| **Long-lived assets** | | |
| Americas: | | |
| United States | **$ 1,923,019** | $ 1,859,418 |
| Other Americas | **9,833** | 11,248 |
| Total Americas | **1,932,852** | 1,870,666 |
| Germany | **540,227** | 579,544 |
| Other Europe, Middle East and Africa | **616,782** | 462,679 |
| Asia Pacific and Rest of World | **239,086** | 256,220 |
| Total | **$ 3,328,947** | $ 3,169,109 |

**Operating Income Information**

Our chief operating decision maker (CODM) makes decisions with regard to business operations and resource allocation considering many measures, the primary income measure being adjusted operating income. Adjusted results are financial measures that are considered to provide insight into our core business performance. The table below provides details regarding adjustments from the primary metric used by the CODM to income from operations for the years ended December 31, 2018 and 2017.

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Adjusted income from operations | **$ 403,315** | $ 371,461 |
| Purchased intangible amortization | **(95,755)** | (112,147) |
| Business integration and acquisition related items | **(40,979)** | (105,896) |
| Development costs | **(4,136)** | (2,004) |
| Other income and expense | **10,101** | 5,536 |
| **Income from operations** | **$ 272,546** | $ 156,950 |

**21. Share-Based Payments**

We adopted the QIAGEN N.V. Amended and Restated 2005 Stock Plan (the 2005 Plan) in 2005 and the QIAGEN N.V. 2014 Stock Plan (the 2014 Plan) in 2014. The 2005 Plan expired by its terms in April 2015 and no further awards will be granted under the 2005 Plan. The plans allow for the granting of stock rights and incentive stock options, as well as non-qualified options, stock grants and stock-based awards, generally with terms of up to 5 or 10 years, subject to earlier termination in certain situations. The vesting and exercisability of certain stock rights will be accelerated in the event of a Change of Control, as defined in the plans. All option grants have been at the market value on the grant date or at a premium above the closing market price on the grant date. We issue Treasury Shares to satisfy option exercises and award releases and had approximately 19.9 million Common Shares reserved and available for issuance under the 2005 and 2014 Plans at December 31, 2018.

*Stock Options*

We have not granted stock options since 2013. A summary of the status of employee stock options as of December 31, 2018 and 2017, and changes during the years then ended is presented below:

| | Stock Options (in thousands) | Weighted Average Exercise Price US$ |
|---|---|---|
| Outstanding at January 1, 2018 | **1,149** | **$ 19.54** |
| Exercised | **(249)** | **$ 17.77** |
| Expired | **(2)** | **$ 15.84** |
| Outstanding at December 31, 2018 | **898** | **$ 20.04** |
| Vested at December 31, 2018 | **898** | **$ 20.04** |
| **Vested and expected to vest at December 31, 2018** | **898** | **$ 20.04** |
| | | |
| Outstanding at January 1, 2017 | 1,439 | $ 19.84 |
| Exercised | (287) | $ 21.08 |
| Expired | (3) | $ 18.63 |
| Outstanding at December 31, 2017 | 1,149 | $ 19.54 |
| Vested at December 31, 2017 | 1,149 | $ 19.54 |
| Vested and expected to vest at December 31, 2017 | 1,149 | $ 19.54 |

The total intrinsic value of options exercised during the years ended December 31, 2018 and 2017 was $5.0 million and $3.3 million, respectively. The actual tax benefit for the tax deductions from option exercises totaled $0.8 million and $0.7 million during the years ended December 31, 2018 and 2017, respectively. At December 31, 2018, there was no unrecognized share-based compensation expense related to employee stock option awards.

At December 31, 2018 and 2017, 0.9 million and 1.1 million options were exercisable at a weighted average price of $20.04 and $19.54 per share, respectively. The options outstanding at December 31, 2018 will expire in various years through 2023.

*Stock Units*

Stock units represent rights to receive Common Shares at a future date and include restricted stock units which are subject to time-vesting only and performance stock units which include performance conditions in addition to time-vesting. The final number of performance stock units earned is based on the performance achievement which for some grants can reach up to 120% of the granted shares. There is no exercise price and the fair market value at the time of the grant is recognized over the requisite vesting period, generally 5 or 10 years. The fair market value is determined based on the number of stock units granted and the market value of our shares on the grant date. Pre-vesting forfeitures were estimated to be approximately 6.6% (2017: 7.0%). At December 31, 2018, there was $95.2 million remaining in unrecognized compensation cost including estimated forfeitures related to these awards, which is expected to be recognized over a weighted average period of 2.40 years (2017: $67.5 million over a weighted average of 2.35 years). The weighted average grant date fair value of restricted stock units granted during the year ended December 31, 2018 was $35.37 (2017: $31.12). The total fair value of restricted stock units released during the years ended December 31, 2018 and 2017 was $54.3 million and $69.2 million, respectively.

A summary of stock units as of December 31, 2018 and 2017, and changes during the year then ended are presented below:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Outstanding at January, 1st | **8,102** | 10,198 |
| Granted | **2,344** | 1,976 |
| Released | **(1,575)** | (2,306) |
| Forfeited | **(528)** | (1,766) |
| Outstanding at December 31st | **8,343** | 8,102 |
| Vested and expected to vest at December 31st | **7,238** | 6,914 |

*Compensation Expense*

Share-based compensation expense for the years ended December 31, 2018 and 2017 totaled approximately $40.1 million and $34.4 million, respectively as shown in the table below. No share-based compensation cost was capitalized in inventory in 2018 and 2017 as the amounts were not material. Following the restructuring program discussed in Note 6 "Restructuring", share-based compensation expense in 2017 includes the impact of $0.7 million in forfeitures in connection with the restructuring terminations.

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Cost of sales | **$ 2,879** | $ 2,641 |
| Research and development | **6,457** | 5,367 |
| Sales and marketing | **9,372** | 6,820 |
| General and administrative | **21,405** | 19,614 |
| Share-based compensation expense before taxes | **40,113** | 34,442 |
| Less: Income tax benefit [(1)] | **7,869** | 8,110 |
| Net share-based compensation expense | **$ 32,244** | $ 26,332 |

[(1)] Does not include the excess tax benefit realized for the tax deductions of the share-based payment arrangements totaled $4.7 million and $5.2 million for the years ended December 31, 2018 and 2017, respectively.

## 22. Employee Benefits and Personnel Costs

We maintain various benefit plans, including defined contribution and defined benefit plans. Our U.S. defined contribution plan is qualified under Section 401(k) of the Internal Revenue Code, and covers substantially all U.S. employees. Participants may contribute a portion of their compensation not exceeding a limit set annually by the Internal Revenue Service. This plan includes a provision for us to match a portion of employee contributions. Total expense under the 401(k) plans, including the plans acquired via business acquisitions, was $4.0 million and $3.6 million for the years ended December 31, 2018 and 2017, respectively. We also have defined contributions up to an established maximum. We make matching contributions up to an established maximum. Matching contributions made to the plan, and expensed, totaled approximately $0.2 million and $0.3 million for the years ended December 31, 2018 and 2017, respectively.

We have five defined benefit, non-contributory retirement or termination plans that cover certain employees in Germany, France, Japan, Italy and the United Arab Emirates. These defined benefit plans provide benefits to covered individuals satisfying certain age and service requirements. For certain plans, we calculate the vested benefits to which employees are entitled if they separate immediately. The benefits accrued on a pro-rata basis during the employees' employment period are based on the individuals' salaries, adjusted for inflation. The liability under the defined benefit plans was $7.4 million at December 31, 2018 and $8.0 million at December 31, 2017, and is included as a component of other non-current liabilities on the accompanying consolidated balance sheets.

### Personnel Costs

Personnel costs amounted to $483.6 million in 2018 (2017: $453.6 million). As of December 31, 2018, there were 4,952 employees within the Group (2017: 4,688).

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Salaries and wages | **$ 283,192** | $ 266,866 |
| Social security | **84,670** | 78,994 |
| Share-based payment expense | **40,113** | 34,442 |
| Termination costs | **10,834** | 9,168 |
| Other | **64,765** | 64,138 |
| Personnel Costs | **$ 483,574** | $ 453,608 |

The personnel costs are allocated to the functional areas in which the respective employees are working or in the case of the incremental termination benefits which are the result of restructuring activities as discussed in Note 6 "Restructuring" are recorded in cost of sales and general and administrative, restructuring, integration and other costs.

## 23. Related Party Transactions

From time to time, we have transactions with other companies in which we hold an interest, all of which are individually and in the aggregate immaterial, as summarized in the table below:

| | For the years ended December 31, | |
|---|---|---|
| (in thousands) | 2018 | 2017 |
| Net sales | **$ 23,358** | $ 3,852 |

Net sales with related parties primarily reflects our ventures in China including our joint venture with Sichuan Maccura Biotechnology Co., Ltd with a focus on accelerating the growth of our GeneReader NGS System as well as the partnership to externalize the HPV test franchise for cervical cancer screening in China.

| | As of December 31, | |
|---|---|---|
| **(in thousands)** | **2018** | **2017** |
| Accounts receivable | **$ 10,109** | $ 3,802 |
| Other non-current assets | **$ 24,300** | $ 17,713 |
| Accounts payable | **$ 4,888** | $ 1,921 |
| Other current liabilities | **$ 5,488** | $ 9,028 |
| Other non-current liabilities | **$ —** | $ 3,075 |

Other non-current assets include long-term loan receivables from companies with which we have an investment or partnership interest. During 2018, we purchased a convertible note for $15.0 million from a privately held company. The note is due in December 2021 and bears interest at 8%. In the event the company goes public, the note will convert into common shares in the company ranking pari-passu with existing common shares. During 2018, we converted a note receivable from a non-publicly traded company, considered a related party, into an equity interest in that company. This note held a balance of $11.4 million including principal balance and accrued interest at conversion. During 2017, we purchased a convertible note for $3.0 million from a publicly listed company considered a related party. The note is due in October 2020 and bears interest of 3.0%. As of December 31, 2018, the principal and accrued interest of this note totals $2.9 million while the remaining $0.3 million is attributable to the embedded derivative, that is bifurcated and measured at fair value, associated to a convertible feature of this note.

Liabilities to related parties include payables and other liabilities associated to the 19.0% interest in Hombrechtikon Systems Engineering AG (HSE) acquired in 2016 as discussed in Note 11 "Equity Accounted Investments" for a total obligation of $9.8 million payable over 3 years. During the year ended December 31, 2018, we had research and development expense incurred with HSE for a total of $12.2 million. As of December 31, 2018, the remaining obligation from the acquisition together with amounts payable from research and development services totaled $5.3 million, of which $3.5 million was included in accounts payable and $1.8 million was included in other current liabilities in the accompanying consolidated balance sheet. As of December 31, 2017, the total remaining obligation was $6.2 million, of which $3.1 million was included in other current liabilities and $3.1 million was included in other non-current liabilities in the accompanying consolidated balance sheet.

*Compensation of Directors and Officers*

Total compensation for members of the Managing and Supervisory Boards for the period ended December 31, 2018, amounts to $20.2 million (2017: $19.0 million) as shown in the table below. Total non-periodical remuneration according to Netherlands Civil Code included in total compensation for the period ended December 31, 2018 was $4.0 million (2017: $3.7 million).

*Remuneration of the Managing Board*

The tables below state the amounts earned on an accrual basis by our Managing Board members in 2018 and 2017.

| For the year ended December 31, 2018<br>(in thousands, except for number of award grants) | Peer M. Schatz | Roland Sackers |
|---|---|---|
| Fixed Salary | $ 1,281 | $ 575 |
| Other [(1)] | 5 | 37 |
| **Total fixed income 2018** | **$ 1,286** | **$ 612** |
| Short-term variable cash bonus [(3)] | — | — |
| **Total short-term income 2018** | **$ 1,286** | **$ 612** |
| Defined contribution on benefit plan | $ 78 | $ 80 |
| *Number of performance stock units granted 2018 [(2)]* | *661,315* | *197,000* |
| Related recognized compensation expense | $ 2,645 | $ 763 |
| **Total compensation** | **$ 4,009** | **$ 1,455** |

(1) Amounts include, among others, car lease and reimbursed personal expenses such as tax consulting. We also occasionally reimburse our Managing Directors' personal expenses related to attending out-of-town meetings but not directly related to their attendance. Amounts do not include the

reimbursement of certain expenses relating to travel incurred at the request of QIAGEN, other reimbursements or payments that in total did not exceed $10,000 or tax amounts paid by the Company to tax authorities in order to avoid double-taxation under multi-tax jurisdiction employment agreements.

(2) The Performance Stock Units Granted amount includes the number of performance stock units granted to each Managing Board member under the Company's Commitment Program as discussed further in the Corporate Governance Report within this Annual Report. Of the total performance shares granted in 2018, 307,000 were granted to Mr. Schatz and 97,000 were granted to Mr. Sackers under this Commitment Program.

(3) The Variable Cash Bonus does not include values which were converted to equity-based compensation for each Managing Board member at his election in lieu of the value of the cash bonus earned by such Managing Board member in 2018. In 2019, Mr. Schatz will receive a grant of 60,982 performance stock units and Mr. Sackers will receive a grant of 21,131 performance stock units. The performance stock units will vest 40% over three years and 60% over five years from the date of grant, with the final performance measurement aligned to achievement of 2019 performance goals.

| For the year ended December 31, 2017<br>(in thousands, except for number of option and award grants) | Peer M. Schatz | Roland Sackers |
|---|---|---|
| Fixed Salary | $ 1,192 | $ 535 |
| Other [1] | 5 | 38 |
| **Total fixed income 2017** | **$ 1,197** | **$ 573** |
| Short-term variable cash bonus | 671 | 237 |
| **Total short-term income 2017** | **1,868** | **810** |
| Defined contribution on benefit plan | $ 74 | $ 76 |
| *Number of performance stock units granted 2017* [2] | *445,000* | *186,075* |
| Related recognized compensation expense | $ 1,764 | $ 439 |
| **Total compensation** | **$ 3,706** | **$ 1,325** |

(1) Amounts include, among others, car lease and reimbursed personal expenses such as tax consulting. We also occasionally reimburse our Managing Directors' personal expenses related to attending out-of-town meetings but not directly related to their attendance. Amounts do not include the reimbursement of certain expenses relating to travel incurred at the request of QIAGEN, other reimbursements or payments that in total did not exceed $10,000 or tax amounts paid by the Company to tax authorities in order to avoid double-taxation under multi-tax jurisdiction employment agreements.

(2) The Performance Stock Units Granted amount includes a special incentive grant of 100,000 PSU which was not achieved

*Remuneration of the Supervisory Board*

The tables below state the amounts earned on an accrual basis by the members of the Supervisory Board in 2018 and 2017:

| **For the year ended December 31, 2018 (in thousands, except for number of share grants)** | **Fixed remuneration** | **Committee Chairman / Chairwoman** | **Committee membership** | **Total [2]** | ***Number of restricted stock units granted*** | **Related recognized compensation expense** |
|---|---|---|---|---|---|---|
| Stéphane Bancel | $ 57.5 | — | 32.0 | $ 89.5 | *9,866* | $ 58.3 |
| Dr. Håkan Björklund | $ 103.8 | 6.0 | 14.0 | $ 123.8 | 9,866 | $ 58.3 |
| Dr. Metin Colpan | $ 57.5 | 12.0 | 6.0 | $ 75.5 | *9,866* | $ 58.3 |
| Prof. Dr. Manfred Karobath [1] | $ 75.0 | 6.0 | 8.5 | $ 89.5 | *9,866* | $ 133.0 |
| Dr. Ross L. Levine | $ 57.5 | — | 6.0 | $ 63.5 | *9,866* | $ 58.3 |
| Dr. Elaine Mardis | $ 57.5 | — | 6.0 | $ 63.5 | *9,866* | $ 58.3 |
| Lawrence A. Rosen | $ 57.5 | 25.0 | — | $ 82.5 | *9,866* | $ 58.3 |
| Elizabeth E. Tallett | $ 57.5 | 18.0 | 21.0 | $ 96.5 | *9,866* | $ 158.8 |

(1) Prof. Dr. Manfred Karobath was a member of the Supervisory Board since 2000 and did not stand for re-election at the Company's Annual General Meeting in June 2018.

(2) Supervisory Directors are reimbursed for travel costs and for any value-added tax to be paid on their remuneration. These reimbursements are excluded from the amounts presented herein.

| For the year ended December 31, 2017 (in thousands, except for number of share grants) | Fixed remuneration | Committee Chairman / Chairwoman | Committee membership | Total[1] | *Number of restricted stock units granted* | Related recognized compensation expense |
|---|---|---|---|---|---|---|
| Stéphane Bancel | $ 57.5 | — | 32.0 | $ 89.5 | *10,732* | $ 55.4 |
| Dr. Håkan Björklund | $ 43.1 | — | 12.8 | $ 55.9 | — | — |
| Dr. Metin Colpan | $ 57.5 | 12.0 | 6.0 | $ 75.5 | *10,732* | $ 55.4 |
| Prof. Dr. Manfred Karobath | $ 150.0 | 12.0 | 17.0 | $ 179.0 | *10,732* | $ 147.0 |
| Dr. Ross L. Levine | $ 57.5 | — | 6.0 | $ 63.5 | *10,732* | $ 55.4 |
| Dr. Elaine Mardis | $ 57.5 | — | 6.0 | $ 63.5 | *10,732* | $ 55.4 |
| Lawrence A. Rosen | $ 57.5 | 25.0 | — | $ 82.5 | *10,732* | $ 55.4 |
| Elizabeth E. Tallett | $ 57.5 | 18.0 | 21.0 | $ 96.5 | *10,732* | $ 147.0 |

(1) Supervisory Directors are reimbursed for travel costs and for any value-added tax to be paid on their remuneration. These reimbursements are excluded from the amounts presented herein.

**Supervisory Board and Managing Board members' interests in QIAGEN N.V. shares**

*Share Ownership*

The following table sets forth certain information as of January 31, 2019 concerning the ownership of Common Shares by our directors and officers. In preparing the following table, we have relied on information furnished by such persons.

| Name and Country of Residence | Shares Beneficially Owned | Percent Ownership |
|---|---|---|
| Peer M. Schatz, Germany | 2,732,805 | 1.21% |
| Roland Sackers, Germany | 40,000 | * |
| Stéphane Bancel, United States | 4.429 | * |
| Dr. Håkan Björklund, Sweden | — | — |
| Dr. Metin Colpan, Germany | 3,539,784 | 1.57% |
| Dr. Ross L. Levine, United States | — | — |
| Dr. Elaine Mardis, United States | — | — |
| Lawrence A. Rosen, United States | — | — |
| Elizabeth Tallett, United States | 16,103 | * |

* Indicates that the person beneficially owns less than 0.5% of the Common Shares issued and outstanding as of January 31, 2019.

**24. Fair Value Measurements**

Financial Instruments are measured at fair value according the following hierarchy which prioritizes the inputs used in measuring fair value as follows:

- *Level 1*, Observable inputs, such as quoted prices in active markets;
- *Level 2,* Inputs, other than the quoted price in active markets, that are observable either directly or indirectly; and
- *Level 3,* Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

Our assets and liabilities measured at fair value on a recurring basis consist of financial assets, which are classified in Level 1 and Level 2 of the fair value hierarchy, derivative contracts used to hedge currency and interest rate risk and derivative financial instruments entered into in connection with the Cash Convertible Notes discussed in Note 25 "Financial Risk Factors and Use of Derivative Financial Instruments", which are classified in Level 2 of the fair value hierarchy, and contingent consideration accruals which are classified in Level 3 of the fair value hierarchy, and are shown in the tables below. There have been no transfers between levels.

In determining fair value for Level 2 instruments, we apply a market approach, using quoted active market prices relevant to the particular instrument under valuation, giving consideration to the credit risk of both the respective counterparty to the contract and the Company. To determine our credit risk we estimated our credit rating by benchmarking the price of outstanding debt to publicly-available comparable data from rated companies. Using the estimated rating, our credit risk was quantified by reference to publicly-traded debt with a corresponding rating. The Level 2 derivative financial instruments include the Call Options asset, the Warrants liability and the embedded conversion option liability. See Note 15 "Financial Debts" and Note 25 "Financial Risk Factors and Use of Derivative Financial Instruments" for further information. The derivatives are not actively traded and are valued based on an option pricing model that uses observable market data for inputs. Significant market data inputs used to determine fair values as of December 31, 2018 included our common stock price, the risk-free interest rate, and the implied volatility of our common stock. The Call Options asset and the embedded cash conversion option liability were designed with the intent that changes in their fair values would substantially offset, with limited net impact to our earnings. Therefore, the sensitivity of changes in the unobservable inputs to the option pricing model for such instruments is substantially mitigated.

Our Level 3 instruments include contingent consideration liabilities. We value contingent consideration liabilities using unobservable inputs, applying the income approach, such as the discounted cash flow technique, or the probability-weighted scenario method. Contingent consideration arrangements obligate us to pay the sellers of an acquired entity if specified future events occur or conditions are met such as the achievement of technological or revenue milestones. We use various key assumptions, such as the probability of achievement of the milestones (0% to 100%) and the discount rate (between 6.5% and 17.2%), to represent the non-performing risk factors and time value when applying the income approach. We regularly review the fair value of the contingent consideration, and reflect any change in the accrual in the consolidated statements of income in the line items commensurate with the underlying nature of milestone arrangements. If minor changes were made in the key assumptions on which these valuations are based, there would be no material effect on the fair value of contingent consideration on the statement of financial position or the corresponding effect in the consolidated statement of income for the years ended December 31, 2018 and 2017. The maximum amount of contingent consideration relating to business combinations is disclosed in Note 19 "Commitments and Contingencies".

Upon adoption of IFRS 9 in 2018, our Level 3 instruments also include unquoted equity securities for which we estimate the value based on valuation methods using the observable transaction price at the transaction date and other unobservable inputs. These investments are carried at fair value which is considered to be cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer.

As of December 31, 2018, we held the following financial instruments carried at fair value on the statement of financial position:

| (in thousands) | 2018 | Level 1 | Level 2 | Level 3 |
|---|---|---|---|---|
| Financial assets, current | $ 214,918 | $ 350 | $ 214,568 | $ — |
| Financial assets, non-current | 81,639 | 2,117 | 20,038 | 59,484 |
| Call option | 395,095 | — | 395,095 | — |
| Foreign exchange contracts | 2,673 | — | 2,673 | — |
| **Assets** | **$ 694,325** | **$ 2,467** | **$ 632,374** | **$ 59,484** |
| Foreign exchange contracts | (5,957) | — | (5,957) | — |
| Interest rate contracts | (18,768) | — | (18,768) | — |
| Cash conversion option | (399,262) | — | (399,262) | — |
| Warrants | (297,240) | — | (297,240) | — |
| Contingent consideration | (48,971) | — | — | (48,971) |
| **Liabilities** | **$ (770,198)** | **—** | **$ (721,227)** | **$ (48,971)** |

As of December 31, 2017, we held the following financial instruments carried at fair value on the statement of financial position:

| (in thousands) | 2017 | Level 1 | Level 2 | Level 3 |
|---|---|---|---|---|
| Financial assets, current | $ 359,198 | $ — | $ 359,198 | $ — |
| Financial assets, non-current | 3,208 | 3,208 | — | — |
| Call option | 223,164 | — | 223,164 | — |
| Foreign exchange contracts | 7,480 | — | 7,480 | — |
| Interest rate contracts | 1,017 | — | 1,017 | — |
| **Assets** | **$ 594,067** | **$ 3,208** | **$ 590,859** | **$ —** |
| Foreign exchange contracts | (2,424) | — | (2,424) | — |
| Interest rate contracts | (29,103) | — | (29,103) | — |
| Cash conversion option | (224,286) | — | (224,286) | — |
| Warrants | (159,147) | — | (159,147) | — |
| Contingent consideration | (11,539) | — | — | (11,539) |
| **Liabilities** | **$ (426,499)** | **$ —** | **$ (414,960)** | **$ (11,539)** |

Refer to Note 7 "Financial Assets" for the change in unquoted equity securities with Level 3 inputs during the year ended December 31, 2018 included in financial assets, non-current in the table above. For liabilities with Level 3 inputs, the following table summarizes the activity as of December 31, 2018 and 2017:

| Fair Value Measurements Using Significant Unobservable Inputs (Level 3) Contingent Consideration (in thousands) | 2018 | 2017 |
|---|---|---|
| Contingent consideration as at January 1st | **$ (11,539)** | $ (8,754) |
| Additions | **(53,962)** | (10,954) |
| Payments | **16,530** | 4,900 |
| Gain included in earnings | **—** | 3,269 |
| Contingent consideration as at December 31st | **$ (48,971)** | $ (11,539) |

As of December 31, 2018, the liability for contingent consideration totals $49.0 million, of which $27.5 million is included in other current liabilities and $21.5 million is included in other non-current liabilities in the accompanying consolidated balance sheet. During 2017, gains for the reduction in the fair value of contingent consideration related to unmet milestones of $3.3 million was recognized in general and administrative, restructuring, integration and other in the accompanying consolidated statement of income.

The table below presents the carrying values and the estimated fair values of financial instruments not presented in the tables above.

| | As of December 31, 2018 | | | As of December 31, 2017 | | |
|---|---|---|---|---|---|---|
| (in thousands) | Carrying Amount | Level 1 | Level 2 | Carrying Amount | Level 1 | Level 2 |
| **Long-term debt including current portion:** | | | | | | |
| Cash convertible notes | **$ 1,439,931** | **$ 1,794,000** | **$ —** | $ 1,008,507 | $ — | $ 1,269,613 |
| U.S. Private placement | **399,301** | **—** | **391,700** | 399,083 | — | 394,669 |
| German private placement | **336,168** | **—** | **337,768** | 349,812 | — | 349,977 |
| | **$ 2,175,400** | **$ 1,794,000** | **$ 729,468** | $ 1,757,402 | $ — | $ 2,014,259 |

The fair values of the financial instruments presented in the tables above were determined as follows:

*Cash Convertible Notes:* Fair value is based on an estimation using available over-the-counter market information on the Cash Convertible Notes due in 2019, 2021, 2023 and 2024. During 2018, we determined that the quoted prices were from active markets and accordingly moved the fair value from level 2 to level 1 of the fair value hierarchy.

*U.S. Private Placement:* Fair value of the outstanding bonds is based on an estimation using the changes in the U.S. Treasury rates.

*German Private Placement:* Fair value is based on an estimation using changes in the euro swap rates.

The carrying values of financial instruments, including cash and equivalents, accounts receivable, accounts payable and other current liabilities, approximate their fair values due to their short-term maturities. The estimated fair values may not represent

actual values of the financial instruments that could be realized as of the balance sheet date or that will be realized in the future. There were no adjustments in the twelve months ended periods ended December 31, 2018 and 2017 for nonfinancial assets or liabilities required to be measured at fair value on a nonrecurring basis.

## 25. Financial Risk Factors and Use of Derivative Financial Instruments

### 25.1. Financial Risks

*Market risk*

Our market risk relates primarily to interest rate exposures on cash, short-term investments and borrowings and foreign currency exposures. Financial risk is centrally managed and is regulated by internal guidelines which require a continuous internal risk analysis. The overall objective of our risk management is to reduce the potential negative earnings effects from changes in interest and foreign exchange rates. Exposures are managed through operational methods and financial instruments relating to interest rate and foreign exchange risks. In the ordinary course of business, we use derivative instruments, including swaps, forwards and/or options, to manage potential losses from foreign currency exposures and interest rates. The principal objective of such derivative instruments is to minimize the risks and/or costs associated with global financial and operating activities. We do not utilize derivative or other financial instruments for trading or other speculative purposes. All derivatives are recognized as either assets or liabilities in the balance sheet and are measured at fair value with any change in fair value recognized in earnings in the period of change, unless the derivative qualifies as an effective hedge that offsets certain exposures. In determining fair value, we consider both the counterparty credit risk and our own creditworthiness, to the extent that the derivatives are not covered by collateral agreements with respective counterparties.

*Foreign currency exchange rates*

As a global enterprise, we are subject to risks associated with fluctuations in foreign currencies with regard to our ordinary operations. This includes foreign currency-denominated receivables, payables, debt, and other balance sheet positions as well as future cash flows resulting from anticipated transactions including intra-group transactions. We manage our balance sheet exposure on a group-wide basis primarily using foreign exchange forward contracts, options and cross-currency swaps.

A significant portion of our revenues and expenses are earned and incurred in currencies other than the U.S. dollar. The euro is the most significant such currency, with others including the British pound, Japanese yen, Chinese renminbi, Turkish lira, Brazilian real, Indian rupee, Swiss franc, and Canadian and Australian dollars. Fluctuations in the value of the currencies in which we conduct our business relative to the U.S. dollar have caused and will continue to cause U.S. dollar translations of such currencies to vary from one period to another. Due to the number of currencies involved, the constantly changing currency exposures, and the potential substantial volatility of currency exchange rates, we cannot predict the effect of exchange rate fluctuations upon future operating results. In general terms, depreciation of the U.S. dollar against our other foreign currencies will increase reported net sales. However, this effect is, at least partially, offset by the fact that we also incur substantial expenses in foreign currencies.

We have significant production and manufacturing facilities located in Germany and intercompany sales of inventory also expose us to foreign currency exchange rate risk. Intercompany sales of inventory are generally denominated in the local currency of the subsidiary purchasing the inventory in order to centralize foreign currency risk with the manufacturing subsidiary. We use an in-house bank approach to net and settle intercompany payables and receivables as well as intercompany foreign exchange swaps and forward contracts in order to centralize the foreign exchange rate risk to the extent possible. We have entered in the past and may enter in the future into foreign exchange derivatives including forwards, swaps and options to manage the remaining foreign exchange exposure.

For the presentation of market risks, IFRS 7 requires sensitivity analyses that show the effects of hypothetical changes of relevant risk variables on profit or loss and shareholders' equity. Currency risks as defined by IFRS 7 arise on account of financial instruments being denominated in a currency that is not the functional currency and being of a monetary nature; differences resulting from the translation of financial statements into the Company's presentation currency are not taken into consideration. Relevant risk variables are generally all non-functional currencies in which QIAGEN has financial instruments.

QIAGEN is exposed to currency risks from financial derivatives. If each of the respective currency pairs for which the Company has financial derivatives in place, which do not qualify for hedge accounting in accordance with IFRS 9, varied from the rates used for the preparation of the consolidated financial statements, this would have had an effect on the net income of the Company. Any effect would have been almost fully off-set by corresponding valuation adjustments in the positions, which economically had been hedged by these financial derivatives. Accordingly, the net effect of such variance in currency rates would not have been material.

If, at December 31, 2018, the U.S. dollar had gained or lost 10% against all identified major currencies, the estimated effect on the fair value of the financial derivatives would have been as follows:

| | As of December 31, 2018 | | As of December 31, 2017 | |
|---|---|---|---|---|
| **(in thousands)** | **10% higher** | **10% lower** | **10% higher** | **10% lower** |
| **Currency** | | | | |
| Euro (EUR) | **(5,947)** | **5,947** | 18,409 | (18,409) |
| Australian Dollar (AUD) | **9,493** | **(9,493)** | 10,710 | (10,710) |
| Swedish Krona (SEK) | **(345)** | **422** | 390 | (477) |
| Japanese Yen (JPY) | — | — | 201 | (246) |
| Canadian Dollar (CAD) | **(399)** | **488** | (616) | 753 |
| Singapore Dollar (SGD) | **(1,795)** | **2,196** | (3,704) | 4,528 |
| Swiss Franc (CHF) | **(8,478)** | **10,389** | 470 | (575) |
| Pound Sterling (GBP) | **895** | **(895)** | 68 | (68) |
| Turkish Lira (TRY) | **1,393** | **(1,699)** | — | — |
| South Korean Won (KRW) | **529** | **(647)** | — | — |
| Chinese Yuan (CNY) | **263** | **(321)** | — | — |
| Norwegian Krone (NOK) | **209** | **(256)** | — | — |
| Polish Zloty (PLN) | **362** | **(443)** | — | — |
| **Total** | **(3,820)** | **5,688** | 25,928 | (25,204) |

*Interest rates*

The Company is exposed to interest rate risk by floating rate financial debt and floating rate financial assets. This exposure is managed by varying the proportion of fixed and floating rate debt, while all non-derivative financial assets pay interest on floating rates. Net financial income earned on the Company's net financial assets is generally affected by changes in the level of interest rates, principally the Euro and the U.S. dollar interest rate.

At December 31, 2018, we had $1.2 billion in cash and cash equivalents (2017: $657.7 million). Interest income earned on our cash investments is affected by changes in the relative levels of market interest rates. We only invest in high-grade investment instruments. A hypothetical adverse 10% movement in market interest rates would not have materially impact our financial statements.

Borrowings against lines of credit are at variable interest rates. We had no amounts outstanding against our lines of credit at December 31, 2018 and 2017. A hypothetical adverse 10% movement in market interest rates would not have materially impacted our financial statements.

At December 31, 2018, we had $2.2 billion in current and non-current financial debt (2017: $1.8 billion). A hypothetical adverse 10% movement in market interest rates would not have materially impacted our financial statements.

*Liquidity risk*

To date, we have funded our business primarily through internally generated funds, debt and the private and public sales of equity. Our primary use of cash has been to support continuing operations and our investing activities including capital expenditure requirements and acquisitions. As of December 31, 2018 and 2017, we had cash and cash equivalents of $1.16 billion and $657.7 million, respectively. We also had current financial assets of $214.6 million and $359.2 million, respectively. Cash and cash equivalents are primarily held in Euros and U.S. dollars, other than those cash balances maintained in the local currency of subsidiaries to meet local working capital needs. As of December 31, 2018 and 2017, we had working capital of $1.1 billion and $1.3 billion, respectively.

In October 2016, we extended the maturity of our €400.0 million syndicated revolving credit facility, which now has a contractual lifetime until December 2021 of which no amounts were utilized at December 31, 2018. We have additional credit lines totaling €26.6 million with no expiration date, none of which were utilized as of December 31, 2018. We also have finance lease obligations, including interest, in the amount of $0.1 million (2017: $1.5 million), and repayment obligations of $2.2 billion of financial debt (2017: $1.8 billion), of which $503.6 million is current as of December 31, 2018.

As of December 31, 2018, our future contractual cash obligations are as follows:

| Contractual Obligations (in thousands) | Payments Due by Period | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total | 2018 | 2019 | 2020 | 2021 | 2022 | Thereafter |
| Financial debt [1] | $ 2,288,785 | $ 531,670 | $ 25,884 | $ 339,445 | $ 491,380 | $ 343,969 | $ 556,437 |
| Purchase obligations | 128,281 | 93,214 | 20,804 | 8,883 | 2,690 | 2,690 | — |
| Operating leases | 60,666 | 20,235 | 14,845 | 10,745 | 6,839 | 3,854 | 4,148 |
| License and royalty payments [2] | 48,631 | 11,973 | 11,613 | 9,167 | 6,731 | 4,704 | 4,443 |
| Finance lease obligations [3] | 86 | 63 | 23 | — | — | — | — |
| Total contractual cash obligations | **$ 2,526,449** | **$ 657,155** | **$ 73,169** | **$ 368,240** | **$ 507,640** | **$ 355,217** | **$ 565,028** |

[1] Amounts include required principal, stated at current carrying values, and interest payments.

[2] As of December 31, 2018, $10.5 million and $24.3 million are included in other current liabilities and other non-current liabilities, respectively.

[3] Includes future cash payments, including interest, due under finance lease arrangements.

In addition to the above and pursuant to purchase agreements for several of our recent acquisitions, we could be required to make additional contingent cash payments totaling up to $57.3 million based on the achievement of certain revenue and operating results milestones as follows: $23.7 million in 2019, $22.7 million in 2020, $5.9 million in 2022 and $5.0 million, payable in any 12-month period from now until 2028 based on the accomplishment of certain revenue targets, the launch of certain products or the grant of certain patent rights. As of December 31, 2018, we have accrued $49.0 million for these contingent payments, of which $27.5 million is included in other current liabilities and $21.5 million is included in other non-current liabilities.

We believe that funds from operations, existing cash and cash equivalents, together with the proceeds from our public and private sales of equity, and availability of financing facilities, will be sufficient to fund our planned operations and expansion during the coming year. However, any global economic downturn may have a greater impact on our business than currently expected, and we may experience a decrease in the sales of our products, which could impact our ability to generate cash. If our future cash flows from operations and other capital resources are not adequate to fund our liquidity needs, we may be required to obtain additional debt or equity financing or to reduce or delay our capital expenditures, acquisitions or research and development projects. If we could not obtain financing on a timely basis or at satisfactory terms, or implement timely reductions in our expenditures, our business could be adversely affected.

*Credit risk*

Financial instruments that potentially subject us to concentrations of credit risk are cash and cash equivalents, financial assets , and accounts receivable. We attempt to minimize the risks related to cash and cash equivalents and financial assets by dealing with highly-rated financial institutions and investing in a broad and diverse range of financial instruments. We have established guidelines related to credit quality and maturities of investments intended to maintain safety and liquidity. Concentration of credit risk with respect to accounts receivable is limited due to a large and diverse customer base, which is dispersed over different geographic areas. Allowances are maintained for potential credit losses and such losses have historically been within expected ranges. There were no significant concentrations of credit risk during the reporting period. The maximum exposure to credit risk is represented by the carrying amount of each financial asset in the statement of financial position.

Credit risk is managed on a Company basis, except for credit risk relating to accounts receivable balances. Each local entity is responsible for managing and analyzing the credit risk for each of their new clients before standard payment and delivery terms and conditions are offered.

*Counterparty risk*

The financial instruments used in managing our foreign currency, equity and interest rate exposures have an element of risk in that the counterparties may be unable to meet the terms of the agreements. To the extent that derivatives are not subject to mutual collateralization agreements, we attempt to minimize this risk by limiting the counterparties to a diverse group of highly-rated international financial institutions. The carrying values of our financial instruments incorporate the non-performance risk by using market pricing for credit risk. However, we have no reason to believe that any counterparties will

default on their obligations and therefore do not expect to record any losses as a result of counterparty default. In order to minimize our exposure with any single counterparty, we have entered into all derivative agreements, with the exception of the Call Spread Overlay, under master agreement which allow us to manage the exposure with the respective counterparty on a net basis. Most of these master agreements, include bilateral collateral agreements.

*Fair values*

The fair values of financial assets and financial liabilities are determined in accordance with the accounting policies stated under Notes 3.12 "Financial Assets" and 3.13 "Financial Liabilities", respectively.

*Equity prices*

The Warrants issued as part of the Call Spread Overlay discussed in Note 15 "Financial Debts" and Note 25.2 "Use of Derivative Financial Instruments" expose us to income statement volatility due to changes in our own equity price. Changes in the fair value of the Warrants are recognized in other financial expense, net. Assuming a hypothetical 10% increase or decrease in equity prices at December 31, 2018, the estimated effect would have been approximately $108.3 million loss or $89.0 million gain, respectively (2017: $62.8 million loss or $52.3 million gain).

*Commodities*

The Company has exposures to price risk related to anticipated purchases of certain commodities used as raw materials in its business. A change in commodity prices may alter the gross margin, but due to the limited exposure to any single raw material, a price change is unlikely to have a material unforeseen impact on the Company's earnings.

**25.2. Use of Derivative Financial Instruments**

*Derivatives and Hedging*

In the ordinary course of business, we use derivative instruments, including swaps, forwards and/or options, to manage potential losses from foreign currency exposures and interest bearing assets or liabilities. The principal objective of such derivative instruments is to minimize the risks and/or costs associated with our global financial and operating activities. We do not utilize derivative or other financial instruments for trading or other speculative purposes. We recognize all derivatives as either assets or liabilities on the balance sheet on a gross basis, measure those instruments at fair value and recognize the change in fair value in earnings in the period of change, unless the derivative qualifies as an effective hedge that offsets certain exposures. We have agreed with almost all of our counterparties with whom we enter into cross-currency swaps, interest rate swaps or foreign exchange contracts, to enter into bilateral collateralization contracts under which we receive or provide cash collateral, as the case may be, for the net position with each of these counterparties. As of December 31, 2018, cash collateral positions consisted of $1.0 million recorded in other current liabilities and $25.4 million recorded in other current assets in the accompanying consolidated balance sheet. As of December 31, 2017, we had a liability position of $3.0 million recorded in other current liabilities and $21.9 million recorded in other current assets in the accompanying consolidated balance sheet.

In 2017, we entered into a foreign currency non-derivative hedging instrument that is designated and qualifies as net investment hedge. The objective of the hedge is to protect part of the net investment in foreign operations against adverse changes in the exchange rate between the Euro and the functional currency of the U.S. dollar. The non-derivative hedging instrument is the German private corporate bond ("Schuldschein") which was issued in the total amount of $331.1 million as described in Note 15 "Financial Debts". Of the $331.1 million, which is held in both U.S. dollars and Euro, €255.0 million is designated as the hedging instrument against a portion of our Euro net investments in our foreign operations. The relative changes in both the hedged item and hedging instrument are calculated by applying the change in spot rate between two assessment dates against the respective notional amount. The effective portion of the hedge is recorded in the cumulative translation adjustment account within other accumulated comprehensive income (loss). Based on the spot rate method, the unrealized loss recorded in equity as of December 31, 2018 is $5.9 million. Since we are using the debt as the hedging instrument, which is also remeasured based on the spot rate method, there is no hedge ineffectiveness related to the net investment hedge as of December 31, 2018.

As of December 31, 2018 and 2017, we held derivative instruments that are designated and qualify as cash flow hedges where the effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income (loss) and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings. In 2018 and in 2017, we did not record any hedge ineffectiveness related to any cash-flow hedges in earnings. Based on their valuation as of December 31, 2018, we expect approximately $9.5 million of derivative losses included in accumulated other comprehensive loss will be reclassified into income during the next 12 months. The cash flows derived from derivatives are classified in the consolidated statements of cash flows in the same category as the consolidated balance sheet account of the underlying item.

As of December 31, 2018 and 2017, we held derivative instruments that qualify for hedge accounting as fair value hedges. For derivative instruments that are designated and qualify as a fair value hedge, the effective portion of the gain or loss on the derivative is reflected in earnings. This earnings effect is offset by the change in the fair value of the hedged item attributable to the risk being hedged that is also recorded in earnings. In 2018 and 2017, we concluded there was no ineffectiveness. The cash flows derived from derivatives are classified in the consolidated statements of cash flows in the same category as the consolidated balance sheet account of the underlying item.

***Interest Rate Derivatives***

We use interest rate derivative contracts to align our portfolio of interest bearing assets and liabilities with our risk management objectives. During 2015, we entered into five cross currency interest rate swaps through 2025 for a total notional amount of $180.0 million which qualify for hedge accounting as cash flow hedges. We determined that no ineffectiveness exists related to these swaps. As of December 31, 2018, the €180.0 million notional swap amount had a fair value of $17.6 million recorded in fair value of derivative financial instruments -non-current liability and accrued and unpaid interest of $1.4 million recorded in other current assets. As of December 31, 2017, this swap had a fair value of $28.9 million recorded in fair value of derivative financial instruments - non-current liability and accrued and unpaid interest of $1.2 million recorded in other current assets, in the accompanying consolidated balance sheet.

During 2014, we entered into interest rate swaps, which effectively fixed the fair value of $200.0 million of our fixed rate private placement debt. As of December 31, 2018, the $200.0 million notional swap amount had a fair value of $1.2 million, of which $0.5 million is recorded in fair value of derivative financial instruments - current liability and $0.7 million is recorded in fair value of derivative financial instruments - non-current liability with unpaid interest of $0.1 million recorded in other current liabilities in the accompanying consolidated balance sheet. As of December 31, 2017, this swap had a fair value of $0.9 million of which $1.0 million is recorded in fair value of derivative instruments - non-current asset and $0.2 million is recorded in fair value of derivative instruments - current liability and accrued and unpaid interest of $0.3 million which is recorded in other current assets, respectively, in the accompanying consolidated balance sheet. During the years ended December 31, 2018 and 2017, losses of $2.1 million and $2.2 million, respectively, are recorded in other financial income (expense), net in the accompanying consolidated income statements.

***Call Spread Overlay***

We entered into Call Options during 2014 which, along with the sale of the Warrants, represent the Call Spread Overlay entered into in connection with the 2019 and 2021 Cash Convertible Notes and which are more fully described in Note 15 "Financial Debts". We used $105.2 million of the proceeds from the issuance of the 2019 and 2021 Cash Convertible Notes to pay the premium for the Call Options, and simultaneously received $68.9 million (net of issuance costs) from the sale of the Warrants, for a net cash outlay of $36.3 million for the Call Spread Overlay.

We used $73.7 million of the proceeds from the from the issuance of the 2023 Cash Convertible Notes to pay for the premium for the Call Option, and simultaneously received $45.3 million from the sale of Warrants, for a net cash outlay of $28.3 million for the Call Spread Overlay. Issuance costs incurred in connection with the Warrant and the Call Option were $0.3 million and $0.1 million respectively, which $0.1 million was accrued as of December 31, 2017.

In November 2018, we used $97.3 million of the proceeds from the from the issuance of the 2024 Cash Convertible Notes to pay for the premium for the Call Option, and simultaneously received $72.4 million from the sale of Warrants, for a net cash outlay of $24.9 million for the Call Spread Overlay. Issuance costs incurred in connection with the Warrant and the Call Option were $0.5 million and $0.5 million respectively, of which $0.8 million was accrued as of December 31, 2018.

In these transactions, the Call Options are intended to address the equity price risk inherent in the cash conversion feature of each instrument by offsetting cash payments in excess of the principal amount due upon any conversion of the Cash Convertible Notes.

Aside from the initial payment of a premium of $105.2 million (2019 and 2021 Notes), $73.7 million (2023 Notes) and $97.3 million (2024 Notes) for the Call Options, we will not be required to make any cash payments under the Call Options. We will, however, be entitled to receive under the terms of the Call Options an amount of cash generally equal to the amount by which the market price per share of our common stock exceeds the exercise price of the Call Options during the relevant valuation period. The exercise price under the Call Options is equal to the conversion price of the Cash Convertible Notes.

The Call Options, for which our common stock is the underlying security, are a derivative asset that requires mark-to-market accounting treatment due to the cash settlement features until the Call Options settle or expire. The Call Options are measured and reported at fair value on a recurring basis, within Level 2 of the fair value hierarchy. For further discussion of the inputs used to determine the fair value of the Call Options, refer to Note 24 "Fair Value Measurements". The fair value of the Call Options at December 31, 2018 was approximately $395.1 million, of which $100.1 million is recorded in fair value of derivative instruments - current asset and $295.0 million is recorded in fair value of derivative instruments - non-current asset

in the accompanying consolidated balance sheet. The fair value of the Call Options at December 31, 2017 was approximately $223.2 million and is recorded in fair value of derivative instruments - non-current asset in the accompanying consolidated balance sheet.

The Call Options do not qualify for hedge accounting treatment. Therefore, the change in fair value of these instruments is recognized immediately in our consolidated statements of income. For the years ended December 31, 2018 and 2017, the change in the fair value of the Call Options resulted in gains of $74.7 million and $37.4 million, respectively, which are recognized in other financial income (expense), net in the accompanying consolidated statements of income. Because the terms of the Call Options are substantially similar to those of the Cash Convertible Notes' embedded cash conversion option, discussed below, we expect the effect on earnings from those two derivative instruments to mostly offset each other.

In connection with the issuance of Cash Convertible Notes, we issued Warrants as follows: For 2019 and 2021 Cash Convertible Notes, we issued Warrants for approximately 25.8 million shares with an initial exercise price of $32.085 per share. Following the synthetic share repurchase program discussed in Note 17 "Equity", the adjusted exercise price is $32.056; For 2023 Cash Convertible Notes, we issued Warrants for approximately 9.7 million shares with an exercise price of $50.9664 per share; 2024 Cash Convertible Notes, we issued Warrants for approximately 10.9 million shares with an with an exercise price of $52.1639 per share. Additional details regarding the Warrants as well as the Cash Convertible Notes are included in Note 15 "Financial Debts".

The Warrants are exercisable only upon expiration. For each Warrant that is exercised, we will deliver to the holder a number of shares of our common stock equal to the amount by which the settlement price exceeds the exercise price, divided by the settlement price, plus cash in lieu of any fractional shares. The Warrants could separately have a dilutive effect on shares of our common stock to the extent that the market value per share of our common stock exceeds the applicable exercise price of the Warrants (as measured under the terms of the Warrants).

The fair value of the Warrants at December 31, 2018, was approximately $297.2 million, of which $296.8 million is recorded in fair value of derivative financial instruments non-current liability and $0.4 million is recorded in fair value of derivative financial instruments - current liability in the accompanying consolidated balance sheet. As of December 31, 2017, the fair value of the Warrants was $159.1 million which is recorded in fair value of derivative financial instruments - non-current liability, in the accompanying consolidated balance sheet. For the years ended December 31, 2018 and 2017, the change in the fair value of the Warrants resulted in a gain of $65.7 million and a loss of $40.8 million, respectively, which are recognized in other financial income (expense), net in the accompanying consolidated statements of income.

***Cash Convertible Notes Embedded Cash Conversion Option***

The embedded cash conversion options within the Cash Convertible Notes are required to be separated from the Cash Convertible Notes and accounted for separately as a derivative liability, with changes in fair value reported in our consolidated statements of income in other financial expense, net until the cash conversion option settles or expires. For further discussion of the Cash Convertible Notes, refer to Note 15 "Financial Debts". The initial fair value liability of the embedded cash conversion option for the 2019 and 2021 Notes was $105.2 million , for the 2023 Notes was $74.5 million and for the 2024 Notes was $98.5 million, which simultaneously reduced the carrying values of the Cash Convertible Notes (effectively an original issuance discount). The embedded cash conversion option is measured and reported at fair value on a recurring basis, within Level 2 of the fair value hierarchy. For further discussion of the inputs used to determine the fair value of the embedded cash conversion option, refer to Note 24 "Fair Value Measurements". The fair value of the embedded cash conversion option at December 31, 2018 was approximately $399.3 million, of which $100.2 million is recorded in fair value of derivative instruments - current liability and $299.1 million is recorded in fair value of derivative instruments - non-current liability in the accompanying balance sheet. The fair value of the embedded cash conversion option at December 31, 2017 was approximately $224.3 million which is recorded in fair value of derivative instruments - non-current liability in the accompanying balance sheet. For the year ended December 31, 2018 and 2017, the change in the fair value of the embedded cash conversion option resulted in losses of $76.5 million and $36.7 million, respectively, recognized in other financial income (expense), net.

***Embedded Conversion Option***

During 2017, we purchased a convertible note for $3.0 million from a publicly listed company considered a related party. The embedded derivative, that is bifurcated and measured at fair value, associated to a convertible feature of this note had a fair value of $0.3 million and $0.2 million as of December 31, 2018 and 2017, respectively, included in fair value of derivative instruments - non-current asset.

***Foreign Currency Derivatives***

As a globally active enterprise, we are subject to risks associated with fluctuations in foreign currencies in our ordinary operations. This includes foreign currency-denominated receivables, payables, debt, and other balance sheet positions including

intercompany items. We manage balance sheet exposure on a group-wide basis using foreign exchange forward contracts, foreign exchange options and cross-currency swaps.

We are party to various foreign exchange forward, option and swap arrangements which had, at December 31, 2018, an aggregate notional value of $792.7 million and fair value of $2.7 million included in fair value of derivative instruments - current asset and $6.0 million included in fair value of derivative instruments - current liability, respectively, which expire at various dates through November 2019.

We were party to various foreign exchange forward and swap arrangements which had, at December 31, 2017, an aggregate notional value of $587.3 million and fair values of $7.5 million and $2.4 million included in fair value of derivative instruments - current asset and fair value of derivative instruments - current liability, respectively, and which expired at various dates through March 2018. The transactions have been entered into to offset the effects from short-term balance sheet exposure to foreign currency exchange risk. Changes in the fair value of these arrangements have been recognized in other financial expense, net.

**Fair Values of Derivative Instruments**

The following table summarizes the fair value amounts of derivative instruments reported in the consolidated balance sheets as of December 31, 2018 and 2017:

| | Derivatives in Asset Positions Fair value | | Derivatives in Liability Positions Fair value | |
|---|---|---|---|---|
| **(in thousands)** | **12/31/2018** | **12/31/2017** | **12/31/2018** | **12/31/2017** |
| **Derivative instruments designated as hedges** | | | | |
| Interest rate contracts[(1)] | **$ —** | $ 1,017 | **$ (18,768)** | $ (29,103) |
| Total derivative instruments designated as hedges | **$ —** | $ 1,017 | **$ (18,768)** | $ (29,103) |
| **Undesignated derivative instruments** | | | | |
| Embedded conversion option | **$ 349** | $ 217 | **$ —** | $ — |
| Call spread overlay | **395,095** | 223,164 | **(399,262)** | (224,286) |
| Cash conversion options | **—** | — | **(297,240)** | (159,147) |
| Foreign exchange contracts | **2,673** | 7,480 | **(5,957)** | (2,424) |
| Total undesignated derivative instruments | **$ 398,117** | $ 230,861 | **$ (702,459)** | $ (385,857) |

[(1)] The fair value amounts for the interest rate contracts do not include accrued interest of $1.4 million and $1.6 million included in other current assets in the consolidated balance sheets as of December 31, 2018 and 2017, respectively.

**Gains and Losses on Derivative Instruments**

The following tables summarize the classification and gains and losses on derivative instruments for the years ended December 31, 2018 and 2017:

| Year-Ended December 31, 2018 (in thousands) | Gain (loss) recognized in equity | Location of (gain) loss in income statement | (Gain) loss reclassified from equity into income | Gain (loss) recognized in income |
|---|---|---|---|---|
| **Non-derivative instruments** | | | | |
| Net investment hedge | $ 13,839 | Other financial expense, net | — | n/a |
| **Derivative instruments designated as hedges** | | | | |
| Interest rate contracts | $ 11,368 | Other financial expense, net | $ (9,774) | n/a |
| **Undesignated derivative instruments** | | | | |
| Interest rate contracts | n/a | Other financial expense, net | n/a | $ (2,051) |
| Call spread overlay | n/a | Other financial expense, net | n/a | (1,818) |
| Cash conversion option | n/a | Other financial expense, net | n/a | (65,660) |
| Foreign exchange contracts | n/a | Foreign currency losses, net | n/a | (19,857) |
| | | | | **$ (89,386)** |

| Year-Ended December 31, 2017 (in thousands) | Gain (loss) recognized in equity | Location of (gain) loss in income statement | (Gain) loss reclassified from equity into income | Gain (loss) recognized in income |
|---|---|---|---|---|
| **Non-derivative instruments** | | | | |
| Net investment hedge | $ (19,757) | Other financial expense, net | — | n/a |
| **Derivative instruments designated as hedges** | | | | |
| Interest rate contracts | $ (30,310) | Other financial expense, net | $ 26,136 | n/a |
| **Undesignated derivative instruments** | | | | |
| Interest rate contracts | n/a | Other financial expense, net | n/a | $ (2,199) |
| Call spread overlay | n/a | Other financial expense, net | n/a | 673 |
| Cash conversion option | n/a | Other financial expense, net | n/a | 40,779 |
| Foreign exchange contracts | n/a | Foreign currency losses, net | n/a | 11,813 |
| | | | | $ 51,066 |

## 26. Additional Information for Financial Instruments

The tables below present the carrying amounts, fair values and measurements in accordance with IFRS 9 and IAS 39 as of December 31, 2018 and 2017, respectively.

| December 31, 2018 (US$ thousands) | IFRS 9 Category | Total Carrying Amount | Amortized Cost | Cost | At Fair Value |
|---|---|---|---|---|---|
| **Assets** | | | | | |
| Cash and cash equivalents | AC | 1,159,079 | 1,159,079 | — | — |
| Financial assets | FVTPL | 296,207 | — | — | 296,207 |
| Trade accounts receivable | AC | 351,612 | 351,612 | — | — |
| Derivatives designated as hedges | N/A | — | — | — | — |
| Undesignated derivatives | FVTPL | 398,117 | — | — | 398,117 |
| **Liabilities** | | | | | |
| Financial debts | FLAC | (2,175,400) | (2,175,400) | — | (2,523,468) |
| Finance lease obligations | N/A | (83) | (83) | — | — |
| Trade accounts payable | FLAC | (69,415) | (69,415) | — | — |
| Derivatives in effective hedges | N/A | (18,768) | — | — | (18,768) |
| Undesignated derivatives | FVTPL | (702,459) | — | — | (702,459) |
| Contingent consideration | FVTPL | (48,971) | | — | (48,971) |
| **Aggregated by category** | | | | | |
| Financial Assets measured at Amortized Cost (AC) | | 1,510,691 | 1,510,691 | — | — |
| Financial Liabilities measured at Amortized Cost (FLAC) | | (2,244,815) | (2,244,815) | — | (2,523,468) |
| Instruments at fair value through profit or loss (FVTPL) | | (57,106) | — | — | (57,106) |

| December 31, 2017 (US$ thousands) | IAS 39 Category | Total Carrying Amount | Amortized Cost | Cost | At Fair Value |
|---|---|---|---|---|---|
| **Assets** | | | | | |
| Cash and cash equivalents | LaR | 657,714 | 657,714 | — | — |
| Available-for-sale assets | AfS | 396,011 | — | 33,605 | 362,406 |
| Trade accounts receivable | LaR | 329,138 | 329,138 | — | — |
| Derivatives designated as hedges | N/A | 1,206 | — | — | 1,206 |
| Undesignated derivatives | FVTPL | 232,008 | — | — | 232,008 |
| **Liabilities** | | | | | |
| Financial debts | FLAC | (1,757,402) | (1,757,402) | — | (2,014,258) |
| Finance lease obligations | N/A | (1,416) | (1,416) | — | — |
| Trade accounts payable | FLAC | (59,205) | (59,205) | — | — |
| Derivatives in effective hedges | N/A | (28,942) | — | — | (28,942) |
| Undesignated derivatives | FVTPL | (386,018) | — | — | (386,018) |
| Contingent consideration | FVTPL | (11,539) | — | — | (11,539) |
| **Aggregated by category** | | | | | |
| Loans and receivables (LaR) | | 986,852 | 986,852 | — | — |
| Available-for-sale financial assets (AfS) | | 396,011 | — | 33,605 | 362,406 |
| Financial liabilities measured at amortized cost (FLAC) | | (3,830,865) | (1,816,607) | — | (2,014,258) |
| Instruments at fair value through profit or loss (FVTPL) | | (165,549) | — | — | (165,549) |

As of December 31, 2018 and 2017, fair values of financial debts amount to $2.5 billion and $2.0 billion, respectively. The carrying amounts of all other financial assets and financial liabilities approximate their fair values.

As of December 31, 2018 and 2017, there are no significant concentrations of risks arising from financial instruments.

The table below presents the carrying amounts of financial instruments and their fair values as of December 31, 2018 and 2017:

| (in US$ thousands) | December 31, 2018 Carrying Amount | December 31, 2018 Fair Value | December 31, 2017 Carrying Amount | December 31, 2017 Fair Value |
|---|---|---|---|---|
| **Financial assets** | | | | |
| Cash and cash equivalents | **1,159,079** | **1,159,079** | 657,714 | 657,714 |
| Financial assets | **296,557** | **296,557** | 396,011 | 396,011 |
| Trade accounts receivable | **351,612** | **351,612** | 329,138 | 329,138 |
| Derivatives designated as hedges | **—** | **—** | 1,206 | 1,206 |
| Derivatives measured at fair value through profit or loss | **398,117** | **398,117** | 232,008 | 232,008 |
| **Financial liabilities** | | | | |
| Financial debts | **(2,175,400)** | **(2,523,468)** | (1,757,402) | (2,014,258) |
| Finance lease obligations | **(83)** | **(83)** | (1,416) | (1,416) |
| Trade accounts payable | **(69,415)** | **(69,415)** | (59,205) | (59,205) |
| Contingent consideration | **(48,971)** | **(48,971)** | (11,539) | (11,539) |
| Derivatives in effective hedges | **(18,768)** | **—** | (28,942) | — |
| Instruments measured at fair value through profit or loss | **(702,459)** | **(702,459)** | (386,018) | (386,018) |

*Net Results by Category*

| **December 31, 2018** | | Subsequent Measurement | | | |
|---|---|---|---|---|---|
| **(in thousands)** | **From interest** | **At fair value** | **Allowances / Impairments** | **De-recognition** | **Net result** |
| Loans and receivables (LaR) | $ 15,061 | — | — | — | $ 15,061 |
| Financial assets | — | (147) | — | — | (147) |
| Financial liabilities measured at amortized cost (FLAC) | (62,766) | — | — | — | (62,766) |
| **Net result** | **$ (47,705)** | **$ (147)** | **$ —** | **$ —** | **$ (47,852)** |

Interest from financial instruments is recognized in financial expense.

The Company recognizes the other components of net gain/loss in other financial income/expense, except for impairments of trade receivables that are classified as “loans and receivables” which are reported under general and administrative, restructuring, integration and other expense.

The information for the comparative period is provided below:

| **December 31, 2017** | | Subsequent Measurement | | | |
|---|---|---|---|---|---|
| **(in thousands)** | **From interest** | **At fair value** | **Allowances / Impairments** | **De-recognition** | **Net result** |
| Loans and receivables (LaR) | $ 6,194 | — | — | — | $ 6,194 |
| Available-for-sale financial assets (AfS) | — | (855) | (5,137) | — | (5,992) |
| Financial liabilities measured at amortized cost (FLAC) | (45,141) | — | — | — | (45,141) |
| **Net result** | $ (38,947) | $ (855) | $ (5,137) | $ — | $ (44,939) |

## 27. Capital Management

The primary objectives of the Group's capital management are to safeguard the Group's ability to continue as a going concern and to ensure financial flexibility to execute the Group's strategic growth targets. We regularly review our capital structure to ensure a low cost of capital to enhance shareholder value. The Group's overall strategy remains unchanged from 2017 and we are not subject to any externally imposed capital requirements. All common shares issued are fully paid.

In November 2018, we issued $500.0 million aggregate principal amount of Cash Convertible Senior Notes which is due in 2024 (2024 Notes). The net proceeds of the 2024 Notes were $470.0 million, after payment of the net cost of the Call Spread Overlay described below and transaction costs paid through December 31, 2018.

In January 2017, we completed a capital repayment program through a synthetic share repurchase program that combined a direct capital repayment with a reverse stock split as discussed in Note 17 "Equity". During 2017, 1.9 million QIAGEN shares were repurchased for $61.0 million (including transaction costs) and on January 31, 2018, we announced our fifth share repurchase program of up to $200 million of our common shares.

In 2017, we completed a German private placement bond ("Schuldschein") which was issued in several tranches totaling $331.1 million due in various periods through 2027. Additionally in 2017, we issued $400.0 million aggregate principal amount of Cash Convertible Senior Notes which is due in 2023 (2023 Notes). The net proceeds of the 2023 Notes were $365.6 million, after payment of the net cost of the Call Spread Overlay described below and transaction costs paid through December 31, 2018.

An important indicator of capital management efforts is the ratio of shareholders' equity compared to total assets as shown in the consolidated statement of financial position:

| (in thousands, except of ratio) | 2018 | 2017 |
|---|---|---|
| Shareholders' equity attributable to equity holders of the parent | **$ 2,378,815** | $ 2,426,410 |
| Total Assets | **$ 5,797,817** | $ 5,085,112 |
| Shareholders' equity ratio in % | **41%** | 48% |

Total financial debt consists of cash convertible notes and private placements as discussed in Note 15 "Financial Debts". The changes in financial debts reconciled to the cash flows arising from financing activities as follows:

**Reconciliation of Liabilities Arising from Financing Activities**

Total financial debt consists of cash convertible notes and private placements as discussed in Note 15. The changes in financial debts reconciled to the cash flows arising from financing activities as follows:

| (in thousands) | 12/31/2017 | Cash flows | Amortization of debt discount and issuance costs [1] | Embedded derivative | Foreign currency and other[2] | 12/31/2018 |
|---|---|---|---|---|---|---|
| Cash convertible notes | $1,008,507 | $ 494,879 | $ 35,599 | $ (98,475) | $ (579) | **$1,439,931** |
| Private Placement | 399,083 | — | 218 | — | — | **399,301** |
| German Private Placement (Schuldschein) | 349,812 | — | 195 | — | (13,839) | **336,168** |
| Total non-current debt | 1,757,402 | 494,879 | 36,012 | (98,475) | (14,418) | **2,175,400** |
| Finance leases | 1,416 | (1,308) | — | — | (25) | **83** |
| Total liabilities from financing activities | $1,758,818 | $ 493,571 | $ 36,012 | $ (98,475) | $ (14,443) | **$2,175,483** |

| (in thousands) | 12/31/2016 | Cash flows | Amortization of debt discount and issuance costs [1] | Embedded derivative | Foreign currency and other[3] | 12/31/2017 |
|---|---|---|---|---|---|---|
| Cash convertible notes | $ 665,176 | $ 394,391 | $ 23,992 | $ (74,500) | $ (552) | $1,008,507 |
| Private Placement | 398,865 | — | 218 | — | — | 399,083 |
| German Private Placement (Schuldschein) | — | 329,875 | 180 | | 19,757 | 349,812 |
| Total non-current debt | 1,064,041 | 724,266 | 24,390 | (74,500) | 19,205 | 1,757,402 |
| Finance leases | 2,555 | (1,402) | — | — | 263 | 1,416 |
| Total liabilities from financing activities | $1,066,596 | $ 722,864 | $ 24,390 | $ (74,500) | $ 19,468 | $1,758,818 |

[1] Total amortization of debt discount and issuance costs for the years ended December 31, 2018 and 2017 totaled $36.4 million and $24.8 million, respectively which included costs related to the syndicated multi-currency revolving credit facility expiring December 2021 of which no amounts were utilized at December 31, 2018 or at 2017.

[2] For the year ended December 31, 2018, the Cash Convertible Notes are net of debt issuance costs, of which $0.6 million were unpaid as of year-end and the German Private Placement experienced unrealized foreign currency gains totaling $13.8 million. Finance leases for the years ended December 31, 2018 included non-cash charges of less than $0.1 million of foreign currency impacts.

[3] For the year ended December 31, 2017, the Cash Convertible Notes are net of debt issuance costs, of which $0.6 million were unpaid as of year-end and the German Private Placement experienced unrealized foreign currency losses totaling $19.8

million. Finance leases for the year end included non-cash charges $0.3 million which include non-cash additions and foreign currency impacts.

**28. Subsequent Events**

Events that occurred after the balance sheet date that provide no information on the actual situation at the balance sheet date are not recognized in the financial statements. When those events are relevant for the economic decisions of users of the financial statements, the nature and the estimated financial effects of the events are disclosed in the financial statements.

On January 7, 2019, we announced the acquisition of N-of-One, Inc, a privately-held U.S. molecular decision support company and pioneer in clinical interpretation services for complex genomic data. The cash consideration totaled approximately $26.0 million. The acquisition included contingent consideration which is recorded as part of the purchase price based on the acquisition date fair value. The addition of N-of-One will enable QIAGEN to significantly expand its decision-support solutions while offering a broader range of software, content and service-based solutions. It will also enable QIAGEN to provide customers with greater access to valuable genomic data assets and service offerings. N-of-One is not expected to provide a significant contribution to our results in 2019.

January 31, 2019, we acquired the digital PCR assets of Formulatrix, Inc., a developer of laboratory automation solutions. Combining the Formulatrix assets with QIAGEN technologies and automation, we expect to bring to market a fully integrated digital PCR solution with a targeted launch in 2020. We agreed to pay Formulatrix $125.0 million in cash upon closing and future milestone payments of $135.9 million in 2020.

**29. Consolidated Companies**

The following is a list of the Company's subsidiaries as of December 31, 2018, other than certain subsidiaries that did not in the aggregate constitute a significant subsidiary:

| Company Name | Jurisdiction of Incorporation |
|---|---|
| Amnisure International, LLC | USA |
| Cellestis Pty. Ltd. | Australia |
| QIAGEN Aarhus A/S | Denmark |
| QIAGEN AB | Sweden |
| QIAGEN AG | Switzerland |
| QIAGEN Australia Holding Pty. Ltd. | Australia |
| QIAGEN Benelux B.V. | Netherlands |
| QIAGEN Beverly, LLC | USA |
| QIAGEN China (Shanghai) Co. Ltd. | China |
| QIAGEN Deutschland Finance Holding (Luxembourg) SARL | Luxembourg |
| QIAGEN Deutschland Holding GmbH | Germany |
| QIAGEN Finance (Ireland) Ltd. | Ireland |
| QIAGEN Finance (Malta) Ltd. | Malta |
| QIAGEN France S.A.S. | France |
| QIAGEN Gaithersburg, LLC | USA |
| QIAGEN GmbH | Germany |
| QIAGEN Hamburg GmbH | Germany |
| QIAGEN Inc. (Canada) | Canada |
| QIAGEN Instruments AG | Switzerland |
| QIAGEN K.K. | Japan |
| QIAGEN Lake Constance GmbH | Germany |
| QIAGEN, LLC | USA |
| QIAGEN Ltd. | UK |
| QIAGEN Manchester Ltd. | UK |
| QIAGEN Marseille SA | France |
| QIAGEN North American Holdings Inc. | USA |
| QIAGEN Pty. Ltd. | Australia |
| QIAGEN Redwood City, Inc. | USA |
| QIAGEN Sciences, LLC | USA |
| QIAGEN S.r.l. | Italy |
| QIAGEN U.S. Finance Holdings (Luxembourg) SARL | Luxembourg |
| QIAGEN U.S. Finance, Inc. | USA |

**30. Fees Paid to External Auditors**

At our 2018 Annual General Meeting of Shareholders on June 19, 2018, our shareholders appointed KPMG Accountants N.V. to serve as our external auditor for our statutory consolidated financial statements prepared in accordance with International Financial Reporting Standards for the year ended December 31, 2018. Set forth below are the total fees billed (or expected to be billed), on a consolidated basis, by the independent public accounting firm or their affiliates for providing audit and other professional services in each of the last two years:

| (in thousands) | 2018 | | 2017 | |
|---|---|---|---|---|
| | KPMG Network | KPMG Accountants N.V. | KPMG Network | KPMG Accountants N.V. |
| Audit fees | **2,555** | **219** | 1,840 | 108 |
| Audit related fees | **324** | **—** | 450 | — |
| Tax and all other fees | **93** | **—** | 35 | — |
| **Service fees to external auditors** | **$ 2,972** | **$ 219** | $ 2,325 | $ 108 |

Audit fees consist of fees and expenses billed for the annual audit and quarterly review of QIAGEN's consolidated financial statements. They also include fees billed for other audit services, which are those services that only the statutory auditor can provide.

Audit-related fees consist of fees and expenses billed for assurance and related services that are related to the performance of the audit or review of QIAGEN's financial statements and include consultations concerning financial accounting and reporting standards and review of the opening balance sheets of newly acquired companies.

Tax fees include fees and expenses billed for tax compliance services, including assistance on the preparation of tax returns and claims for refund; tax consultations, such as assistance and representation in connection with tax audits and appeals. All other fees include various fees and expenses billed for services as approved by the Audit Committee.

# QIAGEN N.V.

# COMPANY FINANCIAL STATEMENTS

**QIAGEN N.V.**

**COMPANY FINANCIAL STATEMENTS**

**BALANCE SHEETS**
**(before profit appropriation)**
**(in thousands)**

| | Note | December 31, 2018 | December 31, 2017 |
|---|---|---|---|
| **Assets** | | | |
| Fixed assets: | | | |
| Intangible fixed assets: | | | |
| Goodwill | (3) | **$ 307,116** | $ 194,126 |
| Other intangible assets | (2) | **1** | 66 |
| Tangible fixed assets: | | | |
| Property, plant and equipment | (4) | **938** | 1,123 |
| Financial fixed assets: | | | |
| Non-current financial assets | (5) | **23,592** | 9,814 |
| Financial fixed assets | (6) | **3,411,757** | 3,496,959 |
| Fair value of derivative financial instruments | (11) | **295,015** | 224,181 |
| Other fixed assets | | **2,027** | 5,197 |
| **Total fixed assets** | | **4,040,446** | 3,931,466 |
| Current assets: | | | |
| Trade and other receivables: | | | |
| Receivables from group companies | | **624,882** | 729,430 |
| Prepaid and other current assets | | **31,620** | 28,432 |
| Securities: | | | |
| Current financial assets | (5) | **214,568** | 359,198 |
| Fair value of derivative financial instruments | (11) | **102,754** | 7,480 |
| Cash and cash equivalents: | | | |
| Cash and cash equivalents | | **1,032,716** | 273,198 |
| **Total current assets** | | **2,006,540** | 1,397,738 |
| **Total assets** | | **6,046,986** | 5,329,204 |
| **Liabilities and equity** | | | |
| Shareholders' equity: | | | |
| Common shares | (8) | **2,727** | 2,606 |
| Share premium | (10) | **1,727,922** | 1,687,564 |
| Legal reserves | (10) | **(270,322)** | (174,384) |
| Other reserves | (10) | **(124)** | (1,820) |
| Treasury shares | | **(178,903)** | (118,987) |
| Retained earnings | | **992,621** | 964,053 |
| Net income for the period | | **104,894** | 67,378 |
| **Total shareholders' equity** | | **2,378,815** | 2,426,410 |
| Non-current liabilities: | | | |
| Non-current financial debts | (7) | **1,671,811** | 1,757,402 |
| Deferred tax liabilities | | **1,200** | 799 |
| Fair value of derivative financial instruments | (11) | **614,200** | 412,536 |
| Other non-current liabilities | | **14,431** | — |
| **Total non-current liabilities** | | **2,301,642** | 2,170,737 |
| Current liabilities: | | | |
| Current portion of non-current financial debts | (7) | **503,589** | — |
| Accounts payable trade | | **1,839** | 1,984 |
| Payables to group companies | | **717,430** | 712,122 |
| Fair value of derivative financial instruments | (11) | **107,027** | 2,424 |
| Accrued liabilities | | **36,644** | 15,527 |
| **Total current liabilities** | | **1,366,529** | 732,057 |
| **Total liabilities and shareholders' equity** | | **$ 6,046,986** | $ 5,329,204 |

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

**QIAGEN N.V.**

**COMPANY FINANCIAL STATEMENTS**

**INCOME STATEMENTS**
**(in thousands)**

| | Note | Years ended December 31, 2018 | 2017 |
|---|---|---|---|
| Other expense | | **$ (47)** | $ (115) |
| Operating expenses: | | | |
| Sales and marketing expense | | **(352)** | (584) |
| General and administrative, restructuring, integration and other expense | | **(11,146)** | (19,828) |
| Other operating income | | **352** | 179 |
| **Total operating expenses, net** | | **(11,146)** | (20,233) |
| **Loss from operations** | | **(11,193)** | (20,348) |
| Financial income | | **17,545** | 8,672 |
| Financial expense | (7) | **(64,504)** | (45,195) |
| Other financial (expense) income, net | (11) | **(106,706)** | 39,840 |
| **Total finance (expense) income, net** | | **(153,665)** | 3,317 |
| **Loss before income taxes** | | **(164,858)** | (17,031) |
| Income taxes | | **(2,598)** | 48 |
| **Loss after income tax** | | **(167,456)** | (16,983) |
| Results related to subsidiaries, after tax | | **272,350** | 84,361 |
| **Net income for the period** | | **$ 104,894** | $ 67,378 |

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

## QIAGEN N.V.

## COMPANY FINANCIAL STATEMENTS

## STATEMENTS OF CHANGES IN EQUITY
## (in thousands)

| | Common shares | | Share premium | Retained earnings | Net Income | Legal reserves | Other reserves | Treasury shares | | Total shareholders' equity |
|---|---|---|---|---|---|---|---|---|---|---|
| | Shares | Amount | | | | | | Shares | Amount | |
| **Balance at January 1, 2017** | **239,707** | **$ 2,653** | **$1,897,399** | **$ 969,788** | **$ 49,378** | **$(287,733)** | **$ (1,654)** | **(5,147)** | **$(120,006)** | **$ 2,509,825** |
| Appropriation of prior year net income | — | — | — | 49,378 | (49,378) | — | — | — | — | — |
| Net income for the period | — | — | — | — | 67,378 | — | — | — | — | 67,378 |
| Capital repayment | (8,878) | (110) | (244,319) | — | — | — | — | 191 | — | (244,429) |
| Effect from capitalized development costs | — | — | — | 862 | — | (862) | — | — | — | — |
| Effect from foreign currency translation | — | 63 | — | (63) | — | 137,098 | — | — | — | 137,098 |
| Effect from cash flow hedge | — | — | — | — | — | (22,887) | — | — | — | (22,887) |
| Effect from available-for-sale financial asset | — | — | — | — | — | — | (786) | — | — | (786) |
| Effect from pension reserve | — | — | — | — | — | — | 620 | — | — | 620 |
| Purchase of treasury shares | — | — | — | — | — | — | — | (1,909) | (60,970) | (60,970) |
| Stock awards and options | — | — | 34,484 | (55,912) | — | — | — | 2,593 | 61,989 | 40,561 |
| **Balance at December 31, 2017** | **230,829** | **$ 2,606** | **$1,687,564** | **$ 964,053** | **$ 67,378** | **$(174,384)** | **$ (1,820)** | **(4,272)** | **$(118,987)** | **$ 2,426,410** |

| | Note | Common shares | | Share premium | Retained earnings | Net income | Legal reserves | Other reserves | Treasury shares | | Total shareholders' equity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Shares | Amount | | | | | | Shares | Amount | |
| Balance at January 1, 2018, as previously reported | | **230,829** | **2,606** | **1,687,564** | **964,053** | **67,378** | **(174,384)** | **(1,820)** | **(4,272)** | **(118,987)** | **2,426,410** |
| IFRS 9 impact of change in accounting policy | | — | — | — | **(942)** | — | — | **942** | — | — | — |
| IFRS 15 impact of change in accounting policy | | — | — | — | **(1,306)** | — | — | — | — | — | **(1,306)** |
| Adjusted balance at January 1, 2018 | | **230,829** | **$ 2,606** | **$1,687,564** | **$ 961,805** | **$ 67,378** | **$(174,384)** | **$ (878)** | **(4,272)** | **$(118,987)** | **$ 2,425,104** |
| Appropriation of prior year net income | | — | — | — | 67,378 | (67,378) | — | — | — | — | — |
| Net income for the period | | — | — | — | — | 104,894 | — | — | — | — | 104,894 |
| Effect from capitalized development costs | **(10)** | — | — | — | 3,916 | — | (3,916) | — | — | — | — |
| Effect from foreign currency translation | **(10)** | — | 121 | — | (121) | — | (107,056) | — | — | — | (107,056) |
| Effect from cash flow hedge | | — | — | — | — | — | 15,034 | — | — | — | 15,034 |
| Effect from pension reserve | | — | — | — | — | — | — | 754 | — | — | 754 |
| Purchase of treasury shares | | — | — | — | — | — | — | — | (2,871) | (104,685) | (104,685) |
| Stock awards and options | | — | — | 40,358 | (40,357) | — | — | — | 1,823 | 44,769 | 44,770 |
| **Balance at December 31, 2018** | | **230,829** | **$ 2,727** | **$1,727,922** | **$ 992,621** | **$104,894** | **$(270,322)** | **$ (124)** | **(5,320)** | **$(178,903)** | **$ 2,378,815** |

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

**QIAGEN N.V.**

**NOTES TO THE COMPANY FINANCIAL STATEMENTS**

**FOR THE YEAR ENDED DECEMBER 31, 2018**

## 1. Accounting Policies

The financial statements of QIAGEN N.V. (the 'Company') included in this section are prepared in accordance with IFRS accounting principles as used in the QIAGEN N.V. Consolidated (the 'Consolidated') Financial Statements, considering the provisions of section 362 of Book 2 of the Netherlands Civil Code.

Subsidiaries are accounted for using the net equity value in these Company financial statements.

## 2. Other Intangible Assets

Intangible assets represent developed technology, computer software, patent rights and licenses. There were no additions to intangible assets during the years ended December 31, 2018 and 2017. As of December 31, 2018, the historic cost of intangibles assets $8.1 million (2017: $8.1 million) and accumulated amortization amounted to $8.1 million (2017: $8.0 million). Amortization expense on intangible assets during the year ended December 31, 2018 was $0.1 million (2017: $0.1 million).

## 3. Goodwill

The changes in the carrying amount of goodwill for the years ended December 31, 2018 and 2017 are as follows:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Goodwill as at January 1st | **$ 194,126** | $ 62,437 |
| Goodwill acquired during the year | **117,621** | — |
| Goodwill transferred from (to) indirectly owned Group companies | **6,780** | 119,227 |
| Currency adjustments | **(11,411)** | 12,462 |
| Goodwill as at December 31st | **$ 307,116** | $ 194,126 |

In 2018, the changes in goodwill resulted from goodwill acquired during the year and transferred from indirectly owned Group companies partially offset by foreign currency translation. In 2017, the changes in goodwill resulted from goodwill transferred from indirectly owned Group companies and foreign currency translation.

## 4. Property, Plant and Equipment

The changes in property, plant and equipment for the years ended December 31, 2018 and 2017 are as follows:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Property. plant and equipment as at January 1st | **$ 1,123** | $ 1,300 |
| Additions | **27** | 35 |
| Depreciation | **(212)** | (212) |
| Property, plant and equipment as at December 31st | **$ 938** | $ 1,123 |

The historic cost as of December 31, 2018 and 2017 for property, plant and equipment was $1.8 million and $1.8 million, respectively. As of December 31, 2018 and 2017, accumulated amortization was $0.9 million and $0.7 million, respectively.

## 5. Financial Assets

At December 31, 2018, the Company had investments in unquoted debt securities which had a fair market value and cost of approximately $234.3 million (2017: $359.2 million). At December 31, 2018, the Company holds investments of $3.6 million for noncontrolling interests in privately-held companies which are considered unquoted equity securities (2017: $8.3 million). At December 31, 2018, the Company holds an investment of $0.4 million for noncontrolling interests in a publicly-held company which is classified as quoted equity securities (2017: $1.5 million). Information on the accounting for these financial assets is provided in Note 7 "Financial Assets" to the Consolidated Financial Statements of the Group.

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Unquoted equity securities | **$ 3,554** | $ 8,298 |
| Quoted equity securities | **350** | 1,516 |
| Unquoted debt securities | **234,256** | 359,198 |
| **Financial assets** | **$ 238,160** | $ 369,012 |
| thereof current financial assets | **$ 214,568** | $ 359,198 |
| thereof non-current financial assets | **$ 23,592** | $ 9,814 |

## 6. Financial Fixed Assets

The financial fixed assets are presented in the statements of financial position based on either their net asset value in accordance with the aforementioned accounting principles of the Consolidated Financial Statements, or at amortized cost. There are no indications the fair value of the financial assets are lower than the values as presented in the statements of financial position as of December 31, 2018.

| (in thousands) | Total | Investments in subsidiaries | Participation interest | Loans receivable |
|---|---|---|---|---|
| **January 1, 2017** | **$ 3,204,976** | **$ 2,401,713** | **$ 2,444** | **$ 800,819** |
| Increases | 802,690 | 320,379 | 4,000 | 478,311 |
| Decreases | (445,041) | — | — | (445,041) |
| Dividends received | (65,273) | (65,273) | — | — |
| Share of net profit | (393) | (46) | (347) | — |
| **December 31, 2017** | **$ 3,496,959** | **$ 2,656,773** | **$ 6,097** | **$ 834,089** |

| (in thousands) | Total | Investments in subsidiaries | Participation interest | Loans receivable |
|---|---|---|---|---|
| **January 1, 2018** | **$ 3,496,959** | **$ 2,656,773** | **$ 6,097** | **$ 834,089** |
| Increases | 269,273 | 217,267 | 3,970 | 48,036 |
| Decreases | (203,525) | — | (2,539) | (200,986) |
| Dividends received | (150,410) | (150,410) | — | — |
| Share of net profit | (620) | 59 | (679) | — |
| Translation adjustments | 80 | — | — | 80 |
| **December 31, 2018** | **$ 3,411,757** | **$ 2,723,689** | **$ 6,849** | **$ 681,219** |

## 7. Financial Debts

Information on the financial debts of $706.9 million related to the Cash Convertible Notes due in 2019 and 2021, $335.2 million related to the Cash Convertible Notes due in 2023, $397.8 million related to the Cash Convertible Notes due in 2024, $399.3 million related to the Private Placement and $336.2 million related to the German private placement bond ("Schuldschein") are provided under Note 15 "Financial Debts" to the Consolidated Financial Statements of the Group. Our revolving facility agreement and private placement contains certain financial and non-financial covenants, including but not limited to, restrictions on the encumbrance of assets, restrictions on priority indebtedness and maintenance of certain financial ratios. We were in compliance with these covenants at December 31, 2018.

Of the total $2.2 billion financial debts as of December 31, 2018, $503.6 million is included in current liabilities and $1.7 billion is included in non-current liabilities in the accompanying balance sheet of QIAGEN N.V. During the years ended December 31, 2018 and 2017, financial expense of $64.5 million and $45.2 million, respectively, is included in the accompanying income statement of QIAGEN N.V. and is primarily associated with these financial debts.

## 8. Common Shares

The authorized classes of our shares consist of Common Shares, Preference Shares and Financing Preference Shares. No Financing Preference Shares or Preference Shares have been issued. The Company had the following authorized shares issued and outstanding as of December 31, 2018 and 2017:

| **Authorized,** (in thousands) | **2018** | **2017** |
|---|---|---|
| Common shares | 410,000 | 410,000 |
| Preference shares | 450,000 | 450,000 |
| Financing preference shares | 40,000 | 40,000 |
| **At December 31st** | **900,000** | **900,000** |

| **Issued and outstanding,** (in thousands) | **2018** | **2017** |
|---|---|---|
| Common shares issued | 230,829 | 230,829 |
| Treasury shares | (5,320) | (4,272) |
| **Outstanding at December 31st** | **225,509** | **226,557** |

| **Par value in EUR per share** | **2018** | **2017** |
|---|---|---|
| Common shares | 0.01 | 0.01 |
| Preference shares | 0.01 | 0.01 |
| Financing preference shares | 0.01 | 0.01 |

| **Par value (in thousands)** | **2018** | **2017** |
|---|---|---|
| Common shares issued at December 31st in EUR | 2,308 | 2,308 |
| Common shares issued at December 31st in USD | 2,727 | 2,606 |

## 9. Subsidiaries

The following is a list of the Company's subsidiaries as of December 31, 2018, other than certain subsidiaries that did not in the aggregate constitute a significant subsidiary:

| Company Name | Jurisdiction of Incorporation | Ownership | Voting Rights |
|---|---|---|---|
| Amnisure International, LLC | USA | 100% | 100% |
| Cellestis Pty. Ltd. | Australia | 100% | 100% |
| QIAGEN Aarhus A/S | Denmark | 100% | 100% |
| QIAGEN AB | Sweden | 100% | 100% |
| QIAGEN AG | Switzerland | 100% | 100% |
| QIAGEN Australia Holding Pty. Ltd. | Australia | 100% | 100% |
| QIAGEN Benelux B.V. | Netherlands | 100% | 100% |
| QIAGEN Beverly, LLC | USA | 100% | 100% |
| QIAGEN China (Shanghai) Co. Ltd. | China | 100% | 100% |
| QIAGEN Deutschland Finance Holding (Luxembourg) SARL | Luxembourg | 100% | 100% |
| QIAGEN Deutschland Holding GmbH | Germany | 100% | 100% |
| QIAGEN Finance (Ireland) Ltd. | Ireland | 100% | 100% |
| QIAGEN Finance (Malta) Ltd. | Malta | 100% | 100% |
| QIAGEN France S.A.S. | France | 100% | 100% |
| QIAGEN Gaithersburg, LLC | USA | 100% | 100% |
| QIAGEN GmbH | Germany | 100% | 100% |
| QIAGEN Hamburg GmbH | Germany | 100% | 100% |
| QIAGEN Inc. (Canada) | Canada | 100% | 100% |
| QIAGEN Instruments AG | Switzerland | 100% | 100% |
| QIAGEN K.K. | Japan | 100% | 100% |
| QIAGEN Lake Constance GmbH | Germany | 100% | 100% |
| QIAGEN, LLC | USA | 100% | 100% |
| QIAGEN Ltd. | UK | 100% | 100% |
| QIAGEN Manchester Ltd. | UK | 100% | 100% |
| QIAGEN Marseille SA | France | 100% | 100% |
| QIAGEN North American Holdings Inc. | USA | 100% | 100% |
| QIAGEN Pty. Ltd. | Australia | 100% | 100% |
| QIAGEN Redwood City, Inc. | USA | 100% | 100% |
| QIAGEN Sciences, LLC | USA | 100% | 100% |
| QIAGEN S.r.l. | Italy | 100% | 100% |
| QIAGEN U.S. Finance Holdings (Luxembourg) SARL | Luxembourg | 100% | 100% |
| QIAGEN U.S. Finance, Inc. | USA | 100% | 100% |

## 10. Equity

*Share Premium*

The share premium concerns the income from the issuing of shares in so far as this exceeds the nominal value of the shares (above par income). Of share premium, no legal restrictions apply to the distribution thereof and therefore can be considered freely distributable

*Legal Reserves*

Legal reserves as of December 31, 2018 and 2017 were $(270.3) million and $(174.4) million, respectively, and include the amounts as shown in the table below:

| (in thousands) | 2018 | 2017 |
|---|---|---|
| Cumulative foreign currency translation adjustment | **$ (291,011)** | $ (183,955) |
| Capitalized development costs related to subsidiaries | **36,142** | 40,058 |
| Cash flow hedge reserve | **(15,453)** | (30,487) |
| Legal reserves | **$ (270,322)** | $ (174,384) |

The legal reserves set up in connection with the capitalized development costs related to subsidiaries as described in Note 12 "Goodwill and Intangible Assets" to the Consolidated Financial Statements of the Group. As a result of the capitalization and subsequent amortization of these capitalized development costs, the net impact on the legal reserves was $(3.9) million and $(0.9) million for the years ended December 31, 2018 and 2017, respectively.

*Other Reserves*

Other reserves as of December 31, 2018 and 2017 were $(0.1) million and $(1.8) million, respectively, and include the amounts as shown in the table below.

| **(in thousands)** | **2018** | **2017** |
|---|---|---|
| Pension reserve | **$ (124)** | $ (878) |
| Available-for-sale reserve | **—** | (942) |
| Other reserves | **$ (124)** | $ (1,820) |

The change in available-for-sale reserve is due to the cumulative effect adjustment as of January 1, 2018 upon adoption of IFRS 9 *Financial Instruments*. The amounts noted in the table above for other reserves include adjustment for the impact of deferred income taxes.

## 11. Financial Instruments

Information on the use of financial instruments and on related risks is provided in Note 25 "Financial Risk Factors and Use of Derivative Financial Instruments" to the Consolidated Financial Statements of the Group and includes information about the Group's exposure to these risks, the Group's objectives, policies and processes for measuring and managing risk, and the Group's management of capital.

These risks, objectives, policies and processes for measuring and managing risk, and the management of capital apply also to the separate financial statements of QIAGEN N.V.

In the ordinary course of business, we use derivative instruments to manage potential losses from foreign currency exposures and interest bearing assets or liabilities as further described in Note 25 to the Consolidated Financial Statements. For the years ended December 31, 2018 and 2017, gains and losses on these derivatives instruments are included in Other financial (expense) income, net in the accompanying income statements of QIAGEN N.V.

## 12. Income Tax

Together with Life Biotech Partners B.V., the Company forms a fiscal unity for corporate income tax purposes. For value-added tax purposes, the fiscal unity includes all Dutch subsidiaries of the Company. The standard conditions of fiscal unity stipulate that each of the companies is liable for the tax payable of all companies belonging to the fiscal unity.

## 13. Employee Information

| **Average Number of Employees** | **2018** | **2017** |
|---|---|---|
| Research & Development | **1,005** | 974 |
| Sales | **1,938** | 1,897 |
| Production | **1,074** | 1,039 |
| Marketing | **293** | 293 |
| Administration | **511** | 484 |
| Total | **4,821** | 4,687 |

The average number of employees working outside the Netherlands during the year ended December 31, 2018 was 4,772 (2017: 4,635).

The pension plans applicable to the employees are financed through contributions to external pension insurance companies. The contribution due is accounted for in the profit and loss account as an expense. Prepaid contributions are recognized as deferred assets if these lead to a refund or reduction of future payments. Contributions that are due but have not yet been paid are presented as liabilities. Information on personnel costs is provided under Note 22 "Employee Benefits and Personnel Costs" to the Consolidated Financial Statements of the Group.

## 14. Related Party Transactions

Information on related party transactions including remuneration of the members of the Managing and Supervisory Board is provided under Note 23 "Related Party Transactions" to the Consolidated Financial Statements of the Group. Information on the remuneration policy is provided in the Corporate Governance Report.

## 15. Auditor Fees

Information on auditor fees is provided under Note 30 "Fees Paid External Auditors" to the Consolidated Financial Statements of the Group.

## 16. Subsequent Events

Based on the Company's review, no events or transactions have occurred subsequent to December 31, 2018 other than those described in Note 28 "Subsequent Events" to the Consolidated Financial Statements, that would have a material impact on the financial statements as presented.

**Signatures**

Venlo, the Netherlands, April 29, 2019

QIAGEN N.V.

| | |
|---|---|
| Peer M. Schatz | Roland Sackers |
| Chief Executive Officer | Chief Financial Officer |

**OTHER INFORMATION**

# Independent auditor's report

To: the General Meeting of Shareholders and the Supervisory Board of QIAGEN N.V.

## Report on the audit of the financial statements 2018 included in the annual report

### *Our opinion*

In our opinion:

- the accompanying consolidated financial statements give a true and fair view of the financial position of QIAGEN N.V. as at 31 December 2018 and of its result and its cash flows for the year then ended, in accordance with International Financial Reporting Standards as adopted by the European Union (EU-IFRS) and with Part 9 of Book 2 of the Dutch Civil Code.
- the accompanying company financial statements give a true and fair view of the financial position of QIAGEN N.V. as at 31 December 2018 and of its result for the year then ended in accordance with Part 9 of Book 2 of the Dutch Civil Code.

### *What we have audited*

We have audited the financial statements 2018 of QIAGEN N.V. (also referred to as 'the Company') based in Venlo, Netherlands. The financial statements include the consolidated financial statements and the company financial statements.

The consolidated financial statements comprise:

1. the consolidated balance sheet as at December 31, 2018;
2. the following consolidated statements for 2018: the income statement, the statement of comprehensive income (loss), statement of cash flows and statement of changes in equity; and
3. the notes comprising a summary of the significant accounting policies and other explanatory information.

The company financial statements comprise:

1. the company balance sheet as December 31, 2018;
2. the company income statement for 2018;
3. the company statement of changes in equity for 2018; and
4. the notes comprising a summary of the accounting policies and other explanatory information

notes comprising a summary of the accounting policies and other explanatory information.

### *Basis for our opinion*

We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing. Our responsibilities under those standards are further described in the 'Our responsibilities for the audit of the financial statements' section of our report.

We are independent of QIAGEN N.V. in accordance with the EU Regulation on specific requirements regarding statutory audits of public-interest entities, the 'Wet toezicht accountantsorganisaties' (Wta, Audit firms supervision act), the 'Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten' (ViO, Code of Ethics for Professional Accountants, a regulation with respect to

independence) and other relevant independence regulations in the Netherlands. Furthermore, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA, Dutch Code of Ethics).

We believe the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

## *Audit approach*

### *Summary*

| Materiality |
| --- |
| - Materiality of USD 8.0 million<br>- 5% of normalized pre-tax income |

| Group audit |
| --- |
| - 94% of total assets<br>- 84% of revenue |

| Key audit matters |
| --- |
| - Revenue recognition for milestone contracts<br>- Cash convertible notes and call spread overlay<br>- Investments in NeuMoDx |

| Opinion |
| --- |
| - Unqualified |

### *Materiality*

Based on our professional judgement we determined the materiality for the financial statements as a whole at USD 8.0 million (2017: USD 7.0 million). The materiality is determined with reference to normalized pre-tax income (5.0%). The pre-tax income is normalized by excluding one-time income and expenses, which mainly include legal settlements. We consider pre-tax income (normalized) as the most appropriate benchmark because of the nature of the business and the fact that the main stakeholders are primarily focused on profit before tax. We have also taken into account misstatements and/or possible misstatements that in our opinion are material for the users of the financial statements for qualitative reasons.

We agreed with the Supervisory Board that misstatements in excess of USD 400,000 which are identified during the audit, would be reported to them, as well as smaller misstatements that in our view must be reported on qualitative grounds.

### *Scope of the group audit*

QIAGEN N.V. is at the head of a group of components. The financial information of this group is included in the consolidated financial statements of QIAGEN N.V..

Our group audit is mainly focused on significant components. Decisive were the size and/or the risk profile of the group entities or operations. Based on the size and the risk profile of the components, we determined the scope of the audit procedures to be performed. We requested KPMG Germany to perform the majority of the audit procedures for both the German and foreign locations. For the components in the United States KPMG USA was engaged to perform specified audit procedures in addition to the audit procedures performed by KPMG Germany.

We have:

– performed part of the audit procedures at group level by ourselves ;

– made use of the work of the component auditors who performed full scope audit procedures (audit of complete reporting package) and specified audit procedures at the parent and local entity level; and
– performed analytical procedures and desktop review procedures with assistance of KPMG Germany on the remaining entities to validate our assessment that these were not significant components.

The group audit team set materiality levels for the audits of components, which ranged from USD 1.0 million to USD 6.0 million, based on the judgement of the group audit team given the mix of size and risk profile of these entities within the group.

The group audit team has sent detailed instructions to the auditor of the component which includes the significant risk areas that should be covered and sets out the information required to be reported to the group audit team. The group audit team visited the entity location in Germany, and held telephone conferences with the component auditors. During these visits and telephone conferences, the audit approach, the findings and observations reported to the group audit team were discussed in detail. For certain components a file review has also been performed.

By performing the procedures mentioned above at components, together with additional procedures at group level, we have been able to obtain sufficient and appropriate audit evidence about the group's financial information to provide an opinion about the financial statements.

The procedures as described above can be summarized as follows:

### *Audit scope in relation to fraud and non-compliance with laws and regulations*

In accordance with the Dutch Standards on Auditing we are responsible for obtaining reasonable assurance that the financial statements taken as a whole are free from material misstatement, whether caused by fraud or error. In determining the audit procedures we will make use of the evaluation of management in relation to fraud risk management (prevention, detection and response), including ethical standards to create a culture of honesty.

In our process of identifying fraud risks we assessed fraud risk factors, which we discussed with management and Supervisory Board. Fraud risk factors are events or conditions that indicate an incentive or pressure to commit fraud or provide an opportunity to commit fraud. We also assessed

factors related to the risk of non-compliance with laws and regulations which could have a direct or indirect impact on the financial statements.

In line with the auditing standards we evaluated the two presumed fraud risks: fraud risk in relation to the revenue recognition and fraud risk in relation to management override of controls. After due consideration of the non-complex nature of sales transactions this year, we concluded that the presumed risk of fraud for revenue recognition was not present and consequently no additional procedures were required.

Based on our analysis of fraud risk factors, we have identified a fraud risk in respect of the investment in NeuMoDx. The complexity of the arrangements in respect of NeuMoDx and consequently the accounting thereof warranted special attention during our audit. For details regarding the fraud risk in relation to the investments in NeuMoDx, we refer to the key audit matter on this topic as included in this auditor's report.

Our audit procedures in response to the risk of management override of controls included an evaluation of the of internal controls relevant to mitigate this risk and supplementary substantive audit procedures, including testing significant estimates (considering potential bias), designing specific data analytics routines to identify and test high-risk journal entries (e.g. entries that deviate from the normal pattern) and testing consolidation and post-closing journal entries.

Our audit procedures differ from a specific forensic fraud investigation, which investigation often has a more in-depth character.

We did not identify significant risks in relation to non-compliance with laws and regulations which could have a direct or indirect impact on the consolidated financial statements. Our procedures to address fraud risks and/or risk of non-compliance to laws and regulations did not result in findings to be included in this audit report other than disclosed in the key audit matter.

### *Our key audit matters*

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements. We have communicated the key audit matters to the Supervisory Board. The key audit matters are not a comprehensive reflection of all matters discussed.

These matters were addressed in the context of our audit of the financial statements as a whole and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Compared to last year the 'net investment hedge on Germany private-placement' is no longer a key audit matter, because no private placement took place in the current year.

## *Revenue recognition for milestone contracts*

### Description

As of 1 January 2018 IFRS 15 “Revenue recognition from contracts with customers” is adopted and has changed the manner in which the Company accounts for its revenue. The change is mainly related to a different mechanism for the allocation of the consideration of the contract to the performance obligations. This is based on stand-alone selling prices determined using the adjusted market approach and changes in timing of revenue recognition for certain upgrades and services. The adoption of the new standard has mostly affected revenue with milestone payments, that changes revenue recognition from milestone method under IAS 18 to Input method under IFRS 15. Under the new accounting standard, QIAGEN N.V. is required to identify appropriate inputs and outputs to be used to accurately measure progress and appropriately recognize revenue over time. Given the complexity and the non-routine nature of this accounting policy change and high level of estimation of inputs used to measure progress in percentage of completion of revenue recognition model as well as the effect of this on our audit work, we consider this a key audit matter.

### Our response

Our audit procedures included, amongst others, assessing the appropriateness of the Company’s revenue recognition accounting policies under the new accounting standard IFRS 15. In addition, we tested the operating effectiveness of the Company’s controls related to the milestone contracts process and controls related to the transition into the new accounting standard. Furthermore, we assessed management transition process and retrospective adjustment of the related comparative figures by, amongst others, assessment of sales contracts, individual sale transactions, confirmations by customers and assessment of over-time and point in time revenue recognition for individual performance obligations.

Finally, we assessed the adequacy of the Company’s disclosures included in Note 4 to the financial statements in relation to IFRS 15 requirements.

### Our observation

The results of our procedures relating to transition to new revenue recognition standard as well as the retrospective adjustment of the comparative figures and assumptions and inputs used by management for making estimates were satisfactory. Furthermore, we assessed the adequacy of the disclosure in Notes 2 and 4 to the financial statements and found these to be appropriate.

## *Cash convertible notes and call spread overlay*

### Description

In the fourth Quarter of 2018, QIAGEN N.V. issued a six year USD 500 million face value convertible bond with a maturity date of 13 November 2024. Concurrent with the issuance of the Cash Convertible Notes, QIAGEN N.V. entered into privately negotiated hedge transactions (Call Options) and warrants to purchase shares of QIAGEN N.V. common stock (Warrants) to certain financial institutions (in combination referred to as the Call Spread Overlay). The call options are intended to offset any cash payments by the Company in excess of the principal amount due upon any conversion of the Notes. The accounting for the Cash Convertible Notes and the Call Spread Overlay is complex, accounting considerations include the bifurcation of embedded derivatives, fair value measurements including conversion rates and the determination of debt-equity classification of Warrants. Considering the complexity related to the Cash Convertible Notes and Call Spread Overlay we consider these to be a key audit matter.

### Our response

We inquired key management personnel involved in the transaction to determine the nature, terms, and business purpose of the transaction. The audit team inspected with assistance of our Financial Risk Management Specialists the Company's technical accounting memorandum and assessed the application of the relevant authoritative guidance under IAS 32, Financial Instruments: Presentation and IFRS 9, Financial Instruments. We also evaluated the models used by the Company to assess the fair value of the bifurcated derivative liability as well as the fair value of the Call Options and Warrants. We inspected supporting documentation, including the executed agreements and reconciled the supporting documentation to the Company's technical accounting memorandum and financial statements. Additionally, we assessed the adequacy of the disclosures included in Note 15, Financial Debts and Note 25 Financial Risk Factor and Use of Derivate Financial Instruments.

### Our observation

The results of our procedures, to ensure appropriate accounting of the cash convertible notes and the call spread overlay including the appropriateness of the valuation assumptions used were satisfactory. Furthermore, we assessed the adequacy of the disclosure in Note 15, Financial Debts, and Note 25, Financial Risk Factors and Use of Derivative Financial Instruments and found these to be appropriate.

## *Investments in NeuMoDx*

### Description

In 2018, QIAGEN N.V. entered into a suite of transactions with NeuMoDx, a development stage entity developing a new platform for high-throughput, low cost molecular testing. QIAGEN N.V. additionally invested $9.3 million resulting in a 19.9% share in NeuModx. Furthermore, the transactions provided QIAGEN N.V. with distribution rights over NeuMoDx products in certain regions, and also a purchase agreement for the remaining 80.1% of the shares. This purchase agreement can be executed once the contractual conditions have been met. The purchase agreement provides QIAGEN N.V. with the ability to waive the conditions. The purchase consideration for the remaining shares equals $234 million.

Considering the potential size of the transactions, the amount of considerations and the technical expertise needed in evaluating whether the entity should be consolidated, we consider it to be a key audit matter related to a fraud risk. The complexity of the transactions and the number of agreements related to the transaction, could provide the Company with the opportunity to intentionally reflect the numbers differently.

### Our response

We inquired key management personnel involved in the transaction to determine the nature, terms and business purpose of the transaction. The audit team inspected with the assistance of our Accounting Specialists the Company’s technical accounting memorandum and assessed the application of the relevant authoritative guidance under IFRS 10, *Consolidated Financial Statements*. We inspected the supporting documents including agreements and reconciled the supporting documentation to the Company’s technical accounting memorandum and the financial statements. Additionally, we assessed the adequacy of the disclosures included in Note 7, Financial Assets.

The results of our procedures on the accounting of the NeuMoDx investment were satisfactory. Furthermore, we assessed the adequacy of the disclosure in Note 7 to the financial statements and found these to be appropriate.

## Report on the other information included in the annual report

In addition to the financial statements and our auditor’s report thereon, the annual report contains other information that consists of:

– Report of the Supervisory Board;
– Management Report;
– Corporate Governance Report;
– Corporate Governance Statement;
– Responsibility Statement of the Management Board; and
– the other information pursuant to Part 9 of Book 2 of the Dutch Civil Code.

Based on the following procedures performed, we conclude that the other information:

– is consistent with the financial statements and does not contain material misstatements; and
– contains the information as required by Part 9 of Book 2 of the Dutch Civil Code.

We have read the other information. Based on our knowledge and understanding obtained through our audit of the financial statements or otherwise, we have considered whether the other information contains material misstatements.

By performing these procedures, we comply with the requirements of Part 9 of Book 2 of the Dutch Civil Code and the Dutch Standard 720. The scope of the procedures performed is substantially less than the scope of those performed in our audit of the financial statements.

Management is responsible for the preparation of the other information, including the information as required by Part 9 of Book 2 of the Dutch Civil Code.

## Report on other legal and regulatory requirements

### *Engagement*

We were engaged by Supervisory Board as auditor of QIAGEN N.V. on 23 June 2015 as of the audit for the year 2015 and have operated as statutory auditor ever since that financial year.

### *No prohibited non-audit services*

We have not provided prohibited non-audit services as referred to in Article 5(1) of the EU Regulation on specific requirements regarding statutory audits of public-interest entities.

## Description of responsibilities regarding the financial statements

### *Responsibilities of Management and the Supervisory Board for the financial statements*

Management is responsible for the preparation and fair presentation of the financial statements in accordance with EU-IFRS and Part 9 of Book 2 of the Dutch Civil Code. Furthermore, Management is responsible for such internal control as management determines is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to fraud or error.

As part of the preparation of the financial statements, Management is responsible for assessing the Company's ability to continue as a going concern. Based on the financial reporting frameworks mentioned, Management should prepare the financial statements using the going concern basis of accounting unless Management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so. Management should disclose events and circumstances that may cast significant doubt on the company's ability to continue as a going concern in the financial statements.

The Supervisory Board is responsible for overseeing the Company's financial reporting process.

### *Our responsibilities for the audit of the financial statements*

Our objective is to plan and perform the audit engagement in a manner that allows us to obtain sufficient and appropriate audit evidence for our opinion.

Our audit has been performed with a high, but not absolute, level of assurance, which means we may not detect all material errors and fraud during our audit.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements. The materiality affects the nature, timing and extent of our audit procedures and the evaluation of the effect of identified misstatements on our opinion.

A further description of our responsibilities for the audit of the financial statements is included in appendix on page 10. This description forms part of our auditor's report.

Amstelveen, 29 April 2019

KPMG Accountants N.V.

M. Meester RA

## Appendix

We have exercised professional judgement and have maintained professional scepticism throughout the audit, in accordance with Dutch Standards on Auditing, ethical requirements and independence requirements. Our audit included among others:

- identifying and assessing the risks of material misstatement of the financial statements, whether due to fraud or error, designing and performing audit procedures responsive to those risks, and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than the risk resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtaining an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control;
- evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by Management;
- concluding on the appropriateness of Management's use of the going concern basis of accounting, and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause a company to cease to continue as a going concern;
- evaluating the overall presentation, structure and content of the financial statements, including the disclosures; and
- evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Because we are ultimately responsible for the opinion, we are also responsible for directing, supervising and performing the group audit. In this respect we have determined the nature and extent of the audit procedures to be carried out for group components. Decisive were the size and/or the risk profile of the group components or operations. On this basis, we selected group components for which an audit or review had to be carried out on the complete set of financial information or specific items.

We communicate with the Supervisory Board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant findings in internal control that we identify during our audit. In this respect we also submit an additional report to the audit committee in accordance with Article 11 of the EU Regulation on specific requirements regarding statutory audits of public-interest entities. The information included in this additional report is consistent with our audit opinion in this auditor's report.

We provide the Supervisory Board with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Supervisory Board, we determine the key audit matters: those matters that were of most significance in the audit of the financial statements. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, not communicating the matter is in the public interest.

**Provisions in the Articles of Association Governing the Appropriation of Net Income**

According to Article 40 till 42 of the Articles of Association, the allocation of net income will be as follows. Subject to certain exceptions, dividends may only be paid out of profits as shown in our annual report as adopted by the General Meeting of Shareholders. Distributions may not be made if the distribution would reduce the shareholders' equity below the sum of the paid-up capital and any reserves required by Dutch Law or the Articles.

Out of profits, dividends must first be paid on any outstanding Preference Shares (the "Preference Share Dividend") in a percentage (the "Preference Share Dividend Percentage") of the obligatory amount (call) paid up on such shares at the beginning of the fiscal year in respect of which the distribution is made. The Preference Share Dividend Percentage is equal to the Average Main Refinancing Rates during the financial year for which the distribution is made. Average Main Refinancing Rate shall be made understood to mean the average value on each individual day during the financial year for which the distribution is made of the Main Refinancing Rates prevailing on such day. Main Refinancing Rate shall be understood to mean the rate of the Main Refinancing Operation as determined and published from time to time by the European Central Bank. If and to the extent that profits are not sufficient to pay the Preference Share Dividend in full, the deficit shall be paid out of the reserves, with the exception of any reserve, which was formed as share premium reserve upon the issue of Financing Preference Shares. If in any fiscal year the profit is not sufficient to make the distributions referred to above and if no distribution or only a partial distribution is made from the reserves referred to above, such that the deficit is not fully made good no further distributions will be made as described below until the deficit has been made good.

Out of profits remaining after payment of any dividends on Preference Shares such amounts shall be kept in reserve as determined by the Supervisory Board. Out of any remaining profits not allocated to reserve, a dividend shall be paid on the Financing Preference Shares in a percentage over the par value, increased by the amount of share premium that was paid upon the first issue of Financing Preference Shares, which percentage is related to the average effective yield on the prime interest rate on corporate loans in the United States as quoted in the Wall Street Journal. If and to the extent that the profits are not sufficient to pay the Financing Preference Share Dividend in full, the deficit may be paid out of the reserves if the Managing Board so decides with the approval of the Supervisory Board, with the exception of the reserve which was formed as share premium upon the issue of Financing Preference Shares.

Insofar as the profits have not been distributed or allocated to the reserves as specified above, they are at the free disposal of the General Meeting of Shareholders, provided that no further dividends will be distributed on the Preference Shares or the Financing Preference Shares.

The General Meeting may resolve, on the proposal of the Supervisory Board, to distribute dividends or reserves, wholly or partially, in the form of QIAGEN shares.

**Proposal for Profit Appropriation**

The General Meeting of Shareholders will be asked to approve the following appropriation of the 2018 net income for the period: an amount of $104.9 million to be added to retained earnings.