QIAGEN NV
Form 20-F
March 06, 2018

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 20-F
o REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934
or
ý ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2017
or
o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 For the transition period from to
or
o SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 Date of event requiring this shell company report
Commission File Number 001-438332

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QIAGEN N.V.
(Exact name of Registrant as specified in its charter)
n/a
(Translation of Registrant's name in English)
The Netherlands
(Jurisdiction of incorporation or organization)
Hulsterweg 82
5912 PL Venlo
The Netherlands
011-31-77-355-6600
(Address of principal executive offices)

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Roland Sackers, Tel: 011-31-77-355-6600, Fax: 011-31-77-355-6658
QIAGEN N.V., Hulsterweg 82, 5912 PL Venlo, The Netherlands
(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

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

Title of class:	Name of each exchange on which registered:
Common Shares, par value EUR 0.01 per share	New York Stock Exchange

Securities registered or to be registered pursuant to Section 12(g) of the Act:
None
Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:
None

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The number of outstanding Common Shares as of December 31, 2017 was 226,556,855.
Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. ý Yes o No
If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. o Yes ý No

Note—Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of accelerated filer and large accelerated filer in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ý Accelerated filer o Non-accelerated filer o Emerging Growth Company o

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

* The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

ý U.S. GAAP

o International Financial Reporting Standards as issued by the International Accounting Standards Board

o Other

If “Other” has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow:

o Item 17

o Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). o Yes ý No

Unless the context otherwise requires, references herein to “we,” “us,” “our,” the “Company” or to “QIAGEN” are to QIAGEN N.V. and its consolidated subsidiaries.

EXCHANGE RATES

QIAGEN publishes its financial statements in U.S. dollars. In this Annual Report on Form 20-F, references to “dollars” or “$” are to U.S. dollars, and references to “EUR” or the “euro” are to the European Monetary Union euro. Except as otherwise stated herein, all monetary amounts in this Annual Report on Form 20-F have been presented in U.S. dollars.

The exchange rate used for the euro was obtained from the European Central Bank and is based on a regular daily concentration procedure between central banks across Europe and worldwide, which normally takes place at 2:15 P.M. Central European Time. This rate at March 1, 2018, was $1.2171 per €1.

For information regarding the effects of currency fluctuations on our results, see Item 5 “Operating and Financial Review and Prospects.”

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PART I

Item 1. Identity of Directors, Senior Management and Advisors
Not applicable.

Item 2. Offer Statistics and Expected Timetable
Not applicable.

Item 3. Key Information
QIAGEN N.V. is registered under its commercial and legal name with the trade register (kamer van koophandel) of the Dutch region Limburg Noord under file number 12036979. QIAGEN N.V. is incorporated under Dutch law as a public limited liability company (naamloze vennootschap) and is organized as a holding company.
The selected consolidated financial data below should be read in conjunction with “Operating and Financial Review and Prospects” and the Consolidated Financial Statements, including the notes and other financial information included in this Annual Report on Form 20-F. The selected financial data below is derived from the consolidated statements of income for the years ended December 31, 2017, 2016 and 2015 and the consolidated balance sheets at December 31, 2017 and 2016 of QIAGEN that have been audited by an independent registered public accounting firm, and are included in this Annual Report. The selected data from the consolidated statements of income presented for the years ended December 31, 2014 and 2013, and the consolidated balance sheets as of December 31, 2015, 2014 and 2013, is derived from audited consolidated financial statements not included in this Annual Report. Certain prior year amounts related to restructuring costs have been reclassified to conform to the current year presentation as further discussed within Note 1 - Corporate Information and Basis of Presentation.

Selected Financial Data

The information below should be read in conjunction with the Consolidated Financial Statements (and accompanying notes) and "Operating and Financial Review and Prospects."

	Years ended December 31,				
	2017	2016	2015	2014	2013
Consolidated Statement of Income Data:					
(amounts in thousands, except per share data)					
Net sales	$1,417,536	$1,337,991	$1,280,986	$1,344,777	$1,301,984
Cost of sales	494,975	493,338	454,328	479,570	487,321
Gross profit	922,561	844,653	826,658	865,207	814,663
Operating expenses:					
Research and development	154,084	149,841	146,830	163,666	147,157
Sales and marketing	375,562	376,321	359,598	376,141	373,719
General and administrative, restructuring, integration and other	200,098	180,573	102,066	126,637	200,815
Acquisition-related intangible amortization	39,398	39,091	38,666	37,070	35,495
Total operating expenses	769,142	745,826	647,160	703,514	757,186
Income from operations	153,419	98,827	179,498	161,693	57,477
Other expense	(39,044)	(41,919)	(43,195)	(42,304)	(25,992)
Income before income taxes	114,375	56,908	136,303	119,389	31,485
Income taxes	73,981	(23,395)	6,401	2,456	(33,164)
Net income	$40,394	$80,303	$129,902	$116,933	$64,649
Net (loss) income attributable to noncontrolling interest	—	(101)	(246)	568	25
Net income attributable to QIAGEN N.V.	$40,394	$80,404	$130,148	$116,365	$64,624
Basic net income per common share attributable to the owners of QIAGEN N.V. [1]	$0.18	$0.34	$0.56	$0.50	$0.28
Diluted net income per common share attributable to the owners of QIAGEN N.V. [1]	$0.17	$0.34	$0.55	$0.48	$0.27
Weighted-average common shares outstanding					
Basic	228,074	234,800	233,483	232,644	234,000
Diluted	233,009	238,993	238,647	242,806	243,400

(1) See Note 18 of the “Notes to Consolidated Financial Statements” for the computation of the weighted average number of Common Shares.

	As of December 31,				
	2017	2016	2015	2014	2013
Consolidated Balance Sheet Data:					
(amounts in thousands)					
Cash and cash equivalents	$657,714	$439,180	$290,011	$392,667	$330,303
Working capital [1]	$1,323,181	$729,140	$693,043	$717,124	$583,851
Total assets	$5,038,516	$4,308,194	$4,179,117	$4,454,372	$4,088,392
Total long-term liabilities, including current portion	$2,174,087	$1,393,668	$1,343,616	$1,490,114	$1,024,389
Total equity	$2,540,996	$2,607,096	$2,568,070	$2,664,876	$2,731,891
Common shares, par value	$2,702	$2,812	$2,812	$2,812	$2,812
Common shares issued	230,829	239,707	239,707	239,707	239,707
Common shares outstanding	226,557	234,561	233,006	232,023	233,890

(1) Working capital is current assets less current liabilities.

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Risk Factors

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 (discussed in more detail in Item 10 of this Annual Report) and the function of the Audit Committee of the Supervisory Board (discussed in more detail in Item 6 of this Annual Report). We maintain adequate internal controls over financial reporting to ensure the integrity of financial reporting, which is described further in Item 15 of this Annual Report. 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 as described further in Item 16B of this Annual Report.

Risk Types	
Base Business Risk	• Identification and monitoring of competitive business threats • Monitoring complexity of product portfolio • Monitoring dependence on key customers for single product groups • Reviewing dependence on individual production sites or suppliers • Evaluating purchasing initiatives, price controls and changes to reimbursements • Monitoring production risks, including contamination prevention, high-quality product assurance • 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 • Managing successful integration of acquisitions to achieve anticipated benefits
Underlying Business Risk	• Evaluating financial risks, including economic risks and currency rate fluctuations • Monitoring financial reporting risks, including multi-jurisdiction tax compliance • Reviewing possible asset impairment events • Assessing compliance and legal risks, including safety in operations and environmental hazard risks, compliance with various regulatory bodies and pending product approvals • 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, our GeneReader NGS System for next-generation sequencing (NGS), 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.

The speed and level of adoption of our QIAsymphony and GeneReader NGS 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 QIAsymphony and GeneReader NGS System 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 or GeneReader NGS System, 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, or the GeneReader NGS System 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 $1.42 billion in 2017 from $1.30 billion in 2013. We have made a series of acquisitions in recent years, including the acquisitions of OmicSoft Corporation in 2017, Exiqon A/S in 2016, MO BIO Laboratories in 2015, Enzymatics and BIOBASE in 2014, and Ingenuity and CLC bio in 2013. We intend to identify and acquire other businesses in the future, including the acquisition of STAT-Dx expected in 2018, 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 have also made significant investments to expand our business operations. We completed an expansion project in Germany in early 2012 and another at our facility in Germantown, Maryland, for research, production and administrative space in 2013. We completed two smaller-scale building projects in 2015. These projects increased 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 the ability of our management 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 to offset associated acquisition costs;
- implementation and maintenance of uniform standards and effective controls and procedures;
- maintenance of relationships with employees and customers 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.

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. Changes in the availability or reimbursement of our diagnostic testing products by insurance providers and healthcare maintenance organizations could also have a significant adverse impact on our results of operations.

Access to financing in the global financial markets has also been adversely affected for many businesses during challenging economic times. 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, 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 (as in the U.S. in 2013). 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.

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 diagnostic product 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. As a result, third-party reimbursement may not be 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. Both Congress and President Trump have expressed their intention to repeal or repeal and replace the ACA, and as a result certain sections of the ACA have not been fully

implemented or effectively repealed. The 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 terms of 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 these organizations to our sample and assay technologies and other products. An inability to do so 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.

Also, for our commercial clinical assays, we often compete with solutions developed by our laboratory customers and 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 continuous changes in the governing regulatory framework, particularly for product approvals. 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 (most notably in genomic research 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 existing 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 of 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. These trials could be subject to extensive regulation by governmental authorities in the U.S., particularly the FDA, and regulatory agencies in other countries. These trials involve substantial uncertainties and could impact customer demand for our products.

In addition, certain products, especially those intended for use in in vitro diagnostic applications, require regulatory approvals in various countries. For example, since the European Union Directive 98/79/EC on in vitro diagnostic medical devices (EU-IvD-D) went into effect in 2003, all products and kits used for in vitro diagnostic applications must be compliant with this directive. In addition to high-risk products such as HIV testing systems (list A of Annex II of the directive) or blood glucose testing systems (list B of Annex II of the directive), nucleic acid purification products, which are used in diagnostic workflows, are affected by this regulatory framework. The major goals of this directive are to standardize diagnostic procedures within the European Union, to increase reliability of diagnostic analysis and to enhance patient safety. In addition, new Medical Device Regulations and In Vitro Diagnostic Regulations, part of which may go into effect as early as 2018, will make major changes in IVD regulation for all medical devices and in vitro diagnostics. Compliance with these regulations may be expensive and time-consuming. The new IVD regulation introduces, among other things, a new risk classification system and requirements for conformity assessments. If we fail to obtain any required clearances, approvals, or certifications, it could significantly damage our business in these markets.

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.

Each medical device that we wish to distribute commercially in the U.S. will likely require us to seek either 510(k) clearance or approval of a pre-market approval application (PMA) from the FDA prior to marketing the device for in-vitro diagnostic use. Clinical trials related to our regulatory submissions may take years to complete and represent a significant expense. The 510(k) clearance pathway usually takes from three to 12 months, but can take longer. The PMA pathway is more costly, lengthy and uncertain, and can take from one to three years, or longer. For example, it took more than four years to receive pre-market approval from the FDA for our HPV test product for use as a test for the presence of HPV in women with equivocal Pap test results and pre-market approval for the use of our HPV test as a primary adjunctive cervical cancer screening test to be performed in combination with the Pap test for women age 30 and older. The uncertain time period required for regulatory review increases our costs to develop new products and increases the risk that we will not succeed in introducing or selling new products in the U.S.

Our cleared or approved devices, including our 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 the product until appropriate regulatory clearance or approval has been obtained. Further, some of our products are used in LDTs,

where laboratories use our materials for assays manufactured, validated and performed in house. We do not promote these products for clinical diagnostic use.

Further, the FDA has publicly announced its intention to regulate certain LDTs in a phased-in approach, but draft guidance that was published a couple of years ago was withdrawn at the end of the Obama administration and replaced by an informal nonenforceable discussion paper reflecting some of the feedback that it received on LDT regulation. LDTs represent many of the molecular tests currently in use in terms of volume, and our automation systems - particularly the QIAsymphony platform - are designed to accommodate the automation and validation of these tests. Moreover, laboratories creating LDTs may use some of our materials in their tests. We do not promote these products for clinical diagnostic use, but if the FDA were to stop the use

of LDTs or significantly limit their area of application, sales of some of our products in the U.S. could be adversely affected. The flexibility to handle LDTs is an advantage for our instruments, particularly the QIAsymphony automation system. On the consumables side, however, LDTs can at times create competition to our own commercially approved tests. We are pursuing a strategy of developing new content for our platforms partly by seeking regulatory approvals for new assays that incorporates approvals for these tests to run on QIAGEN instruments. We believe standardized tests that pass regulatory scrutiny and are clinically validated are highly attractive to reference laboratories and healthcare providers in our Molecular Diagnostics customer class, and also to customers in Pharma and Academia who rely on molecular assays to research and develop new products. At this point, the ultimate impact of potential new FDA policies on LDTs is uncertain.

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 carry forwards, intercompany dividends, controlled corporations, and limitations on tax relief allowed on the interest on intercompany debt, 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.

Changes in the interpretation and application of the 2017 Tax Cuts and Jobs Act could materially affect our tax obligations and effective tax rate.

On December 22, 2017, President Trump signed into law the Tax Cuts and Jobs Act (H.R.1) (the "2017 Tax Act"). The 2017 Tax Act includes a number of changes to existing U.S. tax laws that impact us, most notably a reduction of the U.S. corporate income tax rate from 35% to 21% effective as of January 1, 2018 and a new net interest expense deduction limitation, which limits the deduction of net interest expense to 30% of the taxpayer's adjusted taxable income (ATI). The 2017 Tax Act also provides the acceleration of depreciation for certain assets placed into service after September 27, 2017 as well as prospective changes including repeal of the domestic manufacturing deduction beginning in 2018 and capitalization of research and development expenditures beginning in 2022. In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act ("SAB 118"), which allows us to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. For those specific income tax effects of the 2017 Tax Act for which the accounting under ASC Topic 740 is incomplete, a reasonable estimate was determined. We have recognized the provisional tax impacts related to the interest expense deduction limitation and the revaluation of deferred tax assets and liabilities and included these amounts in our consolidated financial statements for the year ended December 31, 2017 as discussed in Note 16 Income Taxes in the Notes to the Consolidated Financial Statements. The ultimate impact may differ from these provisional amounts due to additional analysis, changes in interpretations and assumptions we have made, additional regulatory guidance that may be issued, and actions we may take because of the 2017 Tax Act, which could materially affect our tax obligations and effective tax rate.

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 the 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 and, 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 are preparing for a new partnership with a Chinese company in 2018 that will take over the research and development, 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 Personalized Healthcare 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 the development of their drugs, the outcome of clinical trials for the drugs and diagnostics, and regulatory approvals of the diagnostic 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 2017, and we expect to continue to focus on expanding our business in these or other fast-growing markets. In addition to the currency and international operation risks described above, our international operations are subject to a variety of risks that include those arising out of the economy, political outlook and 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 customer’s 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 cyber security 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 cyber security processes, in an attempt to keep pace with evolving cyber security risks. In spite of our efforts, we are unable to completely eliminate these risks and occasionally experience minor cyber security incidents. External phishing emails (occurring outside of our computer services) is 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 and cause reputational damage. While our cyber security 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 cyber security 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 cyber terrorists. 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. Currently, we are implementing the requirements set forth by the European Union General Data Protection Regulation (GDPR), which is set to take 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. 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.

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, China and the U.S. 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, we or our customers are affected by a disaster, we may experience delays or reductions in sales or production, or increased costs, or may be required to identify alternate suppliers 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 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 shutdown 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 in order 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 only keep 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 even 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 it is during this period that they receive new information on both 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 on us 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 any 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.

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.

We currently anticipate that our short-term capital requirements will be satisfied by cash flow from our operations. As of December 31, 2017, we had outstanding long-term debt of approximately $1.8 billion, of which no amount was current. Furthermore, as of December 31, 2017, we had capital lease obligations, including the current portion, of $1.4 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 13, “Derivatives and Hedging” and Note 15 "Lines of Credit and Debt," 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, 2017, our consolidated balance sheet reflected approximately $2.0 billion of goodwill and approximately $499.3 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. U.S. generally accepted accounting principles (U.S. GAAP) requires 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 numerous countries including the U.S., Germany, Japan, the United Kingdom, France, Switzerland, Australia, Canada, the Netherlands, Sweden, Italy, Hong Kong, Singapore, Turkey, Thailand, South Korea, Taiwan, Malaysia, China, Spain, Brazil, Mexico, South Africa and India. 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, 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, trade restrictions, exchange controls and changes in tariff and 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 increase 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 make sales in countries known to experience corruption. Further international expansion may involve increased exposure to such practices. Our activities in these countries, and in all countries as well, 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. It is our policy 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, 2017, we owned 362 issued patents in the United States, 279 issued patents in Germany and 1,825 issued patents in other major industrialized countries. In addition, at December 31, 2017, we had 776 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 from 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, the impact of restructuring activities, the 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 and short-term investments. 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 $36.34 to a low of $19.94 on NASDAQ, and a high of €31.52 to a low of €17.76 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, the covenants we have with our lenders may limit our ability to use available cash to do so, and 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, 2017, a total of approximately 226.6 million Common Shares were outstanding along with approximately 9.3 million additional shares reserved for issuance upon exercise or release of outstanding stock options and awards, of which 1.1 million were vested. A total of approximately 22.0 million Common Shares are reserved and available for issuances under our stock plans as of December 31, 2017, 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 35.4 million shares of our common stock (subject to anti-dilution 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, 2017, 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. In countries outside the U.S., other or similar tax regimes may apply and result in unfavorable tax treatment for any dividends received.

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 us and 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,” “anticip “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.

Item 4. Information on the Company

Description of our business

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 help customers move from Sample to Insight. Our solutions support more than 500,000 customers worldwide in generating insights into the molecular building blocks of life. Our proven solutions 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 many other areas of everyday life. QIAGEN’s mission is to make improvements in life possible by providing innovative technologies to enable 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 $1.42 billion in 2017 consisted of consumable kits and other revenues (88% of sales) and automation systems and instruments (12% of sales). Approximately 48% of net sales in 2017 were in Molecular Diagnostics, and 52% in Life Sciences customer classes in the Academia, Pharma and Applied Testing markets.

QIAGEN has grown substantially 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 strategic milestones by continuing to focus on strategic growth initiatives:

QuantiFERON-TB franchise growing rapidly:

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QIAGEN is aiding the global fight against tuberculosis (TB), a contagious bacterial infection that strikes more than 10 million new persons and kills about 1.8 million annually. The global epidemic is complicated because an estimated one out of three people have latent TB infection, a phase in which the bacterium infects a person but produces no detectable symptoms. About 5-10% of those individuals, if untreated, will progress to the active TB disease, so screening of high-risk individuals and treatment for latent TB plays an important role in global tuberculosis control efforts.

- QIAGEN's novel QuantiFERON tests, the fourth-generation QuantiFERON-TB Gold Plus (QFT-Plus) and third-generation QuantiFERON-TB Gold (QFT), are the market-leading modern diagnostic tools for latent TB infection. In a class known

as interferon-gamma release assays (IGRAs), QuantiFERON-TB tests have been shown in clinical studies to be faster, less labor-intensive and more accurate than the century-old tuberculin skin test. QFT is one of two tests mentioned in the World Health Organization guidelines as an alternative to tuberculin skin tests. First introduced in 2015, QFT-Plus adds clinical insights with antigens that measure the cell-mediated immune response to TB infection from both CD4+ and CD8+ T cells. The addition of CD8+ assessment led WHO in its Global TB Report 2016 to cite QFT-Plus (the only such test on the market) for its potential in identifying at-risk adults at greater risk of progressing to active TB. QFT-Plus is now available in more than 75 countries in Europe, the Americas, Africa, Asia and Middle East. The laboratory-based QuantiFERON-TB tests are displacing the more subjective and time-consuming tuberculin skin test, and sales surpassed $175 million in 2017.

- In October 2017 QIAGEN launched QuantiFERON-TB Gold Plus in the United States after it received Food and Drug Administration approval. Japan also recently approved QFT-Plus. These market introductions follow adoption of QFT-Plus in more than 75 countries across Europe, the Middle East, Africa, Asia and Latin America, where nearly two million of the tests have been used. QFT-Plus advances the science of TB testing with innovative antigens that measure each patient’s cell-mediated immune response from both CD4+ and CD8+ T cells, a unique capability. An increasing number of peer-reviewed publications support the efficacy of QFT-Plus, which is the only interferon-gamma release assay (IGRA) test on the pathway to evaluation by the World Health Organization (WHO) for its global campaign to eradicate TB.
- In January 2018, QIAGEN began a new partnership with DiaSorin that will provide a state-of-the-art automation option for QuantiFERON-TB Gold Plus customers, embedding QFT-Plus in a broad and highly synergistic assay menu for DiaSorin's LIAISON-family analyzers. More than 7,000 LIAISON-family analyzers are already in use worldwide.

Next-generation sequencing solutions extending QIAGEN's reach:

- As a leader in “universal” technologies for use with any next-generation sequencing system, as well as creator of the innovative GeneReader NGS System for benchtop sequencing, QIAGEN continues to expand its presence in the rapidly growing market for NGS solutions in laboratories around the world. QIAGEN’s NGS portfolio produced more than $115 million in sales in 2017.
- In 2017 QIAGEN continued to broaden its portfolio of platform-agnostic NGS solutions, streamlining tasks such as automated sample and library preparation, reliable detection of DNA and RNA variations, and bioinformatics for analysis and interpretation. 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.
- QIAGEN’s GeneReader NGS System, the first complete Sample to Insight next-generation sequencing solution designed for any laboratory to deliver actionable results, continued to gain acceptance with strong growth in placements in 2017.
- We expanded the GeneReader system's capabilities and content menu for clinical researchers in 2017. Going beyond the original GeneRead QIAact Actionable Insights Tumor Panel (AIT), we launched the GeneRead QIAact Lung DNA Panel and Lung RNA Panel for deep analysis of lung cancer samples and the GeneRead QIAact BRCA 1/2 Panel for in-depth insights into breast and ovarian cancers. All of the QIAact NGS panels run with the GeneReader system and integrate seamlessly with our QCI bioinformatics software for analysis and interpretation. We have incorporated the GeneReader NGS System into collaborations with pharmaceutical companies for co-development of companion diagnostics.
- Multiple studies demonstrating the efficacy of QIAGEN’s GeneReader system, panels and other NGS solutions were presented in major scientific meetings in 2017, including the American Society of Clinical Oncology (ASCO), American Society of Human Genetics (ASHG) and Association for Molecular Pathology (AMP). At the AMP annual meeting in November 2017, about 10 percent of the more than 500 papers presented relied on QIAGEN solutions for some aspect of molecular testing, from sample technologies for NGS to bioinformatics for interpretation of data.
- To accelerate the growth of the GeneReader system in China, QIAGEN formed a joint venture in 2017 with Maccura, a leading in vitro diagnostics company in China. The venture, MAQGEN Biotechnology Co., Ltd. (MAQGEN), will develop local adaptations, pursue regulatory paths to maximize the GeneReader’s value and leverage Maccura’s broad customer network to expand adoption in laboratories across China. The NGS market in China is growing rapidly in personalized medicine and clinical research. MAQGEN China is 60% owned by Maccura and 40% by QIAGEN.

- In late 2017, QIAGEN created a new unit, Enterprise Genomics Services, to serve the growing demand for customization of NGS gene panels with integrated bioinformatics for dedicated applications. This initiative offers benefits to customers in implementation time, expense and risk mitigation across the continuum from NGS discovery to panel development, optimization, verification and implementation. QIAGEN's capabilities support customized solutions for any NGS platform, including the GeneReader NGS System.
- In Applied Testing, QIAGEN collaborated with the International Commission on Missing Persons (ICMP) in 2017 to launch a cutting-edge next-generation sequencing workflow for DNA identification at the ICMP's laboratory in The Hague. The lab integrates the GeneReader system, other QIAGEN instruments and a new NGS panel specifically designed to

identify missing persons. QIAGEN will supply software, reagents, consumables and technical support on an ongoing basis.

Continued Leadership in Personalized Healthcare:

- QIAGEN strengthened its leading position in Personalized Healthcare in 2017, surpassing a milestone of 25 master collaboration agreements with pharma and biotech companies to develop companion and complementary diagnostics providing individualized genomic insights to guide clinical decision-making. QIAGEN launched 15 new companion diagnostic projects in 2017, a record high for QIAGEN. In addition, we continued to achieve regulatory approvals of companion diagnostics and to launch them commercially.
- A major initiative in 2017 was QIAGEN's expansion into developing biomarker tests to support emerging therapies in immuno-oncology (I-O), a novel approach using drugs to target the body's immune system to help fight cancer. QIAGEN and Bristol-Myers Squibb launched a groundbreaking collaboration to explore the use of NGS technology to develop gene expression profiles (GEPs) as predictive or prognostic tools for use with a number of novel immuno-oncology molecules Bristol-Myers Squibb is developing. QIAGEN subsequently has entered into other agreements with undisclosed industry partners to co-develop molecular tests to identify patients who could benefit from I-O therapies. QIAGEN obtained a worldwide license in 2017 from The Johns Hopkins University for biomarkers that play roles in identifying patients for I-O therapies.
- QIAGEN continues to roll out regulator-approved companion diagnostics that deliver actionable insights for treatment decisions based on patients' genomic information. We launched the ipsogen JAK2 RGQ PCR Kit in 2017 as the only FDA-cleared JAK2 kit for blood cancers, diagnosing gene mutations in patients with Polycythemia Vera. The FDA approval was expanded in early 2018 to other myeloproliferative neoplasms. The FDA indicated use of QIAGEN's therascreen EGFR RGQ PCR Kit as a companion diagnostic also was expanded in early 2018 to diagnose additional EGFR gene mutations involved in treatment decisions for first-line treatment of metastatic non-small cell lung cancer (NSCLC).
- We added a new liquid biopsy assay in 2017 for clinical research - the AdnaTest Prostate Cancer Panel AR-V7, using circulating tumor cells to monitor RNA expression of a biomarker indicating resistance to prostate cancer treatments.
- As one of the world's leading independent developers of molecular technologies, with a diverse portfolio of sequencing platforms and solutions, QIAGEN is a preferred industry partner for developing companion or complementary diagnostics.

QIAsymphony delivering platform growth as content menu expands:

- QIAGEN surpassed its 2017 goal of 2,000 cumulative placements of QIAsymphony, a cost-effective modular system that integrates PCR molecular testing workflows from initial biological sample processing to final insights. The platform's rapid dissemination and growing content menu fueled double-digit growth in consumables for QIAsymphony.
- The QIAsymphony automation 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.
- Two new QIAGEN test kits were approved by the FDA in 2017 for use on QIAsymphony instruments: the ipsogen JAK2 RGQ PCR Kit, a qualitative test for the detection of an important genetic variant in blood cancers; and the artus CMV QS-RGQ MDx kit, to monitor solid organ transplant patients for cytomegalovirus (CMV), a common infection that can be life-threatening in vulnerable patients.
- The QIAsymphony system's sample processing module, QIAsymphony SP, is a market-leading "front end" automated solution for downstream molecular testing. The growth of next-generation sequencing has highlighted the critical need of laboratories for reliable, automated processing of samples, including liquid biopsies. QIAsymphony SP automates the processing of nucleic acids for analysis with the GeneReader NGS System or other sequencers.

Leadership in differentiated core technologies continuing to drive growth:

- As a world leader in sample technologies enabling laboratories to obtain highest-quality DNA and RNA for molecular testing, QIAGEN continued to expand its offerings in 2017 with differentiated solutions for

front-end challenges. 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 handling microbiome samples, where we have an estimated 75% market share.

- Innovation in “liquid biopsy” technologies is increasingly enabling QIAGEN customers to unlock molecular insights from blood or other fluids as a non-invasive alternatives to surgical biopsies. Our solutions based on several different technologies for isolation and stabilization of nucleic acids are used in an estimated 80% of liquid biopsy testing.

- Partnering with leading providers of molecular testing services, QIAGEN continues to incorporate its differentiated solutions in liquid biopsy testing. In 2017, for example, QIAGEN's PAXgene® Blood ccfDNA Tube was adopted by Clinical Genomics for sample collection with its assay to monitor patients for recurrence of colorectal cancer.
- To facilitate the growing trend toward liquid biopsies for routine use in clinical testing, QIAGEN joined CANCER-ID, a public-private consortium working to establish standard protocols and clinical validation for blood-based biomarkers in lung and breast cancer. QIAGEN is helping create standardized methods and Sample to Insight workflows.
- QIAGEN launched a Custom Solutions business in 2017 to serve life science and molecular diagnostics customers with the tools and expertise to quickly build and commercialize products that meet unique workflow requirements. The new 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.
- In forensics, QIAGEN's long-standing leadership in developing international standards of quality for products to collect and test samples for human identification gained support in 2017 with third-party certification that QIAGEN meets state-of-the-art requirements for forensics supply chain and manufacturing (ISO18385:2016).

Industry-leading bioinformatics turning raw genomic data into valuable insights:

QIAGEN's broad offering of content-enabled bioinformatics software continues to grow both as a standalone franchise and as a driver integrated into QIAGEN's Sample to Insight workflows. Our bioinformatics turn vast amounts of genomic data into actionable insights for customers, addressing a critical bottleneck in next-generation sequencing, especially for clinical research and diagnostics. Studies by leading institutions often use solutions such as QIAGEN Clinical Insight (QCI) or CLC Genomics Workbench to analyze and interpret genomic data. QIAGEN pursues collaborations across the genomics and bioinformatics community to offer customers the richest access possible to insights for research and diagnostics.

- In January 2017, QIAGEN acquired OmicSoft Corporation to expand its solutions and enable scientists to visualize and mine large institutional and publicly available "omics" datasets, in addition to the expertly curated, literature-based datasets marketed by QIAGEN. Its OmicSoft solutions meet a growing need in discovery and translational research to access and manage huge amounts of data on DNA, RNA and other sequencing insights.
- In October 2017, QIAGEN partnered with CENTOGENE AG, a leader in testing for rare diseases and hereditary disorders, to provide customers of both companies with more complete insights. QIAGEN integrated CENTOGENE's rare disease variant database into its bioinformatics offerings for genomic interpretation, while CENTOGENE licensed QIAGEN's bioinformatics solutions for use in its diagnostic testing services for rare diseases.
- Advancing the potential of precision medicine for the diagnosis and treatment of cancer, in November 2017 we launched enhancements in our QIAGEN Clinical Insight (QCI) bioinformatics software to automate guidelines published by leading oncology and pathology groups for the use of next-generation sequencing in genetic profiling of cancers. QIAGEN's QCI-Interpret software integrates the consensus AMP/ASCO/CAP standards with our comprehensive biomedical knowledge base to guide the selection of treatments based on findings from each patient's genomic testing and diagnosis.
- Also in November 2017, a collaboration in women's health with Counsyl, a company based in California, demonstrated the value of QIAGEN Clinical Insight for interpretation of results from prenatal testing and hereditary disease screening. Counsyl reported that using QCI for interpreting and scoring genetic variants reduced search time for literature references by 75%, while maintaining accuracy.

Targeted action increasing returns to shareholders

- In 2017, QIAGEN fulfilled its commitment to return $300 million to shareholders through share repurchase transactions, including the return of $245 million through a synthetic share repurchase in January 2017 and the open-market repurchase of 1.9 million shares on the Frankfurt Stock Exchange for approximately $60 million in September 2017. Reaffirming its commitment to a disciplined approach to capital allocation, QIAGEN announced a new commitment to return $200 million to shareholders beginning in 2018 via open-market repurchases. Shares will be repurchased on the Frankfurt Stock Exchange.
- In 2017, QIAGEN continued to execute previously announced restructuring actions to improve efficiency and profitability, while supporting momentum in sales growth. Key areas include consolidating activities into shared service centers and global centers of excellence, gaining efficiencies in marketing, and embracing digital tools across

the business. In 2017, we launched a shared service center for administrative functions in the Philippines, expanding on the efficiencies and complementing the geographic footprint of our first shared service center in Poland. A pre-tax restructuring charge of $19.8 million ($0.06 per share after taxes) was recorded in 2017 for these changes. In addition, following enactment of the new U.S. tax law in December 2017, QIAGEN announced restructuring initiatives to mitigate some of its impacts, resulting in a pre-tax restructuring charge of $13.8 million ($0.04 per share after taxes) in the fourth quarter. Operating results in 2017 show the benefits in cost reduction and profitability, and targeted actions are continuing into 2018.

- In a review aimed at freeing resources to focus on high-growth market opportunities, QIAGEN took steps in late 2017 to streamline its product portfolio in China, the company's second-largest market, by discontinuing the commercialization of some non-core PCR tests and externalizing the HPV test (cervical cancer screening) franchise to a third-party company in China. A partnership became effective in January 2018 with a Chinese company that has absorbed R&D, commercial distribution, and the related QIAGEN employees and infrastructure of the HPV test franchise in China. QIAGEN has become a minority shareholder of this company. QIAGEN China will focus additional resources on QuantiFERON-TB, the new MAQGEN China joint venture with Maccura for the GeneReader NGS System, and the life sciences portfolio.

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 79%-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 for the 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%-8% 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. Examples of our bioinformatics solutions:

Ingenuity Variant Analysis, a powerful cloud-based platform tapping into the QIAGEN Knowledge Base, interprets data from NGS analysis to efficiently filter genetic variants and interpret links to diseases.

QIAGEN Clinical Insight, a unique evidence-based decision support solution, draws on the QIAGEN Knowledge Base to deliver clinically relevant insights from complex genomic variants identified in NGS.

CLC Genomics Workbench incorporates cutting-edge technology and algorithms to overcome challenges face by scientists in analyzing and visualizing data from all major NGS platforms.

GeneGlobe, a web-based portal, enables researchers to search and select gene- and pathway-specific solutions from approximately 25 million pre-designed and custom PCR assay kits, NGS panels and other products.

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 is driving a new era of integrated workflow, making molecular testing 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 2017, our installed base surpassed 2,000 QIAsymphony systems worldwide, serving in a wide variety of laboratories and applications. The platform offers many features to enhance workflows, such as 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 and improve outcomes. The GeneReader workflow offers the flexibility of scalable batch sizes and continuous loading of multiple flow cells, and customers can create relevant reports using QIAGEN's proven gene panels and bioinformatics solutions. In 2017, we continued to enhance performance and added new content, including QIAact panels for deep analysis of lung, breast and ovarian cancers, as well as customized panels for users' specific needs. GeneReader's digital sequencing integrates seamlessly with QIAGEN bioinformatics solutions for interpretation.

QIAcube robotic workstations provide highly versatile solutions for automated sample processing, with novel technologies for purification of DNA, RNA and proteins, saving laboratory staff time and enabling standardized results in analysis using PCR or NGS.

QIAxcel replaces traditional slab-gel analysis, eliminating time-consuming nucleic acid separation methods in low- to high-throughput labs and offering unprecedented sensitivity and time-to-results for analysis of DNA fragments and RNA.

QIAgility is a compact benchtop instrument that enables rapid, high-precision PCR setup supporting almost all tube and plate formats, as well as Rotor-Discs for the Rotor-Gene Q.

ESEQuant portable, battery-operated instruments enable optical measurement for Point of Need molecular testing in physician practices, emergency rooms, remote areas, and other settings with limited or delayed access to laboratories.

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 fields such as forensics, veterinary diagnostics and food safety testing
- 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 nucleic acid sample preparation, assay technologies 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 rapidly disseminating, further transforming 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 2017, including about $3-4 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 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. 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 Personalized Healthcare technologies and biomarkers, 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 2017, we launched the ipsogen JAK2 RGQ PCR Kit in the United States for use in blood cancers. In Europe, we already offer a market-leading portfolio of ipsogen assays for common and rare leukemia types. The U.S. approval for our therascreen EGFR RGQ PCR Kit was expanded in early 2018 for use as a companion diagnostic to diagnose additional EGFR gene mutations in metastatic non-small cell lung cancer (NSCLC).

QIAGEN also offers an extensive range of kits for diagnosing infectious diseases, and we are expanding this portfolio by seeking regulatory approvals of new tests in additional markets.

QIAGEN is the global leader 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 careHPV Test for use in low-resource regions lead the market in HPV screening around the world. In the United States, QIAGEN remains a market leader although vigorous price competition has reduced that business to about 2% of total sales.

A key success factor for our growth in Molecular Diagnostics is enabling laboratories to efficiently use our assay technologies on QIAGEN automation platforms. Our flagship PCR platform is QIAsymphony, based on its flexibility and unique capabilities. We offer broad portfolios of companion diagnostics and infectious disease tests running on the QIAsymphony system. We also are developing companion diagnostics for our GeneReader NGS System and

Modaplex platform. Nucleic acid samples purified on our instruments are ready for use in the demanding and sensitive downstream assays performed in molecular diagnostic applications. We market assays directly via QIAGEN sales channels, and selected assays through major diagnostic partners or other companies to broaden the distribution of our products.

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 - such as human identification and forensics, food and environmental safety, and veterinary testing. The value of genetic “fingerprinting” has been shown for criminal investigations or clarification of paternity or ancestry, public policy compliance for food safety and genetically modified organisms (GMOs), and containment of diseases in commercial livestock.

QIAGEN has developed relationships with diverse molecular testing laboratories and continually innovates to meet their needs. In 2017, QIAGEN helped the International Commission on Missing Persons launch a cutting-edge next-generation sequencing lab for forensic DNA identification, deploying the GeneReader NGS System and other solutions. We are a leader in standardizing solutions for reliable forensic testing, and in 2017 we received international certification for manufacturing human ID products. In environmental research, QIAGEN’s solutions for metagenomics are increasingly used in studies of microbiomes and their effect on health.

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. In 2017, we surpassed 25 master collaboration agreements with Pharma, each enabling multiple co-development projects. These alliances 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.

In addition to our broad portfolio of molecular technologies, QIAGEN offers Pharma partners a full infrastructure for co-development programs, intellectual property on platforms and content, extensive regulatory experience, global marketing reach, and independence as a company focusing exclusively on these types of technologies.

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)	2017	2016	2015
Net Sales			
Consumables and related revenues	$1,242,715	$1,166,131	$1,114,580
Instrumentation	174,821	171,860	166,406
Total	$1,417,536	$1,337,991	$1,280,986

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)	2017	2016	2015
Net Sales			
Americas:			
United States	$579,906	$555,676	$525,532
Other Americas	73,478	71,797	79,578
Total Americas	653,384	627,473	605,110
Europe, Middle East and Africa	462,980	428,055	409,955
Asia Pacific and Rest of World	301,172	282,463	265,921
Total	$1,417,536	$1,337,991	$1,280,986

QIAGEN has built an increasing presence in key emerging markets as a growth strategy. In 2017, 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 1,000 employees in research and development work in QIAGEN centers of excellence on three continents.

Strengthening our leadership in the automation of laboratories is a key to driving dissemination of molecular testing in healthcare and other fields, as well as generating increased demand for our consumable products. We continue to expand the applications of our modular QIAsymphony platform, enabling hospitals and other customers to adopt or greatly expand their use of molecular diagnostics. QIAGEN also is rolling out a range of performance enhancements and expansions for our GeneReader NGS System to add value by addressing new applications and improving output and connectivity within labs.

We are commercializing a deep pipeline of assays for preventive screening and diagnostic profiling of diseases, detection of biomarkers to guide personalized medicine in cancer and other diseases, and a range of other targets. Our development program generates commercial launches of tests that add value to our QIAsymphony and GeneReader NGS platforms. In 2017, we launched novel infectious disease tests and companion diagnostics for QIAsymphony, as well as additional QIAact panels for deep analysis of lung, breast and ovarian cancers using the GeneReader NGS System. In Applied Testing, we continue to develop new content for human identification and environmental applications. We are also expanding our extensive portfolio of products for disease pathway research by Pharma and Academic customers. In addition, we are developing assays for specific applications in key markets such as China and Japan.

Our bioinformatics teams are 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 website makes ordering easy with a fully searchable online product catalog and ordering. The site can be viewed in Chinese and Japanese, and contains selected information in French, German and Korean. 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 Genes & Pathways 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 2017, our purchases of intangible assets totaled $34.3 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, 2017, we owned 362 issued patents in the United States, 279 issued patents in Germany and 1,825 issued patents in other major industrialized countries. We had 638 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 “Risk Factors” included in Item 3 above 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 such as Merck KGaA (MilliporeSigma business) and Roche Diagnostics GmbH (Applied Sciences Division). 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, Promega Corp., EMD Millipore or Merck Millipore, and Macherey-Nagel GmbH for nucleic acid separation and purification; Thermo Fisher and Promega Corp. for assay solutions and for transfection reagents; and Merck KGaA (MilliporeSigma business) and Thermo Fisher for 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. Our competitors for gene-based diagnostic assays include Roche Diagnostics, Thermo Fisher, Abbott, and Danaher. 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) are regulated under EU-Directive 98/79/EC (IVD Directive) and corresponding national provisions. 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.

On May 25, 2017, the European Commission (EC) enacted new EU regulations for medical devices and IVDs that impose additional legal regulatory requirements on MD/IVDs used in the EU. These new regulations will come into full effect after a 5-year transition period. All products will require approval under the new law and no grandfathering of existing approvals will be allowed. 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. 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 kits are subject to regulation by the FDA as medical devices and must be cleared or approved before they can be marketed. 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 addition, some of our test kits are sold for research use only in the United States. 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.

In Vitro Diagnostics

The FDA regulates the sale or distribution of medical devices, including in vitro diagnostic test kits and some Lab Developed Tests (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 general controls and 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 subject to frequent adjustment, 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 petition 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) review process, and we cannot predict what if any changes will occur.

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.

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, and therascreen products. We established a task force to ensure that the deadline was met but this will place 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 are required to have this same labeling as of September 24, 2016 and 2018, respectively. QIAGEN was fully compliant with the new rule by the September 2014 and 2016 deadlines and we continue to work to ensure that we will be able to meet the remaining deadlines. The new rule will also require additional compliance oversight now that it has been implemented. The requirements are now required to be confirmed as part of our annual reporting and PMA submissions. They are also assessed during site inspections by the U.S. FDA.

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

(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 or de-identify information so that we may provide services. 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. 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.

Almost all states have adopted data breach notification laws relating to the “personal information” of its 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. There is significant variability under these laws, but most require notification to affected individuals (and some require notification 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.

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, there are 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. Currently, we are implementing the requirements set forth by the GDPR, which is set to take 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 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 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

Recent 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, 2016 on Form SD on April 24, 2017 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 Exhibit 8.1 to this Annual Report.

Description of Property

Our production and manufacturing facilities for consumable products are located in Germany, the United States, China, and the United Kingdom. Our facilities for software development are located in the United States, Germany, Poland 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 totaled $90.1 million, $74.5 million and $97.8 million for 2017, 2016 and 2015, 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, and Germantown, Maryland. 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 781,000 square feet, some of which is leased pursuant to separate contracts, the last of which expires in 2018. Our most recent expansion to these facilities was in 2017 and included approximately 4,400 square feet of additional office and warehouse space. 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 32,400 square feet in Waltham for NGS system development and 39,100 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. Additionally, we lease smaller facilities in Shenzhen, China and Manchester, United Kingdom for

manufacturing, warehousing, distribution and research operations and have shared service centers which lease facilities in Wroclaw, Poland and Manila, Philippines. 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.

Item 4A. Unresolved Staff Comments
Not applicable.

Item 5. Operating and Financial Review and Prospects
This section contains a number of forward-looking statements. These statements are based on current management expectations, and actual results may differ materially. Among the factors that could cause actual results to differ from management's expectations are those described in "Risk Factors" and "Forward-looking and Cautionary Statements" in Item 3 of this Annual Report.
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 including Prevention, Profiling of diseases, Personalized Healthcare and Point of Need testing
- Applied Testing - government or industry customers using molecular technologies in fields such as forensics, veterinary diagnostics and food safety testing
- 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, 2017, we employed approximately 4,700 people in more than 35 locations worldwide.
Recent Acquisitions
We have made a number of strategic acquisitions and implemented other strategic transactions since 2015, targeting innovative technologies and aiming to achieve market-leading positions 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 early 2018, QIAGEN entered into a purchase agreement to acquire STAT-Dx, a privately-held company developing advanced multiplex diagnostics for widespread syndromes such as serious respiratory or gastrointestinal infections. Subject to successful completion of defined development activities by STAT-Dx, QIAGEN has agreed to acquire all shares of STAT-Dx for approximately $147 million in cash and additional payments of up to about $44 million based on the achievement of regulatory and commercial milestones. The acquisition is expected to be completed in the second quarter of 2018 and funded from existing cash reserves. The transaction will expand QIAGEN's instrument and consumables portfolio by adding a novel CE-IVD marked system, to be branded as QIAstat-Dx, enabling Sample to Insight processing of up to 48 molecular targets with cost-efficient, easy-to-use assays. The first two QIAstat-Dx tests, extensive respiratory and gastrointestinal panels, are expected to be launched in Europe and other markets in the second half of 2018, and in the U.S. following expected regulatory approval in 2019.
- QIAGEN entered into a joint venture in May 2017 with 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 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.
- In 2015, we acquired MO BIO Laboratories, Inc., a privately-held provider of cutting-edge sample technologies for studies of the microbiome and metagenomics, analyzing the impact of microbial diversity on health and the environment. The acquisition added a complementary portfolio of sample technologies to QIAGEN's universal solutions for next-generation sequencing. MO BIO kits, based on proprietary Inhibitor Removal Technology, enable the isolation of pure DNA from challenging samples like soil, water, plants and stool.
- In 2015, we acquired an innovative technology from AdnaGen GmbH, a subsidiary of Alere Inc., that enables enrichment and molecular analysis of circulating tumor cells (CTCs) from blood samples. The acquisition added to QIAGEN’s pipeline of technologies for molecular testing through non-invasive liquid biopsies as an alternative to costly and risky tissue biopsies. Other assets acquired include two marketed CE-IVD marked products, AdnaTest BreastCancer and AdnaTest Prostate Cancer, for treatment monitoring and detection of tumor relapse.
- In February 2015, we announced the spin-off of teams and activities of QIAGEN Marseille S.A. (formerly Ipsogen S.A.), a majority-owned and fully consolidated entity. In the divestiture, QIAGEN Marseille agreed to the sale of all its assets and liabilities, except its intellectual property portfolio, to a stand-alone company. QIAGEN retained rights to commercialize the ipsogen line of products, including companion diagnostics for blood cancers. As part of this initiative, we acquired the remaining QIAGEN Marseille shares through a tender offer during 2015 and 2016.

Our financial results include the contributions of recent acquisitions and the QIAGEN Marseille spin-off 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 ASC Topic 280, Segment Reporting. 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 2017, 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, 2017, Compared to 2016

Net Sales

In 2017, net sales grew 6% to $1.42 billion compared to $1.34 billion in 2016 with organic business expansion contributing four percentage points to total sales growth with two percentage points of additional growth from the June 2016 acquisition of Exiqon A/S, a leader in RNA analysis technologies, and the January 2017 acquisition of OmicSoft Corporation, a software provider unlocking valuable insights from large “omics” datasets. Sales growth of 6% includes an adverse impact of one percentage point related to growth of non-core PCR tests and the China HPV franchise, which beginning in January 2018 have either been discontinued or externalized through a partnership with a Chinese company which has taken over the commercial distribution of the HPV test franchise in China. All regions

and customer classes supported higher sales of consumables and related revenues (+7% / 88% of sales) and instruments (+2% / 12% of sales).
Net sales by geographic region

	Full-year 2017		
	Sales (In $ m)	% change	% of sales
Americas	$653	+4%	46%
Europe / Middle East / Africa	$463	+8%	33%
Asia-Pacific / Japan	$299	+7%	21%

Top 7 emerging markets: Brazil, Russia, India, China, South Korea, Mexico and Turkey ($234 million, +12%, 16% of sales)
FY 2017: Rest of world represented less than 1% of net sales.

Geographic regions: Europe / Middle East / Africa led the geographic performance with 8% growth in 2017, including adverse currency movements of one percentage point of sales growth, and benefited from gains in Germany, Italy and Turkey. The Asia-Pacific / Japan region advanced 7%, due partially to strong performance in South Korea and India, which more than offset lower sales in Japan. Excluding the business portfolio change in China, the Asia-Pacific / Japan region experienced 13% growth, including one percentage point of favorable currency movements. The Americas advanced at a 5% pace, excluding U.S. HPV test sales, on higher sales of QuantiFERON-TB tests and improved conditions among Life Science customers. Excluding adverse currency movements of one percentage point, the top seven emerging markets expanded 12%, with key contributions from Turkey, South Korea, India and Brazil.
Customer classes: An overview of performance in QIAGEN's four customer classes:
Net sales by product category and customer class

	Full-year 2017		
	Sales (In $ m)	% change	% of sales
Consumables and related revenues	$1,243	+7%	88%
Instruments	$175	+2%	12%
Molecular Diagnostics[(1)]	$683	+5%	48%
Applied Testing	$137	+14%	10%
Pharma	$275	+7%	19%
Academia	$323	+4%	23%

(1) Includes companion diagnostic co-development revenues ($43 million, +32%) and U.S. HPV sales ($28 million, -16%, 2% of sales).

Molecular Diagnostics, which contributed approximately 48% of net sales, expanded 5% in 2017, after being reduced by adverse currency movements of one percentage point. The core portfolio delivered approximately 7% growth before adverse currency movements and the ongoing decline in sales of U.S. HPV test products (-16% / 2% of sales). Sales of consumables used on the QIAsymphony automation platform also grew at a solid pace for the full year, as QIAGEN exceeded its goal for new QIAsymphony placements in 2017. Sales growth of 5% includes an adverse impact of 1% related to the China HPV franchise, which beginning in January 2018 has been externalized through a partnership with a Chinese company.
Applied Testing represented approximately 10% of net sales and grew 14% in 2017 compared to 2016, with negligible favorable currency movements. Applied Testing advanced for instruments as well as consumables and related revenues, in part due to gains in the human identification / forensics portfolio.
Pharma experienced 7% sales growth in 2017 compared to 2016 and provided 19% of net sales, with negligible adverse currency movements. Pharma grew in consumables and related revenues that more than offset weaker instruments growth during the course of the year.
Academia represented approximately 23% of net sales and rose 4% in 2017 compared to 2016, with modestly favorable currency movements. Academia advanced on consumables and related revenues, while the EMEA and Asia Pacific / Japan regions showed growth during 2017.
Gross Profit

Gross profit was $922.6 million, or 65% of net sales, in 2017, compared with $844.7 million, or 63% of net sales, in 2016. 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 changes in gross margin between

periods. Further, gross profit in 2017 was impacted by $4.4 million in restructuring charges while 2016 was impacted by restructuring charges of $12.0 million. Additionally, during 2016, we incurred incremental costs in connection with the relocation and centralization of the manufacturing of certain products to our European production site in Hilden, Germany and also in connection with the in-sourcing of the manufacturing of our QuantiFERON product to our U.S. site in Germantown, Maryland.

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 $72.7 million in 2017 from $80.1 million in 2016 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 3% to $154.1 million (11% of net sales) in 2017, compared to $149.8 million (11% of net sales) in 2016. The increase in research and development costs during 2017 reflects our ongoing investments in NGS and our life sciences portfolio, as well as our acquisitions of Exiqon in 2016 and OmicSoft in 2017 together with regulatory activity in support of new products. 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. Additionally, 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 largely unchanged at $375.6 million (26% of net sales) in 2017 compared to $376.3 million (28% of net sales) in 2016. Sales and marketing expenses were primarily associated with personnel, commissions, advertising, trade shows, publications, freight and logistics expenses, and other promotional expenses. We experienced efficiencies due to a lower cost base following the realignment of marketing activities as part of the 2016 restructuring project. These incremental savings were slightly offset by higher compensation costs including share based compensation expense when compared to the prior period due to reassessment of stock units with performance criteria. 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. Further, looking forward we expect a lower cost base following the realignment of marketing activities as part of the 2016 restructuring project.

General and Administrative, Restructuring, Integration and Other

General and administrative, restructuring, integration and other costs increased by 11% to $200.1 million (14% of net sales) in 2017 from $180.6 million (13% of net sales) in 2016. The increase in 2017 reflects an increase in acquisition and integration costs which totaled $68.9 million in 2017, which included $45.3 million in costs from acquisition related legal settlements partially offset by $3.3 million gains recorded from the reduction in the fair value of contingent consideration following unmet milestones, as compared to $31.1 million in 2016, of which $6.3 million related to the transaction costs incurred in connection with the acquisition of Exiqon A/S. Acquisition and integration related costs in 2016 are net of $5.0 million of the total $6.5 million gains recorded in general and administrative costs from the reduction in the fair value of contingent consideration following unmet milestones. 2016 also includes the impact of lower share based compensation costs following a reassessment of stock units with performance criteria. Restructuring costs of $29.1 million were lower in 2017 compared to $56.2 million in 2016 related to internal activities, including severance and retention costs as discussed fully in Note 6. 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 2018. Over time, we believe the restructuring and integration activities will reduce expenses as we improve efficiency in operations.

Acquisition-Related Intangible Amortization

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 operating expense under the caption “acquisition-related intangible amortization.”

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 use of the asset.

During 2017, amortization expense on acquisition-related intangibles within operating expense increased to $39.4 million, compared to $39.1 million in 2016. We expect acquisition-related intangible amortization will increase as a result of our future acquisitions.

Other Income (Expense)

Total other expense, net was $39.0 million in 2017, compared to $41.9 million in 2016. Total other expense, net is primarily the result of interest expense and other expense, partially offset by interest income.

For the year ended December 31, 2017, interest income increased to $10.6 million from $6.8 million in 2016. Interest income includes interest earned on cash, cash equivalents and short term investments, income related to certain interest rate derivatives as discussed in Note 13 in the accompanying consolidated financial statements and other components including the interest portion of operating lease transactions.

Interest expense increased to $49.7 million in 2017, compared to $39.0 million in 2016. Interest costs primarily relate to debt, discussed in Note 15 in the accompanying consolidated financial statements.

Other expense, net for the year ended December 31, 2017 includes a $3.5 million gain in connection with the sale of our interest in an equity-method investment as well as $3.2 million in income from equity-method investments offset by a $5.1 million loss recognized in connection with the impairments of cost-method investment and net losses on foreign currency in 2017. Included in $9.7 million other expense, net in 2016 is a $8.3 million loss recognized in connection with the impairment of an equity-method investment and a $2.6 million charge for the disposal of goodwill following the transfer of the research and development activities of our instrumentation business as part of the restructuring program initiated late in 2016. For the year ended December 31, 2017, we recorded net losses on foreign currency of $3.3 million compared to less than $0.1 million in 2016 due to foreign currency rate fluctuations.

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 2017 and 2016, our effective tax rates were 64.7% and (41.1)%, respectively. The comparison is impacted by pre-tax book income which was higher in 2017 at $114.4 million compared to $56.9 million in 2016. Pretax book income was lower in 2016 primarily due to charges incurred in connection with the restructuring program initiated in the fourth quarter of 2016. Fluctuations in the distribution of pre-tax (loss) income among our operating subsidiaries can lead to fluctuations of the effective tax rate in the consolidated financial statements.

During 2017, the 64.7% reflects the impacts of the U.S. tax reform. Because of the tax reform, we revalued of our U.S. deferred tax assets and liabilities to reflect the corporate income tax rate change from 35% to 21% and provided for a full valuation allowance of $60.8 million which was recorded against deferred tax assets related to U.S. interest carry forwards. Based on the current debt level in the U.S., along with the new restrictive interest limitation enacted with the new U.S. tax reform, it is highly unlikely that the historic U.S. interest carry forward will ever be utilized. We also recorded full valuation allowances against other deferred tax assets on tax losses due to unlikely future profits in other jurisdictions. Following the adoption of ASU 2016-09 Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, $5.2 million of excess tax benefit was recognized directly to the tax provision for the year ended December 31, 2017 and during 2017, we increased accruals for tax contingencies by $22.1 million, primarily related to ongoing income tax audits. In 2016, 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, regulations, 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 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 Item 3 Risk Factors.

Year Ended December 31, 2016, Compared to 2015

Net Sales

In 2016, net sales grew 4% to $1.34 billion compared to $1.28 billion in 2015, including two percentage points of adverse currency movements. Excluding the effect of adverse currency movements, organic business expansion contributed four percentage points to total sales growth while nearly two percentage points of additional growth came

from the December 2015 acquisition of MO BIO Laboratories Inc, a leader in sample technologies for metagenomics and microbiome analysis, and the June 2016 acquisition of Exiqon A/S, a leader in RNA analysis technologies. Excluding the expected impact of sharply lower U.S. sales of HPV tests, which created approximately two percentage points of headwind, as well as the effect of adverse currency movements, net sales rose approximately 8% in 2016. All regions and customer classes supported higher sales of consumables and related revenues (+5% / 87% of sales) and instruments (+3% / 13% of sales).

Net sales by geographic region

	Full-year 2016		
	Sales (In $ m)	% change	% of sales
Americas[1]	$627	+4%	47%
Europe / Middle East / Africa	$428	+4%	32%
Asia-Pacific / Japan	$279	+10%	21%
Top 7 emerging markets[2]	$209	+13%	16%

(1) Americas excluding U.S. HPV (+6%)
(2) Top 7 emerging markets: Brazil, Russia, India, China, South Korea, Mexico and Turkey.
FY 2016: Rest of world represented less than 1% of net sales.

Geographic regions: The Asia-Pacific / Japan region led the geographic performance with 10% growth in 2016 reflecting adverse currency movements of one percentage point of sales growth, benefiting from key contributions from China, South Korea and India. The Americas advanced at a faster pace (+6%) when excluding U.S. HPV test sales on higher sales of the QuantiFERON-TB test and improved conditions among Life Science customers. Europe / Middle East / Africa advanced 4% reflecting adverse currency movements of approximately four percentage points of sales growth while experiencing expansion in markets such as France, the United Kingdom, Turkey and the Middle East. Turkey, China, South Korea, India and Brazil were key contributors (+13% / 16% of sales) when excluding adverse currency movements of 6 percentage points.
Customer classes: An overview of performance in QIAGEN's four customer classes:
Net sales by product category and customer class

	Full-year 2016		
	Sales (In $ m)	% change	% of sales
Consumables and related revenues	$1,166	+5%	87%
Instruments	$172	+3%	13%
Molecular Diagnostics[1]	$663	+4%	50%
Of which: U.S. HPV test solutions	$33	-29%	3%
MDx excluding U.S. HPV[1]	$630	+7%	47%
Applied Testing	$120	+5%	9%
Pharma	$262	+5%	19%
Academia	$293	+4%	22%

(1) Includes companion diagnostic co-development revenues ($32 million, -8%)

Molecular Diagnostics, which contributed approximately 50% of net sales, expanded by 4% in 2016 reflecting adverse currency movements of three percentage points of sales growth. The core portfolio delivered approximately 10% growth before adverse currency impacts and the ongoing decline in sales of U.S. HPV test products (-29% / 3% of sales). Sales of consumables used on the QIAsymphony automation platform also grew at a solid pace for the full year, as QIAGEN exceeded its goal for new QIAsymphony placements.
Applied Testing represented approximately 9% of net sales, grew 5% in 2016 compared to 2015 with adverse currency movements resulting in a loss of two percentage points of sales growth. Before negative currency impacts, Applied Testing advanced on high-single digit growth rates for instruments while consumables and related revenues grew at mid-single digit rates.

Pharma experienced 5% sales growth in 2016 compared to 2015 with adverse currency movements resulting in a loss of two percentage points of sales growth and provided 19% of net sales. Pharma grew on high-single digit growth rates for consumables and related revenues while instruments maintained a mid-single digit rate during the course of the year before negative currency impacts.

Academia represented approximately 22% of net sales and rose 4% in 2016 compared to 2015 with negligible adverse currency movements. Before negative currency impacts, Academia advanced on a mid-single digit growth rate for consumables and related revenues while all regions showed gains in this customer class in 2016.

Gross Profit

Gross profit was $844.7 million, or 63% of net sales, in 2016, compared with $826.7 million, or 65% of net sales, in 2015. 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. Gross profit in 2016 was impacted by lower gross margins for companion diagnostic partnerships. Further, gross profit in 2016 was impacted by impairment charges of $12.0 million recognized in connection with our 2016 restructuring. Additionally, during 2016, we incurred incremental costs in connection with the relocation and centralization of the manufacturing of certain products to our European production site in Hilden, Germany and also in connection with the in-sourcing of the manufacturing of our QuantiFERON product to our U.S. production site in Germantown, Maryland.

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 slightly to $80.1 million in 2016 from $84.5 million in 2015.

Research and Development

Research and development expenses increased by 2% to $149.8 million (11% of net sales) in 2016, compared to $146.8 million (11% of net sales) in 2015. During 2015, we introduced our GeneReader NGS System and continue to invest in research and development as we develop a range of upgrades and enhancements to address new applications and market segments. We also plan to introduce additional cancer-related gene panels, with longer-term expansion of the NGS content menu beyond oncology. The increase in research and development costs during 2016 also reflects our ongoing investments in NGS and our life sciences portfolio, as well as our acquisitions of MO BIO in late 2015 and Exiqon in 2016 together with regulatory activity in support of new products. 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. Additionally, 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.

Sales and Marketing

Sales and marketing expenses increased 5% to $376.3 million (28% of net sales) in 2016 from $359.6 million (28% of net sales) in 2015. Sales and marketing expenses were higher as a percentage of sales in 2016 as compared to 2015 to support commercialization of growth drivers and geographic expansion. Sales and marketing expenses are primarily associated with personnel, commissions, advertising, trade shows, publications, freight and logistics expenses, and other promotional expenses. In 2016, we continued investments in our commercialization activities related to our sales force, in particular the addition of sales representatives for QuantiFERON TB and the life sciences markets. We have also continued our e-commerce initiatives as well as investments to expand our presence in markets such as the Middle East and Asia. These incremental investments more than offset favorable currency impacts and lower compensation costs following a reassessment of stock units with performance criteria.

General and Administrative, Restructuring, Integration and Other

General and administrative, restructuring, integration and other costs increased by 77% to $180.6 million (13% of net sales) in 2016 from $102.1 million (8% of net sales) in 2015. The increase in 2016 includes $56.2 million in restructuring costs related to internal restructuring activities, including personnel related, asset impairment and advisory costs. Additionally, acquisition and integration costs totaled $31.1 million, of which $6.3 million related to the transaction costs incurred in connection with the acquisition of Exiqon A/S. In 2015, acquisition and integration costs totaled $13.9 million, of which $7.5 million related to the transaction costs incurred in connection with the acquisition of MO BIO Laboratories. Acquisition and integration related costs in 2016 are net of $5.0 million of the

total $6.5 million gains recorded in general and administrative costs from the reduction in the fair value of contingent consideration following unmet milestones. The increase in general and administrative, restructuring, integration and other costs also reflects an increase of $5.1 million related to share-based compensation expense as 2015 includes the impact of lower share based compensation costs following a reassessment of stock units with performance criteria.

Acquisition-Related Intangible Amortization

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 operating expense under the caption “acquisition-related intangible amortization.” 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 use of the asset.

During 2016, amortization expense on acquisition-related intangibles within operating expense increased to $39.1 million, compared to $38.7 million in 2015.

Other Income (Expense)

Total other expense, net was $41.9 million in 2016, compared to $43.2 million in 2015. Total other expense, net is primarily the result of interest expense and other expense, partially offset by interest income.

For the year ended December 31, 2016, interest income increased to $6.8 million from $4.8 million in 2015. Interest income includes interest earned on cash, cash equivalents and short term investments, income related to certain interest rate derivatives as discussed in Note 13 in the accompanying consolidated financial statements and other components including the interest portion of operating lease transactions.

Interest expense increased to $39.0 million in 2016, compared to $37.4 million in 2015. Interest costs primarily relate to debt, discussed in Note 15 in the accompanying consolidated financial statements.

Other expense, net was $9.7 million for the year ended December 31, 2016, and includes a $8.3 million loss recognized in connection with the impairment of an equity-method investment and a $2.6 million charge for the disposal of goodwill following the transfer of the research and development activities of our instrumentation business as part of the restructuring program initiated late in 2016. Included in $10.6 million of other expense, net in 2015 is a $7.6 million loss recognized on the repurchase of the $130.5 million loan payable to and warrant agreement with QIAGEN Finance. For the year ended December 31, 2016, we recorded net losses on foreign currency of less than $0.1 million compared to $0.5 million in 2015 due to foreign currency rate fluctuations.

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 2016 and 2015, our effective tax rates were (41.1)% and 4.7%, respectively. The comparison is impacted by pre-tax book income which was lower in 2016 at $56.9 million compared to $136.3 million in 2015. Pretax book income was lower in 2016 primarily due to charges incurred in connection with the restructuring program initiated in the fourth quarter of 2016. Fluctuations in the distribution of pre-tax (loss) income among our operating subsidiaries can lead to fluctuations of the effective tax rate in the consolidated financial statements. In 2016 and 2015, 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, regulations, 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 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 Item 3 Risk Factors.

Foreign Currencies

QIAGEN N.V.’s reporting 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. The net loss on foreign currency transactions in 2017 was $3.3 million and in 2016 and 2015 was less than $0.1 million, and $0.5 million, respectively, and is included in other expense, net.

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 variable rate debt. 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 speculative purposes. We recognize all derivatives as either assets

or liabilities on the balance sheet, 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. 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. To determine our own credit risk, we estimated our own credit rating by benchmarking the price of our outstanding debt to publicly-available comparable data from rated companies. Using the estimated rating, we quantify our credit risk by reference to publicly-traded debt with a corresponding rating.

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 our balance sheet exposure on a group-wide basis using foreign exchange forwards, options and cross-currency swaps.

Interest Rate Derivatives. We use interest rate derivative contracts on certain borrowing transactions to hedge interest rate exposures. We have entered into interest rate swaps in which we agree to exchange, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed-upon notional principal amount.

We also make use of economic hedges. Further details of our derivative and hedging activities can be found in Note 13 to the accompanying consolidated financial statements.

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, 2017 and 2016, we had cash and cash equivalents of $657.7 million and $439.2 million, respectively. We also had short-term investments of $359.2 million at December 31, 2017. 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, 2017, cash and cash equivalents had increased by $218.5 million from December 31, 2016, primarily as a result of cash provided by operating activities of $286.8 million and cash provided by financing activities of $387.2 million, partially offset by cash used in investing activities of $464.3 million. Working capital as of December 31, 2017 increased to $1.323 billion as compared to $729.1 million as of December 31, 2016, reflecting the cash provided by the operating and financing activities in 2017 as described below.

Operating Activities. For the years ended December 31, 2017 and 2016, we generated net cash from operating activities of $286.8 million and $341.6 million, respectively. While net income was $40.4 million in 2017, non-cash components in income included $216.4 million of depreciation and amortization and $5.1 million of non-cash impairments due to the impairment of cost-method investments as further discussed in Note 10.

Operating cash flows include a net decrease in working capital of $95.2 million excluding changes in fair value of derivative instruments. The current period change in working capital is primarily due to increased inventories and accounts receivable and decreased taxes payable. 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 $464.3 million of cash was used in investing activities during 2017, compared to $179.1 million during 2016. Investing activities during 2017 consisted principally of $450.6 million for purchases of short-term investments, $90.1 million in cash paid for purchases of property and equipment, as well as $34.3 million paid for intangible assets and $4.8 million paid for strategic investments in privately and publicly held companies as discussed in Note 10, partially offset by $189.0 million from the sale of short-term investments. Additionally, during 2017 cash paid for acquisitions, net of cash acquired, totaled $50.5 million. Cash used in other investing activities during the year ended December 31, 2017 and 2016 consisted primarily of $20.7 million and $1.2 million, respectively, paid in connection with derivative collateral arrangements.

Financing Activities. For the year ended December 31, 2017, cash provided by financing activities was $387.2 million compared to cash used in financing activities of $10.6 million in 2016. Financing activities during 2017 consisted primarily of $329.9 million net cash proceeds from the German private placement and $394.4 million net cash proceeds from the cash convertible offering. We used $73.6 million of the proceeds from the from the cash convertible

offering to pay the premium for a call option related to the cash convertible notes, and simultaneously received $45.4 million from the sale of Warrants, for a net cash outlay of $28.3 million for the call spread overlay. Additionally in 2017, we used $243.9 million for a capital repayment made to shareholders in connection with the January 2017 synthetic share buyback and repurchased QIAGEN shares of $61.0 million in connection with the fourth share repurchase program discussed in Note 17 "Equity." Cash used in other financing activities during the year ended December 31, 2017 and 2016 consisted primarily of $4.4 million and $3.1 million paid for contingent consideration, respectively, together with $4.1 million and $0.8 million paid in connection with derivative collateral arrangements, respectively.

Other Factors Affecting Liquidity and Capital Resources

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 "Lines of Credit and Debt". 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 "Lines of Credit and Debt."

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, 2017. 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, 2017. We also have capital lease obligations, including interest, in the aggregate amount of $1.5 million, and carry $1.8 billion of long-term debt, of which no amounts are current as of December 31, 2017.

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, the 2021 Notes and the 2023 Notes collectively as the “Cash Convertible Notes” which are discussed fully in Note 15 to the consolidated financial statements. Interest on the 2019 and 2021 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%).

We had notes payable, which were the long-term borrowings of the proceeds from the issuances of $150.0 million senior unsubordinated convertible notes, with a 1.5% coupon due in 2024 through QIAGEN Finance (2004 Notes). The 2004 Notes were convertible into our common shares at a conversion price of $12.6449, subject to adjustment. In connection with conversions of $14.9 million of the 2004 Notes, we previously repaid $14.5 million of the debt to QIAGEN Finance. During 2015, we paid $250.9 million for the redemption of the remaining loan and repurchased the warrant agreement with QIAGEN Finance and recognized a loss of $7.6 million in other expense, net.

In connection with certain acquisitions, we could be required to make additional contingent cash payments totaling up to $18.5 million based on the achievement of certain revenue and operating results milestones as follows: $11.5 million in 2018 and $7.0 million, payable in any 12-month period from now until 2029 based on the accomplishment of certain revenue targets. Of the $18.5 million total contingent obligation, we have assessed the fair value at December 31, 2017, to be $11.5 million, which is included in accrued liabilities in the accompanying balance sheet as of December 31, 2017.

In July 2014, we announced the launch of our third $100 million share repurchase program to purchase up to another $100 million of our common shares (excluding transaction costs). In 2014, 2.1 million QIAGEN shares were repurchased for $49.1 million (excluding transaction costs) and in 2015 0.8 million QIAGEN shares were repurchased for $20.8 million. This program expired in December 2015.

In April 2016, we announced the launch of our fourth $100 million share repurchase program. In August 2016, we announced our intention to return a total amount of approximately $300 million to our shareholders by the end of 2017. In January 2017, we completed a synthetic share repurchase that combined a direct capital repayment with a consolidation of shares. This approach has been 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. During the remainder of 2017, 1.9 million QIAGEN shares were repurchased for $61.0 million (including transaction costs) to complete the total program.

In January 2018, we announced our fifth share repurchase program of up to $200 million of our common shares. Repurchased shares will be held in treasury in order to satisfy various obligations, which include employee share-based remuneration plans.

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.

Off-Balance Sheet Arrangements

Other than our former arrangements with QIAGEN Finance as discussed in Note 15 to the consolidated financial statements, we did not use special purpose entities and do not have off-balance sheet financing arrangements as of and during the years ended December 31, 2017, 2016 and 2015.

Contractual Obligations

As of December 31, 2017, our future contractual cash obligations are as follows:

Contractual Obligations	Payments Due by Period						
(in thousands)	Total	2018	2019	2020	2021	2022	Thereafter
Long-term debt [1]	$1,865,393	$24,426	$510,267	$20,485	$330,029	$493,910	$486,276
Purchase obligations	99,489	65,073	22,556	10,472	943	11	434
Operating leases	64,877	18,483	16,011	11,762	8,457	6,126	4,038
License and royalty payments [2]	55,092	12,907	11,858	11,558	8,860	6,161	3,748
Capital lease obligations [3]	1,470	1,411	45	14	—	—	—
Total contractual cash obligations	$2,086,321	$122,300	$560,737	$54,291	$348,289	$506,208	$494,496

[1] Amounts include required principal, stated at the current carrying values, and interest payments.

[2] As of December 31, 2017, $11.8 million and $35.3 million are included in accrued and other current liabilities and other long-term liabilities, respectively.

[3] Includes future cash payments, including interest, due under capital 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 $18.5 million based on the achievement of certain revenue and operating results milestones as follows: $11.5 million in 2018 and $7.0 million, payable in any 12-month period from now until 2029 based on the accomplishment of certain revenue targets, the launch of certain products or the grant of certain patent rights. As of December 31, 2017, we have accrued $11.5 million for these contingent payments which is included in accrued and other current liabilities.

Liabilities associated with uncertain tax positions, including interest and penalties, are currently estimated at $47.1 million as of December 31, 2017 and are not included in the table above, as we cannot reasonably estimate when, if ever, an amount would be paid to a government agency. Ultimate settlement of these liabilities is dependent on factors outside of our control, such as examinations by each agency and expiration of statutes of limitation for assessment of additional taxes.

Critical Accounting Policies, Judgments and Estimates

The preparation of our financial statements in accordance with accounting principles generally accepted in the United States requires management to make assumptions that affect the reported amounts of assets, liabilities and disclosure of contingencies as of the date of the financial statements, as well as the reported amounts of revenues and expenses during the reporting period. Critical accounting policies are those that require the most complex or subjective judgments often as a result of the need to

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make estimates about the effects of matters that are inherently uncertain. Thus, to the extent that actual events differ from management's estimates and assumptions, there could be a material impact to the financial statements. In applying our critical accounting policies, at times we used accounting estimates that either required us to make assumptions about matters that were highly uncertain at the time the estimate was made or it is reasonably likely that changes in the accounting estimate may occur from period to period that would have a material impact on the presentation of our results of operations, financial position or cash flows. Our critical accounting policies are those related to revenue recognition, share-based compensation, income taxes, investments, variable interest entities, goodwill and other intangible assets, purchase price allocation and fair value measurements. We reviewed the development, selection, and disclosure of our critical accounting policies and estimates with the Audit Committee of our Supervisory Board.

Revenue Recognition. We recognize revenue when four basic criteria are met: (1) persuasive evidence of an arrangement exists; (2) delivery has occurred or services have been rendered; (3) the fee is fixed or determinable; and (4) collectability is reasonably assured. Determination of criteria (3) and (4) could require management's judgments regarding the fixed nature of the fee charged for services rendered and products delivered and the collectability of those fees. While the majority of our sales agreements contain standard terms and conditions, we do enter into agreements that contain multiple elements or non-standard terms and conditions. Sometimes interpretation of the sales agreement or contract for multiple-element arrangements is complex in determining whether there is more than one unit of accounting and if so, how and when revenue should be recognized for each element is subject to certain estimates or assumptions. We record revenue as the separate elements are delivered to the customer if the delivered item has value on a stand-alone basis and delivery or performance of the undelivered item is probable and substantially in our control. Revenue is allocated according to the relative selling price method. Should changes in conditions cause management to determine that these criteria are not met for certain future transactions, revenue recognized for any reporting period could be adversely affected.

Share-Based Compensation. Our stock plan, the QIAGEN N.V. 2014 Stock Plan (the Plan), allows for the granting of stock rights, incentive stock options, as well as for non-qualified options, stock grants and stock-based awards. 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.

Income Taxes. Calculation of our tax provision is complex due to our international operations and the multiple taxing jurisdictions in which we operate. Some of our deferred tax assets relate to net operating losses (NOL). The utilization of NOLs is not assured and is dependent on generating sufficient taxable income in the future. Although management believes it is more likely than not that we will generate sufficient taxable income to utilize substantially all NOL carryforwards, evaluating the NOLs related to our newer subsidiaries requires us to make estimates that we believe are reasonable, but may also be highly uncertain given that we do not have direct experience with these subsidiaries or their products. Thus the estimates may be subject to significant changes from period to period as we gain that experience. To the extent that our estimates of future taxable income are insufficient to utilize all available NOLs, a valuation allowance will be recorded in the provision for income taxes in the period the determination is made, and the deferred tax assets will be reduced by this amount, which could be material. In the event that actual circumstances differ from management's estimates, or to the extent that these estimates are adjusted in the future, any changes to the valuation allowance could materially impact our financial position and results of operations.

Additionally, the 2017 Tax Act includes a number of changes to existing U.S. tax laws that impact us. For those specific income tax effects of the 2017 Tax Act for which the accounting under ASC Topic 740 is incomplete, we made reasonable estimates to record the provisional tax impacts related to the interest expense deduction limitation and the revaluation of deferred tax assets and liabilities and included these provisional amounts in our consolidated financial statements for the year ended December 31, 2017. The ultimate impact may differ from these provisional amounts due to additional analysis, changes in interpretations and assumptions and estimates that we have made, additional regulatory guidance that may be issued, and actions we may take because of the 2017 Tax Act, which could materially affect our tax obligations and effective tax rate.

Investments. We have equity investments accounted for under the cost method. We periodically review the carrying value of these investments for permanent impairment, considering factors such as the most recent stock transactions,

book values from the most recent financial statements, and forecasts and expectations of the investee. Estimating the fair value of these nonmarketable equity investments in biotech companies is inherently subjective, and if actual events differ from management's assumptions, it could require a write-down of the investment that could materially impact our financial position and results of operations.

In addition, generally accepted accounting principles require different methods of accounting for an investment depending on the level of influence that we exert. Assessing the level of influence involves subjective judgments. If management's assumptions with respect to its level of influence differ in future periods and we therefore have to account for these investments under a method other than the cost method, it could have a material impact to our financial statements.

Variable Interest Entities. We have made strategic investments in certain companies as more fully described in Note 10 to the Consolidated Financial Statements, some of which are variable interest entities. FASB ASC Topic 810 requires a company to consolidate a variable interest entity in which it holds a variable interest if it is designated as the primary beneficiary of that entity even if the company does not have a majority of voting interests. A variable interest entity is generally defined as an entity with insufficient equity to finance its activities or where the owners of the entity lack the risk and rewards of ownership. Assessing the requirements of ASC Topic 810 involves subjective judgments. If management's assumptions with respect to the criteria differ in future periods, and we therefore have to account for these investments under a different method, it could have a material impact on our financial statements.

Goodwill and Other Intangible Assets. We assess goodwill and other intangible assets for impairment at least annually in the absence of an indicator of possible impairment and immediately upon an indicator of possible impairment. Intangibles are assessed for recoverability considering the contract life, where applicable, and the period of time over which the intangible will contribute to future cash flow. The unamortized cost of intangible assets, where cash flows are independent and identifiable from other assets, is evaluated periodically and adjusted, if necessary, if events and circumstances indicate that a decline in value below the carrying amount has occurred. Goodwill is subject to impairment tests annually or earlier if indicators of potential impairment exist, using a fair-value-based approach. We have elected to perform our annual test for indications of impairment as of October 1st of each year. Goodwill is deemed to be impaired if we determine that the carrying value of our reporting unit is more than the fair value. Due to the numerous variables associated with our judgments and assumptions relating to the valuation of reporting units and the effects of changes in circumstances affecting these valuations, both the precision and reliability of the resulting estimates are subject to uncertainty. As additional information becomes known, we may change our estimates.

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.

The above listing is not intended to be a comprehensive list of all our accounting policies. In many cases, the accounting treatment of a particular transaction is specifically dictated by generally accepted accounting principles in the United States, with limited or no need for management’s judgment. There are also areas in which management’s judgment in selecting available alternatives may or may not produce a materially different result. See our audited consolidated financial statements and notes thereto in Item 18 of this Annual Report, containing a description of accounting policies and other disclosures required by generally accepted accounting principles in the United States.

Recent Authoritative Pronouncements

For information on recent accounting pronouncements impacting our business see Note 2 of the Notes to Consolidated Financial Statements included in Item 18.

Item 6. Directors, Senior Management and Employees

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

Our Supervisory Directors and Managing Directors for the year ended December 31, 2017 and their ages as of January 31, 2018, are as follows:

Managing Directors:

Name	Age	Position
Peer M. Schatz	52	Managing Director, Chief Executive Officer
Roland Sackers	49	Managing Director, Chief Financial Officer

Supervisory Directors:

Name	Age	Position
Stéphane Bancel	45	Supervisory Director, Member of the Compensation Committee, Audit Committee and Science and Technology Committee
Dr. Håkan Björklund	61	Supervisory Director, Member of the Compensation Committee and Selection and Appointment Committee
Dr. Metin Colpan	63	Supervisory Director, Chairman of the Science and Technology Committee and Member of the Selection and Appointment Committee
Prof. Dr. Manfred Karobath	77	Chairman of the Supervisory Board, Supervisory Director, Chairman of the Selection and Appointment Committee, Member of the Compensation Committee and Member of the Science and Technology Committee
Dr. Ross L. Levine	46	Supervisory Director and Member of the Science and Technology Committee
Dr. Elaine Mardis	55	Supervisory Director and Member of the Science and Technology Committee
Lawrence A. Rosen	60	Supervisory Director and Chairman of the Audit Committee
Elizabeth E. Tallett	68	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 and Managing Directors. References to “QIAGEN” and the “Company” in relation to periods prior to April 29, 1996 mean QIAGEN GmbH and its consolidated subsidiaries:

Managing Directors

Peer M. Schatz, 52, 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

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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, 49, 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 is also a non-executive director and chair of the audit committee of Immunodiagnostic Systems Holding PLC (IDS), a leading producer of immunological tests for research and diagnostic applications publicly listed in the United Kingdom.

Supervisory Directors

Stéphane Bancel, 45, 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, 61, was appointed as a new Supervisory Board Member in March 2017. 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, 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, 63, 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.

Professor Dr. Manfred Karobath, 77, has 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 is 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.

Dr. Ross L. Levine, 46, 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, 55, 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 improving 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, Caperna 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, 60, 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. 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, 68, 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), Anthem, Inc. and Meredith Corp. 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.

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 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 2017 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 annual payments linked to business performance (annual bonus), as well as long-term equity incentives that were awarded based on individual performance.

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 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 2016, 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 two-year plan covering 2017 and 2018 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 two-year goals as defined within QIAGEN's five-year business plan covering the period from 2017 until the end of 2022. The targets for vesting were set and approved by the Supervisory Board.

For the year ended December 31, 2017, the Managing Board members received the following compensation:

	Annual Compensation				Long-Term Compensation	
Name	Fixed Salary	Variable Cash Bonus	Other[1]	Total	Defined Contribution Benefit Plan	Performance Stock Units Granted[2]
Managing Board						
Peer M. Schatz	$1,192,000	671,000	5,000	$1,868,000	$ 74,000	445,000

Roland Sackers	$535,000	237,000	38,000	$810,000	$ 76,000	186,075

(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 PSUs which was not achieved.

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 2017 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.

For the year ended December 31, 2017, the Supervisory Board members received the following compensation:

Name	Fixed Remuneration	Committee Chairman/ Chairwoman	Committee Membership	Total[1]	Restricted Stock Units
Supervisory Board					
Stéphane Bancel	$ 57,500	—	32,000	$89,500	10,732
Dr. Håkan Björklund	$ 43,125	—	12,750	$55,875	—
Dr. Metin Colpan	$ 57,500	12,000	6,000	$75,500	10,732
Prof. Dr. Manfred Karobath	$ 150,000	12,000	17,000	$179,000	10,732
Dr. Ross L. Levine	$ 57,500	—	6,000	$63,500	10,732
Dr. Elaine Mardis	$ 57,500	—	6,000	$63,500	10,732
Lawrence A. Rosen	$ 57,500	25,000	—	$82,500	10,732
Elizabeth E. Tallett	$ 57,500	18,000	21,000	$96,500	10,732

(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.

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	Member of Audit Committee	Member of Compensation Committee	Member of Selection and Appointment Committee	Member of Science and Technology Committee
Stéphane Bancel	l	l		l
Dr. Håkan Björklund		l	l	
Dr. Metin Colpan			l	l (Chairman)
Prof. Dr. Manfred Karobath		l	l (Chairman)	l
Dr. Ross L. Levine				l
Dr. Elaine Mardis				l
Lawrence A. Rosen	l (Chairman)			
Elizabeth E. Tallett	l	l (Chairwoman)	l	

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 2017 and met with the external auditor excluding members of the Managing Board in July 2017. 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 four members, Ms. Tallett (Chairwoman), Professor Karobath, 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 2017.

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 Professor Karobath (Chairman), Dr. Colpan, Ms. Tallett and Dr. Björklund. Members are appointed by the Supervisory Board and serve for a one-year term. The Selection and Appointment Committee did not meet in 2017.

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), Professor Karobath, 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 six times in 2017.

Share Ownership

The following table sets forth certain information as of January 31, 2018 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	2,681,395 [3]	1.18 %
Roland Sackers, Germany	40,000 [4]	*
Stéphane Bancel, United States	2,081 [5]	*
Dr. Håkan Björklund, Sweden	—	—
Dr. Metin Colpan, Germany	3,529,123 [6]	1.56 %
Prof. Dr. Manfred Karobath, Austria	22,631 [7]	*

Dr. Ross L. Levine, United States	—		—
Dr. Elaine Mardis, United States	—	(8)	—
Lawrence A. Rosen, United States	—	(9)	—
Elizabeth Tallett, United States	10,130	(10)	*

* Indicates that the person beneficially owns less than 0.5% of the Common Shares issued and outstanding as of January 31, 2018.

(1) The number of Common Shares outstanding as of January 31, 2018 was 226,556,855. 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, 2018. 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 628,045 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 2019 and February 2023. Does not include 387,518 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

(4) Does not include 162,483 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 2019 and February 2023. Does not include 117,966 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 4,496 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 April 2018 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 10,496 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 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 April 2018 and February 2022. Does not include 10,496 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 4,496 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 4,496 shares issuable upon the release of unvested stock awards that could become releasable within 60 days from the date of this table.

(10) 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 10,496 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, 2018:

Name	Total Vested Options	Expiration Dates	Exercise Prices
Peer M. Schatz	628,045	2/27/2019 to 2/28/2023	$15.59 to $22.25
Roland Sackers	162,483	2/27/2019 to 2/28/2023	$15.59 to $22.25
Dr. Metin Colpan	7,893	4/29/2018 to 2/28/2022	$15.59 to $22.43
Prof. Dr. Manfred Karobath	7,893	4/29/2018 to 2/28/2022	$15.59 to $22.43
Elizabeth E. Tallett	1,563	2/28/2022	$15.59

Employees

As of December 31, 2017, we employed 4,688 individuals, of which 20% worked in research and development, 40% in sales, 23% in production/logistics, 6% in marketing and 11% in administration.

Region	Research & Development	Sales	Production	Marketing	Administration	Total
Americas	218	592	279	66	90	1,245
Europe, Middle East & Africa	691	718	679	154	325	2,567
Asia Pacific & Rest of World	44	575	123	58	76	876
December 31, 2017	953	1,885	1,081	278	491	4,688

At December 31, 2016 and 2015, we employed 4,684 and 4,559 individuals, respectively. Management believes that its relations with regional labor unions and employees are good.

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 22 million Common Shares reserved and available for issuance under the 2005 and 2014 Plans at December 31, 2017.

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, 2018, there were 1.1 million options outstanding with exercise prices ranging between $14.91 and $23.16 and expiring between April 29, 2018 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 8.1 million stock unit awards outstanding as of January 31, 2018. These awards will be released between February 15, 2018 and February 28, 2027. As of January 31, 2018, options to purchase 0.8 million Common Shares and 3.4 million stock unit awards were held by the officers and directors of QIAGEN, as a group.

Item 7. Major Shareholders and Related Party Transactions

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The following table sets forth certain information as of December 31, 2017, 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	21,813,445 [2]	9.63	%
Franklin Resources, Inc., United States	18,757,447 [3]	8.28	%
PRIMECAP Management Company, United States	16,566,194 [4]	7.31	%

(1) The percentage ownership was calculated based on 226,556,855 Common Shares outstanding as of December 31, 2017.

(2) Of the 21,813,445 shares attributed to BlackRock, Inc., it has sole voting power over 20,045,447 and sole dispositive power over all 21,813,445 shares. This information is based solely on the Schedule 13G filed by BlackRock, Inc. with the Securities and Exchange Commission on January 30, 2018, which reported ownership as of December 31, 2017.

(3) Of the 18,757,447 shares attributed to Franklin Resources, Inc., it shares voting and dispositive powers over all 18,757,447 shares with various members of a reporting group of which it is part. This information is based solely on the Schedule 13G filed by Franklin Resources Inc. with the Securities and Exchange Commission on February 7, 2018, which reported ownership as of December 31, 2017.

(4) Of the 16,566,194 shares attributed to PRIMECAP Management Company, it has sole voting power over 8,022,006 and sole dispositive power over all 16,566,194 shares. This information is based solely on the Schedule 13G filed by PRIMECAP Management Company with the Securities and Exchange Commission on February 27, 2018, which reported ownership as of December 31, 2017.

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, 2018, there were 133 shareholders of record of our Common Shares.

Control of Registrant

To our knowledge, we are not directly or indirectly owned or controlled by another corporation, by any foreign government, or by any other natural or legal person. As of January 31, 2018, the officers and directors of QIAGEN as a group beneficially owned 6.3 million Common Shares, or 2.77% of the then outstanding Common Shares.

Related Party Transactions

For information on related party transactions, see Note 22 of the Notes to Consolidated Financial Statements.

Item 8. Financial Information

See Item 18.

Legal Proceedings

For information on legal proceedings, see Note 19 of the Notes to Consolidated Financial Statements.

While no assurances can be given regarding the outcome of proceedings described in Note 19, based on information currently available, we believe that the resolution of these matters is unlikely to have a material adverse effect on our financial position or results of future operations for QIAGEN N.V. as a whole. However, because of the nature and inherent uncertainties of litigation, should the outcomes be unfavorable, certain aspects of our business, financial condition, and results of operations and cash flows could be materially adversely affected.

Statement of Policy on Dividend Distribution

We have not paid any dividends on our Common Shares since our inception and do not intend to pay any dividends on our Common Shares in the foreseeable future. We intend to retain our earnings, if any, for the development of our business.

Disclosure pursuant to Section 219 of the Iran Threat Reduction & Syria Human Rights Act (ITRA)

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We conduct limited business with certain Iranian entities which contributed $3.5 million or approximately 0.2% of our consolidated net sales in 2017. Although these activities are compliant with applicable law and not financially material, the Iran Threat Reduction and Syria Human Rights Act of 2012 (the "Act") requires us to include the following disclosures in this report. Sales consisted of our consumables and instrumentation products. U.S. affiliates, or foreign affiliates controlled by U.S. affiliates, are not involved in these sales activities and we have not knowingly conducted a transaction or dealt with a person or entity designated in U.S. Executive Orders No. 13224 and 13382. No business has been transacted with the Government of Iran as defined in the Act. We do not believe any of our activities are sanctionable under the Iran Sanctions Act or the Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010. In light of the nature of the products concerned, we do not currently intend to cease our commercial operations with Iranian entities.

Item 9. The Offer and Listing

Effective January 10, 2018, our Common Shares began trading on the New York Stock Exchange (NYSE) under the symbol QGEN. Prior to that, from July 3, 2006 until January 9, 2018, our Common Shares were traded on the NASDAQ Global Select Market under the symbol QGEN. Previously, since February 15, 2005, our Common Shares had been quoted on the NASDAQ National Market under the symbol QGEN. Prior to that, since June 27, 1996, our Common Shares had been quoted on the NASDAQ National Market under the symbol QGENF. The following tables set forth the annual high and low sale prices for the last five years, the quarterly high and low sale prices for the last two years, and the monthly high and low sale prices for the last six months of our Common Shares on the NYSE and NASDAQ Global Select, as applicable.

	High ($)	Low ($)
Annual:		
2013	24.74	18.30
2014	25.32	19.46
2015	28.53	22.11
2016	28.84	19.94
2017	36.34	27.40

	High ($)	Low ($)
Quarterly 2016:		
First Quarter	26.89	20.10
Second Quarter	24.05	19.94
Third Quarter	27.70	21.38
Fourth Quarter	28.84	23.94
Quarterly 2017:		
First Quarter	30.25	27.40
Second Quarter	35.26	27.74
Third Quarter	34.76	31.02
Fourth Quarter	36.34	30.20
Quarterly 2018:		
First Quarter (through February 28, 2018)	34.79	30.78

	High ($)	Low ($)
Monthly:		
September 2017	32.87	31.23
October 2017	36.34	31.56
November 2017	34.32	30.20
December 2017	32.97	30.64
January 2018	34.79	30.78
February 2018	34.47	31.01

From September 25, 1997, to December 31, 2002, our Common Shares were traded on the Frankfurt Stock Exchange Neuer Markt under the symbol QIA and with the security code number 901626. As of January 1, 2003, the trading of our Common Shares was transferred to the Prime Standard Segment of the Frankfurt Stock Exchange, where QIAGEN is a member of the TecDAX, an index of the 30 leading technology companies in Germany not included in the benchmark DAX index. The following table sets forth the annual high and low sale prices for the last five years, the quarterly high and low sale prices for the last two years, and the monthly high and low sale prices for the last six months of our Common Shares on the Prime Standard.

	High (EUR)	Low (EUR)
Annual:		
2013	18.15	13.67
2014	19.64	14.38
2015	26.05	18.72
2016	27.26	17.76
2017	31.52	25.41

	High (EUR)	Low (EUR)
Quarterly 2016:		
First Quarter	24.96	17.76
Second Quarter	21.40	18.16
Third Quarter	24.77	19.27
Fourth Quarter	27.26	21.77
Quarterly 2017:		
First Quarter	28.50	25.41
Second Quarter	31.52	26.03
Third Quarter	30.02	25.89
Fourth Quarter	30.08	25.78
Quarterly 2018:		
First Quarter (through February 28, 2018)	28.33	25.42

	High (EUR)	Low (EUR)
Monthly:		
September 2017	27.70	26.48
October 2017	30.08	26.70
November 2017	29.60	25.78
December 2017	27.93	25.92
January 2018	28.15	25.54
February 2018	28.33	25.42

Item 10. Additional Information

Memorandum and Articles of Association

We are a public company with limited liability (naamloze vennootschap) incorporated under Dutch law and registered with the Dutch Trade Register under file number 12036979. Set forth below is a summary of certain provisions of our full Articles of Association, as lastly amended on January 24, 2017 (the Articles), and Dutch law, where appropriate. The Dutch Corporate Governance Code, (the Dutch Code), contains principles of good corporate governance and best practice provisions that regulate relations between the Managing Board, the Supervisory Board and the Shareholders. The principles and provisions are aimed at defining responsibilities for long-term value creation, risk control, effective management and supervision, remuneration and the relationship with Shareholders, including the General Meeting and stakeholders. The Dutch Code was lastly amended in 2016. This amended Dutch Code is applicable as from January 1, 2017 and replaces the 2008 Code. A listed company should either comply with, or if not, explain in its annual report why and to what extent it does not comply, with the principles of the Dutch Code. The Dutch Code has been taken into account in the summary below.

This summary does not purport to be complete and is qualified in its entirety by reference to the Articles, Dutch Law and the Dutch Code.

Corporate Purpose

Our objectives include, without limitation, the performance of activities in the biotechnology industry, as well as incorporating, acquiring, participating in, financing, managing and having any other interest in companies or enterprises of any nature, raising and lending funds and such other acts as may be conducive to our business.

Managing Directors

QIAGEN shall be managed by a Managing Board consisting of one or more Managing Directors under the supervision of the Supervisory Board. The Managing Board is responsible for our continuity and our affiliated enterprise. The Managing Board focuses on our long-term value creation and our affiliated enterprise, and takes into account our stakeholders' interests that are relevant in this context, which includes but is not limited to our shareholders. 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

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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.

Furthermore, the Supervisory Board shall determine the salary, the bonus, if any, and the other compensation terms and conditions of employment of the Managing Directors within the scope of the remuneration policy. The remuneration policy of the Managing Board has been adopted in our Annual General Meeting on June 25, 2014.

Resolutions of the Managing Board shall be validly adopted, if adopted by simple majority of votes, at least one of whom voting in favour of the proposal must be the Chairman. Each Managing Director has the right to cast one vote.

Under Dutch law, in the event that there is a conflict of interest between a Managing Director and us and our business on a certain matter, that Managing Director shall not participate in the discussions and voting on that matter. If all our Managing Directors have a conflict of interest, such resolution shall be adopted by the Supervisory Board. If all Supervisory Directors have a conflict of interest as well, the General Meeting will be authorized to resolve on such matter. According to the Dutch Code, any conflict of interest or apparent conflict of interest between the company and Managing Directors should be prevented. To avoid conflicts of interest, adequate measures should be taken. Under the Dutch Code, the Supervisory Board is responsible for the decision-making on dealing with conflicts of interest regarding Managing Directors, Supervisory Directors and majority shareholders in relation to us. A Managing Director should report any potential conflict of interest in a transaction that is of material significance to the Company and/or to such Managing Director to the Chairman of the Supervisory Board and to the other members of the Managing Board without delay. The Supervisory Board should decide, outside the presence of the Managing director, whether there is a conflict of interest.

Supervisory Directors

The Supervisory Board shall be responsible for supervising the policy pursued by the Managing Board and our general course of affairs. Under our Articles, the Supervisory Directors are required to serve our interests and our business and the interest of all stakeholders (which includes but is not limited to our shareholders) in fulfilling their duties. The Supervisory Board shall consist of such number of members as the Joint Meeting may from time to time determine, with a minimum of three members. 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.

Under our Articles, the General Meeting determines the compensation of the Supervisory Directors upon the proposal of the Compensation Committee. Under the Dutch Code, any shares held by a Supervisory Director in the Company on whose board he sits should be long-term investments.

Under our Articles, the General Meeting may suspend or dismiss a Supervisory Director at any time. This is different from the provisions of many American corporate statutes, including the Delaware General Corporation Law, which provides that directors may vote to fill vacancies on the board of directors of a corporation.

Liability of Managing Directors and Supervisory Directors

Under Dutch law, as a general rule, Managing Directors and Supervisory Directors are not liable for obligations we incur. Under certain circumstances, however, they may become liable, either towards QIAGEN (internal liability) or

to others (external liability), although some exceptions are described below.

Liability towards QIAGEN

Failure of a Managing or Supervisory Director to perform his or her duties does not automatically lead to liability. Liability is only incurred in the case of a clear, indisputable shortcoming about which no reasonably judging business-person would have any doubt. In addition, the Managing or Supervisory Director must be deemed to have been grossly negligent. Managing Directors are jointly and severally liable for failure of the Managing Board as a whole, but an individual Managing Director

will not be held liable if he or she is determined not to have been responsible for the mismanagement and has not been negligent in preventing its consequences. Supervisory Directors are jointly and severally liable for failure of the Supervisory Board as a whole, but an individual Supervisory Director will not be held liable if he or she is determined not to have been responsible for the mismanagement and has not been negligent in preventing its consequences.

Liability for Misrepresentation in Annual Accounts

Managing and Supervisory Directors are also jointly and severally liable to any third party for damages suffered as a result of misrepresentation in the annual accounts, management commentary or interim statements of QIAGEN, although a Managing or Supervisory Director will not be held liable if found not to be personally responsible for the misrepresentation. Moreover, a Managing or Supervisory Director may be found to be criminally liable if he or she deliberately publishes false annual accounts or deliberately allows the publication of such false annual accounts.

Tort Liability

Under Dutch law, there can be liability if one has committed a tort (onrechtmatige daad) against another person. Although there is no clear definition of “tort” under Dutch law, breach of a duty of care towards a third party is generally considered to be a tort. Therefore, a Dutch corporation may be held liable by any third party under the general rule of Dutch laws regarding tort claims. In exceptional cases, Managing Directors and Supervisory Directors have been found liable on the basis of tort under Dutch common law, but it is generally difficult to hold a Managing or Supervisory Director personally liable for a tort claim. Shareholders cannot base a tort claim on any losses which derive from and coincide with losses we suffered. In such cases, only we can sue the Managing or Supervisory Directors.

Criminal Liability

Under Dutch law, if a legal entity has committed a criminal offence, criminal proceedings may be instituted against the legal entity itself as well as against those who gave order to or were in charge of the forbidden act. As a general rule, it is held that a Managing Director is only criminally liable if he or she played a reasonably active role in the criminal act.

Indemnification

Article 27 of our Articles provides that we shall indemnify every person who is or was a Managing Director or Supervisory Director against all expenses (including attorneys’ fees) judgments, fines and amounts paid in settlement with respect to any threatened pending or completed action, suit or proceeding as well as against expenses (including attorneys’ fees) actually and reasonably incurred in connection with the defense or settlement of an action or proceeding, if such person acted in good faith and in a manner he reasonably could believe to be in or not opposed to our best interests. An exception is made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable for gross negligence or willful misconduct in the performance of his or her duty to us.

Classes of Shares

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.

Common Shares

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.

On January 24, 2017 an adjustment to our capital structure took place in order to repay approximately USD 250 million to our shareholders via a so called synthetic share repurchase. This involved three amendments of our Articles. With the first amendment of the Articles, the par value of each Common Share was increased. With the second Amendment of the Articles, the Shares were consolidated on the basis of a ratio as determined by the Managing Board as result thereof the total number of issued Shares were decreased and fractional Shares were introduced. Each fractional Share represents one/twenty-seventh (1/27) portion of the value of an ordinary Share. Also, as a result of this second amendment of our Articles, we can no longer issue share certificates, existing share certificates are no

longer valid and therefore no longer a distinction is made between Type I and Type II Shares. With the third amendment of the Articles the par value per Share was decreased to EUR 0.01 (the same par value as before the first amendment of the Articles). A part of the value whereby the par value of Shares was decreased was paid to the shareholders.

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.

Financing Preference Shares

No Financing Preference Shares are currently issued or outstanding. If issued, Financing Preference Shares will be issued in registered form only. No share certificates are issued for Financing Preference Shares. Financing Preference Shares must be fully paid up upon issue. The preferred dividend rights attached to Financing Preference Shares are described under “Dividends” below. We have no present plans to issue any Financing Preference Shares.

Preference Shares

No Preference Shares are currently issued or outstanding. If issued, Preference Shares will be issued in registered form only. No share certificates shall be issued for Preference Shares. Only 25% of the nominal value thereof is required to be paid upon subscription for Preference Shares. The obligatory payable part of the nominal amount (or the call) must be equal for each Preference Share. The Managing Board may, subject to the approval of the Supervisory Board, resolve on which day and up to which amount a further call must be paid on Preference Shares which have not yet been paid up in full. The preferred dividend rights attached to Preference Shares are described under “Dividends” below.

Pursuant to our Articles, QIAGEN’s Supervisory Board is entitled, if and in so far as the Supervisory Board has been designated by our General Meeting, to resolve to issue Preference Shares in case of an intended take-over 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. For this purpose, an “adverse person” is generally any (legal) person, alone or together with affiliates or associates, with an equity stake in our Company which the Supervisory Board considers to be substantial and where the Supervisory Board is of the opinion that this (legal) person has engaged in an acquisition that is intended to cause or pressure QIAGEN to enter into transactions intended to provide such person with short-term financial gain under circumstances that would not be in the interest of QIAGEN and our shareholders or whose ownership is reasonably likely to cause a material adverse impact on our business prospects. Currently the Supervisory Board has not been designated to issue Preference Shares.

On August 2, 2004, we entered into an agreement (Option Agreement) with Stichting Preferente Aandelen QIAGEN (SPAQ) which was most recently amended on June 4, 2012. Pursuant to the Option Agreement, SPAQ was granted an option to acquire such number of Preference Shares as are equal to the total number of all outstanding Common Shares minus one in our share capital at the time of the relevant exercise of the right. SPAQ may exercise its right to acquire the Preference Shares in all situations that it believes that our interest or our stakeholders is at risk (which situations include but are not limited to (i) receipt of a notification from the Managing Board that a takeover is imminent and (ii) receipt of a notification from the Managing Board that one or more activist shareholders take a position that is not in the interest of QIAGEN, our shareholders or our other stakeholders), provided that the conditions mentioned in the previous paragraph have been met. Due to the implementation of the EC Directive on Takeover Bids in Dutch legislation, the exercise of the option to acquire Preference Shares by SPAQ and the subsequent issuance of Preference Shares to SPAQ needs to be done with due observance and in consideration of the restrictions imposed by the Public Offer Rules.

SPAQ was incorporated on August 2, 2004. Its principal office is located at Hulsterweg 82, 5912 PL Venlo, The Netherlands. Its statutory objectives are to protect our interests and our enterprise and the enterprises of companies which are linked to us. SPAQ shall attempt to accomplish its objectives by way of acquiring Preference Shares in the share capital of QIAGEN and to exercise the voting rights in our interests and the interests of our stakeholders.

The board of SPAQ shall consist of at least two directors. Upon incorporation of SPAQ, two members were appointed to the board of SPAQ. Additional board members shall be appointed by the board of SPAQ. Board resolutions will be adopted by unanimity of the votes cast. SPAQ will be represented either by its board or by the chairman of its board.

Pre-emptive Rights

Under our Articles, existing holders of Common Shares will have pre-emptive rights in respect of future issuances of Common Shares in proportion to the number of Common Shares held by them, unless limited or excluded as described below. Holders of Common Shares shall not have pre-emptive rights in respect of future issuances of Financing Preference Shares or Preference Shares. Holders of Financing Preference Shares and Preference Shares shall not have pre-emptive rights in respect of any future issuances of share capital. Pre-emptive rights do not apply with respect to shares issued against contributions other than in cash or shares issued to our employees or one of our group companies. Under our Articles, the Supervisory Board has the power to

limit or exclude any pre-emptive rights to which shareholders may be entitled, provided that it has been authorized by the General Meeting to do so. The authority of the Supervisory Board to limit or exclude pre-emptive rights can only be exercised if at that time the authority to issue shares is in full force and effect. The authority to limit or exclude pre-emptive rights may be extended in the same manner as the authority to issue shares. If there is no designation of the Supervisory Board to limit or exclude pre-emptive rights in force, the General Meeting shall have authority to limit or exclude such pre-emptive rights, but only upon the proposal of the Supervisory Board.

Resolutions of the General Meeting (i) to limit or exclude pre-emptive rights or (ii) to designate the Supervisory Board as the corporate body that has authority to limit or exclude pre-emptive rights, require a majority of at least two-thirds of the votes cast in a meeting of shareholders if less than 50% of the issued share capital is present or represented. For these purposes, issuances of shares include the granting of rights to subscribe for shares, such as options and warrants, but not the issue of shares upon exercise of such rights.

On June 21, 2017, the General Meeting resolved to authorize the Supervisory Board until December 21, 2018 to issue Common Shares and Financing Preference Shares or grant rights to subscribe for such shares, the aggregate par value of which shall be equal to the aggregate par value of all shares issued and outstanding in the capital of the Company as at December 31, 2016 as included in the Annual Accounts for Fiscal Year 2016.

The General Meeting subsequently resolved to grant the authority to restrict or exclude pre-emptive rights until December 21, 2018. However, the General Meeting has limited this authority in a way that the Supervisory Board can only exclude or limit the pre-emptive rights in relation to no more than 20% of the aggregate par value of all shares issued and outstanding in the capital of the Company as of December 31, 2016.

Acquisition of Our Own 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 21, 2017, 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 21, 2017 until December 21, 2018, 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.

Capital Reduction

Subject to the provisions of Dutch law and our Articles, the General Meeting may, upon the proposal of the Supervisory Board, resolve to reduce the issued share capital by (i) canceling shares or (ii) reducing the nominal value of shares through an amendment of our Articles. Cancellation with repayment of shares or partial repayment on shares or release from the obligation to pay up may also be made or given exclusively with respect to Common Shares, Financing Preference Shares or Preference Shares.

Financial Year, Annual Accounts and Independent Registered Public Accounting Firm

Our financial year coincides with the calendar year. Dutch law and our Articles require that within five months after the end of the financial year, the Managing Board must make available a report with respect to such financial year, including our financial statements for such year prepared under International Financial Reporting Standards and accompanied by a report of an Independent Registered Public Accounting Firm. The annual report is submitted to the Annual General Meeting for adoption.

The General Meeting appoints the external auditor of our statutory financial statements prepared in accordance with International Financial Reporting Standards and to issue a report thereon. On June 21, 2017, 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 ending December 31, 2017.

Dividends and Other Distributions

Subject to certain exceptions, dividends may only be paid out of profits as shown in our annual financial statements as adopted by the General Meeting. Distributions may not be made if the distribution would reduce shareholders' equity below the sum of the paid-up capital and any reserves required by Dutch law or our 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 call amount paid up on such shares at the beginning of the financial 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 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. The 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 financial 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, the Supervisory Board shall determine such amounts as shall be kept in reserve as determined by the Supervisory Board. Out of any remaining profits not allocated to reserve, a dividend (the Financing Preference Share Dividend) shall be paid on the Financing Preference Shares equal to a percentage (the Financing Preference Share Dividend Percentage) over the nominal value of the Financing Preference Shares, increased by the amount of share premium that was paid upon the first issue of Financing Preference Shares. The Financing Preference Shares Dividend Percentage which percentage is related to a fixed average effective yield on the prime interest rate on corporate loans in the United States as quoted in the Wall Street Journal as set forth in article 40.4 of our Articles. 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 reserves as specified above, the General Meeting may act to allocate such profits, 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.

Distributions as described above are payable as from a date to be determined by the Supervisory Board. Distributions will be made payable at an address or addresses in The Netherlands to be determined by the Supervisory Board, as well as at least one address in each country where the shares are listed or quoted for trading. The Supervisory Board may determine the method of payment of cash distributions. Distributions in cash that have not been collected within five years and two days after they have become due and payable shall revert to QIAGEN.

Dutch law provides that the declaration of dividends out of the profits that are at the free disposal of the General Meeting is the exclusive right of the General Meeting. This is different from the corporate law of most jurisdictions in the United States, which permit a corporation's board of directors to declare dividends.

Shareholder Meetings, Voting Rights and Other Shareholder Rights

The annual General Meeting is required to be held within six months after the end of each financial year for the purpose of, among other things, adopting the annual accounts and filling of any vacancies on the Managing and Supervisory Boards.

Extraordinary General Meetings are held as often as deemed necessary by the Managing Board or Supervisory Board, or upon the request of one or more shareholders and other persons entitled to attend meetings jointly representing at least 40% of our issued share capital or by one or more shareholders jointly representing at least 10% of our issued share capital as provided for and in accordance with the laws of The Netherlands.

General Meetings are held in Amsterdam, Haarlemmermeer (Schiphol Airport), Arnhem, Maastricht, Rotterdam, Venlo or The Hague. The notice convening a General Meeting must be given in such manner as shall be authorized by law including but not limited to an announcement published by electronic means no later than the forty-second day prior to day of the general meeting. The notice will contain the agenda for the meeting or state that the agenda can be obtained at our offices.

The agenda shall contain such subjects to be considered at the General Meeting, as the persons convening or requesting the meeting shall decide. Under Dutch law, holders of shares representing solely or jointly at least three hundredth part of the issued share capital may request QIAGEN not later than on the sixtieth day prior to the day of the General Meeting, to include

certain subjects on the notice convening a meeting. No valid resolutions can be adopted at a General Meeting in respect of subjects which are not mentioned in the agenda.

Dutch corporate law sets a mandatory (participation and voting) record date for Dutch listed companies fixed at the twenty-eighth day prior to the day of the shareholders' meeting. Shareholders registered at such record date are entitled to attend and exercise their rights as shareholders at the General Meeting, regardless of a sale of shares after the record date.

General Meetings are presided over by the Chairman of the Supervisory Board or, in his absence, by any person nominated by the Supervisory Board.

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.

Except for resolutions to be adopted by the meeting of holders of Preference Shares, our Articles do not allow the adoption of shareholders resolutions by written consent (or otherwise without holding a meeting).

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.

Resolutions of the General Meeting in a meeting that has not been convened by the Managing Board and/or the Supervisory Board, or resolutions included on the agenda for the meeting at the request of shareholders, will be valid only if adopted with a majority of two-thirds of votes cast representing more than half the issued share capital, unless our Articles require a greater majority or quorum.

A resolution of the General Meeting to approve a legal merger or the sale of all or substantially all of our assets is valid only if adopted by a vote of at least two-thirds of the issued share capital, unless proposed by the Supervisory Board, in which case a simple majority of the votes cast shall be sufficient.

A shareholder shall upon request be provided, free of charge, with written evidence of the contents of the share register with regard to the shares registered in its name. Furthermore, any shareholder shall, upon written request, have the right, during normal business hours, to inspect our share register and a list of our shareholders and their addresses and shareholdings, and to make copies or extracts therefrom. Such request must be directed to our Managing Directors at our registered office in The Netherlands or at our principal place of business. Financial records and other company documents (other than those made public) are not available in this manner for shareholder review, but an extract of the minutes of the General Meeting shall be made available.

According to Dutch law and our Articles, certain resolutions of the Managing Board regarding a significant change in the identity or nature of us or our enterprise are subject to the approval of the General Meeting. The following resolutions of the Managing Board require the approval of the General Meeting in any event:

(i) the transfer of our enterprise or practically our entire enterprise to a third party;

(ii) the entry into or termination of a long-term cooperation by us or one of our subsidiaries (dochtermaatschappijen) with another legal person or partnership or as a fully liable general partner of a limited partnership or a general partnership, if such cooperation or termination is of a far-reaching significance for us; and

(iii) the acquisition or divestment by us or one of our subsidiaries (dochtermaatschappijen) of a participating interest in the capital of a company with a value of at least one-third of the sum of our assets according to our consolidated balance sheet and explanatory notes in our last adopted annual accounts.

No Derivative Actions; Right to Request Independent Inquiry

Dutch law does not afford shareholders the right to institute actions on behalf of us or in our interest. Shareholders holding at least one-tenth of our issued capital, or EUR 225,000, in nominal value of our shares may inform the Managing Board and the Supervisory Board of their objections as to our policy or the course of our affairs and, within a reasonable time thereafter, may request the Enterprises Division of the Court of Appeal in Amsterdam to order an inquiry into the policy and the course of our affairs by independent investigators. If such an inquiry is ordered and the investigators conclude that there has been

mismanagement, the shareholders can request the Division to order certain measures such as a suspension or annulment of resolutions.

Dissolution and Liquidation

The General Meeting may resolve to dissolve QIAGEN. If QIAGEN is dissolved, the liquidation shall be carried out by the person designated for that purpose by the General Meeting, under the supervision of the Supervisory Board. The General Meeting shall upon the proposal of the Supervisory Board determine the remuneration payable to the liquidators and to the person responsible for supervising the liquidation.

During the liquidation process, the provisions of our Articles will remain applicable to the extent possible.

In the event of our dissolution and liquidation, the assets remaining after payment of all debts and liquidation expenses will be distributed among registered holders of Common Shares in proportion to the nominal value of their Common Shares, subject to liquidation preference rights of holders of Preference Shares and Financing Preference Shares, if any.

Restrictions on Transfer of Preference Shares

The Supervisory Board, upon application in writing, must approve each transfer of Preference Shares. If approval is refused, the Supervisory Board will designate prospective purchasers willing and able to purchase the shares, otherwise the transfer will be deemed approved.

Limitations in our Articles on Rights to Own Securities

Other than with respect to usufructuaries and pledgees who have no voting rights, our Articles do not impose limitations on rights to own our securities.

Provisions which May Defer or Prevent a Change in Control

The Option Agreement and our Articles could, under certain circumstances, prevent a third party from obtaining a majority of the voting control of our shares by issuing Preference Shares. Under the Option Agreement, SPAQ could acquire Preference Shares subject to the provisions referred to under "Preference Shares".

If SPAQ acquires the 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.

Shareholders who obtain control of a company are obliged to make a mandatory offer to all other shareholders. The threshold for a mandatory offer is set at the ability to exercise 30% of the voting rights at the general meeting of shareholders in a Dutch public limited company (naamloze vennootschap) whose securities are admitted to trading on a regulated market in the EU, such as QIAGEN.

Ownership Threshold Requiring Disclosure

Our Articles do not provide an ownership threshold above which ownership must be disclosed. However there are statutory requirements to disclose share ownership above certain thresholds under Dutch law-see “Obligation of Shareholders to Disclose Major Holdings”.

Exchange Controls

There are currently no limitations either under the laws of The Netherlands or in our Articles, to the rights of shareholders from outside The Netherlands to hold or vote Common Shares. Under current foreign exchange regulations in The Netherlands, there are no material limitations on the amount of cash payments that we may remit to residents of foreign countries.

Obligation of Shareholders to Disclose Major Holdings

Holders of our shares or rights to acquire shares (which include options and convertible bonds - see also below) may be subject to notification obligations under the Dutch Financial Markets Supervision Act (FMSA).

Pursuant to the FMSA, any person who, directly or indirectly, acquires or disposes of an interest (including a potential interest, such as options and convertible bonds) in our issued share capital or voting rights must notify the Netherlands Authority for the Financial Markets (AFM) without delay, if as a result of such acquisition or disposal, the percentage of capital interest or voting rights held by such person in QIAGEN reaches, exceeds or falls below any of the following thresholds: 3%, 5%, 10%, 15%, 20%, 25%, 30%, 40%, 50%, 60%, 75% and 95%. The notifications should be made electronically through the notification system of the AFM.

A notification requirement also applies if a person's capital interest or voting rights reaches, exceeds or falls below the above-mentioned thresholds as a result of a change in our total issued share capital or voting rights. Such notification has to be made no later than the fourth trading day after the AFM has published our notification as described below.

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Under the FMSA, we are required to notify the AFM without delay of the changes to our total issued share capital or voting rights if our issued share capital or voting rights changes by 1% or more since our previous notification. We must furthermore quarterly notify the AFM within eight days after the end of the relevant quarter, in the event our issued share capital or voting rights changed by less than 1% in that relevant quarter since our previous notification. Furthermore, each person who is or ought to be aware that, as a result of the exchange of certain financial instruments, such as options for shares, his actual capital or voting interest in QIAGEN, reaches, exceeds or falls below any of the following thresholds: 3%, 5%, 10%, 15%, 20%, 25%, 30%, 40%, 50%, 60%, 75% and 95%, vis-à-vis his most recent notification to the AFM, must give notice to the AFM no later than the fourth trading day after he became or ought to be aware of this change.

Controlled entities, within the meaning of the FMSA, do not have notification obligations under the FMSA, as their direct and indirect interests are attributed to their (ultimate) parent. Any person may qualify as a parent for purposes of the FMSA, including an individual. A person who has a 3% or larger interest in our share capital or voting rights and who ceases to be a controlled entity for these purposes must notify the AFM without delay. As of the date of that notification, all notification obligations under the FMSA will become applicable to that entity.

For the purpose of calculating the percentage of capital interest or voting rights, the following interests must, inter alia, be taken into account: (i) our shares or voting rights on our shares directly held (or acquired or disposed of) by a person, (ii) our shares or voting rights on our shares held (or acquired or disposed of) by such person's controlled entity or by a third party for such person's account or by a third party with whom such person has concluded an oral or written voting agreement (including a discretionary power of attorney), and (iii) our shares or voting rights on our shares which such person, or any subsidiary or third party referred to above, may acquire pursuant to any option or other right held by such person (or acquired or disposed of, including, but not limited to, on the basis of convertible bonds). Special rules apply with respect to the attribution of our shares or voting rights on our shares which are part of the property of a partnership or other community of property. A holder of a pledge or right of usufruct (vruchtgebruik) in respect of our shares can also be subject to the notification obligations of the FMSA, if such person has, or can acquire, the right to vote on our shares or, in the case of depository receipts, our underlying shares. The acquisition of (conditional) voting rights by a pledgee or usufructuary may also trigger the notification obligations as if the pledgee or beneficial owner were the legal holder of our shares or voting rights on our shares. A holding in certain cash settled derivatives (such as cash settled call options and total equity return swaps) referencing to our shares should also be taken into account for the purpose of calculating the percentage of capital interest.

Gross short positions in our shares must also be notified to the AFM. For these gross short positions, the same thresholds apply as for notifying an actual or potential interest in our issued share capital and/or voting rights as referred to above, and without any set-off against long positions.

In addition, pursuant to Regulation (EU) No 236/2012, each person holding a net short position amounting to 0.2% of our issued share capital is required to report such position to the AFM. Each subsequent increase of this position by 0.1% above 0.2% will also need to be reported. Each net short position equal to 0.5% of our issued share capital and any subsequent increase of that position by 0.1% will be made public via the AFM short selling register. To calculate whether a natural person or legal person has a net short position, their short positions and long positions must be set-off. A short transaction in a share can only be contracted if a reasonable case can be made that the shares sold can actually be delivered, which requires confirmation of a third party that the shares have been located.

The AFM does not issue separate public announcements of the above notifications. However, it does keep a public register of all notifications made pursuant to the above disclosure obligations under the FMSA on its website www.afm.nl. Third parties can request to be notified automatically by e-mail of changes to the public register in relation to a particular company’s shares or a particular notifying party.

Non-compliance with the notification obligations under the FMSA may lead to criminal fines, administrative fines, imprisonment or other sanctions. In addition, non-compliance with the shareholding disclosure obligations under the FMSA may lead to civil sanctions, including suspension of the voting rights relating to our shares held by the offender for a period of not more than three years and a prohibition applicable to the offender to acquire any of our shares or voting rights on our shares for a period of up to five years.

Management Notifications

Pursuant to the FMSA, each Managing Director and each Supervisory Director must notify the AFM: (a) within two weeks after his or her appointment of the number of our shares or rights to acquire shares he or she holds and the number of votes he or she is entitled to cast in respect our issued share capital, and (b) subsequently, each change in the number or our shares or rights to acquire shares such member holds and of each change in the number of votes he or she is entitled to cast in respect of our issued share capital, immediately after the relevant change. If a Managing Director or Supervisory Director has notified a change in shareholding to the AFM under the FMSA as described above under “Obligation of Shareholders to Disclose Major Holdings”, such notification is sufficient for the purposes as described in this paragraph.

Furthermore, pursuant to European Union Regulation (EU) No 596/2014 (the Market Abuse Regulation) and the regulations promulgated thereunder, any Managing Director and Supervisory Director, as well as any other person discharging managerial responsibilities in respect of QIAGEN who has regular access to inside information relating directly or indirectly to QIAGEN and power to take managerial decisions affecting future developments and business prospects of QIAGEN, must notify the AFM and QIAGEN by means of a standard form of any transactions conducted for his or her own account relating to the shares or debt instruments of QIAGEN or to derivatives or other financial instruments linked thereto.

In addition, pursuant to the Market Abuse Regulation, certain persons who are closely associated with Managing Directors and Supervisory Directors or any of the other persons as described above, are required to notify the AFM and QIAGEN of any transactions conducted for their own account relating to the shares or debt instruments of QIAGEN or to derivatives or other financial instruments linked thereto. The Market Abuse Regulation covers, inter alia, the following categories of persons: (i) the spouse or any partner considered by national law as equivalent to the spouse; (ii) dependent children; (iii) other relatives who have shared the same household for at least one year at the relevant transaction date; and (iv) any legal person, trust or partnership whose, among other things, managerial responsibilities are discharged by a person referred to under (i) to (iii) above or by the relevant Managing Directors and Supervisory Directors or other person discharging the managerial responsibilities in respect of QIAGEN as described above.

The notifications pursuant to the Market Abuse Regulation described above must be made to the AFM no later than the third business day following the relevant transaction date. Under certain circumstances, these notifications may be postponed until all transactions within a calendar year have reached a total amount of €5,000 (calculated without netting). Any subsequent transaction must be notified as set forth above. If a Managing Director or Supervisory Director has notified a change in the number of our shares or options to acquire shares such member holds or a change in the number of votes he or she is entitled to cast to the AFM under the FMSA as described in the first paragraph above, such notification - but only to the extent there is an overlap with the notifications obligations under the Market Abuse Regulation - is sufficient for the purposes of the Market Abuse Regulation as described in this paragraph.

Taxation

The following is a general summary of certain material United States federal income tax consequences to holders of our Common Shares who are “U.S. Holders” (as such term is defined below) and certain material Netherlands tax consequences to holders of our Common Shares who are “non-resident Shareholders” or “Shareholders” (as each term is defined below). This summary does not discuss every aspect of such taxation that may be relevant to such holders. Therefore, all prospective purchasers of our Common Shares described above are advised to consult their own tax advisors with respect to the United States federal, state and local tax consequences, as well as The Netherlands tax consequences, of the ownership of our Common Shares. This summary is based upon the advice of Blais, Halpert, Lieberman & Greene LLC with respect to tax consequences for U.S. Holders under United States law and Baker & McKenzie Amsterdam N.V. with respect to tax consequences for non-resident Shareholders or Shareholders under Netherlands law.

The statements of The Netherlands and United States tax laws set out below are based on the laws in force as of the date of this Annual Report on Form 20-F, and as a consequence are subject to any changes in United States or The Netherlands law, or in the double taxation conventions between the United States and The Netherlands, occurring after such date.

Netherlands Tax Considerations

The following describes the material tax consequences under Netherlands law of an investment in our Common Shares. Such description is based on current Netherlands law as interpreted under officially published case law, and is limited to the tax implications for an owner of our Common Shares who is not, or is not deemed to be, a resident of The Netherlands for purposes of the relevant tax codes (a “non-resident Shareholder” or “Shareholder”).

Dividend Withholding Tax

General. Upon distribution of dividends, we would be obligated to withhold 15% dividend tax at source and to pay the amount withheld to The Netherlands tax authorities. The term “dividends” means income from shares or other rights participating in profits, as well as income from other corporate rights that is subjected to the same taxation treatment

as income from shares by the laws of The Netherlands. Dividends include dividends in cash or in kind, constructive dividends, certain repayments of capital qualified as dividends, interest on loans that are treated as equity for Netherlands corporate income tax purposes and liquidation proceeds in excess of, for Netherlands tax purposes, recognized paid-in capital. Stock dividends are also subject to withholding tax, unless derived from our paid-in share premium which is recognized as equity for Netherlands tax purposes.

No withholding tax applies on the proceeds resulting from the sale or disposition of our Common Shares to persons other than QIAGEN and our affiliates.

A domestic exemption from Netherlands withholding tax may apply when dividends are paid to corporate Shareholders that are resident in an EU/EEA Member State or in a country with which the Netherlands has concluded a tax treaty that includes a dividend article and that own 5% or more of our Common Shares. This general exemption does not apply in case of abuse; for example, if a corporate Shareholder owns our Common Shares with the main purpose or one of the main purposes to avoid dividend tax for another person. A Shareholder can also be eligible for a reduction or a refund of Netherlands dividend withholding tax under a tax convention that is in effect between the country of residence of the Shareholder and The Netherlands. The Netherlands has concluded such conventions with, among others, the United States, Canada, Switzerland, Japan and virtually all EU Member States.

U.S. Shareholders. Dividends paid to corporate Shareholders that own 5% of more of our Common Shares may be exempt from Netherlands withholding tax.

If the domestic exemption does not apply, under the Tax Convention between The Netherlands and the United States (the "Convention"), the regular 15% withholding tax on dividends we pay to a resident of the United States (as defined in the Convention) who is entitled to the benefits of the Convention, may still be reduced to 5% (in the case of a corporate U.S. Shareholder that holds 10% or more of the voting power of a Netherlands company) unless such U.S. shareholder has a permanent establishment in The Netherlands with which the shares are effectively connected. Dividends we pay to U.S. pension funds and U.S. tax exempt organizations may be eligible for an exemption from dividend withholding tax.

Dividend Stripping. A refund, reduction, exemption, or credit of Netherlands dividend withholding tax on the basis of Netherlands tax law or on the basis of a tax treaty between The Netherlands and another state, will only be granted if the dividends are paid to the beneficial owner ("uiteindelijk gerechtigde") of the dividends. A recipient of a dividend is not considered to be the beneficial owner of a dividend in an event of "dividend stripping," in which he has paid a consideration related to the receipt of such dividend. In general terms, "dividend stripping" can be described as the situation in which a foreign or domestic person (usually, but not necessarily, the original shareholder) has transferred his shares or his entitlement to the dividend distributions to a party that has a more favorable right to a refund or reduction of Netherlands dividend withholding tax than the foreign or domestic person. In these situations, the foreign or domestic person (usually the original shareholder) avoids Netherlands dividend withholding tax while retaining his "beneficial" interest in the shares and the dividend distributions, by transferring his shares or his entitlement to the dividend distributions.

Income Tax and Corporate Income Tax

General. A non-resident Shareholder will not be subject to Netherlands income tax or corporate income tax with respect to dividends we distribute on our Common Shares or with respect to capital gains derived from the sale or disposition of our Common Shares, provided that:

(a) the non-resident Shareholder does not carry on or have an interest in a business in The Netherlands through a permanent establishment or a permanent representative to which or to whom the Common Shares are attributable or deemed to be attributable;

(b) the non-resident Shareholder does not have a direct or indirect substantial or deemed substantial interest ("aanmerkelijk belang," as defined in The Netherlands tax code) in our share capital or, in the event the Shareholder does have such a substantial interest, such interest is a "business asset", or, in case of a corporate Shareholder, the arrangement or a series of arrangements are not put in place with the main purpose or one of the main purposes to avoid Dutch income tax for another person or otherwise cannot be considered artificial. An arrangement or series of arrangements are considered artificial to the extent not put in place for valid commercial reasons that reflect economic reality; and

(c) the non-resident Shareholder is not entitled to a share in the profits of an enterprise, to which our Common Shares are attributable and that is effectively managed in The Netherlands, other than by way of securities or through an employment contract.

In general terms, a substantial interest ("aanmerkelijk belang") in our share capital does not exist if the Shareholder (individuals as well as corporations), alone or together with his partner, does not own, directly or indirectly, 5% or more of the nominal paid-in capital of, or any class of our shares, does not have the right to acquire 5% or more of the nominal paid-in capital of, or any class of our shares (including a call option) and does not have the right to share in our profit or liquidation revenue amounting to 5% or more of the annual profits or liquidation revenue.

There is no all-encompassing definition of the term “business asset”; whether this determination can be made in general depends on the facts presented and in particular on the activities performed by the Shareholder. If the Shareholder materially conducts a business activity, while the key interest of his investment in our Shares will not be his earnings out of the investment

in our Shares but our economic activity, an investment in our Shares will generally be deemed to constitute a business asset, in particular if the Shareholder's involvement in our business will exceed regular monitoring of his investment in our Shares.

U.S. Shareholders. Pursuant to the Convention, the gain derived by a U.S. Shareholder from an alienation of our Common Shares constituting a substantial interest of the Shareholder in QIAGEN, not effectively connected or deemed connected with a permanent establishment or permanent representative of the Shareholder in The Netherlands, is not subject to Netherlands income tax or corporate income tax, provided that the gain from the alienation of our Common Shares is not derived by an individual Shareholder who has, at any time during the five-year period preceding such alienation, been a resident of The Netherlands according to Netherlands tax law and who owns, at the time of the alienation, either alone or together with close relatives, at least 25% of any class of our shares.

Gift and Inheritance Tax

A gift or inheritance of our Common Shares from a non-resident Shareholder will generally not be subject to a Netherlands gift and inheritance tax, provided that the Shareholder does not own a business which is, in whole or in part, carried on through a permanent establishment or a permanent representative in The Netherlands to which or to whom our Common Shares are attributable. The Netherlands has concluded a tax convention with the United States based on which double taxation on inheritances may be avoided if the inheritance is subject to Netherlands and/or U.S. inheritance tax and the deceased was a resident of either The Netherlands or the United States.

United States Federal Income Tax Considerations

The following summarizes certain material U.S. federal income tax consequences of the acquisition, ownership and sale of our Common Shares by an investor that purchases such Common Shares and that will hold the Common Shares as capital assets. This summary does not purport to be a complete analysis or listing of all potential tax considerations and does not address holders subject to special treatment under U.S. federal income tax laws (including insurance companies, tax-exempt organizations, regulated investment companies, financial institutions, broker dealers, U.S. expatriates, persons subject to alternative minimum tax, or holders that own, actually or constructively, 10% or more of our equity, as measured by value).

As used herein, references to a "U.S. Holder" are to a holder of our Common Shares that is (i) a citizen or resident for tax purposes of the United States, (ii) a corporation, limited liability company or partnership organized under the laws of the United States or any political subdivision thereof, (iii) any estate (other than an estate the income of which, from sources outside the United States that is not effectively connected with a trade or business within the United States, is not includible in its gross income for U.S. federal income tax purposes), and (iv) any trust if a court within the United States is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have the authority to control all substantial decisions of the trust; and references to a "non-U.S. Holder" are to a holder of our Common Shares that is not a U.S. Holder.

Taxation of Dividends

To the extent paid out of our current or accumulated earnings and profits, as determined under U.S. federal income tax principles, distributions, if any, made with respect to our Common Shares will be includable for U.S. federal income tax purposes in the income of a U.S. Holder as ordinary dividend income in an amount equal to the sum of any cash and the fair market value of any property that we distribute, before reduction for Netherlands withholding tax. Such dividends will be eligible to be treated by U.S. Holder individuals, trusts and estates as "qualified dividend income" subject to a maximum tax rate of 20 percent (plus possibly an additional 3.8 percent on net investment income; see "Taxation — United States Federal Income Tax Considerations — Surtax on Net Investment Income"), if the shareholder receiving the dividend satisfies the holding period requirements, does not treat the dividends as "investment income" for purposes of the investment interest deduction, is not under any obligation to make related payments with respect to positions in substantially similar or related property, and if we are not treated for our taxable year in which the dividend is paid, or our preceding taxable year, as a passive foreign investment company (see "Taxation—United States Federal Income Tax Considerations—Passive Foreign Investment Company Status"). To the extent that such distribution exceeds our current or accumulated earnings and profits, it will be treated as a non-taxable return of capital to the extent of the U.S. Holder's adjusted tax basis in our Common Shares and thereafter as taxable capital gain. Dividends

generally will be treated as income from sources outside the United States and generally will be passive category income (or, in the case of certain holders, “financial services income”) for purposes of the foreign tax credit limitation. Dividends we pay will not be eligible for the dividends received deduction allowed to corporations in certain circumstances under the United States Internal Revenue Code of 1986, as amended (the "Code"). A U.S. Holder may elect annually to either deduct The Netherlands withholding tax (see “Taxation—Netherlands Tax Considerations—Dividend Withholding Tax”) against their income (in which case, the election will apply to all foreign income taxes such U.S. Holder paid in that year) or take the withholding taxes as a credit against their U.S. tax liability, subject to U.S. foreign tax credit limitation rules. If the dividends are qualified for the lower applicable capital gains rate (as discussed above), the amount of the dividend income taken into account for calculating the foreign tax credit limitation will in general be limited to the gross

amount of the dividend, multiplied by the reduced rate, divided by the highest rate of tax normally applicable to dividends. The rules governing the foreign tax credit are complex. We urge you to consult with your own tax advisors regarding the availability of the foreign tax credit in your particular circumstances.

A non-U.S. Holder generally will not be subject to U.S. federal income tax or withholding tax on distributions with respect to our Common Shares that are treated as dividend income for U.S. federal income tax purposes unless such dividends are effectively connected with the conduct of a trade or business within the United States by such non-U.S. Holder, (and are attributable to a permanent establishment maintained in the United States by such non-U.S. Holder, if an applicable income tax treaty so requires as a condition for such non-U.S. Holder to be subject to U.S. taxation on a net income basis in respect of income from our Common Shares), in which case the non-U.S. Holder generally will be subject to tax in respect of such dividends in the same manner as a U.S. Holder. Any such effectively connected income received by a non-U.S. Holder treated as a corporation for U.S. federal income tax purposes may also, under certain circumstances, be subject to an additional “branch profits tax” at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. A non-U.S. Holder generally will not be subject to U.S. federal income tax or withholding tax on distributions with respect to our Common Shares that are treated as capital gain for U.S. federal income tax purposes unless such holder would be subject to U.S. federal income tax on gain realized on the sale or other disposition of our Common Shares, as discussed below.

Surtax on Net Investment Income

Certain U.S. Holders that are individuals, estates or trusts and whose income exceeds certain thresholds will be subject to an additional 3.8% surtax on some or all of their “net investment income” (or, in the case of certain estates or trust, their undistributed net investment income). Net investment income generally includes dividends paid on, and gain from the disposition of, our Common Shares unless such dividends or gain is derived in the ordinary course of the conduct of a trade or business (other than a trade or business that consists of certain passive or trading activities). You should consult your tax advisors regarding the effect this surtax may have, if any, on your acquisition, ownership or disposition of our Common Shares.

Taxation of Capital Gains

Subject to the "passive foreign investment company" (PFIC) rules discussed below, upon the sale or other disposition of our Common Shares, a U.S. Holder will recognize gain or loss for U.S. federal income tax purposes in an amount equal to the difference between the amounts realized on the disposition of our Common Shares and the U.S. Holder’s adjusted tax basis in our Common Shares. Such gain or loss generally will be subject to U.S. federal income tax. An individual U.S. Holder is generally subject to a maximum capital gains rate of 20% for our Common Shares held for more than a year (plus possibly an additional 3.8 percent on net investment income, as discussed above). For U.S. federal income tax purposes, capital losses are subject to limitations on deductibility. Gain realized by a U.S. Holder on the sale or other disposition of our Common Shares generally will be treated as income from sources within the United States for purposes of the foreign tax credit limitation.

A non-U.S. Holder will not be subject to U.S. federal income tax or withholding tax on gain realized on the sale or other disposition of our Common Shares unless (i) the gain is effectively connected with a trade or business of the non-U.S. Holder in the United States (and is attributable to a permanent establishment maintained in the United States by such non-U.S. Holder, if an applicable income tax treaty so requires as a condition for such non-U.S. Holder to be subject to U.S. taxation on a net income basis in respect of gain from the sale or other disposition of our Common Shares) or (ii) such holder is an individual who is present in the United States for 183 days or more in the taxable year of the sale, and certain other conditions are met. Effectively connected gains realized by a corporate Non-U.S. Holder may also, under certain circumstances, be subject to an additional “branch profits tax” at a 30% rate or such lower rate as may be specified by an applicable income tax treaty.

Passive Foreign Investment Company Status

We may be classified as a PFIC for U.S. federal income tax purposes if certain tests are met. We will be a PFIC with respect to a U.S. Holder if for any taxable year in which the U.S. Holder held our 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. Passive income means, in general, dividends, interest, royalties, rents (other than rents and royalties derived in the active conduct of a trade or business and not derived from a related person), annuities, and

gains from assets which would produce such income other than sales of inventory. For the purpose of the PFIC tests, if a foreign corporation owns at least 25% by value of the stock of another corporation, the foreign corporation is treated as owning its proportionate share of the assets of the other corporation, and as if it had received directly its proportionate share of the income of such other corporation. The effect of this special provision with respect to QIAGEN and our ownership of our subsidiaries is that we, for purposes of the income and assets tests described above, will be treated as owning directly our proportionate share of the assets of our subsidiaries and of receiving directly our proportionate share of each of those companies' income, if any, so long as we own, directly or indirectly, at least 25% by value of the particular company's stock. Active business income of our subsidiaries will be treated as our active business income, rather than as passive income. Based on our income, assets and activities, we do not believe that we were a PFIC for our taxable years ended December 31, 2015, December 31, 2016 and December 31, 2017, and do not expect to be a PFIC for the

current taxable year. No assurances can be made, however, that the IRS will not challenge this position or that we will not subsequently become a PFIC. Following the close of any tax year, we intend to promptly send a notice to all shareholders of record at any time during such year, if we determine that we are a PFIC.

Prospective purchasers of our Common Shares are urged to consult their tax advisors regarding the PFIC rules and their effect on an investment in our Common Shares, with particular regard to (i) the advisability of making the "qualified electing fund" election in the event that we notify the shareholders that we have become a PFIC in any taxable year, or (ii) the advisability of making the "mark-to-market" election provided in the tax law.

Backup Withholding and Information Reporting

In general, dividend payments, or other taxable distributions, paid within the United States or through certain U.S.-related financial intermediaries on our Common Shares will be subject to information reporting requirements and backup withholding tax at the rate of 24% (increasing to 28% in 2026) for a non-corporate United States person and, who also:

- fails to provide an accurate taxpayer identification number;
- is notified by the Internal Revenue Service that the individual has failed to report all interest or dividends required to be shown on the Federal income tax returns; or
- in certain circumstances, fails to comply with applicable certification requirements.

Certain corporations and persons that are not United States persons may be required to establish their exemption from information reporting and backup withholding by certifying their status on Internal Revenue Service Form W-9 or applicable Form W-8.

If a United States person sells our Common Shares to or through a United States office of a broker, the payment of the proceeds is subject to both United States backup withholding and information reporting unless the individual can certify that they are a non-U.S. person, under penalties of perjury, or they otherwise establish an exemption. If a United States person sells our Common Shares through a non-U.S. office of a non-U.S. broker and the sale proceeds are paid to the person outside the United States then information reporting and backup withholding generally will not apply to that payment. However, United States information reporting requirements, but not backup withholding, will apply to a payment of sales proceeds, even if that payment is made to the United States person outside the United States, if the person sells our Common Shares through a non-U.S. office of a broker that is a U.S. person or has certain other contacts with the United States.

A holder generally may obtain a refund of any amounts withheld under the backup withholding rules that exceed such holder’s income tax liability by filing a refund claim with the United States Internal Revenue Service.

Foreign Currency Issues

If dividends on our Common Shares are paid in euros, the amount of the dividend distribution included in the income of a U.S. Holder will be the U.S. dollar value of the payments made in euros, determined at a spot, euro/U.S. dollar rate applicable to the date such dividend is includible in the income of the U.S. Holder, regardless of whether the payment is in fact converted into U.S. dollars. Generally, gain or loss (if any) resulting from currency exchange fluctuations during the period from the date the dividend is paid to the date such payment is converted into U.S. dollars will be treated as ordinary income or loss. We have never paid cash dividends on our share capital and do not intend to do so for the foreseeable future.

Certain Information Reporting Requirements

Individuals who are U.S. Holders (and to the extent specified in applicable Treasury regulations, certain individual non-U.S. Holders and certain U.S. Holders that are entities), and who hold “specified foreign financial assets” (as defined in section 6038D of the Code), including stock of a non-U.S. corporation that is not held in an account maintained by a U.S. “financial institution” (as defined in section 6038D of the Code), whose aggregate value exceeds $50,000 on the last day of the taxable year or $75,000 at any time during the tax year, may be required to attach to their tax returns for the year certain specified information (on IRS Form 8938). (Higher thresholds apply to married individuals filing a joint return and certain individuals residing outside of the United States.) An individual who fails to timely furnish the required information may be subject to a penalty, unless the failure is shown to be due to reasonable cause and not due to willful neglect. Additionally, in the event a U.S. Holder does not file such a report, the statute of limitations on the assessment and collection of U.S. federal income taxes of such U.S. Holder for the related tax year may not close before such report is filed. Under certain circumstances, an entity may be treated as an

individual for purposes of the foregoing rules. U.S. Holder (including entities) should consult their own tax advisors regarding their reporting obligations under this legislation.

Documents on Display

Documents referred to in this Annual Report may be inspected at our principal executive office located at Hulsterweg 82, 5912 PL Venlo, The Netherlands.

Item 11. 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 13 to the accompanying consolidated financial statements.

Interest Rate Risk

At December 31, 2017, we had $657.7 million in cash and cash equivalents as well as $359.2 million in short-term investments. 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, 2017. A hypothetical adverse 10% movement in market interest rates would not have materially impacted our financial statements.

At December 31, 2017, we had $1.8 billion in long-term debt, none of which 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, 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 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.

Item 12. Description of Securities Other than Equity Securities

Not applicable.

PART II

Item 13. Defaults, Dividend Arrearages and Delinquencies
Not applicable.

Item 14. Material Modifications to the Rights of Security Holders and Use of Proceeds
Not applicable.

Item 15. Controls and Procedures
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, as that term is defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended, within 90 days of the date of this report. Based on that evaluation, they concluded that as of December 31, 2017, our disclosure controls and procedures were effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, 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 as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended. 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, 2017. 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, 2017, our internal control over financial reporting is effective.
Attestation Report of the Independent Registered Public Accounting Firm
KPMG AG Wirtschaftsprüfungsgesellschaft, the independent registered public accounting firm that audited our consolidated financial statements prepared in accordance with U.S. generally accepted accounting principles (GAAP) as of and for the year ended December 31, 2017, has also audited the effectiveness of the Company's internal control over financial reporting as of December 31, 2017. Their report is included in this Annual Report on Form 20-F on page F-2.
Changes in Internal Control over Financial Reporting

There has been no change in our internal control over financial reporting during 2017 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 16A. Audit Committee Financial Expert

The Supervisory Board has designated Mr. Lawrence Rosen as an “audit committee financial expert” as that term is defined in the SEC rules adopted pursuant to the Sarbanes-Oxley Act. Mr. Rosen is “independent” as defined under the independence standards set forth in the New York Stock Exchange (NYSE) Listed Company Manual as applicable to Audit Committees.

Item 16B. Code of Ethics

QIAGEN has in place a Code of Conduct which qualifies as a code of ethics, as required by SEC and the New York Stock Exchange (NYSE) Listed Company Manual. The Code of Conduct applies to all of QIAGEN’s employees, including our principal executive officer, principal financial officer, principal accounting officer or controller and other persons performing similar functions. The full text of the Code of Conduct is available on our website at www.qiagen.com.

Item 16C. Principal Accountant Fees and Services

Audit Committee Pre-Approval Policies and Procedures

The Audit Committee has adopted a policy that requires the pre-approval of all services performed for us by our independent registered public accounting firm. Additionally, the Audit Committee has delegated to the Committee Chairman full authority to approve any management request for pre-approval, provided the Chairman presents any approval given at its next scheduled meeting. All audit-related services, tax services and other services rendered by our independent registered public accounting firm or their affiliates were pre-approved by the Audit Committee and are compatible with maintaining the auditor’s independence.

Set forth below are the total fees billed (or expected to be billed), on a consolidated basis, by the independent registered public accounting firm or their affiliates for providing audit and other professional services in each of the last two years:

(in millions)	2017	2016
Audit fees	$1.8	$1.9
-Consolidated financial statements	1.2	1.2
-Statutory financial statements	0.6	0.7
Audit-related fees	0.5	0.5
Total	$2.3	$2.4

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, and include the review of documents filed with the Securities Exchange Commission.

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 and as permitted by the Sarbanes-Oxley Act of 2002. Tax fees for the year ended December 31, 2016 totaled less than $50,000.

Item 16D. Exemptions From the Listing Standards for Audit Committees

Not applicable.

Item 16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers

The following table sets out information concerning repurchases of our common shares, which we intend to use to serve our exchangeable debt instruments and employee share-based remuneration plans.

In April 2016, we announced the launch of our fourth $100 million share repurchase program. In August 2016, we announced our intention to return a total amount of approximately $300 million to our shareholders by the end of

2017. In January 2017, we completed a synthetic share repurchase that combined a direct capital repayment with a consolidation of shares for a total of $243.9 million. During the remainder of 2017, 1.9 million QIAGEN shares were repurchased for $61.0 million (including

transaction costs) to complete the total program.

Period	(a)Total number of shares purchased	(b)Average price paid per share in $[1]	(c) Total number of shares purchased as part of publicly announced plans and programs	(d) Approximate dollar value of shares that may yet be purchased under these plans and programs (in millions)[2]
January 1 to July 31, 2017	—	—	—	$60.0
August 1-31, 2017	913,686	$31.94	913,686	$30.8
September 1-30, 2017	995,197	$31.92	995,197	$0.0
October 1 to December 31, 2017	—	—	—	$0.0
Total	1,908,883	$31.93	1,908,883	

[1]The average price paid per share of stock repurchased under the stock repurchase program includes the commissions paid to the brokers.

[2]The approximate value of shares that may yet be purchased under these plans and programs does not include commissions that may be paid to brokers in connection with such purchases.

Item 16F. Change in Registrant's Certifying Accountant

Not applicable.

Item 16G. Corporate Governance

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 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. 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.

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.

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. QIAGEN has not entered into any such transactions in 2017. 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.

Further information on our Managing Directors can be found in Item 6 of this Annual Report.

Supervisory Board

General

The Supervisory Board supervises the policies of the Managing Board, the general course of QIAGEN’s affairs and 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 2017, 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.

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. In 2017, 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. Further information on our Supervisory Directors can be found in Item 6 of this Annual Report.

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 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.

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.

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 2017, KPMG Accountants N.V. was appointed as external auditor for the Company for 2017 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.

Following the appointment of KPMG Accountants N.V. for the audit of our statutory consolidated financial statements, the external auditor for our consolidated financial statements prepared under U.S. generally accepted accounting principles is KPMG AG Wirtschaftsprüfungsgesellschaft who audited the consolidated financial statements as of and for the year ended December 31, 2017 contained in this annual report.

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.

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 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.

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 and Prof. Dr. Manfred Karobath in 2000. While Prof. Karobath has announced not to stand for re-election in 2018, 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 create 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, can quickly adapt to a fast changing environment. In 2017, our

multicultural workforce was composed of 71 nationalities with an average age of 40.3 With 49.2% women we are well balanced in terms of gender on an aggregate level. We also have significantly increased the diversity of our senior leadership team and will continue to do so in the future. In 2017, almost 31% of our management positions in the four leadership levels below the Executive Committee were held by women. Information on the composition of our Managing and Supervisory Boards can be found in Item 6.

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 are basically structured so that 40% of a grant vests after three years, 50% after five years and the remaining 10% after ten years. In 2015 and 2016, the members of the Managing Board elected to receive in lieu of their cash bonus the value earned in these years in performance stock units and restricted stock units respectively which vested over two 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.

7. 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. Since 2007, Supervisory Board members have also 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.

Further Information

For additional information regarding our Boards, including the Audit and other Committees of our Supervisory Board, please refer to the discussion in Item 6 above.

Item 16H. Mine Safety Disclosure

Not applicable.

PART III

Item 17. Financial Statements
See Item 18.

Item 18. Financial Statements
See pages F-1 through F-48 included herein.

(A) The following financial statements, together with the reports of KPMG thereon, are filed as part of this annual report:

Item 19. Exhibits

1.1	Articles of Association as confirmed by notarial deed as of January 24, 2017 (English translation) (1)
2.4	$400 Million Note Purchase Agreement dated as of October 16, 2012 (filed as Exhibit 2.9) (2)
2.5	2019 Bonds Indenture dated March 19, 2014 (Filed as Exhibit 2.7) (3)
2.6	2021 Bonds Indenture dated March 19, 2014 (Filed as Exhibit 2.8) (3)
2.7	2019 Form of Warrant Confirmation dated March 12, 2014 (Filed as Exhibit 2.9) (3)
2.8	2021 Form of Warrant Confirmation dated March 12, 2014 (Filed as Exhibit 2.10) (3)
2.9	2019 Form of Bond Hedge Confirmation dated March 12, 2014 (Filed as Exhibit 2.11) (3)
2.10	2021 Form of Bond Hedge Confirmation dated March 12, 2014 (Filed as Exhibit 2.12) (3)
*2.11	Schuldscheindarlehensvertrag Form of Loan Agreement dated as of June 19, 2017
*2.12	$400 Million Note Purchase Agreement dated as of September 6, 2017
*2.13	2023 Bonds Indenture dated September 13, 2017
*2.14	2023 Form of Warrant Confirmation dated September 6, 2017
*2.15	2023 Form of Bond Hedge Confirmation dated September 6, 2017
4.1	Lease Between QIAGEN GmbH and Gisantus Grundstuecksverwaltungsgesellschaft mbH, dated January 13, 1997 (the “Max-Volmer-Strasse 4 Lease”) (Filed as Exhibit 10.3) (4)
4.2	The Max-Volmer-Strasse 4 Lease Summary (Filed as Exhibit 10.3(a)) (4)
4.3	QIAGEN N.V. Amended and Restated 2005 Stock Plan (Filed as Exhibit 99.1) (5)
4.4	QIAGEN N.V. 2014 Stock Plan (Filed as Exhibit 99.1) (6)
*8.1	List of Subsidiaries
*12.1	Certification under Section 302; Peer M. Schatz, Managing Director and Chief Executive Officer
*12.2	Certification under Section 302; Roland Sackers, Managing Director and Chief Financial Officer
*13.1	Certifications under Section 906; Peer M. Schatz, Managing Director and Chief Executive Officer and Roland Sackers, Managing Director and Chief Financial Officer
*15.1	Consent of Independent Registered Public Accounting Firm
†*101	XBRL Interactive Data File

*Filed herewith.

†

Pursuant to Rule 406(T) of Regulation S-T, the Interactive Data Files on Exhibit 101 hereto are deemed not filed or part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933 as amended, are deemed not filed for purposes of Section 18 of the Securities and Exchange Act of 1934, as amended, and otherwise are not subject to liability under those sections.

(1) Incorporated by reference to Form 20-F Annual Report of QIAGEN N.V. filed with the Securities and Exchange Commission on March 6, 2017.

(2) Incorporated by reference to Form 20-F Annual Report of QIAGEN N.V. filed with the Securities and Exchange Commission on March 1, 2013.

(3) Incorporated by reference to Form 20-F Annual Report of QIAGEN N.V. filed with the Securities and Exchange Commission on March 2, 2015.

(4) Incorporated by reference to Form 20-F Annual Report of QIAGEN N.V. filed with the Securities and Exchange Commission on March 31, 2000.

(5) Incorporated by reference to Registration Statement of QIAGEN N.V. on Form S-8 filed with the Securities and Exchange Commission on November 17, 2011.

(6) Incorporated by reference to Registration Statement of QIAGEN N.V. on Form S-8 filed with the Securities and Exchange Commission on April 2, 2015.

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

QIAGEN N.V.

Dated: March 5, 2018

By: /s/ Peer M. Schatz
Peer M. Schatz, Chief Executive Officer

/s/ Roland Sackers
Roland Sackers, Chief Financial Officer

QIAGEN N.V. AND SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Supervisory Board
QIAGEN N.V.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of QIAGEN N.V. and subsidiaries (the "Company") as of December 31, 2017 and 2016, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three year period ended December 31, 2017, and the related notes and the financial statement schedule as listed in Item 18 (A) (collectively, the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the years in the three year period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated March 5, 2018 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft
We have served as the Company's auditor since 2015.
Düsseldorf, Germany
March 5, 2018

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Supervisory Board
QIAGEN N.V.:

Opinion on Internal Control Over Financial Reporting
We have audited QIAGEN N.V.'s and subsidiaries ("QIAGEN" or "the Company") internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.
We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2017 and 2016, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2017, and the related notes and the financial statement schedule as listed in Item 18 (A) (collectively, the "consolidated financial statements"), and our report dated March 5, 2018 expressed an unqualified opinion on those consolidated financial statements.
Basis for Opinion
The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Report of Management on Internal Control over Financial Reporting'. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.
We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.
Definition and Limitations of Internal Control Over Financial Reporting
A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft
Düsseldorf, Germany

March 5, 2018

QIAGEN N.V. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands)

	Note	As of December 31, 2017	2016
Assets			
Current assets:			
Cash and cash equivalents	(3)	$657,714	$439,180
Short-term investments	(7)	359,198	92,999
Accounts receivable, net of allowance for doubtful accounts of $8,008 and $7,614 in 2017 and 2016, respectively	(3, 22)	329,138	278,244
Income taxes receivable		39,509	23,795
Inventories, net	(3)	155,927	136,552
Prepaid expenses and other current assets	(8)	106,487	66,799
Total current assets		1,647,973	1,037,569
Long-term assets:			
Property, plant and equipment, net of accumulated depreciation of $564,588 and $451,160 in 2017 and 2016, respectively	(9)	494,321	436,655
Goodwill	(11)	2,012,904	1,925,518
Intangible assets, net of accumulated amortization of $1,117,423 and $948,072 in 2017 and 2016, respectively	(11)	499,318	557,159
Deferred income taxes	(16)	39,353	68,384
Other long-term assets (of which $17,713 and $13,067 in 2017 and 2016 due from related parties, respectively)	(10, 13, 22)	344,647	282,909
Total long-term assets		3,390,543	3,270,625
Total assets		$5,038,516	$4,308,194

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

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QIAGEN N.V. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands, except par value)

	Note	As of December 31, 2017	2016
Liabilities and equity			
Current liabilities:			
Accounts payable	(22)	$59,205	$51,218
Accrued and other current liabilities (of which $9,028 and $3,926 due to related parties in 2017 and 2016, respectively)	(10, 22)	244,114	230,305
Income taxes payable		21,473	26,906
Total current liabilities		324,792	308,429
Long-term liabilities:			
Long-term debt, net of current portion	(15)	1,758,258	1,067,096
Deferred income taxes	(16)	76,727	40,621
Other long-term liabilities (of which $3,075 and $5,889 due to related parties in 2017 and 2016, respectively)	(10, 13, 22)	337,743	284,952
Total long-term liabilities		2,172,728	1,392,669
Commitments and contingencies	(19)		
Equity:			
Preference shares, 0.01 EUR par value, authorized—450,000 shares, no shares issued and outstanding		—	—
Financing preference shares, 0.01 EUR par value, authorized—40,000 shares, no shares issued and outstanding		—	—
Common Shares, 0.01 EUR par value, authorized—410,000 shares, issued — 230,829 and 239,707 shares in 2017 and 2016, respectively		2,702	2,812
Additional paid-in capital		1,630,095	1,794,665
Retained earnings		1,247,945	1,263,464
Accumulated other comprehensive loss	(17)	(220,759)	(333,839)
Less treasury shares, at cost— 4,272 and 5,147 shares in 2017 and 2016, respectively	(17)	(118,987)	(120,006)
Total equity		2,540,996	2,607,096
Total liabilities and equity		$5,038,516	$4,308,194

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

QIAGEN N.V. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(in thousands, except per share data)

	Note	Years ended December 31, 2017	2016	2015
Net sales	(3, 4, 22)	$1,417,536	$1,337,991	$1,280,986
Cost of sales		494,975	493,338	454,328
Gross profit		922,561	844,653	826,658
Operating expenses:				
Research and development	(3)	154,084	149,841	146,830
Sales and marketing		375,562	376,321	359,598
General and administrative, restructuring, integration and other	(3)	200,098	180,573	102,066
Acquisition-related intangible amortization		39,398	39,091	38,666
Total operating expenses		769,142	745,826	647,160
Income from operations		153,419	98,827	179,498
Other income (expense):				
Interest income		10,645	6,776	4,753
Interest expense		(49,685)	(39,022)	(37,396)
Other expense, net	(6)	(4)	(9,673)	(10,552)
Total other expense, net		(39,044)	(41,919)	(43,195)
Income before income taxes		114,375	56,908	136,303
Income taxes	(3, 16)	73,981	(23,395)	6,401
Net income		40,394	80,303	129,902
Net loss attributable to noncontrolling interest		—	(101)	(246)
Net income attributable to the owners of QIAGEN N.V.		$40,394	$80,404	$130,148
Basic net income per common share attributable to the owners of QIAGEN N.V.		$0.18	$0.34	$0.56
Diluted net income per common share attributable to the owners of QIAGEN N.V.		$0.17	$0.34	$0.55
Weighted-average common shares outstanding				
Basic	(18)	228,074	234,800	233,483
Diluted	(18)	233,009	238,993	238,647

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

QIAGEN N.V. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

		Years ended December 31,		
	Note	2017	2016	2015
Net income		$40,394	$80,303	$129,902
Other comprehensive income (loss) to be reclassified to profit or loss in subsequent periods:				
(Losses) Gains on cash flow hedges, before tax	(13)	(50,067)	(3,969)	5,337
Reclassification adjustments on cash flow hedges, before tax	(13)	26,136	(6,228)	(5,273)
Cash flow hedges, before tax		(23,931)	(10,197)	64
(Losses) gains on marketable securities, before tax		(854)	(1,421)	1,215
Gains (losses) on pensions, before tax		886	929	(1,809)
Foreign currency translation adjustments, before tax		135,945	(65,910)	(124,639)
Other comprehensive income (loss), before tax		112,046	(76,599)	(125,169)
Income tax relating to components of other comprehensive income (loss)		1,034	2,562	1,140
Total other comprehensive income (loss), after tax		113,080	(74,037)	(124,029)
Comprehensive income		153,474	6,266	5,873
Comprehensive (income) attributable to noncontrolling interest		—	(545)	(146)
Comprehensive income attributable to the owners of QIAGEN N.V.		$153,474	$5,721	$5,727

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

QIAGEN N.V. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(in thousands)	Note	Common Shares		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Shares		Equity Attributable to the Owners of QIAGEN N.V.	Non-controlling Interest	Total Equity
		Shares	Amount				Shares	Amount			
BALANCE AT DECEMBER 31, 2014		239,707	$2,812	$1,851,404	$1,104,329	$(134,735)	(7,684)	$(167,190)	$2,656,620	$8,255	$2
Acquisition of QIAGEN Marseille S.A. shares from noncontrolling interests		—	—	—	—	—	—	—	—	(6,367)	(6
Net income		—	—	—	130,148	—	—	—	130,148	(246)	12
Unrealized loss, net on pension	(17)	—	—	—	—	(1,266)	—	—	(1,266)	—	(1
Unrealized gain, net on hedging contracts	(13)	—	—	—	—	4,003	—	—	4,003	—	4,0
Realized gain, net on hedging contracts	(13)	—	—	—	—	(3,955)	—	—	(3,955)	—	(3
Unrealized gain, net on marketable securities		—	—	—	—	1,215	—	—	1,215	—	1,2
Translation adjustment, net	(17)	—	—	—	—	(124,418)	—	—	(124,418)	392	(1
Purchase of treasury shares	(17)	—	—	—	—	—	(842)	(20,818)	(20,818)	—	(2
Issuance of common shares in connection with stock plan	(20)	—	—	—	(25,280)	—	1,824	35,596	10,316	—	10
Excess tax benefit of employee stock plans		—	—	3,328	—	—	—	—	3,328	—	3,3
Share-based compensation	(20)	—	—	23,761	—	—	—	—	23,761	—	23
		—	—	97	—	—	—	—	97	—	97

Proceeds from subscription receivables		—	—		—	—	—	—		—	
Redemption of subscription receivables		—	—	(112,995)	—	—	—	—	(112,995)	—	(1
BALANCE AT DECEMBER 31, 2015		239,707	$2,812	$1,765,595	$1,209,197	$(259,156)	(6,702)	$(152,412)	$2,566,036	$2,034	$2
Acquisition of QIAGEN Marseille S.A. shares from noncontrolling interests		—	—	—	—	—	—	—	—	(2,624)	(2
Acquisition of Exiqon A/S	(5)	—	—	—	—	—	—	—	—	5,519	5,
Acquisition of Exiqon A/S shares from noncontrolling interests	(5)	—	—	—	—	—	—	—	—	(5,474)	(5
Net income		—	—	—	80,404	—	—	—	80,404	(101)	80
Unrealized gain, net on pension	(17)	—	—	—	—	650	—	—	650	—	65
Unrealized loss, net on hedging contracts	(13)	—	—	—	—	(2,977)	—	—	(2,977)	—	(2
Realized gain, net on hedging contracts	(13)	—	—	—	—	(4,671)	—	—	(4,671)	—	(4
Unrealized loss, net on marketable securities	(10)	—	—	—	—	(1,371)	—	—	(1,371)	—	(1
Translation adjustment, net	(17)	—	—	—	—	(66,314)	—	—	(66,314)	646	(6
Issuance of common shares in connection with stock plan	(20)	—	—	—	(26,137)	—	1,555	32,406	6,269	—	6,
Excess tax benefit of employee stock plans		—	—	782	—	—	—	—	782	—	78
Share-based compensation	(20)	—	—	28,288	—	—	—	—	28,288	—	28

BALANCE AT DECEMBER 31, 2016		239,707	$2,812	$1,794,665	$1,263,464	$(333,839)	(5,147)	$(120,006)	$2,607,096	$—	$2
Capital repayment	(17)	(8,878)	(110)	(244,319)	—	—	191	—	(244,429)	—	(2
Issuance of warrants	(17)	—	—	45,307	—	—	—	—	45,307	—	45
Net income		—	—	—	40,394	—	—	—	40,394	—	40
Unrealized gain, net on pension	(17)	—	—	—	—	620	—	—	620	—	62
Unrealized loss, net on hedging contracts	(13)	—	—	—	—	(42,489)	—	—	(42,489)	—	(4
Realized loss, net on hedging contracts	(13)	—	—	—	—	19,602	—	—	19,602	—	19
Unrealized loss, net on marketable securities	(10)	—	—	—	—	(786)	—	—	(786)	—	(7
Translation adjustment, net	(17)	—	—	—	—	136,133	—	—	136,133	—	13
Purchase of treasury shares	(17)	—	—	—	—	—	(1,909)	(60,970)	(60,970)	—	(6

Issuance of common shares in connection with stock plan	(20)	—	—	—	(55,913)	—	2,593	61,989	6,076	—	6,076
Share-based compensation	(20)	—	—	34,442	—	—	—	—	34,442	—	34,442
BALANCE AT DECEMBER 31, 2017		230,829	$2,702	$1,630,095	$1,247,945	$(220,759)	(4,272)	$(118,987)	$2,540,996	$—	$2,540,996

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

QIAGEN N.V. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)	Note	Years ended December 31, 2017	2016	2015
Cash flows from operating activities:				
Net income		$40,394	$80,303	$129,902
Adjustments to reconcile net income to net cash provided by operating activities, net of effects of businesses acquired:				
Depreciation and amortization		216,448	213,056	191,473
Non-cash impairments	(6)	5,137	44,399	5,471
Amortization of debt discount and issuance costs		24,773	20,451	19,955
Share-based compensation expense	(20)	34,442	28,288	23,760
Excess tax benefits from share-based compensation		—	(782)	(3,328)
Deferred income taxes	(16)	60,176	(63,981)	(32,280)
Loss on early redemption of debt	(15)	—	—	7,564
Loss (gain) on marketable securities		1,055	(1,360)	6,039
Reversals of contingent consideration	(14)	(3,269)	(6,501)	(5,225)
Other items, net including fair value changes in derivatives		(4,521)	19,435	2,609
Net changes in operating assets and liabilities:				
Accounts receivable	(3)	(34,165)	(12,238)	(24,764)
Inventories	(3)	(21,633)	(20,346)	(33,194)
Prepaid expenses and other current assets	(8)	(5,245)	6,640	52,315
Other long-term assets		(16,786)	3,549	2,730
Accounts payable		4,321	(1,466)	7,732
Accrued and other current liabilities	(12)	2,828	10,618	(25,570)
Income taxes	(16)	(41,266)	13,483	(4,242)
Other long-term liabilities		24,090	8,054	(3,450)
Net cash provided by operating activities		286,779	341,602	317,497
Cash flows from investing activities:				
Purchases of property, plant and equipment		(90,081)	(74,536)	(97,778)
Proceeds from sale of equipment		42	63	103
Purchases of intangible assets		(34,324)	(19,388)	(19,703)
Purchases of investments		(4,777)	(23,448)	(6,053)
Cash paid for acquisitions, net of cash acquired	(5)	(50,549)	(90,490)	(66,930)
Purchases of short-term investments	(7)	(450,564)	(496,304)	(317,570)
Proceeds from sales of short-term investments	(7)	189,006	533,847	367,714
Cash paid for collateral asset	(13)	(20,707)	(1,200)	—
Other investing activities		(2,310)	(7,600)	(5,983)
Net cash used in investing activities		(464,264)	(179,056)	(146,200)
Cash flows from financing activities:				
Proceeds from long-term debt, net of issuance costs	(15)	329,875	—	—
Proceeds from issuance of cash convertible notes, net of issuance costs	(15)	394,391	—	(86)
Purchase of call option related to cash convertible notes	(15)	(73,646)	—	—
Proceeds from issuance of warrants, net of issuance costs	(17)	45,396	—	—
Capital repayment	(17)	(243,945)	—	—
Repayment of long-term debt	(15)	—	(6,738)	(251,868)
Principal payments on capital leases		(1,402)	(1,322)	(1,079)
Excess tax benefits from share-based compensation		—	782	3,328
Proceeds from issuance of common shares		6,075	6,269	10,316
Purchase of treasury shares	(17)	(60,970)	—	(20,818)

Other financing activities	(8,587)	(9,595)	1,594
Net cash provided by (used in) financing activities	387,187	(10,604)	(258,613)
Effect of exchange rate changes on cash and cash equivalents	8,832	(2,773)	(15,340)
Net increase (decrease) in cash and cash equivalents	218,534	149,169	(102,656)
Cash and cash equivalents, beginning of period	439,180	290,011	392,667
Cash and cash equivalents, end of period	$657,714	$439,180	$290,011
Supplemental cash flow disclosures:			
Cash paid for interest	$20,252	$18,227	$20,799
Cash paid for income taxes	$40,499	$22,670	$34,441
Supplemental disclosure of non-cash investing and financing activities:			
Equipment purchased through capital lease	$88	$113	$231
Intangible assets acquired in non-monetary exchange	$—	$—	$5,900

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

QIAGEN N.V. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2017

1. Corporate Information and Basis of Presentation

Corporate Information

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 to transform biological materials into valuable molecular insights. Our sample technologies isolate and process DNA, RNA and proteins from blood, tissue and other materials. Assay technologies make these biomolecules visible and ready for analysis. Bioinformatics software and knowledge bases interpret data to report relevant, actionable insights. Automation solutions tie these together in seamless and cost-effective molecular testing workflows. We provide these workflows to four major customer classes: Molecular Diagnostics (human healthcare), Applied Testing (forensics, veterinary testing and food safety), Pharma (pharmaceutical and biotechnology companies) and Academia (life sciences research). We market our products in more than 130 countries.

Basis of Presentation

The accompanying consolidated financial statements were prepared in accordance with U.S. generally accepted accounting principles (GAAP) 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 available-for-sale financial instruments that have been measured at fair value.

On January 6, 2017, we acquired OmicSoft Corporation, located in Cary, North Carolina (U.S.). On June 28, 2016, we acquired Exiqon A/S, located in Vedbaek, Denmark and on November 20, 2015, we acquired MO BIO Laboratories, Inc., located in Carlsbad, California. Accordingly, at the acquisition dates, all of 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.

Certain prior year amounts related to deferred taxes have been reclassified in Note 16 Income Taxes and the Consolidated Statements of Cash Flows. Certain prior year amounts related to restructuring costs have been reclassified to conform to the current year presentation. For the year ended December 31, 2016, $26.3 million and $25.0 million costs were reclassified out of research and development and sales and marketing, respectively, to general and administrative, restructuring, integration and other. These reclassifications had no effect on income from operations.

2. Effects of New Accounting Pronouncements

Adoption of New Accounting Standards

The following new FASB Accounting Standards Updates (ASU) were effective for the year ended December 31, 2017.

ASU 2015-11, Inventory (Topic 330): Simplifying the Measurement of Inventory requires in scope inventory, including inventory measured using first-in, first out (FIFO) or average cost, to be measured at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. The adoption of ASU 2015-11 did not have a material impact on our consolidated financial statements.

ASU 2016-07, Investments - Equity Method and Joint Ventures (Topic 323): Simplifying the Transition to the Equity Method of Accounting eliminates the requirement to retroactively adopt the equity method of accounting when an investment qualifies for use of the equity method as a result of an increase in the level of ownership or degree of influence. The new guidance had no impact on our consolidated financial statements.

ASU 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting is intended to simplify several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The new guidance became effective for us on January 1, 2017. The impact of the adoption of ASU 2016-09 is limited to the recording of any windfall or shortfall benefit directly to the tax provision and the reclassification of certain items in our statement of cash flows. We will continue estimating stock-based compensation award forfeitures in determining the amount of compensation cost to be recognized each period. As a result of this adoption, we expect volatility in our effective tax rate as any windfall or shortfall tax benefits related to our share-based compensation will be recorded directly into our results of operations. Additionally, excess tax benefits after adoption are classified as cash flows from operating activities instead of cash flows from financing activities. We adopted this standard on a prospective basis and during 2017, $5.2 million of excess tax benefit was recognized directly to the tax provision and classified as cash flows from operating activities.

New Accounting Standards Not Yet Adopted

The following new FASB Accounting Standards Updates, which are not yet adopted, have been grouped by their required effective dates:

First Quarter of 2018

ASU 2014-09, Revenue from Contracts with Customers (Topic 606) affects any entity that either enters into contracts with customers to transfer goods or services or enters into contracts for the transfer of nonfinancial assets unless those contracts are within the scope of other standards (e.g., insurance contracts or lease contracts). In August 2015, the FASB issued Accounting Standards Update No. 2015-14 (ASU 2015-14), Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date which defers the effective date of ASU 2014-09 to interim and annual reporting periods beginning after December 15, 2017. The FASB has continued to issue accounting standards updates to clarify and provide implementation guidance related to Revenue from Contracts with Customers, including ASU 2016-08 Revenue from Contract with Customers: Principal versus Agent Considerations, ASU 2016-10 Revenue from Contracts with Customers: Identifying Performance Obligations and Licensing, and ASU 2016-12 Revenue from Contracts with Customers: Narrow-Scope Improvements and Practical Expedients. An entity should apply the amendments either retrospectively to each prior reporting period presented and the entity may elect certain practical expedients (the full retrospective method of adoption); or, retrospectively with the cumulative effect of initially applying this ASU recognized at the date of initial application (the modified retrospective method of adoption).

We will adopt this standard on its effective date, January 1, 2018 using the modified retrospective method. The new standard is largely consistent with the existing guidance and current practices applied by our business and we do not expect a material impact on our existing revenue accounting policies. The new standard also requires additional disclosures including quantitative and qualitative disclosures about the nature, amount, timing and uncertainty of revenue and cash flows from customer contracts. The Company is in the process of finalizing changes to support recognition and disclosure under the new revenue standard.

ASU 2016-01, Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities will impact certain aspects of recognition, measurement, presentation and disclosure of financial instruments. The new guidance makes targeted improvements to existing U.S. GAAP by:

- requiring equity investments (except those accounted for under the equity method of accounting, or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income;
- requiring public business entities to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes;
- requiring separate presentation of financial assets and financial liabilities by measurement category and form of financial asset (i.e., securities or loans and receivables) on the balance sheet or the accompanying notes to the financial statements;

- eliminating the requirement for public business entities to disclose the method(s) and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost on the balance sheet; and
- requiring a reporting organization to present separately in other comprehensive income the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk (also referred to as “own

credit") when the organization has elected to measure the liability at fair value in accordance with the fair value option for financial instruments.

The amendments will become effective for our financial statements beginning in the first quarter of 2018 and require adoption using a cumulative-effect adjustment to the balance sheet as of the beginning of the fiscal year of adoption. The implementation of the amendments is expected to increase the volatility of net income as gains or losses in future periods will be recognized in net income; however the extent of any volatility will be dependent upon the significance of the equity investments at the time of adoption. At December 31, 2017, we had a net unrealized loss of $0.9 million net of tax, and at December 31, 2016, we had a net unrealized loss, net of tax, of $0.2 million from equity investments recorded in equity, respectively.

ASU No. 2016-15, Statement of Cash Flows (Topic 320): Classification of Certain Cash Receipts and Cash Payments (a consensus of the FASB Emerging Issues Task Force), addresses eight classification issues related to the statement of cash flows:

- debt prepayment or debt extinguishment costs;
- settlement of zero-coupon bonds;
- contingent consideration payments made after a business combination;
- proceeds from the settlement of insurance claims;
- proceeds from the settlement of corporate-owned life insurance policies, including bank-owned life insurance policies;
- distributions received from equity method investees;
- beneficial interests in securitization transactions; and
- separately identifiable cash flows and application of the predominance principle.

We will adopt ASU 2016-15 on January 1, 2018. We will be required to apply this ASU using a retrospective transition method to each period presented other than for issues where application would be impracticable in which case we will be permitted to apply the amendments for those issues prospectively as of the earliest date practicable. We do not expect any material impact from the adoption of ASU 2016-15 on our consolidated financial statements.

ASU 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory, aims to improve the accounting for the income tax consequences of intra-entity transfers of assets other than inventory. This amendment requires an entity to recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. The amendments in this update should be applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. We will adopt ASU 2016-16 on January 1, 2018 without material impact.

ASU 2016-18, Statement of Cash Flows (Topic 320): Restricted Cash, requires entities to show the changes in the total of cash, cash equivalents, restricted cash and restricted cash equivalents in the statement of cash flows. As a result, entities will no longer present transfers between cash and cash equivalents and restricted cash and restricted cash equivalents in the statement of cash flows. The amendments in this update should be applied using a retrospective transition method to each period presented. This update is effective for us on January 1, 2018. There is no impact from the adoption of ASU 2016-18 on our consolidated financial statements other than the effect of a retrospective adjustment for the $6.3 million restricted cash balance held as of January 1, 2016 in the comparative Consolidated Statements of Cash Flows.

ASU 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business, clarifies and provides a more robust framework to use in determining when a set of assets and activities is a business. The amendments in this update should be applied prospectively on or after the effective date. We adopted this update beginning January 1, 2018.

ASU 2017-09, Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting, clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. The guidance is effective for us prospectively for annual periods beginning on January 1, 2018.

First Quarter of 2019

ASU 2016-02, Leases (Topic 842) aims to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. ASU 2016-02 will become effective for us beginning in the first quarter of 2019 and requires modified retrospective application for leases that exist or are entered into after the beginning of the earliest comparative period in the financial statements. We do not plan to early adopt this standard and we anticipate that the adoption of this standard will require changes to our systems and processes. We expect this standard to increase total assets and total liabilities, however, we are currently evaluating the potential size of the impact that ASU 2016-02 may have on our consolidated financial statements.

ASU 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities, will make more financial and nonfinancial hedging strategies eligible for hedge accounting. It also amends the presentation and disclosure requirements and changes how companies assess effectiveness. It is intended to more closely align hedge accounting with companies' risk management strategies, simplify the application of hedge accounting, and increase transparency as to the scope and results of hedging programs. The new guidance will become effective for us beginning on January 1, 2019 by applying a modified retrospective approach to existing hedging relationship as of the adoption date. Under the modified retrospective approach, entities with cash flow or net investment hedges will make (1) a cumulative-effect adjustment to accumulated other comprehensive income so that the adjusted amount represents the cumulative change in the hedging instruments' fair value since hedge inception (less any amounts that should have been recognized in earnings under the new accounting model) and (2) a corresponding adjustment to opening retained earnings as of the most recent period presented on the date of adoption. We are currently evaluating the potential impact ASU 2017-12 may have on our consolidated financial statements.

First Quarter of 2020

ASU 2016-13, Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments. provides financial statement users with more decision-useful information about the expected credit losses on financial instruments and other commitments to extend credit held by a reporting entity at each reporting date. To achieve this objective, the amendments in ASU 2016-13 replace the incurred loss impairment methodology in current GAAP with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The new guidance will become effective for us by applying the standard's provisions as a cumulative-effect adjustment to retained earnings beginning on January 1, 2020. We are currently evaluating the potential impact ASU 2016-13 may have on our consolidated financial statements.

ASU 2017-04, Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment, removes Step 2 of the goodwill impairment test. A goodwill impairment will now be the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. ASU 2017-04 is effective for us for annual periods beginning January 1, 2020 and early adoption is permitted. The new guidance is required to be applied on a prospective basis. We are currently evaluating the impact the adoption of this new standard will have on our financial position and results of operations.

3. Summary of Significant Accounting Policies and Critical Accounting Estimates

Principles of Consolidation

The consolidated financial statements include the accounts of QIAGEN N.V. and its wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated. Investments in either common stock or in-substance common stock of companies where we exercise significant influence over the operations but do not have control, and where we are not the primary beneficiary, are accounted for using the equity method. All other investments are accounted for under the cost method. When there is a portion of equity in an acquired subsidiary not attributable, directly or indirectly, to the Company, we record the fair value of the noncontrolling interests at the acquisition date and classify the amounts attributable to noncontrolling interests separately in equity in the consolidated financial statements. Any subsequent changes in the Company's ownership interest while the Company retains its controlling financial interest in its subsidiary are accounted for as equity transactions.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities and disclosure of contingencies at the date of the financial statements as well as the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Concentrations of Risk

We buy materials for products from many suppliers, and are not dependent on any one supplier or group of suppliers for the business as a whole. However, key components of certain products, including certain instrumentation components and chemicals, are available only from a single source. If supplies from these vendors were delayed or interrupted for any reason, we may not be able to obtain these materials timely or in sufficient quantities in order to produce certain products and sales levels could be negatively affected. Additionally, 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 researchers and their organizations for applications in which our products are used could have a significant effect on the demand for our products.

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. 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 master agreements which allow us to manage the exposure with the respective counterparty on a net basis.

Other financial instruments that potentially subject us to concentrations of credit risk are cash and cash equivalents, short-term investments, and accounts receivable. We attempt to minimize the risks related to cash and cash equivalents and short-term investments 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.

Foreign Currency Translation

Our reporting currency is the U.S. dollar and our subsidiaries' functional currencies are generally the local currency of the respective 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 equity at historical rates. Translation gains or losses are recorded in equity, and transaction gains and losses are reflected in net income as a component of other expense, net. Realized gains or losses on the value of derivative contracts entered into to hedge the exchange rate exposure of receivables and payables are also included in net income as a component of other expense, net. The net (loss) gain on foreign currency transactions was $(3.3) million, less than $0.1 million, and $(0.5) million in 2017, 2016 and 2015, respectively, and is included in other expense, net.

The exchange rates of key currencies were as follows:

	Closing rate at December 31,		Annual average rate		
(US$ equivalent for one)	2017	2016	2017	2016	2015
Euro (EUR)	1.1993	1.0541	1.1292	1.1068	1.1100
Pound Sterling (GBP)	1.3517	1.2312	1.2882	1.3560	1.5286
Swiss Franc (CHF)	1.0249	0.9816	1.0156	1.0153	1.0406
Australian Dollar (AUD)	0.7815	0.7222	0.7666	0.7439	0.7522
Canadian Dollar (CAD)	0.7975	0.7430	0.7710	0.7552	0.7836
Japanese Yen (JPY)	0.0089	0.0085	0.0089	0.0092	0.0083
Chinese Yuan (CNY)	0.1537	0.1440	0.1480	0.1506	0.1592

Segment Information

We determined that we operate as one operating segment in accordance with the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) Topic 280, Segment Reporting. 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 reporting unit.

Revenue Recognition

Our revenues are reported net of sales and value added taxes, discounts and sales allowances, 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. We recognize revenue when four basic criteria are met: (1) persuasive evidence of an arrangement exists; (2) delivery has occurred or services have been rendered; (3) the fee is fixed or determinable; and (4) collectability is reasonably assured.

Consumable and Related Products: In the last three years, revenue from consumable product sales has accounted for approximately 79%-80% of our net sales and is generally recognized upon transfer of title consistent with the shipping terms. We maintain a small amount, on average less than $2.0 million in total, of consignment inventory at certain customer locations. Revenues for the consumable products which are consigned in this manner are recognized upon consumption. We generally allow returns of consumable products if the product is returned in a timely manner and in good condition. Allowances for returns are provided for based upon the historical pattern of returns and management's evaluation of specific factors that impact the risk of returns.

Revenues from related products include software-as-a-service (SaaS), license fees, intellectual property and patent sales, royalties and milestone payments and over the last three years has accounted for approximately 7%-8% of our net sales. Revenue from SaaS arrangements is recognized ratably 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. License fees from research collaborations include payments for technology transfer and access rights. Non-refundable, up-front payments received in connection with collaborative research and development agreements are generally deferred and recognized on a straight-line basis over the contract period during which there is any continuing obligation. Revenue from intellectual property and patent sales is recognized when earned, either at the time of sale, or over the contract period when licensed. Payments for milestones, generally based on the achievement of substantive and at-risk performance criteria, are recognized in full at such time as the specified milestone has been achieved according to the terms of the agreement. Royalties from licensees are based on reported sales of licensed products and revenues are calculated based on contract terms when reported sales are reliably measurable, fees are fixed or determinable and collectability is reasonably assured.

Instrumentation: 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 title passes to the customer, upon either shipment or written customer acceptance after satisfying any installation and training requirements.

We offer our customers access to our instrumentation via reagent rental agreements which place instrumentation with customers without requiring them to purchase the equipment. Instead, we recover the cost of providing the instrumentation in the amount charged for consumable products. The instruments placed with customers under a reagent rental agreement are depreciated and charged to cost of sales on a straight-line basis over the estimated life of the instrument, typically 3 to 5 years. The costs to maintain these instruments in the field are charged to cost of sales as incurred. Revenue from these reagent rental agreements is allocated to the elements within the arrangement (the lease, the sale of consumables and/or services) in accordance with ASC 605-25, Revenue Recognition—Multiple-Element Arrangements and recognized for each unit of accounting as appropriate.

We have contracts with multiple elements which include instrumentation equipment, either leased under a reagent rental agreement or sold directly, together with other elements such as installation, training, extended warranty services or product maintenance contracts or consumable products. These contracts are accounted for under ASC 605-25, Revenue Recognition—Multiple-Element Arrangements. Multiple-element arrangements are assessed to determine whether there is more than one unit of accounting. In order for a deliverable to qualify as a separate unit of accounting, both of the following criteria must be met:

- The delivered items have value to the client on a stand-alone basis;
- If the arrangement includes a general right of return relative to the delivered item, delivery or performance of the undelivered item or items is considered probable and substantially in the control of the Company.

Arrangement consideration is allocated at the inception of the arrangement to all deliverables on the basis of their relative selling price. When applying the relative selling price method, the selling price for each deliverable is determined using (a) vendor-specific objective evidence (VSOE) of selling price, if it exists; or otherwise (b) third-party evidence of selling price. If neither VSOE nor third-party evidence of selling price exists for a deliverable, then the best estimated selling price for the deliverable is used. The arrangement consideration is allocated to the

separate units of accounting based on each unit's relative fair value. If these criteria are not met, deliverables included in an arrangement are accounted for as a single unit of accounting and revenues and costs are deferred until the period or periods in which the final deliverable is provided.

We have evaluated the deliverables in our multiple-element arrangements and concluded that they are separate units of accounting because the delivered item or items have value to the customer on a standalone basis and for an arrangement that includes a general right of return relative to the delivered item(s), delivery or performance of the undelivered item(s) is considered probable and substantially in our control. Revenues from installation and training are recognized as services are completed, based on VSOE, which is determined by reference to the price customers pay when the services are sold separately. Revenues from extended warranty services or product maintenance contracts are recognized on a straight-line basis over the

term of the contract, typically one year. VSOE of fair value of extended warranty services or product maintenance is determined based on the price charged for the maintenance and support when sold separately. Revenues from the instrumentation equipment and consumable products are recognized when the products are delivered and there are no further performance obligations. VSOE of fair value of instrumentation equipment and consumable products is determined based on the price charged for the instrument and consumables when sold separately. Certain of our reagent rental arrangements include termination provisions for breach of contract. However, these termination provisions would not impact recognized revenues. Our other arrangements do not include any provisions for cancellation or refunds.

Warranty

We provide warranties on our products against defects in materials and workmanship for a period of 1 year. 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 accrued and other current liabilities in the accompanying consolidated balance sheets. The changes in the carrying amount of warranty obligations are as follows:

(in thousands)	Total
BALANCE AT DECEMBER 31, 2015	$2,637
Provision charged to cost of sales	3,562
Usage	(2,936)
Adjustments to previously provided warranties, net	(424)
Currency translation	(60)
BALANCE AT DECEMBER 31, 2016	$2,779
Provision charged to cost of sales	3,024
Usage	(2,859)
Adjustments to previously provided warranties, net	(54)
Currency translation	161
BALANCE AT DECEMBER 31, 2017	$3,051

Research and Development

Research and product development costs are expensed as incurred. Research and development expenses consist primarily of salaries and related expenses, facility costs and amounts paid to contract research organizations, and laboratories for the provision of services and materials as well as costs for internal use or clinical trials.

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 balance sheet. When the grant relates to an asset, the nominal amount of the grant is deducted from the carrying amount of the asset and recognized over the same period that the related asset is depreciated.

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.

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, 2017, 2016 and 2015, shipping and handling costs totaled $28.6 million, $26.5 million and $26.2 million, respectively.

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, 2017, 2016 and 2015 were $7.2 million, $8.4 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 accounted for in accordance with FASB ASC Topic 712, Compensation - Nonretirement Postemployment Benefits, and 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, some termination benefits and other costs are accounted for in accordance with FASB ASC Topic 420, Exit or Disposal Cost Obligations and 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.

Income Taxes

We account for income taxes under the liability method. Under this method, total income tax expense is the amount of income taxes expected to be payable for the current year plus the change from the beginning of the year for deferred income tax assets and liabilities established for the expected further tax consequences resulting from differences in the financial reporting and tax basis of assets and liabilities. Deferred tax assets and/or liabilities are determined by multiplying the differences between the financial reporting and tax reporting bases for assets and liabilities by the enacted tax rates expected to be in effect when such differences are recovered or settled. Deferred tax assets are reduced by a valuation allowance to the amount more likely than not to be realized. The effect on deferred taxes of a change in tax rates is recognized in income in the period that includes the enactment date.

Tax benefits are initially recognized in the financial statements when it is more likely than not that the position will be sustained upon examination by the tax authorities. Such tax positions are initially and subsequently measured as the largest amount of tax benefit that is greater than 50 percent likely of being realized upon settlement with the taxing authority using the cumulative probability method, assuming the tax authority has full knowledge of the position and all relevant facts. Our policy is to recognize interest accrued related to unrecognized tax benefits in interest expense and penalties within the income tax expense.

Derivative Instruments

We enter into derivative financial instrument contracts to minimize the variability of cash flows or income statement impact associated with the anticipated transactions being hedged or to hedge fluctuating interest rates. As changes in foreign currency or interest rate impact the value of anticipated transactions, the fair value of the forward or swap contracts also changes, offsetting foreign currency or interest rate fluctuations. Derivative instruments are recorded on the balance sheet at fair value. Changes in fair value of derivatives are recorded in current earnings or other comprehensive income, depending on whether a derivative is designated as part of a hedge transaction.

Share-Based Payments

Compensation cost for all share-based payments is recorded based on the grant date fair value, less an estimate for pre-vesting forfeitures, recognized in expense over the service period. During 2016 we made a change in accounting principle to move from a straight-line attribution method for expense recognition to an accelerated attribution method.

Forfeiture Rate—This is the estimated percentage of grants that are expected to be forfeited or cancelled on an annual basis before becoming fully vested. We estimated the forfeiture rate based on historical forfeiture experience.

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 of restricted and performance stock units 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. At each reporting period, the estimated performance achievement of the performance stock units is

assessed and any change in the estimated achievement is recorded on a cumulative basis in the period of adjustment.

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)	2017	2016
Cash at bank and on hand	$139,597	$137,615
Short-term bank deposits	518,117	301,565
Cash and Cash Equivalents	$657,714	$439,180

Short-Term Investments

Short-term investments are classified as “available for sale” and stated at fair value in the accompanying balance sheet. Interest income is accrued when earned and changes in fair market values are reflected as unrealized gains and losses, calculated on the specific identification method, as a component of accumulated other comprehensive income (loss) in equity. The amortization of premiums and accretion of discounts to maturity arising from acquisition is included in interest income. A decline in fair value that is judged to be other-than-temporary is accounted for as a realized loss and the write-down is included in the consolidated statements of income. Realized gains and losses, determined on a specific identification basis, on the sale of short-term investments are included in income.

Fair Value of Financial Instruments

The carrying amount of cash and cash equivalents, notes receivable, accounts receivable, accounts payable and accrued liabilities approximate their fair values because of the short maturities of those instruments. The carrying value of our variable rate debt and capital leases approximates their fair values because of the short maturities and/or interest rates which are comparable to those available to us on similar terms. The fair values of the Cash Convertible Notes are based on an estimation using available over-the-counter market information. The fair values of the Private Placement Senior Notes further described in Note 15 were estimated using the changes in the U.S. Treasury rates.

Accounts Receivable

Our accounts receivable are unsecured and we are at risk to the extent such amounts become uncollectible. We continually monitor accounts receivable balances, and provide for an allowance for doubtful accounts at the time collection becomes questionable based on payment history or age of the receivable. Amounts determined to be uncollectible are written off against the reserve. For the years ended December 31, 2017, 2016 and 2015, write-offs of accounts receivable totaled $3.2 million, $1.6 million and $2.0 million, respectively, while provisions for doubtful accounts which were charged to expense totaled $3.1 million, $2.1 million and $2.1 million, respectively. For all years presented, no single customer represented more than ten percent of accounts receivable or consolidated net sales.

Inventories

Inventories are stated at the lower of cost or net realizable value, determined on either a weighted average cost basis or a standard cost basis which is regularly adjusted to actual. Inventories include material, direct labor and overhead costs and are reduced for estimated obsolescence. Inventories consisted of the following as of December 31, 2017 and 2016:

(in thousands)	2017	2016
Raw materials	$23,717	$29,402
Work in process	33,153	28,123
Finished goods	99,057	79,027
Total inventories, net	$155,927	$136,552

Property, Plant and Equipment

Property, plant and equipment, including equipment acquired under capital lease obligations, are stated at cost less accumulated amortization. Capitalized internal-use software costs include only those direct costs associated with the actual development or acquisition of computer software for internal use, including costs associated with the design, coding, installation and testing of the system. Costs associated with preliminary development, such as the evaluation and selection of alternatives, as well as training, maintenance and support are expensed as incurred. Costs for software to be sold, leased or otherwise marketed that are related to the conceptual formulation and design are expensed as incurred. Costs incurred to produce the product after technological feasibility is established are capitalized and amortized in accordance with the accounting standards for the costs of software to be sold, leased, or otherwise

marketed. All other depreciation is computed using the straight-line method over the estimated useful lives of the assets (3 to 40 years). Amortization of leasehold improvements is computed on a straight-line basis over the lesser of the remaining life of the lease or the estimated useful life of the improvement asset. We have a policy of

capitalizing expenditures that materially increase assets' useful lives and charging ordinary maintenance and repairs to operations as incurred. When property or equipment is disposed of, the cost and related accumulated depreciation and amortization are removed from the accounts and any gain or loss is included in earnings.

Acquired Intangibles and Goodwill

Acquired intangibles with alternative future uses are carried at cost less accumulated amortization and consist of licenses to technology held by third parties and other acquired intangible assets. Amortization is computed over the estimated useful life of the underlying patents, which has historically ranged from one to twenty years. Purchased intangible assets acquired in business combinations, other than goodwill, are amortized over their estimated useful lives unless these lives are determined to be indefinite. Intangibles are assessed for recoverability considering the contract life and the period of time over which the intangible will contribute to future cash flow. The unamortized cost of intangible assets, where cash flows are independent and identifiable from other assets, is evaluated periodically and adjusted, if necessary, if events and circumstances indicate that a decline in value below the carrying amount has occurred. For the years ended December 31, 2016 and 2015, we recorded intangible asset impairments of $21.4 million and $0.2 million, respectively. Intangible asset impairments recorded during the year ended December 31, 2016 are further discussed in Note 6 Restructuring.

Amortization expense related to developed technology and patent and license rights which have been acquired in a business combination is included in cost of sales. Amortization of trademarks, customer base and non-compete agreements which have been acquired in a business combination is recorded in operating expense under the caption 'acquisition-related intangible amortization'. Amortization expenses of intangible assets not acquired in a business combination are recorded within either the cost of sales, research and development or sales and marketing line items based on the use of the asset.

Goodwill represents the difference between the purchase price and the estimated fair value of the net assets acquired arising from business combinations. Goodwill is subject to impairment tests annually or earlier if indicators of potential impairment exist, using a fair-value-based approach. We have elected to perform our annual test for indications of impairment as of October 1st of each year. Following the annual impairment tests for the years ended December 31, 2017, 2016 and 2015, goodwill has not been impaired. As discussed in Note 6 Restructuring, in 2016 we recorded a $2.6 million disposal of goodwill associated to the 2016 restructuring initiative.

Investments

We have investments in non-marketable securities issued by privately held companies. These investments are included in other long-term assets in the accompanying consolidated balance sheets and are accounted for using the equity or cost method of accounting.

Investments are evaluated periodically, or when impairment indicators are noted, to determine if declines in value are other-than-temporary. In making that determination, we consider all available evidence relating to the realizable value of a security. This evidence includes, but is not limited to, the following:

- adverse financial conditions of a specific issuer, segment, industry, region or other variables;
- the length of time and the extent to which the fair value has been less than cost; and
- the financial condition and near-term prospects of the issuer.

We consider whether the fair values of any of our cost or equity method investments have declined below their carrying value whenever adverse events or changes in circumstances indicate that recorded values may not be recoverable. If any such decline is considered to be other than temporary (based on various factors, including historical financial results, product development activities and the overall health of the affiliate's industry), then a write-down of the investment would be recorded in operating expense to its estimated fair value. For the year ended December 31, 2017 and 2015, we recorded total impairments to cost method investments of $5.1 million and $2.2 million, respectively, in other expense, net. In 2016, we recorded an impairment to an equity method investment of $8.3 million in other expense, net.

Impairment of Long-Lived Assets

We review our long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset or a group of assets may not be recoverable. We consider, amongst other indicators, a history of operating losses or a change in expected sales levels to be indicators of potential impairment. Assets are grouped and evaluated for impairment at the lowest level for which there are identifiable cash flows that are largely

independent of the cash flows of other groups of assets. If an asset is determined to be impaired, the loss is measured as the amount by which the carrying amount of the asset exceeds fair value which is determined by applicable market prices, when available. When market prices are not available, we generally measure fair value by discounting projected future cash flows of the asset. Considerable judgment is necessary to estimate discounted future cash flows. Accordingly, actual results could differ from such estimates. During the year ended 2016, in connection with the restructuring discussed in Note 6, we recorded asset impairment charges of $10.9 million, of which $10.8 million is recorded in general and administrative, restructuring, integration and other expense and $0.1 million is recorded in

cost of sales. In 2015, we recorded asset impairment charges of $3.1 million in general and administrative, restructuring, integration and other expenses in the accompanying consolidated statements of income related to the abandonment of certain software projects following the acquisition of MO BIO.

4. Segment Information

Considering the acquisition made during 2017, we determined that we still operate as one business segment in accordance with FASB ASC Topic 280, Segment Reporting. 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 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.

(in thousands)	2017	2016	2015
Net Sales			
Consumables and related revenues	$1,242,715	$1,166,131	$1,114,580
Instrumentation	174,821	171,860	166,406
Total	$1,417,536	$1,337,991	$1,280,986

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 $15.0 million, $12.4 million and $11.3 million for the years ended 2017, 2016 and 2015, respectively, and these amounts are included in the line item Europe, Middle East and Africa as shown in the table below.

(in thousands)	2017	2016	2015
Net Sales			
Americas:			
United States	$579,906	$555,676	$525,532
Other Americas	73,478	71,797	79,578
Total Americas	653,384	627,473	605,110
Europe, Middle East and Africa	462,980	428,055	409,955
Asia Pacific and Rest of World	301,172	282,463	265,921
Total	$1,417,536	$1,337,991	$1,280,986

Long-lived assets include property, plant and equipment. The Netherlands, which is included in the balances for Europe, reported long-lived assets of $1.7 million and $1.4 million as of December 31, 2017 and 2016, respectively.

(in thousands)	2017	2016
Long-lived assets		
Americas:		
United States	$148,694	$145,813
Other Americas	4,488	4,544
Total Americas	153,182	150,357
Germany	286,567	237,190
Other Europe	41,188	37,057
Asia Pacific and Rest of World	13,384	12,051
Total	$494,321	$436,655

5. Acquisitions

Acquisitions have been accounted for as business combinations, and the acquired companies' results have been included in the accompanying consolidated statements of income 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.

2017 Acquisition

On January 6, 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.

2016 Acquisitions

During the second quarter of 2016, we acquired a majority shareholding in Exiqon A/S (Exiqon), a publicly traded Danish company headquartered in Vedbaek, Denmark, which is a leading provider of RNA analysis solutions with a proprietary Locked Nucleic Acid (LNA) technology. The acquisition expands our leadership position in Sample to Insight solutions for RNA analysis. On June 28, 2016, we paid DKK 627.4 million ($95.2 million) for approximately 94.52% of the outstanding Exiqon common shares. On the acquisition date, the fair value of the remaining shares was $5.5 million. The fair value of this noncontrolling share was based on reference to quoted market values of Exiqon stock. During the year ended December 31, 2016, we acquired the remaining Exiqon shares for $5.5 million in cash, which is included in other financing activities in the accompanying consolidated statements of cash flows and as of December 31, 2016 we held 100% of Exiqon's shares. For the year ended December 31, 2016, acquisition-related costs of $6.3 million are included in general and administrative, restructuring, integration and other in the accompanying consolidated statements of income.

The final purchase price allocation as of December 31, 2017 did not differ from the preliminary purchase price allocation as of June 30, 2016 other than a $9.4 million increase in developed technology, a $9.2 million increase in deferred tax asset on tax loss carry forwards, a $2.8 million decrease in customer relationships, a $1.2 million increase of long-term deferred tax liability, a $0.4 million increase in prepaid expenses and other current assets and an additional $0.3 million increase of other opening balance sheet liabilities. The corresponding impact for these adjustments was a decrease to goodwill of $14.7 million.

(in thousands)	Exiqon acquisition
Purchase Price:	
Cash consideration	$ 95,163
Fair value of remaining shares	5,519
	$ 100,682
Final Allocation:	
Cash and cash equivalents	$ 4,824
Accounts receivable	3,581
Inventory	1,553
Prepaid expenses and other current assets	1,853
Accounts payable	(1,289)
Accruals and other current liabilities	(11,587)
Debt assumed	(6,068)
Other long-term liabilities	(197)
Deferred tax asset on tax loss carry forwards	10,016
Fixed and other long-term assets	2,870
Developed technology	18,500
Customer relationships	3,800
Tradenames	1,400
Goodwill	76,807
Deferred tax liability on fair value of identifiable intangible assets acquired	(5,381)
	$ 100,682

The weighted average amortization period for the intangible assets is 11.1 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 Exiqon did not have a material impact to net sales, net income or earnings per share on a pro forma basis.

2015 Acquisitions

During 2015, we completed three acquisitions, including the acquisition of MO BIO Laboratories, Inc., a privately-held U.S. company, that is considered a leader in sample technologies for metagenomics and microbiome analysis. Purchase consideration for these acquisitions totaled $66.9 million in cash, net of cash acquired, and as of December 31, 2016, the purchase price allocations are final. Each of these acquisitions 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.

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. Total pre-tax costs are expected to be between $22.8 million and $24.8 million, of which $13.8 million was incurred in 2017. Future pre-tax costs between $9.0 million to $11.0 million are expected to be incurred in 2018 primarily related to personnel and other costs.

The following table summarizes the cash components of the restructuring activity.

(in thousands)	Personnel Related	Consulting Costs	Total
Costs incurred in 2017	$ 6,174	$ 4,583	$10,757
Foreign currency translation adjustment	48	2	50
Liability at December 31, 2017	$ 6,222	$ 4,585	$10,807

The Personnel Related and Consulting Costs are included within general and administrative, restructuring, integration and other and an additional $3.0 million of inventory write-offs is included in cost of sales in the accompanying consolidated statement of income for the year ended December 31, 2017. The liability of $10.8 million is included in accrued and other current liabilities in the accompanying consolidated balance sheet at December 31, 2017.

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 are as follows:

(in thousands)	Personnel Related	Facility Related	Contract and Other Costs	Asset Impairments & Disposals	Total
Cost of sales	$ 1,222	$ 205	$43	$ 10,490	$11,960
General and administrative, restructuring, integration and other	17,998	6,960	8,272	22,963	56,193
Other expense, net	—	—	—	10,946	10,946
Total 2016 costs	$ 19,220	$ 7,165	$8,315	$ 44,399	$79,099
Cost of sales	$ 1,141	$ —	$238	$ —	$1,379
General and administrative, restructuring, integration and other	$ 8,399	$ 350	$9,612	$ —	$18,361
Total 2017 costs	$ 9,540	$ 350	$9,850	$ —	$19,740
Total cumulative costs	$ 28,760	$ 7,515	$18,165	$ 44,399	$98,839

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 $21.4 million for intangible asset impairments, $10.9 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 included in other expense, net in the accompanying consolidated statements of income is composed of $8.3 million associated with an impairment of an equity method investment and a disposal of goodwill of $2.6 million.

The following table summarizes the cash components of the restructuring activity.

(in thousands)	Personnel Related	Facility Related	Contract and Other Costs	Total
Costs incurred in 2016	$21,252	$7,165	$8,315	$36,732
Payments	(2,742)	(601)	(2,391)	(5,734)
Facility deferred rent reclassified to restructuring liability	—	1,326	—	1,326
Foreign currency translation adjustment	(30)	(8)	19	(19)
Liability at December 31, 2016	$18,480	$7,882	$5,943	$32,305
Additional costs in 2017	13,357	1,798	9,883	25,038
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	$4,294	$1,052	$1,066	$6,412

At December 31, 2017, $5.6 million of the liability is included in accrued and other current liabilities and $0.8 million is included in other-long term liabilities in the accompanying consolidated balance sheet. At December 31, 2016, $27.6 million of the liability is included in accrued and other current liabilities and $4.7 million is included in other long-term liabilities in the accompanying consolidated balance sheet.

2014 Restructuring

During the fourth quarter of 2014, we recorded restructuring charges in connection with the acquisition of Enzymatics and from the implementation of headcount reductions and facility consolidations to further streamline operations and various measures as part of a commitment to continuous improvement and related to QIAGEN's strategic focus on its five growth drivers. No additional costs were incurred subsequent to 2014 related to this program.

The following table summarizes the components of the restructuring costs.

(in thousands)	Personnel Related	Facility Related	Contract and Other Costs	Total
Balance at December 31, 2014	$ 6,341	$7,627	$ 652	$14,620
Payments	(4,789)	(4,199)	(418)	(9,406)
Release of excess accrual	(453)	—	(20)	(473)
Foreign currency translation adjustment	(630)	—	—	(630)
Balance at December 31, 2015	$ 469	$3,428	$ 214	$4,111
Payments	(143)	(3,428)	(214)	(3,785)
Release of excess accrual	(325)	—	—	(325)
Foreign currency translation adjustment	(1)	—	—	(1)
Balance at December 31, 2016	$ —	$—	$ —	$—

7. Short-Term Investments

At December 31, 2017 and 2016, we had $359.2 million and $89.3 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 carried at fair market value, which is equal to the cost. At December 31, 2017, these loans consist of $308.2 million and €42.5 million ($51.0 million as of December 31, 2017) which mature at various dates through December 2018. All instruments that have an original tenor of more than 12 months include redemption rights on at least a quarterly basis. Interest income is determined using the effective interest rate method. These loans are classified as current assets in the accompanying consolidated balance sheets since we may redeem the loans at our discretion.

At December 31, 2016, we had €3.5 million ($3.7 million) in term deposits which matured in August 2017. The deposits could be withdrawn at the end of each quarter without penalty and were therefore classified as current assets in the accompanying consolidated balance sheets.

For the years ended December 31, 2017, 2016 and 2015, proceeds from sales of short term investments totaled $189.0 million, $533.8 million and $367.7 million, respectively. During the years ended December 31, 2017 and 2016, realized gains totaled $1.1 million and $1.4 million, respectively. During the year ended December 31, 2015, realized losses totaled $6.0 million.

8. Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets are summarized as follows as of December 31, 2017 and 2016:

(in thousands)	2017	2016
Prepaid expenses	$41,775	$35,529
Cash collateral	21,907	1,200
Value added tax	17,870	14,985
Other receivables	15,902	9,699
Fair value of derivative instruments	9,033	5,386

Total prepaid expenses and other current assets	$106,487	$66,799

9. Property, Plant and Equipment

Property, plant and equipment, including equipment acquired under capital lease obligations, are summarized as follows as of December 31, 2017 and 2016:

(in thousands)	Estimated useful life (in years)	2017	2016
Land	—	$18,188	$16,327
Buildings and improvements	5-40	328,938	301,092
Machinery and equipment	3-10	299,175	257,349
Computer software	3-7	243,809	176,227
Furniture and office equipment	3-10	103,257	89,560
Construction in progress	—	65,542	47,260
		1,058,909	887,815
Less: Accumulated depreciation and amortization		(564,588)	(451,160)
Property, plant and equipment, net		$494,321	$436,655

Amortization of assets acquired under capital lease obligations is included within accumulated depreciation and amortization above for the years ended December 31, 2017 and 2016, respectively. For the years ended December 31, 2017, 2016 and 2015 depreciation and amortization expense totaled $82.5 million, $75.1 million and $59.5 million, respectively. For the years ended December 31, 2017, 2016 and 2015 amortization related to computer software to be sold, leased or marketed totaled $13.9 million, $9.3 million and $5.1 million, respectively.

In 2016, we recorded asset impairment charges of $10.9 million related to the restructuring charge discussed in Note 6. Impairments included $7.5 million of computer software to be sold, leased or marketed, $1.7 million in machinery and equipment, $1.5 million in internal-use software, $0.1 million in furniture and office equipment and $0.1 million in buildings and improvements. In 2015, we recorded asset impairment charges of $3.1 million, of which $1.0 million related to computer software to be sold, leased or marketed related to the abandonment of certain projects following the acquisition of MO BIO.

Repairs and maintenance expense was $12.7 million, $13.0 million and $15.4 million in 2017, 2016 and 2015, respectively. For the year ended December 31, 2017 and 2016, construction in progress primarily includes amounts related to ongoing software development projects. For the years ended December 31, 2017, 2016 and 2015, interest capitalized in connection with construction projects was not significant.

10. Investments

We have made strategic investments in certain companies that are accounted for using the equity or cost 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. The fair value of cost and equity-method investments is estimated when there are identified events or changes in circumstances that may have an impact on the fair value of the investment.

Additionally, we have investments in marketable equity securities that have readily determinable fair values that are classified as available-for-sale. These investments are reported at fair value, with unrealized gains and losses recorded in accumulated other comprehensive income (loss) in equity.

Equity Method Investments

A summary of these equity method investments, which are included in other long-term assets in the consolidated balance sheets, is as follows:

($ in thousands)	Ownership Percentage	Equity investments as of December 31, 2017	2016	Share of income (loss) for the years ended December 31, 2017	2016	2015
PreAnalytiX GmbH	50.00 %	$ 7,562	$ 3,519	$ 3,818	$ 3,067	$ 1,878
Biotype Innovation GmbH	24.90 %	3,821	3,339	39	(335)	(595)
MAQGEN Biotechnology Co., Ltd	40.00 %	3,285	—	(542)	—	—
Pyrobett	19.00 %	2,639	2,444	195	333	(600)
Hombrechtikon Systems Engineering AG	19.00 %	1,155	1,524	(346)	—	—
QIAGEN (Suzhou) Institute of Translation Research Co., Ltd.	0.00 %	—	—	—	(244)	(107)
QIAGEN Finance	100.00 %	—	—	—	—	85
		$ 18,462	$ 10,826	$ 3,164	$ 2,821	$ 661

During 2017, we acquired a 40% interest in MAQGEN Biotechnology Co., Ltd. for $4.0 million and a commitment to contribute an additional $8.0 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 expense, net in the accompanying statement of income.

In connection with the 2016 restructuring activities discussed in Note 6, in 2016 we transferred the research and development activities of our instrumentation business to a new company, Hombrechtikon Systems Engineering AG (HSE), in which we acquired a 19.0% interest for a total obligation of $9.8 million payable over three years. As of December 31, 2017 and 2016, $3.1 million and $3.9 million, respectively, were included in accrued and other current liabilities and $3.1 million and $5.9 million, respectively, were included in other long-term liabilities in the accompanying consolidated balance sheet. HSE is a variable interest entity and we are not the primary beneficiary as we do not hold the power to direct the activities that most significantly impact the economic performance of HSE. Therefore, HSE is not consolidated. In 2016, we recorded an impairment of the investment in HSE of $8.3 million in other expense, net. As of December 31, 2017 and 2016, the investment had a carrying value of $1.2 million and $1.5 million, respectively, which is included in other long-term assets in the consolidated balance sheets, representing our maximum exposure to loss.

We had a 100% interest in QIAGEN Finance (Luxembourg) S.A. (QIAGEN Finance) which was established for the purpose of issuing convertible debt in 2004. The proceeds of the 2004 Notes were loaned to subsidiaries within the consolidated QIAGEN N.V. group. QIAGEN N.V. had guaranteed the 2004 Notes, and had agreements with QIAGEN Finance to issue common shares to the investors in the event of conversion of the 2004 Notes. QIAGEN Finance was a variable interest entity. We did not hold any variable interests in QIAGEN Finance, and we were not the primary beneficiary, therefore QIAGEN Finance was not consolidated. Accordingly, the 2004 convertible debt was not included in the consolidated statements of QIAGEN N.V., though QIAGEN N.V. did report the full obligation of the debt through its liabilities to QIAGEN Finance. QIAGEN N.V. accounted for its investment in QIAGEN Finance as an equity investment until the first quarter of 2015 and accordingly recorded 100% of the profit or loss of QIAGEN Finance in the gain or loss from equity method investees. During the first quarter of 2015, we repaid the $250.9 million loan to QIAGEN Finance and repurchased the warrant agreement with QIAGEN Finance.

Cost Method Investments

At December 31, 2017 and 2016, we had a total of cost-method investments in non-publicly traded companies with carrying amounts of $33.6 million and $38.2 million, respectively, which are included in other long-term assets in the consolidated balance sheets. The fair-value of these cost-method investments are not estimated unless there are identified events or changes in circumstances that may have a significant adverse effect on the fair value of the investment. During the years ended December 31, 2017, and 2016, we made cost-method investments totaling $0.3 million, and $20.5 million, respectively. In 2017 and 2015, we recorded total impairments to cost method investments of $5.1 million and $2.2 million, respectively, in other expense, net. In 2016, we converted a $0.6 million short-term

loan into additional ownership interest of a cost-method investment.
Marketable Equity Securities

During 2016, we made an investment in HTG Molecular Diagnostics, Inc. (HTGM), a publicly traded company. At December 31, 2017, we held 833,333 shares with a cost basis of $2.0 million. As of December 31, 2017 and 2016, the fair market value of these shares was $1.7 million and $1.9 million, respectively. During 2017, we purchased a convertible loan from HTGM as further discussed in Note 22. Additionally, our former cost-method investment in Curetis AG was reclassified as a long-term marketable security during 2015 upon the completed IPO of its Dutch holding company, Curetis N.V. At December 31, 2017, we hold 320,424 shares of Curetis N.V. with a cost basis of $2.3 million and a fair market value of $1.5 million. We held 320,712 shares with a cost basis of $2.3 million and a fair value of $2.2 million as of December 31, 2016. These marketable securities are included in other long-term assets in the accompanying consolidated balance sheets.

11. Goodwill and Intangible Assets

The following sets forth the intangible assets by major asset class as of December 31, 2017 and 2016:

(in thousands)	Weighted Average Life (in years)	2017 Gross Carrying Amount	Accumulated Amortization	2016 Gross Carrying Amount	Accumulated Amortization
Amortized Intangible Assets:					
Patent and license rights	9.41	$407,635	$(280,434)	$373,609	$(233,406)
Developed technology	11.82	771,893	(544,633)	708,825	(469,312)
Customer base, trademarks, and non-compete agreements	10.28	437,213	(292,356)	422,797	(245,354)
	10.76	$1,616,741	$(1,117,423)	$1,505,231	$(948,072)
Unamortized Intangible Assets:					
Goodwill		$2,012,904		$1,925,518	

The changes in intangible assets for the years ended December 31, 2017 and 2016 are as follows:

(in thousands)	Intangibles	Goodwill
BALANCE AT DECEMBER 31, 2015	$636,421	$1,875,698
Additions	70,937	—
Purchase adjustments	(321)	316
Additions from acquisitions	23,700	76,807
Amortization	(137,949)	—
Disposals	(29)	(2,650)
Impairment losses	(21,423)	—
Foreign currency translation adjustments	(14,177)	(24,653)
BALANCE AT DECEMBER 31, 2016	$557,159	$1,925,518
Additions	15,527	—
Additions from acquisitions	28,700	26,934
Amortization	(133,797)	—
Disposals	(897)	—
Foreign currency translation adjustments	32,626	60,452
BALANCE AT DECEMBER 31, 2017	$499,318	$2,012,904

Amortization expense on intangible assets totaled approximately $133.8 million, $137.9 million and $132.0 million, respectively, for the years ended December 31, 2017, 2016 and 2015.

In 2016, we recorded an intangible asset abandonment charge of $21.4 million related to the discontinuation of existing technologies in connection with the 2016 restructuring discussed more fully in Note 6. Of this abandonment charge, $10.3 million is included in cost of sales and $11.1 million is included in general and administrative, restructuring, integration and other in the accompanying consolidated statements of income.

Cash paid for purchases of intangible assets during the year ended December 31, 2017 totaled $34.3 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 long-term assets in the accompanying consolidated balance sheet. Intangible asset additions of $15.5 million includes $12.0 million of cash paid during the year ended December 31, 2017, together with $3.5 million of additions which were previously recorded as prepayments. Cash paid for intangible assets during the year ended December 31, 2016 totaled $19.4 million of which $3.9 million is related to prepayments recorded in other long-term assets in accompanying consolidated balance sheet. Intangible asset additions of $70.9 million includes $15.5 million of cash paid during the year ended December 31, 2016, together with $7.1 million of additions which were previously recorded as prepayments and $48.4 million of additions which were accrued as of December 31, 2016. Of the accrued additions in 2016, $46.3 million related to licenses for which fixed payments are expected to occur through the end of the license term in 2024.

The changes in the carrying amount of goodwill during the years ended December 31, 2017 and 2016 resulted primarily from changes in foreign currency translation together with acquired goodwill from the 2017 acquisition of OmicSoft and the 2016 acquisition of Exiqon discussed in Note 5. Additionally, $2.6 million of goodwill was disposed of in connection with the transfer of the research and development activities of our instrumentation business as part of the 2016 restructuring program discussed in Note 6.

Amortization of intangibles for the next five years is expected to be approximately:

(in thousands)	Amortization
Years ended December 31:	
2018	$ 114,009
2019	$ 92,717
2020	$ 65,503
2021	$ 56,214
2022	$ 40,692

12. Accrued and Other Current Liabilities

Accrued and other current liabilities at December 31, 2017 and 2016 consist of the following:

(in thousands)	2017	2016
Accrued expenses and other liabilities	$85,986	$74,245
Payroll and related accruals	63,525	54,772
Deferred revenue	49,357	44,629
Restructuring	14,667	27,590
Accrued contingent consideration and milestone payments	11,539	2,957
Accrued royalties	6,714	7,801
Accrued interest on long-term debt	5,543	4,239
Cash collateral	3,000	6,984
Fair value of derivative instruments	2,424	6,089
Current portion of capital lease obligations	1,359	999
Total accrued and other current liabilities	$244,114	$230,305

13. 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 had entered into cross-currency swaps, interest rate swaps or foreign exchange contracts, to enter into bilateral collateralization contracts under which we will receive or

provide cash collateral, as the case may be, for the net position with each of these counterparties. As of December 31, 2017, cash collateral positions consisted of $3.0 million recorded in accrued and other current liabilities and $21.9 million recorded in prepaid and other current assets in the accompanying consolidated balance sheet. As of December 31, 2016, we had a liability position of $7.0 million recorded in accrued and other current liabilities and $1.2 million recorded in prepaid expenses and 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. 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, 2017 is $19.8 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, 2017.
As of December 31, 2017 and 2016, 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 2017 and in 2016, we did not record any hedge ineffectiveness related to any cash-flow hedges in earnings. Based on their valuation as of December 31, 2017, we expect approximately $10.7 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, 2017 and 2016, 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 2017 and 2016, 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, 2017, the €180.0 million notional swap amount had a fair value of $28.9 million recorded in other-long term liabilities and a related interest receivable of $1.2 million recorded in prepaid and other current assets, respectively, in the accompanying consolidated balance sheet. As of December 31, 2016, this swap had a fair value of $1.4 million and accrued and unpaid interest of $1.7 million which recorded in other long-term assets and prepaid expenses and other current assets, respectively, 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 and qualify for hedge accounting as fair value hedges. We determined that no ineffectiveness exists related to these swaps. As of December 31, 2017, the $200.0 million notional swap amount had a fair value of $0.9 million and accrued and unpaid interest of $0.3 million which are recorded in other long-term assets and prepaid and other current assets, respectively, in the accompanying consolidated balance sheet. As of December 31, 2016, this swap had a fair value of $3.1 million and accrued and unpaid interest of $0.6 million which are recorded in other long-term assets and prepaid expenses and other current assets, respectively, in the

accompanying balance sheet.

Call Options

We entered into Call Options in 2014 which, along with the sale of the Warrants, represent the Call Spread Overlay entered in connection with the 2019 and 2021 Cash Convertible Notes, which are more fully described in Note 15. 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.

During 2017, we used $73.6 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 $45.4 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 both 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) and $73.6 million (2023 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 14. The fair value of the Call Options at December 31, 2017 and 2016 was approximately $223.2 million and $185.8 million, respectively which is recorded in other long-term assets 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 in other expense, net. For the years ended December 31, 2017 and 2016, the changes in the fair value of the Call Options resulted in gains of $37.4 million and $16.7 million, respectively. 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.

Cash Convertible Notes Embedded Cash Conversion Option

The embedded cash conversion option within the Cash Convertible Notes 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 in other expense, net until the cash conversion option settles or expires. For further discussion of the Cash Convertible Notes, refer to Note 15. The initial fair value liability of the embedded cash conversion option for the 2019 and 2021 Notes was $105.2 million and for the 2023 Notes was $74.5 million, which simultaneously reduced the carrying value 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 options, refer to Note 14. The fair value of the embedded cash conversion options at December 31, 2017 and 2016 was approximately $224.3 million and $187.5 million, respectively, which is recorded in other long-term liabilities in the accompanying balance sheet. For the years ended December 31, 2017 and 2016 the change in the fair value of the embedded cash conversion options resulted in losses of $36.7 million and $16.6 million, respectively, recognized in our consolidated statements of income in other expense, net.

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.

Undesignated Derivative Instruments

We are party to various foreign exchange forward, option 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 prepaid and other current assets and accrued and other current liabilities, respectively, which expire at various dates through March 2018. We were party to various foreign exchange forward and swap arrangements which had, at December 31, 2016,

an aggregate notional value of $347.6 million and fair values of $3.2 million and $6.1 million included in prepaid and other current assets and accrued and other current liabilities, respectively, which expired at various dates through December 2017. 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 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, 2017 and 2016:

	Derivatives in Asset Positions Fair value		Derivatives in Liability Positions Fair value	
(in thousands)	2017	2016	2017	2016
Derivative instruments designated as hedges				
Interest rate contracts	$ 2,409	$ 6,655	$ (28,942)	$ —
Total derivative instruments designated as hedges	$ 2,409	$ 6,655	$ (28,942)	$ —
Undesignated derivative instruments				
Call spread overlay	$ 223,164	$ 185,750	$ (224,286)	$ (187,546)
Foreign exchange contracts	7,480	3,154	(2,424)	(6,089)
Total derivative instruments	$ 230,644	$ 188,904	$ (226,710)	$ (193,635)

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, 2017, 2016 and 2015:

Year-Ended December 31, 2017 (in thousands)	Gain/(loss) recognized in AOCI	Location of gain/loss in income statement	(Gain) loss reclassified from AOCI into income	Gain (loss) recognized in income
Non-derivative instruments				
Net investment hedge	$ (19,757)	Other expense, net	$ —	n/a
Cash flow hedges				
Interest rate contracts	$ (30,310)	Other expense, net	$ 26,136	n/a
Fair value hedges				
Interest rate contracts	$ —	Other expense, net	$ —	$ (2,199)
Undesignated derivative instruments				
Call spread overlay	n/a	Other expense, net	n/a	$ 1,573
Foreign exchange contracts	n/a	Other expense, net	n/a	11,813
				$ 13,386

Year-Ended December 31, 2016 (in thousands)	Gain/(loss) recognized in AOCI	Location of (gain) loss in income statement	(Gain) loss reclassified from AOCI into income	Gain (loss) recognized in income
Cash flow hedges				
Interest rate contracts	$ (3,969)	Other expense, net	$ (6,228)	n/a
Fair value hedges				
Interest rate contracts	$ —	Other expense, net	$ —	$ (1,930)
Undesignated derivative instruments				
Call spread overlay	n/a	Other expense, net	n/a	$ 118

Foreign exchange contracts	n/a	Other expense, net	n/a	(6,072)
				$ (5,954)

Year-Ended December 31, 2015 (in thousands)	Gain/(loss) recognized in AOCI	Location of (gain) loss in income statement	(Gain) loss reclassified from AOCI into income	Gain (loss) recognized in income
Cash flow hedges				
Interest rate contracts	$ 5,337	Other expense, net	$ (5,273)	n/a
Fair value hedges				
Interest rate contracts	$ —	Other expense, net	$ —	$ 1,691
Undesignated derivative instruments				
Call spread overlay	n/a	Other expense, net	n/a	$ (171)
Foreign exchange contracts	n/a	Other expense, net	n/a	$ 21,434
				$ 21,263

The amounts noted in the table above for accumulated other comprehensive income (AOCI) do not include any adjustment for the impact of deferred income taxes.

14. Fair Value Measurements

Assets and liabilities are measured at fair value according to a three-tier fair value 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 short-term investments, which are classified in Level 1 and Level 2 of the fair value hierarchy, marketable securities discussed in Note 10, which are classified in Level 1, 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 15, 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 and the embedded conversion option liability. See Note 15, "Lines of Credit and Debt", and Note 13, "Derivatives and Hedging", 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 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 2.2% and 7.7%), 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.

The following table presents our fair value hierarchy for our financial assets and liabilities measured at fair value on a recurring basis:

	As of December 31, 2017				As of December 31, 2016			
(in thousands)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Short-term investments	$—	$359,198	$—	$359,198	$3,699	$89,300	$—	$92,999
Marketable securities	3,208	—	—	3,208	4,064	—	—	4,064
Call option	—	223,164	—	223,164	—	185,750	—	185,750
Foreign exchange contracts	—	7,480	—	7,480	—	3,154	—	3,154
Interest rate contracts	—	2,409	—	2,409	—	6,655	—	6,655
	$3,208	$592,251	$—	$595,459	$7,763	$284,859	$—	$292,622
Liabilities:								
Foreign exchange contracts	$—	$(2,424)	$—	$(2,424)	$—	$(6,089)	$—	$(6,089)
Interest rate contracts	—	(28,942)	—	(28,942)	—	—	—	—
Cash conversion option	—	(224,286)	—	(224,286)	—	(187,546)	—	(187,546)
Contingent consideration	—	—	(11,539)	(11,539)	—	—	(8,754)	(8,754)
	$—	$(255,652)	$(11,539)	$(267,191)	$—	$(193,635)	$(8,754)	$(202,389)

For liabilities with Level 3 inputs, the following table summarizes the activity for the years ended December 31, 2017 and 2016:

(in thousands)	Contingent Consideration
BALANCE AT DECEMBER 31, 2015	$ (17,678)
Additions from acquisitions	(692)
Payments	3,120
Gain included in earnings	6,501
Foreign currency translation adjustments	(5)
BALANCE AT DECEMBER 31, 2016	$ (8,754)
Additions	(10,954)
Payments	4,900
Gain included in earnings	3,269
BALANCE AT DECEMBER 31, 2017	$ (11,539)

For the year ended December 31, 2017, the total $11.5 million accrued for contingent consideration is accrued and other current liabilities. During 2017 and 2016, gains for the reduction in the fair value of contingent consideration related to unmet milestones of $3.3 million and $6.5 million were recognized in general and administrative, restructuring, integration and other in the accompanying consolidated statements of income.

The carrying values of financial instruments, including cash and cash equivalents, accounts receivable, accounts payable and other accrued liabilities, approximate their fair values due to their short-term maturities. The estimated fair value of long-term debt as disclosed in Note 15 was based on current interest rates for similar types of borrowings. 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 fair value differences in the years ended December 31, 2017 and 2016 for nonfinancial assets or liabilities required to be measured at fair value on a nonrecurring basis other than the impairment of cost-method investments as discussed in Note 10.

15. Lines of Credit and Debt

Our credit facilities available and undrawn at December 31, 2017 total €426.6 million (approximately $511.6 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, 2017 or at December 31, 2016, and four other lines of credit amounting to €26.6 million with no expiration date, none of which were utilized as of December 31, 2017 or as of December 31, 2016. 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 2017 and 2016, $0.9 million and $1.0 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, 2017. The credit facilities are for general corporate purposes.

At December 31, 2017 and December 31, 2016, total long-term debt, net of debt issuance costs of $12.4 million and $8.1 million, respectively, consists of the following:

(in thousands)	2017	2016
0.375% Senior Unsecured Cash Convertible Notes due 2019	$414,843	$402,806
0.875% Senior Unsecured Cash Convertible Notes due 2021	270,762	262,371
0.500% Senior Unsecured Cash Convertible Notes due 2023	322,902	—
3.19% Series A Senior Notes due October 16, 2019	72,742	73,408
3.75% Series B Senior Notes due October 16, 2022		