QIAGEN NV
Form 6-K
October 31, 2018

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER
PURSUANT TO RULE 13a-16 OR 15d-16 OF
THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended September 30, 2018
Commission File Number 001-38332

QIAGEN N.V.

Hulsterweg 82
5912 PL Venlo
The Netherlands

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:
Form 20-F x Form 40-F o
Indicate by check mark whether the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1): o
Indicate by check mark whether the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7): o

QIAGEN N.V.
Form 6-K
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OTHER INFORMATION

For the three- and nine-month periods ended September 30, 2018, QIAGEN N.V. prepared its quarterly report under United States generally accepted accounting principles (U.S. GAAP). This quarterly report is furnished herewith as Exhibit 99.1 and incorporated by reference herein.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

QIAGEN N.V.

BY: /s/ Roland Sackers
Roland Sackers
Chief Financial Officer

Date: October 30, 2018

EXHIBIT INDEX

Exhibit No.	Exhibit
99.1	U.S. GAAP Quarterly Report for the Period Ended September 30, 2018

Exhibit 99.1
QIAGEN N.V. AND SUBSIDIARIES
U.S. GAAP QUARTERLY REPORT FOR THE PERIOD ENDED SEPTEMBER 30, 2018
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QIAGEN N.V. AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands)

	Note	September 30, 2018 (unaudited)	December 31, 2017
Assets			
Current assets:			
Cash and cash equivalents		$ 599,842	$ 657,714
Short-term investments		320,888	359,198
Accounts receivable, net of allowance for doubtful accounts of $9,526 and $8,008 in 2018 and 2017, respectively		314,348	329,138
Income taxes receivable		48,097	39,509
Inventories, net	(11)	159,968	155,927
Prepaid expenses and other current assets	(7)	426,428	106,487
Total current assets		1,869,571	1,647,973
Long-term assets:			
Property, plant and equipment, net of accumulated depreciation of $592,859 and $564,588 in 2018 and 2017, respectively		494,024	494,321
Goodwill	(6)	2,116,889	2,012,904
Intangible assets, net of accumulated amortization of $1,183,102 and $1,117,423 in 2018 and 2017, respectively	(6)	504,861	499,318
Deferred income taxes		40,516	39,353
Other long-term assets (of which $7,615 and $17,713 in 2018 and 2017 due from related parties, respectively)	(5, 7)	273,166	344,647
Total long-term assets		3,429,456	3,390,543
Total assets		$ 5,299,027	$ 5,038,516

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

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

	Note	September 30, 2018 (unaudited)	December 31, 2017
Liabilities and equity			
Current liabilities:			
Current portion of long-term debt	(9)	$ 701,366	$ —
Accrued and other current liabilities (of which $9,626 and $9,028 in 2018 and 2017 due to related parties, respectively)	(7)	584,326	244,114
Accounts payable		59,912	59,205
Income taxes payable		22,986	21,473
Total current liabilities		1,368,590	324,792
Long-term liabilities:			
Long-term debt	(9)	1,066,853	1,758,258
Deferred income taxes		83,593	76,727
Other long-term liabilities (of which $3,075 in 2017 due to related parties)	(7)	252,688	337,743
Total long-term liabilities		1,403,134	2,172,728
Commitments and contingencies	(15)		
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 shares in 2018 and in 2017	(12)	2,702	2,702
Additional paid-in capital	(12)	1,660,705	1,630,095
Retained earnings		1,321,094	1,247,945
Accumulated other comprehensive loss	(12)	(305,173)	(220,759)
Less treasury shares at cost—4,587 and 4,272 shares in 2018 and 2017, respectively	(12)	(152,025)	(118,987)
Total equity		2,527,303	2,540,996
Total liabilities and equity		$ 5,299,027	$ 5,038,516

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

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

	Three months ended September 30,	
	2018	2017
	(unaudited)	
Net sales	$377,911	$363,977
Cost of sales	121,135	123,096
Gross profit	256,776	240,881
Operating expenses:		
Research and development	42,030	38,303
Sales and marketing	96,473	95,682
General and administrative, restructuring, integration and other, net	31,875	32,948
Acquisition-related intangible amortization	9,365	10,017
Total operating expenses	179,743	176,950
Income from operations	77,033	63,931
Other income (expense):		
Interest income	5,309	2,670
Interest expense	(16,255)	(12,000)
Other income (expense), net	6,116	(2,948)
Total other expense, net	(4,830)	(12,278)
Income before income taxes	72,203	51,653
Income taxes	11,883	3,168
Net income	$60,320	$48,485
Basic earnings per common share	$0.27	$0.21
Diluted earnings per common share	$0.26	$0.21
Weighted-average shares outstanding		
Basic	226,623	227,729
Diluted	235,151	232,721

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

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

	Nine months ended September 30,	
	2018	2017
	(unaudited)	
Net sales	$1,098,675	$1,020,673
Cost of sales	362,469	359,390
Gross profit	736,206	661,283
Operating expenses:		
Research and development	121,185	113,140
Sales and marketing	294,405	283,336
General and administrative, restructuring, integration and other, net	112,712	125,384
Acquisition-related intangible amortization	29,596	29,376
Total operating expenses	557,898	551,236
Income from operations	178,308	110,047
Other income (expense):		
Interest income	15,087	6,298
Interest expense	(47,110)	(32,742)
Other income (expense), net	11,019	(3,076)
Total other expense, net	(21,004)	(29,520)
Income before income taxes	157,304	80,527
Income taxes	27,874	440
Net income	$129,430	$80,087
Basic earnings per common share	$0.57	$0.35
Diluted earnings per common share	$0.55	$0.34
Weighted-average shares outstanding		
Basic	226,939	228,555
Diluted	233,823	233,428

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

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

	Note	Three months ended September 30, 2018	2017
		(unaudited)	
Net income		$60,320	$48,485
Other comprehensive income (loss) to be reclassified to profit or loss in subsequent periods:			
Gains (losses) on cash flow hedges, before tax	(7)	1,507	(10,542)
Reclassification adjustments on cash flow hedges, before tax	(7)	(1,476)	7,092
Cash flow hedges, before tax		31	(3,450)
Net investment hedge	(7)	2,090	(8,763)
Losses on marketable securities, before tax		—	(724)
Foreign currency translation adjustments, before tax		(29,167)	30,988
Other comprehensive (loss) income, before tax		(27,046)	18,051
Income tax relating to components of other comprehensive income		1,517	1,160
Total other comprehensive (loss) income, after tax		(25,529)	19,211
Comprehensive income		$34,791	$67,696

	Note	Nine months ended September 30, 2018	2017
		(unaudited)	
Net income		$129,430	$80,087
Other comprehensive income (loss) to be reclassified to profit or loss in subsequent periods:			
Gains (losses) on cash flow hedges, before tax	(7)	3,876	(24,383)
Reclassification adjustments on cash flow hedges, before tax	(7)	(7,506)	22,770
Cash flow hedges, before tax		(3,630)	(1,613)
Net investment hedge	(7)	10,628	(14,991)
Losses on marketable securities, before tax		—	(762)
Foreign currency translation adjustments, before tax		(95,496)	125,049
Other comprehensive (loss) income, before tax		(88,498)	107,683
Income tax relating to components of other comprehensive income		3,141	576
Total other comprehensive (loss) income, after tax		(85,357)	108,259
Comprehensive income		$44,073	$188,346

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

QIAGEN N.V. AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(in thousands)

(unaudited)	Note	Common Shares Shares	Common Shares Amount	Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Treasury Shares Shares	Treasury Shares Amount	Total Equity
BALANCE AT DECEMBER 31, 2017		230,829	$2,702	$1,630,095	$1,247,945	$ (220,759)	(4,272)	$(118,987)	$2,540,996
Balance at January 1, 2018, as previously reported		230,829	$2,702	$1,630,095	$1,247,945	$ (220,759)	(4,272)	$(118,987)	$2,540,996
ASU 2016-01 impact of change in accounting policy	(2)	—	—	—	(942)	942	—	—	—
ASU 2016-16 impact of change in accounting policy	(2)	—	—	—	(16,096)	—	—	—	(16,096)
ASC 606 impact of change in accounting policy	(2)	—	—	—	(1,306)	—	—	—	(1,306)
Adjusted balance at January 1, 2018		230,829	$2,702	$1,630,095	$1,229,601	$ (219,817)	(4,272)	$(118,987)	$2,523,594
Net income		—	—	—	129,430	—	—	—	129,430
Unrealized gain, net on hedging contracts	(7)	—	—	—	—	13,535	—	—	13,535
Realized gain, net on hedging contracts	(7)	—	—	—	—	(5,630)	—	—	(5,630)
Translation adjustment, net	(12)	—	—	—	—	(93,261)	—	—	(93,261)
Purchase of treasury shares	(12)	—	—	—	—	—	(2,039)	(75,318)	(75,318)
Issuance of common shares in connection		—	—	—	(37,937)	—	1,724	42,280	4,343

with stock plan									
Share-based compensation	(16)	—	—	30,610	—	—	—	—	30,610
BALANCE AT SEPTEMBER 30, 2018		230,829	$2,702	$1,660,705	$1,321,094	$ (305,173)	(4,587)	$(152,025)	$2,527,303
BALANCE AT DECEMBER 31, 2016		239,707	$2,812	$1,794,665	$1,263,464	$ (333,839)	(5,147)	$(120,006)	$2,607,096
Net income		—	—	—	80,087	—	—	—	80,087
Capital repayment	(12)	(8,878)	(110)	(244,319)	—	—	191	—	(244,429)
Issuance of warrants	(12)	—	—	45,307	—	—	—	—	45,307
Unrealized loss, net on hedging contracts		—	—	—	—	(33,278)	—	—	(33,278)
Realized loss, net on hedging contracts		—	—	—	—	17,078	—	—	17,078
Unrealized loss, net on marketable securities		—	—	—	—	(594)	—	—	(594)
Translation adjustment, net		—	—	—	—	125,053	—	—	125,053
Purchase of treasury shares	(12)	—	—	—	—	—	(1,909)	(60,970)	(60,970)
Issuance of common shares in connection with stock plan		—	—	—	(53,948)	—	2,412	57,502	3,554
Share-based compensation		—	—	27,692	—	—	—	—	27,692
BALANCE AT SEPTEMBER 30, 2017		230,829	$2,702	$1,623,345	$1,289,603	$ (225,580)	(4,453)	$(123,474)	$2,566,596

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

QIAGEN N.V. AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Note	Nine months ended September 30, 2018	2017
Cash flows from operating activities:		(unaudited)	
Net income		$129,430	$80,087
Adjustments to reconcile net income to net cash provided by operating activities, net of effects of businesses acquired:			
Depreciation and amortization		156,464	163,628
Non-cash impairments	(5)	16,998	5,137
Amortization of debt discount and issuance costs		25,536	16,325
Share-based compensation expense	(16)	30,610	27,692
Deferred income taxes		1,356	(6,377)
(Gain) loss on marketable securities		(3,219)	1,055
Reversals of contingent consideration		—	(2,769)
Other items, net including fair value changes in derivatives		(16,091)	(2,481)
Net changes in operating assets and liabilities:			
Accounts receivable		(9,117)	(208)
Inventories		(30,339)	(23,851)
Prepaid expenses and other current assets		(6,164)	(3,758)
Other long-term assets		(30,267)	(651)
Accounts payable		(731)	(3,434)
Accrued and other current liabilities		(13,359)	(11,660)
Income taxes		(3,633)	(27,412)
Other long-term liabilities		1,512	(610)
Net cash provided by operating activities		248,986	210,713
Cash flows from investing activities:			
Purchases of property, plant and equipment		(72,326)	(64,605)
Proceeds from sale of equipment		—	42
Purchases of intangible assets	(6)	(30,722)	(26,899)
Purchases of investments, net		(8,426)	(697)
Cash paid for acquisitions, net of cash acquired	(3)	(172,831)	(50,549)
Purchases of short-term investments		(456,154)	(345,564)
Proceeds from redemptions of short-term investments		495,577	139,214
Cash paid for collateral asset		(4,021)	(22,829)
Other investing activities	(3)	16,337	13
Net cash used in investing activities		(232,566)	(371,874)
Cash flows from financing activities:			
Proceeds from long-term debt, net of issuance costs	(9)	—	329,949
Proceeds from issuance of cash convertible notes, net of issuance costs	(9)	—	396,363
Purchase of call option related to cash convertible notes	(7, 9)	—	(73,600)
Proceeds from issuance of warrants, net of issuance costs	(9, 12)	—	45,579
Capital repayment	(12)	—	(243,945)
Principal payments on capital leases		(983)	(1,005)

Proceeds from issuance of common shares		4,343	3,554
Purchase of treasury shares	(12)	(66,581)	(60,970)
Other financing activities	(8)	(4,318)	(9,940)
Net cash (used in) provided by financing activities		(67,539)	385,985
Effect of exchange rate changes on cash and cash equivalents		(6,753)	7,747
Net (decrease) increase in cash and cash equivalents		(57,872)	232,571
Cash and cash equivalents, beginning of period		657,714	439,180
Cash and cash equivalents, end of period		$599,842	$671,751

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

QIAGEN N.V. AND SUBSIDIARIES

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(unaudited)

1. Corporate Information

QIAGEN N.V. is a public limited liability company ('naamloze vennootschap') under Dutch law with a 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 a 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.

2. Basis of Presentation and Accounting Policies

Basis of Presentation

The condensed consolidated financial statements include the accounts of QIAGEN N.V., its wholly-owned subsidiaries and any partially owned subsidiaries that the Company has the ability to control. All significant intercompany accounts and transactions have been eliminated in consolidation. All amounts are presented in U.S. dollars, unless otherwise indicated. Investments in 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. We account for all other investments in nonmarketable equity securities in which we are not able to exercise significant influence, our cost-method investments, at our initial cost, minus any impairment, plus or minus changes from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. 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 condensed 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.

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) for interim financial information and generally in accordance with the instructions to Form 10-Q and Article 10 of Regulation S-X. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted pursuant to the Securities and Exchange Commission (SEC) rules and regulations. In the opinion of management, all adjustments (which include only normal recurring adjustments) necessary for a fair presentation have been included.

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

Certain prior year amounts related to restructuring costs have been reclassified to conform to the current year presentation. For the three and nine months ended September 30, 2017, $0.1 million and $1.9 million were reclassified out of research and development and $1.0 million and $9.5 million were reclassified out of sales and marketing, respectively, to general and administrative, restructuring, integration and other, net. These reclassifications had no effect on income from operations.

We operate as one operating segment in accordance with the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) Topic 280, Segment Reporting. We have a common basis of organization and our products and services are offered globally. Our chief operating decision maker (CODM) makes decisions based on the Company as a whole. Accordingly, we operate and make decisions as one reporting unit.

The results of operations for an interim period are not necessarily indicative of results that may be expected for any other interim period or for the full year. These unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto included in the Company's Annual Report on Form 20-F for the year ended December 31, 2017.

Summary of Significant Accounting Policies

The interim condensed consolidated financial statements were prepared based on the same accounting policies as those applied and described in the consolidated financial statements as of December 31, 2017 except for the changes described below in connection with the adoption of new standards and interpretations as of January 1, 2018.

Adoption of New Accounting Standards

The following new FASB Accounting Standards Updates (ASU) were adopted in 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.

We adopted this standard on its effective date, January 1, 2018, using the modified retrospective method, by recognizing the cumulative effect of initially applying Topic 606 to incomplete contracts as a $1.3 million adjustment to the opening balance of equity at January 1, 2018. The details of the changes and quantitative impact are discussed in Note 13 "Revenue".

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. In February 2018, the FASB issued ASU No. 2018-03, Technical Corrections and Improvements to Financial Instruments—Overall (Subtopic 825-10), which clarified certain aspects of the previously issued ASU 2016-01. 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 became 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. Accordingly, upon adoption, we recorded a cumulative effect adjustment to decrease opening retained earnings at January 1, 2018 by $0.9 million as required for our equity investments recorded at fair value. The implementation of the amendments is expected to increase the volatility of net income as gains or losses 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.

ASU No. 2016-15, Statement of Cash Flows (Topic 230): 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 adopted ASU 2016-15 on January 1, 2018 without any impact from the adoption on our condensed 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. We adopted ASU 2016-16 on a modified retrospective basis resulting in a cumulative-effect reclassification of $16.1 million for unrecognized income tax effects related to intra-entity transfers of fixed assets and intellectual property rights that occurred prior to adoption from other current and non-current assets to opening retained earnings as of January 1, 2018.

ASU 2016-18, Statement of Cash Flows (Topic 230): 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. We adopted ASU 2016-18 on January 1, 2018 using a retrospective transition method to each period presented. There is no impact from the adoption of ASU 2016-18 on our condensed consolidated financial statements.

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 without impact.

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 prospectively and we adopted ASU 2017-09 as of January 1, 2018.

ASU 2018-02, Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income, permits companies to reclassify the stranded tax effects of the U.S. Tax Cuts and Jobs Act on items within accumulated other comprehensive income to retained earnings. This ASU is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Early adoption is permitted. We early adopted ASU 2018-02 as of April 1, 2018 with no impact as we have no stranded tax effects.

ASU 2018-07, Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting, largely aligns the accounting for share-based payment awards issued to employees and nonemployees. ASU 2018-07 is effective for annual periods beginning January 1, 2019. Early adoption is permitted. We early adopted ASU 2018-07 as of July 1, 2018 without material impact.

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 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 are evaluating the use of optional practical expedients related to the reporting at adoption. ASU 2018-10, Codification Improvements to Topic 842, Leases, and ASU 2018-11, Leases (Topic 842), Targeted Improvements, are also effective at the time of adoption of ASU 2016-02. We will adopt these standards as per the effective date of January 1, 2019, using the modified retrospective approach. Under this approach, the cumulative effect of initially applying the standard will be recognized as an adjustment to the opening balance of retained earnings on the date of initial application. We continue to work on implementing changes to our systems, policies and processes, and disclosures. We plan to use practical expedients offered by the standard and expect this standard to increase total assets and total liabilities since all leases of a lessee need to be recognized on the balance sheet. We are currently evaluating the potential impact that ASU

2016-02 may have on our consolidated financial statements. However, as the effects of applying Topic 842 will depend on the lease agreements in effect at the time of adoption, the impact of Topic 842 on our consolidated financial statements cannot be reliably estimated at this time.

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 relationships 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 and disclosures.

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.

ASU 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework, provides guidance that eliminates, adds and modifies certain disclosure requirements for fair value measurements. ASU 2018-13 is effective for us for annual periods beginning January 1, 2020. Entities are permitted to early adopt either the entire standard or only the provisions that eliminate or modify the requirements. We are currently evaluating the potential impact ASU 2018-13 may have on our consolidated financial statements.

ASU 2018-15, Intangibles--Goodwill and Other--Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract, provides guidance on a customer's accounting for implementation, set-up, and other upfront costs incurred in a cloud computing arrangement that is hosted by the vendor, i.e. a service contract. Under the new guidance, customers will apply the same criteria for capitalizing implementation costs as they would for an arrangement that has a software license. ASU 2018-15 is effective for us for annual periods beginning January 1, 2020 and early adoption is permitted. We are currently evaluating the potential impact ASU 2018-15 may have on our consolidated financial statements.

3. Acquisitions and Divestitures

Acquisitions

Acquisitions have been accounted for as business combinations, and the acquired companies’ results have been included in the accompanying condensed 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 an acquired business' products; use of the infrastructure of the acquired businesses to cost-effectively expand sales of our products; and elimination of duplicative facilities, functions and staffing.

2018 Acquisitions

In April 2018, we acquired all shares in STAT-Dx Life, S.L. (STAT-Dx), a privately-held company located in Barcelona, Spain, which is developing the next generation of multiplex diagnostics for one-step, fully integrated molecular analysis of common syndromes using a novel system based on real-time PCR technology and proven QIAGEN chemistries.

The cash consideration totaled $148.8 million. The acquisition included contingent consideration which is recorded as part of the purchase price based on the acquisition date fair value. Under the purchase agreement, potential contingent payments through 2024 total $44.3 million, of which the fair value of $35.8 million was recorded as purchase price using a probability-weighted analysis of the future milestones using discount rates between 6.5% and 7.3%.

Acquisition related costs of $0.4 million and $2.4 million were incurred during the three- and nine-month periods ended September 30, 2018, respectively, and are included in general and administrative, restructuring, integration and other expenses, net in the accompanying condensed consolidated statements of income.

The allocation of the purchase price is preliminary and is not yet finalized. The preliminary allocation of the purchase price is based upon preliminary estimates which used information that was available to management at the time the condensed consolidated financial statements were prepared and these estimates and assumptions are subject to change within the measurement period, up to one year from the acquisition date. Accordingly, the allocation may change. We continue to gather information about the fair value of intangible assets acquired and tax balances.

The preliminary purchase price allocation as of September 30, 2018 did not differ from the preliminary purchase price allocation as of June 30, 2018 other than recognition of in-process research and development assets of $24.3 million, a decrease of $48.8 million in

developed technology, a decrease of $6.1 million in deferred tax liabilities, a decrease of $0.1 million in fixed and other long-term assets and an increase of $1.2 million in accrued and other liabilities. Additionally, there was a decrease of $1.0 million in purchase price due to changes in the fair value of contingent consideration. The corresponding impact for these adjustments was an increase in goodwill of $18.8 million. The changes in the values of in-process research and development assets and developed technology relate to new information obtained regarding key assumptions in the valuation model and resulted in an immaterial impact to the amortization expense recorded during the three months ended September 30, 2018.

The preliminary purchase price allocation for STAT-Dx is as follows:

(in thousands)	STAT-Dx acquisition
Purchase Price:	
Cash consideration	$ 148,780
Fair value of contingent consideration	35,774
	$ 184,554
Preliminary Allocation:	
Cash and cash equivalents	$ 7,357
Prepaid expenses and other current assets	1,432
Inventories	1,868
Income tax receivables	2,213
Accounts payable	(1,412)
Accruals and other current liabilities	(1,785)
Fixed and other long-term assets	6,306
Developed technology	31,300
In-process research and development	24,300
Goodwill	116,018
Deferred tax liability on fair value of identifiable intangible assets acquired	(3,043)
	$ 184,554

The weighted average amortization period for the developed technology is 10.0 years. The goodwill acquired is not deductible for tax purposes.

Revenue and earnings in the reporting periods since the acquisition date have not been significant. No pro forma financial information has been provided herein as the acquisition of STAT-Dx did not have a material impact to net sales, net income or earnings per share on a pro forma basis.

Other 2018 Acquisition

In April 2018, we acquired all remaining shares of a privately held entity in which we held a minority interest. The allocation of the purchase price is preliminary and is based upon preliminary estimates which used information that was available to management at the time the financial statements were prepared and these estimates and assumptions are subject to change within the measurement period, up to one year from the acquisition date. This acquisition was not significant to the overall consolidated financial statements and the acquisition did not have a material impact to net sales, net income or earnings per share and therefore no pro forma information has been provided herein.

2017 Acquisition

In January 2017, we acquired OmicSoft Corporation, a leading provider of omics data management solutions located in Cary, North Carolina (U.S.). This acquisition was not significant to the overall consolidated financial statements and as of December 31, 2017, the allocation of the purchase price was final. The acquisition did not have a material impact to net sales, net income or earnings per share and therefore no pro forma information has been provided herein.

Divestitures

2018 Divestitures

In April 2018, we sold a portfolio of veterinary testing products for $16.4 million and recorded an $8.0 million gain on the sale to other income (expense), net in the accompanying condensed consolidated statement of income for the nine months ended September 30, 2018.

4. Restructuring

2017 Restructuring

During the fourth quarter of 2017, we initiated restructuring initiatives to mitigate the negative impacts stemming from the U.S. tax reform as further discussed in Note 10 "Income Taxes". Total pre-tax costs are expected to be between $23 million and $25 million, of which $22 million was incurred through September 30, 2018. Future pre-tax costs between $1 million to $3 million are expected to be incurred in the remainder of 2018 primarily related to personnel and other costs.

Since 2017, we have incurred costs related to this restructuring program that have been recorded as follows:

(in thousands)	Personnel Related	Contract and Other Costs	Inventory Write-offs & Asset Impairments	Total
Cost of sales	$ —	$ —	$ 3,039	$ 3,039
General and administrative, restructuring, integration and other, net	6,174	4,583	—	10,757
Total 2017 costs	6,174	4,583	3,039	13,796
Cost of sales	433	—	—	433
General and administrative, restructuring, integration and other, net	2,817	2,950	1,610	7,377
Total 2018 costs	3,250	2,950	1,610	7,810
Total cumulative costs	$ 9,424	$ 7,533	$ 4,649	$ 21,606

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

(in thousands)	Personnel Related	Contract and Other 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
Additional costs in 2018	4,450	3,079	7,529
Release of excess accrual	(1,201)	(129)	(1,330)
Payments	(5,970)	(6,271)	(12,241)
Foreign currency translation adjustment	(5)	30	25
Liability at September 30, 2018	$ 3,496	$ 1,294	$ 4,790

During the second quarter of 2018, fixed asset impairments of $1.6 million were recorded in connection with this initiative and are included within general and administration, restructuring, integration and other in the accompanying consolidated statements of income. As of September 30, 2018 and December 31, 2017, liabilities of $4.8 million and $10.8 million, respectively, are included in accrued and other current liabilities in the accompanying condensed consolidated balance sheets.

2016 Restructuring

During the fourth quarter of 2016, we initiated a series of targeted actions to support faster sales momentum and improve efficiency and accountability. The objective with these actions is to ensure that we grow sustainably and consistently in the coming years. Measures include simplifying our geographic presence with site reductions, focusing resources to shared service centers, and streamlining selected organizational structures. No additional costs will be incurred related to this program. Cumulative costs for this program are as follows:

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(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, net	17,998	6,960	8,272	22,963	56,193
Other income (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, net	8,399	350	9,612	—	18,361
Total 2017 costs	9,540	350	9,850	—	19,740
General and administrative, restructuring, integration and other, net	(261)	(838)	(331)	—	(1,430)
Total 2018 releases	(261)	(838)	(331)	—	(1,430)
Total cumulative costs	$28,499	$6,677	$17,834	$ 44,399	$97,409

Personnel Related expenses during 2017 and 2016 include 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 income (expense), net 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
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
Release of excess accrual	(261)	(838)	(331)	(1,430)
Payments	(2,891)	(214)	(496)	(3,601)
Foreign currency translation adjustment	(37)	—	(25)	(62)
Liability at September 30, 2018	$1,105	$—	$214	$1,319

At September 30, 2018, $1.3 million of the liability is included in accrued and other current liabilities in the accompanying condensed consolidated balance sheet. 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 condensed consolidated balance sheet.

5. 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. Our cost-method investments do not have readily determinable fair values and are therefore measured at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. Additionally, we hold 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 and with gains and losses recorded in earnings beginning in January 2018 upon adoption of ASU 2016-01.

Equity Method Investments

As of September 30, 2018 and December 31, 2017, we had a total of equity-method investments in non-publicly traded companies of $11.3 million and $18.5 million, respectively, which are included in other long-term assets in the accompanying condensed consolidated balance sheets.

During the second quarter of 2018, we recorded impairments of $6.1 million in other income (expense), net in the accompanying condensed consolidated statements of income, following changes in the investee's circumstances that indicated the carrying value was no longer recoverable. Accordingly, the investments were fully impaired.

During 2017, we acquired a 40% interest in MAQGEN Biotechnology Co., Ltd. for $4.0 million and contributed an additional $3.2 million during 2018. We have a commitment to contribute an additional $4.8 million in future periods.

In connection with the 2016 restructuring activities discussed in Note 4 "Restructuring", 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 September 30, 2018, $3.1 million was included in accrued and other current liabilities and as of December 31, 2017, $3.1 million was included in accrued and other current liabilities and $3.1 million was included in other long-term liabilities in the accompanying condensed consolidated balance sheets. 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. As of September 30, 2018 and December 31, 2017, the investment had a carrying value of $0.8 million and $1.2 million, respectively, which is included in other long-term assets in the accompanying condensed consolidated balance sheets, representing our maximum exposure to loss.

Cost Method Investments

At September 30, 2018 and December 31, 2017, we had a total of cost-method investments in non-publicly traded companies with carrying amounts of $61.8 million and $33.6 million, respectively, which are included in other long-term assets in the accompanying condensed consolidated balance sheets.

During the second quarter of 2018, we made an additional investment in NeuMoDx Molecular, Inc. (NeuMoDx) of $9.3 million. This equity interest acquired was considered similar to an existing equity interest in the company and as a result, the existing equity interest in the company was adjusted by $11.7 million and a corresponding gain was recorded in other income (expense), net in the accompanying condensed statements of income. The investment is part of a strategic partnership with NeuMoDx to commercialize two new fully integrated systems for automation of PCR (polymerase chain reaction) testing. Under the agreement, we will initially distribute the NeuMoDx™ 288 (high-throughput version) and NeuMoDx™ 96 (mid-throughput version) in Europe and other major markets worldwide outside of the United States. NeuMoDx will cover the United States directly. Additionally, the companies are collaborating to implement certain QIAGEN chemistries on the NeuMoDx systems. The two companies have also entered into an agreement under which we can acquire all NeuMoDx shares not currently owned by QIAGEN at a predetermined price of approximately $234 million, subject to the achievement of certain regulatory and operational milestones.

Also during the second quarter of 2018, we acquired all remaining shares of a privately held entity in which we held a minority interest as discussed in Note 3 "Acquisitions and Divestitures". The value of the minority interest investment was revalued in connection with the acquisition by $4.8 million and a corresponding gain was recorded in general and administrative, restructuring, integration and other, net in the accompanying condensed consolidated statement of income for the nine months ended September 30, 2018.

During the first quarter of 2018, we converted a note receivable from a non-publicly traded company, considered a related party, into an equity interest in that company. This note held a balance of $11.4 million including principal balance and accrued interest at conversion. As a result of an orderly transaction for a similar investment of the same issuer, this investment was adjusted by $0.8 million and a corresponding gain was recorded in other income (expense), net in the accompanying condensed consolidated statement of income for the nine months ended September 30, 2018.

During the third quarter of 2018, we sold our interest in a non-publicly traded company which had a book value of $5.4 million. Proceeds from the sale totaled $10.5 million in cash resulting in a corresponding gain of $5.1 million

recorded in other income (expense), net in the accompanying condensed consolidated statement of income.

Marketable Equity Securities

At September 30, 2018 and December 31, 2017, we held 833,333 shares in HTG Molecular Diagnostics, Inc. (HTGM), a publicly traded company. The investment has a cost basis of $2.0 million with fair values of $4.2 million and $1.7 million as of September 30, 2018 and December 31, 2017, respectively. During the three and nine months ended September 30, 2018, the fair market value of these shares increased $1.5 million and $2.5 million, respectively, and were recognized in other income (expense), net. The total unrealized gain as of September 30, 2018 totaled $2.2 million as compared to the total unrealized loss of $0.3 million as of December 31, 2017. These marketable securities are included in other long-term assets in the accompanying condensed consolidated balance sheets.

At September 30, 2018 and December 31, 2017, we held 204,000 shares and 320,424 shares, respectively of Curetis N.V., a publicly traded company. The investment had a cost basis of $1.4 million and $2.3 million as of September 30, 2018 and December 31, 2017, respectively, with fair values of $0.8 million and $1.5 million as of September 30, 2018 and December 31, 2017, respectively. The total unrealized losses were $0.7 million and $0.8 million as of September 30, 2018 and December 31, 2017, respectively. During the three and nine months ended September 30, 2018, the fair market value of these shares decreased $0.3 million and $0.1 million, respectively, and were recognized in other income (expense), net. During the nine months ended September 30, 2018, we sold 116,424 shares of Curetis N.V. and recognized a gain of $0.3 million in other income (expense), net in the accompanying condensed consolidated statement of income in connection with the sale of these shares. This investment is included in short-term investments in the accompanying consolidated balance sheet as of September 30, 2018.

6. Intangible Assets

The following sets forth the intangible assets by major asset class as of September 30, 2018 and December 31, 2017:

	September 30, 2018		December 31, 2017	
(in thousands)	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Amortized Intangible Assets:				
Patent and license rights	$446,920	$(302,535)	$407,635	$(280,434)
Developed technology	785,423	(565,719)	771,893	(544,633)
Customer base, non-compete agreements and trademarks	432,332	(314,848)	437,213	(292,356)
	$1,664,675	$(1,183,102)	$1,616,741	$(1,117,423)
Unamortized Intangible Assets:				
In-process research and development	$23,288		$—	
Goodwill	$2,116,889		$2,012,904	

The in-process research and development is associated to the acquisition of STAT-Dx as further discussed in Note 3 "Acquisitions and Divestitures." The estimated fair value of acquired in-process research and development projects which have not reached technological feasibility at the date of acquisition are capitalized and subsequently tested for impairment through completion of the development process, at which point the capitalized amounts are amortized over their estimated useful life. If a project is abandoned rather than completed, all capitalized amounts are written-off immediately. As of September 30, 2018, the purchase price allocation remains preliminary in part due to the determination of the fair value of this in-process research and development.

The changes in intangible assets in 2018 are summarized as follows:

(in thousands)	Intangibles	Goodwill
Balance at December 31, 2017	$499,318	$2,012,904
Additions	30,519	—
Acquisitions	81,200	141,452
Amortization	(90,360)	—
Disposals	(4,416)	(5,682)
Foreign currency translation adjustments	(11,400)	(31,785)
Balance at September 30, 2018	$504,861	$2,116,889

Cash paid for purchases of intangible assets during the nine months ended September 30, 2018 totaled $30.7 million, of which $9.0 million is related to current year payments for licenses that were accrued as of December 31, 2017 and $2.3 million is related to prepayments recorded in other long-term assets in the accompanying condensed consolidated balance sheet. Intangible asset additions of $30.5 million includes $19.4 million of cash paid during the nine months ended September 30, 2018, together with $9.1 million of additions that were accrued as of September 30, 2018 and $2.0 million of additions which were previously recorded as prepayments.

The changes in the carrying amount of goodwill for the nine months ended September 30, 2018 resulted from acquisitions and divestitures as discussed in Note 3 and changes in foreign currency translation.

For the three- and nine-month periods ended September 30, 2018 and 2017, amortization expense on intangible assets totaled approximately $28.3 million and $90.4 million and $32.4 million and $103.7 million, respectively. Amortization of intangibles for the next five years is expected to be approximately:

Year	Annual Amortization (in millions)
2019	$ 103.5
2020	$ 76.4
2021	$ 67.4
2022	$ 53.0
2023	$ 50.0

7. 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 September 30, 2018, cash collateral positions consisted of $4.7 million recorded in accrued and other current liabilities and $25.9 million recorded in prepaid expenses and other assets in the accompanying condensed consolidated balance sheet. As of December 31, 2017, we had cash collateral positions consisting of $3.0 million recorded in accrued and other current liabilities and $21.9 million recorded in prepaid expenses and other current assets in the accompanying condensed 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 9 "Debt." Of the $331.1 million, which is held in both U.S. dollars and Euros, €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 loss. Based on the spot rate method, the unrealized loss recorded in equity was $9.1 million and $19.8 million as of September 30, 2018 and December 31, 2017, respectively. 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 September 30, 2018 and December 31, 2017.

As of September 30, 2018 and December 31, 2017, we held derivative instruments that are designated and qualify as cash flow hedges, where the effective portion of the gain or loss on the derivative is reported as a component of other comprehensive loss and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings. In 2018 and in 2017, we did not record any hedge ineffectiveness related to any cash-flow hedges in earnings. Based on their valuation as of September 30, 2018, we expect approximately $13.5 million of derivative losses included in accumulated other comprehensive loss will be reclassified into income during the next 12 months. The cash flows derived from derivatives are classified in the condensed consolidated statements of cash flows in the same category as the condensed consolidated balance sheet account of the underlying item.

As of September 30, 2018 and December 31, 2017, we held derivative instruments that qualify for hedge accounting as fair value hedges. For derivative instruments that are designated and qualify as a fair value hedge, the effective portion of the gain or loss on the derivative is reflected in earnings. This effect on earnings is offset by the change in the fair value of the hedged item attributable to the risk being hedged that is also recorded in earnings. In 2018 and in 2017, there was no ineffectiveness. The cash flows derived from derivatives are classified in the condensed consolidated statements of cash flows in the same category as the condensed 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 September 30, 2018, the €180.0 million notional swap amount had a fair value of $25.1 million recorded in other long-term liabilities and a related interest receivable of $0.5 million which is recorded in prepaid expenses and other current assets, respectively, in the accompanying condensed consolidated balance sheet. As of December 31, 2017, these swaps had a fair value of $28.9 million and related interest receivable of $1.2 million which are recorded in other long-term liabilities and prepaid expenses and other current assets, respectively, in the accompanying condensed consolidated balance sheet.

We hold interest rate swaps which effectively fix 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 September 30, 2018, the $200.0 million notional swap amount had a fair value of $3.8 million and related interest payable of $1.0 million which are recorded in other long-term liabilities and accrued and other current liabilities, respectively, in the accompanying condensed consolidated balance sheet. As of December 31, 2017, these swaps 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 expenses and other current assets, respectively, in the accompanying condensed consolidated 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 into in connection with the 2019 and 2021 Cash Convertible Notes and which are more fully described in Note 9, “Debt.” 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 issuance of the 2023 Cash Convertible Notes to pay the premium for the Call Option, and simultaneously received $45.4 million from the sale of the Warrants, for a net cash outlay of $28.3 million for the Call Spread Overlay. Issuance costs in connection with the Warrant and the Call Option were $0.3 million and $0.1 million respectively.

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 are the underlying security, are derivative assets 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 8, “Financial Instruments and Fair Value Measurements.” The fair value of the Call Options at September 30, 2018 was approximately $436.6 million, of which $126.3 million and $310.3 million was recorded in other long-term assets and prepaid expenses and other current assets, respectively. As of December 31, 2017, the fair value of the Call Options was approximately $223.2 million which was recorded in other long-term assets in the accompanying condensed 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 condensed consolidated statements of income in other income (expense), net. For the three- and nine-month periods ended September 30, 2018 and September 30, 2017, the change in the fair

value of the Call Options resulted in gains of $5.8 million and $213.4 million and $42.3 million and $80.5 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 the 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 condensed consolidated statements of income in other income (expense), net until the cash conversion option settles or expires. For further discussion of the Cash Convertible Notes, refer to Note 9, “Debt.” 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 option, refer to Note 8 “Financial Instruments and Fair Value Measurements.” The fair value of the embedded cash conversion options at September 30, 2018 was approximately $438.9 million, of which $311.3 million is recorded in accrued and other current liabilities and $127.6 million is recorded in other long-term liabilities. As of December 31, 2017, the fair value of the embedded cash conversion options was approximately $224.3 million which is recorded in other long-term liabilities in the accompanying condensed consolidated balance sheet. For the three- and nine-month periods ended September 30, 2018 and September 30, 2017, the change in the fair value of the embedded cash conversion option resulted in losses of $4.9 million and $214.6 million, and $42.6 million and $80.2 million, respectively, recognized in our condensed consolidated statements of income in other income (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 September 30, 2018, an aggregate notional value of $479.8 million and fair value of $2.1 million included in prepaid expenses and other current assets and $4.9 million included in accrued and other current liabilities, which expire at various dates through December 2018. We were party to various foreign exchange forward and swap arrangements which had, at December 31, 2017, an aggregate notional value of $587.3 million and fair values of $7.5 million included in prepaid expenses and other current assets and $2.4 million included in accrued and other current liabilities, which expired at various dates through March 2018. The transactions have been entered into to offset the effects from short-term balance sheet exposure to foreign currency exchange risk. Changes in the fair value of these arrangements have been recognized in other income (expense), net.

Fair Values of Derivative Instruments

The following table summarizes the fair value amounts of derivative instruments reported in the condensed consolidated balance sheets as of September 30, 2018 and December 31, 2017:

	Derivatives in Asset Positions Fair value		Derivatives in Liability Positions Fair value	
(in thousands)	9/30/2018	12/31/2017	9/30/2018	12/31/2017
Derivative instruments designated as hedges				
Interest rate contracts[1]	$1,502	$2,409	$ (28,871)	$ (28,942)
Total derivative instruments designated as hedges	$1,502	$2,409	$ (28,871)	$ (28,942)
Undesignated derivative instruments				
Call spread overlay	$436,583	$223,164	$ (438,931)	$ (224,286)
Foreign exchange contracts	2,068	7,480	(4,923)	(2,424)
Total undesignated derivative instruments	$438,651	$230,644	$ (443,854)	$ (226,710)

[1] The fair value amounts for the interest rate contracts include accrued interest.

Gains and Losses on Derivative and Non-derivative Instruments

The following tables summarize the locations and gains and losses on derivative and non-derivative instruments for the three and nine months ended September 30, 2018 and 2017:

Three months ended September 30, 2018 (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	$ 2,090	Other income (expense), net	—	n/a
Cash flow hedges				
Interest rate contracts	$ 1,507	Other income (expense), net	$ (1,476)	n/a
Fair value hedges				
Interest rate contracts	$ —	Other income (expense), net	$ —	$ (670)
Undesignated derivative instruments				
Call spread overlay	n/a	Other income (expense), net	n/a	$ 847
Foreign exchange contracts	n/a	Other income (expense), net	n/a	(1,219)
				$ (372)

Three months ended September 30, 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	$ (8,763)	Other income (expense), net	—	n/a
Cash flow hedges				
Interest rate contracts	$ (10,542)	Other income (expense), net	$ 7,092	n/a
Fair value hedges				
Interest rate contracts	$ —	Other income (expense), net	$ —	$ (528)
Undesignated derivative instruments				
Call spread overlay	n/a	Other income (expense), net	n/a	$ (341)
Foreign exchange contracts	n/a	Other income (expense), net	n/a	813

$ 472

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Nine months ended September 30, 2018 (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	$ 10,628	Other income (expense), net	—	n/a
Cash flow hedges				
Interest rate contracts	$ 3,876	Other income (expense), net	$ (7,506)	n/a
Fair value hedges				
Interest rate contracts	$ —	Other income (expense), net	$ —	$ (4,661)
Undesignated derivative instruments				
Call spread overlay	n/a	Other income (expense), net	n/a	$ (1,225)
Foreign exchange contracts	n/a	Other income (expense), net	n/a	(15,261)
				$ (16,486)

Nine months ended September 30, 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	$ (14,991)	Other income (expense), net	—	n/a
Cash flow hedges				
Interest rate contracts	$ (24,383)	Other income (expense), net	$ 22,770	n/a
Fair value hedges				
Interest rate contracts	$ —	Other income (expense), net	$ —	$ (418)
Undesignated derivative instruments				
Call spread overlay	n/a	Other income (expense), net	n/a	$ 330
Foreign exchange contracts	n/a	Other income (expense), net	n/a	7,347
				$ 7,677

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.

8. Financial Instruments and 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 marketable securities, as discussed in Note 5 "Investments", and short-term investments, derivative contracts used to hedge currency and interest rate risk, derivative financial instruments entered into in connection with the Cash Convertible Notes discussed in Note 9 "Debt", and contingent consideration accruals and are shown in the tables below. There have been no transfers between levels during the periods ending September 30, 2018.

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, unless there are collateral agreements for the respective transactions in place. 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 9 "Debt" and Note 7 "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 as of September 30, 2018 included our common stock price, the risk-free interest rate, and the implied volatility of our common stock. The Call Options asset and the embedded cash conversion option liability were designed with the intent that changes in their fair values would substantially offset, with limited net impact to our earnings. Therefore, the sensitivity of changes in the unobservable inputs to the option pricing model for such instruments is substantially mitigated.

Our Level 3 instruments include contingent consideration liabilities. We value contingent consideration liabilities using unobservable inputs, applying the income approach, such as the discounted cash flow technique, or the probability-weighted scenario method. Contingent consideration arrangements obligate us to pay the sellers of an acquired entity if specified future events occur or conditions are met such as the achievement of technological or revenue milestones. We use various key assumptions, such as the probability of achievement of the milestones (0% to 100%) and the discount rate (6.5%-17.2%), to represent the non-performing risk factors and time value when applying the income approach. We regularly review the fair value of the contingent consideration and reflect any change in the accrual in the condensed consolidated statements of income in the line items commensurate with the underlying nature of milestone arrangements.

The following table presents our hierarchy for our financial assets and liabilities measured at fair value on a recurring basis as of September 30, 2018 and December 31, 2017:

	As of September 30, 2018				As of December 31, 2017			
(in thousands)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Short-term investments	$784	$320,104	$—	$320,888	$—	$359,198	$—	$359,198
Marketable securities	4,208	—	—	4,208	3,208	—	—	3,208
Call option	—	436,583	—	436,583	—	223,164	—	223,164
Foreign exchange contracts	—	2,068	—	2,068	—	7,480	—	7,480
Interest rate contracts	—	1,502	—	1,502	—	2,409	—	2,409
	$4,992	$760,257	$—	$765,249	$3,208	$592,251	$—	$595,459
Liabilities:								
Foreign exchange contracts	$—	$(4,923)	$—	$(4,923)	$—	$(2,424)	$—	$(2,424)
Interest rate contracts	—	(28,871)	—	(28,871)	—	(28,942)	—	(28,942)
Cash conversion option	—	(438,931)	—	(438,931)	—	(224,286)	—	(224,286)
Contingent consideration	—	—	(51,436)	(51,436)	—	—	(11,539)	(11,539)
	$—	$(472,725)	$(51,436)	$(524,161)	$—	$(255,652)	$(11,539)	$(267,191)

The carrying values of cash and equivalents, accounts receivable, accounts payable and other accrued liabilities, which are classified in Level 1 of the fair value hierarchy, approximate their fair values due to their short-term maturities.

For liabilities with Level 3 inputs, the following table summarizes the activity for the nine months ended September 30, 2018:

(in thousands)	Contingent Consideration
Beginning Balance at December 31, 2017	$ (11,539)
Additions	(51,428)
Payments	11,531

Ending balance at September 30, 2018	$ (51,436)

As of September 30, 2018, $26.0 million accrued for contingent consideration is included in accrued and other current liabilities and $25.4 million is included in other long-term liabilities in the accompanying condensed consolidated balance sheet. For the nine months ended September 30, 2018, cash payments for contingent consideration totaled $11.5 million, of which $5.5 million relate to amounts originally accrued at the acquisition date and $6.0 million relate to amounts in excess of amounts originally accrued and are included in financing activities and operating activities, respectively, in the accompanying condensed consolidated statements of cash flows.

The table below presents the carrying values and the estimated fair values of financial instruments not presented in the tables above.

	As of September 30, 2018			As of December 31, 2017		
(in thousands)	Carrying Amount	Level 1	Level 2	Carrying Amount	Level 1	Level 2
Long-term debt including current portion:						
Cash convertible notes	$1,033,446	$1,422,652	$—	$1,008,507	$ —	$1,269,613
Private placement	395,437	—	385,063	399,939	—	394,669
German private placement	339,336	—	339,538	349,812	—	349,977
	$1,768,219	$1,422,652	$724,601	$1,758,258	$ —	$2,014,259

The fair values of the financial instruments presented in the tables above were determined as follows:

Cash Convertible Notes: Fair value is based on an estimation using available over-the-counter market information on the Cash Convertible Notes due in 2019, 2021 and 2023. During 2018, we determined that the quoted prices were from active markets and accordingly moved the fair value from level 2 to level 1 of the fair value hierarchy.

Private Placement: Fair value of the outstanding bonds is based on an estimation using the changes in the U.S. Treasury rates.

German Private Placement: Fair value is based on an estimation using changes in the euro swap rates.

The estimated fair values may not represent actual values of the financial instruments that could be realized as of the balance sheet date or that will be realized in the future. There were no adjustments in the three- and nine-month periods ended September 30, 2018 and 2017 for nonfinancial assets or liabilities required to be measured at fair value on a nonrecurring basis.

9. Debt

Our credit facilities available and undrawn at September 30, 2018 total €426.6 million (approximately $493.8 million). This includes a €400.0 million syndicated multi-currency revolving credit facility expiring December 2021 of which no amounts were utilized at September 30, 2018 or at December 31, 2017, and three other lines of credit amounting to €26.6 million with no expiration date, none of which were utilized as of September 30, 2018 or at December 31, 2017. The €400.0 million facility can be utilized in Euro, British pounds sterling, Swiss franc or U.S. dollar and bears interest of 0.4% to 1.2% above three months EURIBOR, or LIBOR in relation to any loan not in euro, and is offered with interest periods of one, two, three, or six months. The commitment fee is calculated based on 35% of the applicable margin. 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 September 30, 2018. The credit facilities are for general corporate purposes.

At September 30, 2018 or at December 31, 2017, long-term debt, net of debt issuance costs of $9.6 million and $12.4 million, respectively, consists of the following:

(in thousands)	2018	2017
0.375% Senior Unsecured Cash Convertible Notes due 2019	$424,102	$414,843
0.875% Senior Unsecured Cash Convertible Notes due 2021	277,264	270,762
0.500% Senior Unsecured Cash Convertible Notes due 2023	332,080	322,902
3.19% Series A Senior Notes due October 2019	72,283	72,742
3.75% Series B Senior Notes due October 2022	296,228	300,276
3.90% Series C Senior Notes due October 2024	26,926	26,921
Schuldschein Private Placement	339,336	349,812
Total long-term debt, including current portion	$1,768,219	$1,758,258
Less: current portion	701,366	—
Long-term portion	$1,066,853	$1,758,258

The notes are all unsecured obligations that rank pari passu.

Cash Convertible Notes due 2019, 2021 and 2023

On March 19, 2014, we issued $730.0 million aggregate principal amount of Cash Convertible Senior Notes of which $430.0 million is due in 2019 (2019 Notes) and $300.0 million is due in 2021 (2021 Notes). The aggregate net proceeds of the 2019 Notes and 2021

Notes was $680.7 million, after payment of the net cost of the Call Spread Overlay described below and transaction costs. Additionally, we used $372.5 million of the net proceeds to repay other debt.

On September 13, 2017, we issued $400.0 million aggregate principal amount of Cash Convertible Senior Notes which is due in 2023 (2023 Notes). The net proceeds of the 2023 Notes were $365.6 million, after payment of the net cost of the call Spread Overlay described below and transaction costs.

We refer to the 2019 Notes, 2021 Notes and 2023 Notes collectively as the "Cash Convertible Notes." Interest on the Cash Convertible Notes is payable semi-annually in arrears in March and September of each year, at rates of 0.375%, 0.875% and 0.500% per annum for the 2019 Notes, 2021 Notes and 2023 Notes, respectively, commencing on September 19, 2014 for the 2019 Notes and 2021 Notes and March 13, 2018 for the 2023 Notes. The 2019 Notes will mature on March 19, 2019, the 2021 Notes will mature on March 19, 2021 and the 2023 Notes will mature on September 13, 2023 unless repurchased or converted in accordance with their terms prior to such date.

The Cash Convertible Notes are convertible solely into cash in whole, but not in part, at the option of noteholders in the following circumstances: (a) from April 29, 2014 through September 18, 2020 for the 2021 Notes and from October 24, 2017 through March 13, 2023 for the 2023 Notes (Contingent Conversion Period), under any of the Contingent Conversion Conditions and (b) at any time following the Contingent Conversion Period through the fifth business day immediately preceding the applicable maturity date. For further information on the Contingent Conversion Conditions, refer to Note 15 "Lines of Credit and Debt" of our Annual Report on Form 20-F. Upon conversion, noteholders will receive an amount in cash equal to the Cash Settlement Amount, calculated as described below. The Cash Convertible Notes are not convertible into shares of our common stock or any other securities.

The Contingent Conversion Period for the 2019 Notes has passed and noteholders may convert at any time through the fifth business day immediately preceding the maturity date.

Beginning on October 1, 2018 and ending at the close of business on December 31, 2018 (the “Relevant Fiscal Quarter”), the 2021 Notes may be surrendered for conversion. The 2021 Notes have become convertible pursuant to Section 12.01(b)(iv) of the indenture because the arithmetic mean of the last reported sale prices of our common stock, in each trading day in at least one 20 consecutive trading day period during the 30 consecutive trading day period ending on the last trading day of the preceding fiscal quarter, was greater than 130% of the conversion price in effect on such last trading day. The 2021 Notes will be convertible at a conversion ratio of 7,063.1647 per $200,000 principal amount of 2021 Notes, which is equivalent to a conversion price of approximately $28.32 per share of our common stock.

No Contingent Conversion Conditions were triggered for the 2023 Notes as of September 30, 2018.

For the 2023 Notes, the initial conversion rate is 4,829.7279 shares of our common stock per $200,000 principal amount (reflecting an initial conversion price of approximately $41.4102 per share of common stock). As adjusted by the synthetic share repurchase discussed in Note 12, the conversion rate for the 2019 Notes and 2021 Notes is 7,063.1647 shares of our common stock per $200,000 principal amount (reflecting an adjusted conversion price of approximately $28.32 per share of common stock). Upon conversion, holders are entitled to a cash payment (Cash Settlement Amount) equal to the average of the conversion rate multiplied by the daily volume-weighted average trading price for our common stock over a 50-day period. The conversion rate is subject to adjustment in certain instances but will not be adjusted for any accrued and unpaid interest. In addition, following the occurrence of certain corporate events that may occur prior to the applicable maturity date, we may be required to pay a cash make-whole premium by increasing the conversion rate for any holder who elects to convert Cash Convertible Notes in connection with the occurrence of such a corporate event, but in no event will the Conversion Ratio exceed 6,728.6463 per $200,000 principal amount of Notes.

We may redeem the 2019 Notes, 2021 Notes or 2023 Notes in their entirety at a price equal to 100% of the principal amount of the applicable Cash Convertible Notes plus accrued interest at any time when 20% or less of the aggregate principal amount of the applicable Cash Convertible Notes originally issued remain outstanding.

Because the Cash Convertible Notes contain an embedded cash conversion option, we have determined that the embedded cash conversion option is a derivative financial instrument, which is required to be separated from the Cash Convertible Notes and accounted for separately as a derivative liability, with changes in fair value reported in our consolidated statements of operations until the cash conversion option transaction settles or expires. The initial fair

value liability of the embedded cash conversion option for the 2019 Notes 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). For further discussion of the derivative financial instruments relating to the Cash Convertible Notes, refer to Note 7, “Derivatives and Hedging.”

As noted above, the reduced carrying value on the Cash Convertible Notes resulted in a debt discount that is amortized to the principal amount through the recognition of non-cash interest expense using the effective interest method over the expected life of the debt, which is five, seven and six years for the 2019 Notes, 2021 Notes and 2023 Notes, respectively. This resulted in our recognition of interest expense on the Cash Convertible Notes at an effective rate approximating what we would have incurred had nonconvertible debt with otherwise similar terms been issued. The effective interest rate of the 2019 Notes, 2021 Notes and 2023 Notes is 2.937%, 3.809% and 3.997%, respectively, which is imputed based on the amortization of the fair value of the embedded cash conversion

option over the remaining term of the Cash Convertible Notes. As of September 30, 2018, we expect the 2019 Notes, 2021 Notes and 2023 Notes to be outstanding until their respective maturity dates.

In connection with the issuance of the 2019 Notes and 2021 Notes, we incurred approximately $13.1 million in transaction costs. We incurred approximately $6.2 million in transaction costs for the 2023 Notes. Such costs have been allocated to the Cash Convertible Notes and deferred as a long-term asset which are being amortized to interest expense using the effective interest method.

Interest expense related to the Cash Convertible Notes for the three and nine months ended September 30, 2018 and 2017 was comprised of the following:

	Three months ended September 30,	
(in thousands)	2018	2017
Coupon interest	$1,560	$1,153
Amortization of original issuance discount	7,544	5,061
Amortization of debt issuance costs	841	630
Total interest expense related to the Cash Convertible Notes	$9,945	$6,844

	Nine months ended September 30,	
(in thousands)	2018	2017
Coupon interest	$4,678	$3,272
Amortization of original issuance discount	22,433	14,031
Amortization of debt issuance costs	2,506	1,792
Total interest expense related to the Cash Convertible Notes	$29,617	$19,095

Cash Convertible Notes Call Spread Overlay

Concurrent with the issuance of the Cash Convertible Notes, we entered into privately negotiated hedge transactions (Call Options) with, and issued warrants to purchase shares of our common stock (Warrants) to, certain financial institutions. We refer to the Call Options and Warrants collectively as the “Call Spread Overlay”. The Call Options are intended to offset any cash payments payable by us in excess of the principal amount due upon any conversion of the Cash Convertible Notes. During 2014, we used $105.2 million of the proceeds from the issuance of the 2019 Notes and 2021 Notes to pay for the Call Options, and simultaneously received $69.4 million from the sale of the Warrants, for a net cash outlay of $35.8 million for the Call Spread Overlay.

During 2017, we used $73.6 million of the proceeds from the issuance of the 2023 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 in connection with the Warrant and the Call Option were $0.3 million and $0.1 million respectively.

The Call Options are derivative financial instruments and are discussed further in Note 7 “Derivatives and Hedging.” The Warrants are equity instruments and are further discussed in Note 12 “Equity.”

Aside from the initial payment of a premium of $105.2 million (relating to the 2019 Notes and 2021 Notes) and $73.6 million (relating to the 2023 Notes) for the Call Option, we will not be required to make any cash payments under the Call Options, and will be entitled to receive an amount of cash, generally equal to the amount by which the market price per share of our common stock exceeds the exercise price of the Call Options during the relevant valuation period. The exercise price under the Call Options is initially equal to the conversion price of the Cash Convertible Notes.

The Warrants issued in connection with the 2019 Notes and 2021 Notes cover an aggregate of 25.8 million shares of our common stock (subject to anti-dilution adjustments under certain circumstances) and following the completion of the synthetic share repurchase, have an exercise price of $32.0558 per share, subject to customary adjustments. These Warrants expire as follows: Warrants to purchase 15.2 million shares expire over a period of 50 trading days

beginning on December 27, 2018 and Warrants to purchase 10.6 million shares expire over a period of 50 trading days beginning on December 29, 2020.

Concurrent with the 2023 Notes, we issued Warrants which cover 9.7 million shares of our common stock (subject to anti-dilution adjustments under certain circumstances) and have an initial exercise price of $50.9664 per share, subject to customary adjustments. The Warrants expire over a period of 50 trading days beginning on June 26, 2023.

The Warrants that were issued with our Cash Convertible Notes discussed above could have a dilutive effect to the extent that the price of our common stock exceeds the applicable strike price of the Warrants. For each Warrant that is exercised, we will deliver to the holder a number of shares of our common stock equal to the amount by which the settlement price exceeds the exercise price, divided

by the settlement price, plus cash in lieu of any fractional shares. We will not receive any additional proceeds if the Warrants are exercised. The Warrants are European-style (exercisable only upon expiration).

Private Placement

In October 2012, we completed a 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 paid $2.1 million in debt issuance costs which are being amortized through interest expense over the lifetime of the notes. The note purchase agreement contains certain financial and non-financial covenants, including but not limited to, restrictions on priority indebtedness and the maintenance of certain financial ratios. We were in compliance with these covenants at September 30, 2018. During 2014, we entered into interest rate swaps, which effectively fixed the fair value of $200.0 million of this debt and qualify for hedge accounting as fair value hedges as described in Note 7 "Derivatives and Hedging."

German Private Placement (Schuldschein)

In 2017, we issued a German private placement bond ("Schuldschein") in several tranches totaling $331.1 million due in various periods through 2027. The Schuldschein consists of U.S. dollar and Euro denominated tranches. The Euro tranches are designated as a foreign currency non-derivative hedging instrument that qualifies as a net investment hedge as described in Note 7 "Derivatives and Hedging." We paid $1.2 million in debt issuance costs which are being amortized through interest expense over the lifetime of the notes. A summary of the tranches as of September 30, 2018 is as follows:

Currency	Notional Amount	Interest Rate	Maturity	Carrying Value as of September 30, 2018 (in thousands)	Carrying Value as of December 31, 2017 (in thousands)
EUR	€11.5 million	Fixed 0.4%	March 2021	$ 13,285	$ 13,660
EUR	€23.0 million	Floating EURIBOR + 0.4%	March 2021	26,570	27,320
EUR	€21.5 million	Fixed 0.68%	October 2022	24,829	25,535
EUR	€64.5 million	Floating EURIBOR + 0.5%	October 2022	74,486	76,605
USD	$45.0 million	Floating LIBOR + 1.2%	October 2022	44,883	44,862
EUR	€25.0 million	Floating EURIBOR + 0.5%	October 2022	28,856	31,792
EUR	€64.0 million	Fixed 1.09%	June 2024	73,895	76,005
EUR	€31.0 million	Floating EURIBOR + 0.7%	June 2024	35,793	36,815
EUR	€14.5 million	Fixed 1.61%	June 2027	16,739	17,218
				$ 339,336	$ 349,812

10. Income Taxes

The quarterly provision for income taxes is based upon the estimated annual effective tax rates for the year, applied to the current period ordinary income before tax plus the tax effect of any discrete items. Our operating subsidiaries are exposed to effective tax rates ranging from zero to more than 34%. 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 the third quarters of 2018 and 2017, our effective tax rates were 16.5% and 6.1%, respectively. In the nine-month periods ended September 30, 2018 and September 30, 2017, the effective tax rates were 17.7% and 0.5% respectively. Additionally, in 2018 and 2017, tax expense on foreign operations was favorably impacted by lower income tax rates and partial tax exemptions on foreign income primarily derived from operations in Germany, Singapore, Luxembourg, Ireland and Switzerland. These foreign tax benefits are due to a combination of favorable tax laws, rules, rulings, and exemptions in these jurisdictions. In particular, we have pre-tax income in Germany which is statutorily exempt from trade tax on intercompany foreign royalty income. Further, we have intercompany financing arrangements through Luxembourg and Ireland in which the intercompany income is partially exempt.

We assess uncertain tax positions in accordance with ASC 740 (ASC 740-10 Accounting for Uncertainties in Tax). At September 30, 2018, our net unrecognized tax benefits totaled approximately $49.0 million which, if recognized, would favorably impact our effective tax rate in the periods in which they are recognized. It is reasonably possible that approximately $13.3 million of the unrecognized tax benefits may be released during the next 12 months due to lapse of statutes of limitations or settlements with tax authorities. We cannot reasonably estimate the range of the potential outcomes of these matters.

We conduct business globally and, as a result, file numerous consolidated and separate income tax returns in The Netherlands, Germany, Switzerland and the U.S. federal jurisdiction, as well as in various other state and foreign jurisdictions. In the normal course of business, we are subject to examination by taxing authorities throughout the world. Our subsidiaries are generally no longer subject

to income tax examinations by tax authorities for years before 2013. During the first quarter of 2016, the U.S. tax authority (Internal Revenue Service) concluded its federal audit of our U.S. tax returns for 2011 and 2012 without any adjustments. In February 2016, German tax authorities began the audit of the German tax returns for the 2010 through 2013 tax years. This audit is currently in process and we expect to close the audit later in 2018.

As of September 30, 2018, residual Netherlands income taxes have not been provided on the undistributed earnings of the majority of our foreign subsidiaries as these earnings are considered to be either permanently reinvested or can be repatriated tax free under the Dutch participation exemption.

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 Tax Cuts and Jobs Act ("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. The ultimate impact may differ from these provisional amounts due to additional analysis, changes in interpretations and assumptions that we have made, additional regulatory guidance that may be issued, and actions we may take because of the 2017 Tax Act. We did not identify items for which the income tax effects of the 2017 Tax Act have not been completed and a reasonable estimate could not be determined as of December 31, 2017. We expect to complete our analysis within the measurement period in accordance with SAB118.

11. Inventories

The components of inventories consist of the following as of September 30, 2018 and December 31, 2017:

(in thousands)	September 30, 2018	December 31, 2017
Raw materials	$ 23,818	$ 23,717
Work in process	33,015	33,153
Finished goods	103,135	99,057
Total inventories, net	$ 159,968	$ 155,927

12. Equity

Issuance of Warrants

In March 2014, in connection with the issuance of our 2019 Notes and 2021 Notes, we issued Warrants (as described in Note 9 "Debt") for approximately 25.8 million shares of our common stock (subject to antidilution adjustments under certain circumstances) with an exercise price of $32.085 per share, subject to customary adjustments. Following the synthetic share repurchase discussed below, the adjusted exercise price is $32.056. The proceeds, net of issuance costs, from the sale of these Warrants of approximately $68.9 million are included as additional paid in capital in the accompanying condensed consolidated balance sheets. These Warrants expire as follows: Warrants to purchase 15.2 million shares expire over a period of 50 trading days beginning on December 27, 2018 and Warrants to purchase 10.6 million shares expire over a period of 50 trading days beginning on December 29, 2020.

In September 2017, concurrent with the issuance of our 2023 Notes, we issued Warrants (as described in Note 9) for approximately 9.7 million shares of our common stock (subject to anti-dilution adjustments under certain circumstances) with an exercise price of $50.9664 per share, subject to customary adjustments. The proceeds from the sale of the Warrants, net of issuance costs, of approximately $45.3 million are included as additional paid in capital in the accompanying condensed consolidated balance sheets. The Warrants expire over a period of 50 trading days beginning on June 26, 2023.

These Warrants are exercisable only upon expiration. For each Warrant that is exercised, we will deliver to the holder a number of shares of our common stock equal to the amount by which the settlement price exceeds the exercise price, divided by the settlement price, plus cash in lieu of any fractional shares. These Warrants could separately have a dilutive effect on shares of our common stock to the extent that the market value per share of our common stock

exceeds the applicable exercise price of the Warrants (as measured under the terms of the Warrants).

Share Repurchase Programs

On April 27, 2016, we announced the launch of our fourth $100 million share repurchase program which was completed by the end of 2017. During the third quarter of 2017, 1.9 million QIAGEN shares were repurchased for $61.0 million (including transaction costs).

On January 31, 2018, we announced our fifth share repurchase program of up to $200 million of our common shares. During the nine months ended September 30, 2018, we repurchased 2.0 million QIAGEN shares for $75.3 million (including transaction costs) of

which $66.6 million was paid as of September 30, 2018. During October 2018, we purchased 0.7 million shares for a total of €20.4 million.

The cost of repurchased shares is included in treasury stock and reported as a reduction in total equity when a repurchase occurs. Repurchased shares will be held in treasury in order to satisfy various obligations, which include exchangeable debt instruments, warrants and employee share-based remuneration plans.

Synthetic Share Repurchase Program

In August 2016, we announced our plan to return approximately $250.0 million to shareholders through a synthetic share repurchase program that combines a direct capital repayment with a reverse stock split. The synthetic share repurchase was implemented through a series of amendments to our Articles of Association which were approved by our shareholders at an Extraordinary General Meeting (EGM) held on October 26, 2016. The first amendment involved an increase in share capital by an increase in the nominal value per common share from EUR 0.01 to EUR 1.04 and a corresponding reduction in additional paid in capital. The second amendment involved a reduction in stock whereby 27 existing common shares with a nominal value of EUR 1.04 each were consolidated into 26 new common shares with a nominal value of EUR 1.08 each. The third amendment was a reduction of the nominal value per common share from EUR 1.08 to EUR 0.01. As a result of these amendments, which in substance constitute a synthetic share buyback, $243.9 million was repaid to our shareholders and the outstanding number of common shares was reduced by 8.9 million, or 3.7%. The capital repayment program was completed in January 2017. Expenses incurred related to the capital repayment and share consolidation amounted to $0.5 million and were charged to equity.

Accumulated Other Comprehensive Loss

The following table is a summary of the components of accumulated other comprehensive loss as of September 30, 2018 and December 31, 2017:

(in thousands)	September 30, 2018	December 31, 2017
Net unrealized loss on hedging contracts, net of tax	$ (22,582)	$ (30,487)
Net unrealized loss on marketable securities, net of tax	—	(942)
Net unrealized loss on pension, net of tax	(878)	(878)
Foreign currency effects from intercompany long-term investment transactions, net of tax of $10.1 million in 2018 and $7.9 million 2017	(24,841)	(16,144)
Foreign currency translation adjustments	(256,872)	(172,308)
Accumulated other comprehensive loss	$ (305,173)	$ (220,759)

13. Revenue

Accounting Policies

We adopted Topic 606 Revenue from Contracts with Customers with a date of initial application of January 1, 2018. Therefore, the comparative information has not been adjusted and continues to be reported under ASC Topic 605 Revenue Recognition. As a result, we changed our accounting policy for revenue recognition as detailed below.

We applied Topic 606 using the modified retrospective method by recognizing the effect of initially applying Topic 606 as an $1.3 million adjustment to the opening balance of retained earnings at January 1, 2018 for all contracts not completed at January 1, 2018. The following table presents the impact from the adoption of Topic 606 on our condensed consolidated balance sheet:

(in thousands)	Balance at December 31, 2017	Topic 606 Adjustments	Balance at January 1, 2018
Accounts receivable	$329,138	$ 160	$329,298
Accrued and other current liabilities	$244,114	$ 765	$244,879
Long-term deferred income tax assets	$39,353	$ 701	$40,054
Retained earnings	$1,247,945	$ (1,306)	$1,246,639

The adoption of Topic 606 resulted in higher revenue of $6.7 million and $9.0 million for the three and nine month periods ended September 30, 2018, respectively, following primarily the change in the timing of the recognition of milestone payments. The following tables summarizes the impacted line items from our condensed consolidated statement of income for the three and nine month periods ended September 30, 2018:

(in thousands, except per share amounts)	Three months ended September 30, 2018 under previous standard	Effect of Topic 606	September 30, 2018 As Reported
Net sales	$ 371,199	$6,712	$ 377,911
Income taxes	$ 10,778	$1,105	$ 11,883
Net income	$ 54,713	$5,607	$ 60,320
Basic earnings per common share	$ 0.24	$0.02	$ 0.27
Diluted earnings per common share	$ 0.23	$0.02	$ 0.26

(in thousands, except per share amounts)	Nine months ended September 30, 2018 under previous standard	Effect of Topic 606	September 30, 2018 As Reported
Net sales	$1,089,679	$8,996	$1,098,675
Income taxes	$26,280	$1,594	$27,874
Net income	$122,028	$7,402	$129,430
Basic earnings per common share	$0.54	$0.03	$0.57
Diluted earnings per common share	$0.52	$0.03	$0.55

The impact from the adoption of Topic 606 on our condensed consolidated balance sheet as of September 30, 2018 and condensed consolidated statement of cash flow for the nine months ended September 30, 2018 was not material.

Nature of Goods and Services

Our revenues are reported net of sales and value added taxes and accruals for estimated rebates and returns and are derived primarily from the sale of consumable and instrumentation products, and to a much lesser extent, from the sale of services, intellectual property and technology. Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration we expect to receive in exchange for those products or services. We enter into contracts that can include various combinations of products and services, which are generally distinct and accounted for as separate performance obligations. The transaction price is allocated to performance obligations based on their relative stand-alone selling prices.

We offer warranties on our products. Certain of our warranties are assurance-type in nature and do not cover anything beyond ensuring that the product is functioning as intended. Based on the guidance in Topic 606, assurance-type warranties do not represent separate performance obligations. The Company also sells separately-priced service contracts which qualify as service-type warranties and represent separate performance obligations.

We sell our products and services both directly to customers and through distributors generally under agreements with payment terms typically less than 90 days and in most cases not exceeding one year and therefore contracts do not contain a significant financing component.

Consumable and Related Revenue

Consumable Products: In the last three years, revenue from consumable product sales has accounted for approximately 79%-80% of our net sales and revenue is recognized when performance obligations under the terms of a contract with a customer are satisfied. The majority of our contracts have a single performance obligation to transfer a product or multiple performance obligations to transfer multiple products concurrently. Accordingly, we recognize revenue when control of the products has transferred to the customer, which is generally at the time of shipment of

products as this is when title and risk of loss have been transferred. In addition, invoicing typically occurs at this time so this is when we have a present right to payment. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring products and is generally based upon a negotiated, formula, list or fixed price.
Related Revenue: Revenues from related products include software-as-a-service (SaaS), licenses, intellectual property and patent sales, royalties and milestone payments and over the last three years has accounted for approximately 7%-8% of our net sales.
SaaS arrangements: Revenue from SaaS arrangements, which allow customers to use hosted software over the contract period without taking possession of the software, is recognized over the duration of the agreement unless the terms of the agreement indicate that revenue should be recognized in a different pattern, for example based on usage.
Licenses: Licenses for on-site software, which allow customers to use the software as it exists when made available, are sold as perpetual licenses or subscriptions. Revenue from on-site licenses are recognized upfront at the point in time at the later of when

the software is made available to the customer and the beginning of the license term. When a portion of the transaction price is allocated to a performance obligation to provide support and/or updates, revenue is recognized as the updates/support are provided, generally over the life of the license. Fees from research collaborations include payments for technology transfer and access rights. Royalties from licensees of intellectual property are based on sales of licensed products and revenues are recognized at the later of (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied).

Milestone Payments: At the inception of each companion diagnostic co-development arrangement that includes development milestone payments, which represent variable consideration, we evaluate whether the milestones are probable of being reached and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within our control, such as milestones which are achieved through regulatory approvals, are considered to be constrained and excluded from the transaction price until those approvals are received. Revenue is recognized following the input method as this is considered to best depict the timing of the transfer of control. This involves measuring actual hours incurred to date as a proportion of the total budgeted hours of the project. At the end of each subsequent reporting period, the proportion of completion is trued-up. We also re-evaluate the probability of achievement of development milestones and any related constraint on a periodic basis, and if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and earnings in the period of adjustment.

Instruments

Revenue from instrumentation includes the instrumentation equipment, installation, training and other instrumentation services, such as extended warranty services or product maintenance contracts and over the last three years has accounted for approximately 12%-13% of net sales. Revenue from instrumentation equipment is recognized when the customer obtains control of the instrument which is predominantly at the time of delivery or when title has transferred to the customer. Service revenue is recognized over the term of the service period as the customers benefit from the service throughout the service period. Revenue related to services performed on a time-and-materials basis is recognized when performed

Contract Estimates

The majority of our revenue is derived from contracts (i) with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount in which we have the right to invoice as product is delivered. We have elected the practical expedient not to disclose the value of remaining performance obligations associated with these types of contracts.

However, we have certain companion diagnostic co-development contracts to provide research and development activities in which our performance obligations extend over multiple years. As of September 30, 2018, we had $38.2 million of remaining performance obligations for which the transaction price is not constrained related to these contracts of which we expect to recognize approximately 50% over the next 12 months and the remainder thereafter. Revenue expected to be recognized in any future year related to remaining performance obligations, excluding revenue pertaining to contracts that have an original expected duration of one year or less, contracts where revenue is recognized as invoiced and contracts with variable consideration related to undelivered performance obligations, is not material.

Contract Balances

The timing of revenue recognition, billings and cash collections can result in billed accounts receivable, unbilled receivables (contract assets), and customer advances and deposits (contract liabilities) in the condensed consolidated balance sheet.

Contract assets (unbilled receivables) as of September 30, 2018 totaled $8.1 million and are included in prepaid expenses and other current assets in the accompanying condensed consolidated balance sheet and relate to the companion diagnostic co-development contracts discussed above. There were no material contract assets as of January 1, 2018.

Contract liabilities primarily relate to advances or deposits received from customers before revenue is recognized and is primarily related to instrument service and software subscription revenue. As of September 30, 2018 and December 31, 2017, the amount of deferred revenue reported as accrued and other current liabilities totaled to $42.3 million and $49.4 million, respectively, and $6.4 million and $6.1 million are reported as other long-term liabilities, respectively. During the three and nine months ended September 30, 2018, we satisfied the associated performance obligations and recognized revenue of $10.2 million and $42.4 million, respectively, related to advance customer payments previously received.

Practical Expedients and Accounting Policy Elections

We exclude from net sales any value add, sales and other taxes which we collect concurrent with revenue-producing activities. If we perform shipping and handling activities after the transfer of control to the customer (e.g., when control transfers prior to delivery), they are considered as fulfillment activities, and accordingly, the costs are accrued when the related revenue is recognized. As such, shipping and handling fees billed to customers in a sales transaction are recorded in net sales and shipping

and handling costs incurred are recorded in sales and marketing expenses. We recognize the incremental costs of obtaining contracts (commissions) as an expense when incurred for contracts that have a duration of one year or less. There were no deferred contract costs recorded at September 30, 2018. We apply the practical expedient to not disclose information about remaining performance obligations that have original expected duration of one year or less.

Disaggregation of Revenue

We disaggregate our revenue based on product categories and customer class as shown in the table below:

	Three Months Ended September 30, 2018			Three Months Ended September 30, 2017		
(in thousands)	Consumables and related	Instruments	Total	Consumables and related	Instruments	Total
Molecular Diagnostics	$167,507	$ 21,535	$189,042	$159,972	$ 19,854	$179,826
Applied Testing	28,187	6,880	35,067	28,101	7,490	35,591
Pharma	63,687	7,439	71,126	61,387	7,522	68,909
Academia	72,095	10,581	82,676	71,737	7,914	79,651
Total	$331,476	$ 46,435	$377,911	$321,197	$ 42,780	$363,977

	Nine Months Ended September 30, 2018			Nine Months Ended September 30, 2017		
(in thousands)	Consumables and related	Instruments	Total	Consumables and related	Instruments	Total
Molecular Diagnostics	$480,324	$ 57,035	$537,359	$437,093	$ 52,642	$489,735
Applied Testing	79,417	18,787	98,204	78,094	19,472	97,566
Pharma	193,894	22,339	216,233	181,008	21,605	202,613
Academia	217,647	29,232	246,879	206,948	23,811	230,759
Total	$971,282	$ 127,393	$1,098,675	$903,143	$ 117,530	$1,020,673

	Three Months Ended September 30,		Nine Months Ended September 30,	
(in thousands)	2018	2017	2018	2017
Americas	$185,717	$172,003	$524,387	$477,271
Europe, Middle East and Africa	111,006	117,010	347,161	329,466
Asia Pacific and Rest of World	81,188	74,964	227,127	213,936
Total	$377,911	$363,977	$1,098,675	$1,020,673

14. Earnings per Common Share

We present basic and diluted earnings per share. Basic earnings per share is calculated by dividing the net income by the weighted average number of common shares outstanding. Diluted earnings per share reflect the potential dilution that would occur if all “in the money” securities to issue common shares were exercised. The following table for the three- and nine-month periods ended September 30, 2018 and 2017 summarizes the information used to compute earnings per common share:

	Three months ended September 30,	
(in thousands, except per share data)	2018	2017
Net income	$60,320	$48,485
Weighted average number of common shares used to compute basic net income per common share	226,623	227,729
Dilutive effect of stock options and restricted stock units	4,684	4,645
Dilutive effect of outstanding warrants	3,844	347
Weighted average number of common shares used to compute diluted net income per common share	235,151	232,721
Outstanding options and awards having no dilutive effect, not included in above calculation	—	1
Outstanding warrants having no dilutive effect, not included in above calculation	31,572	35,070
Basic earnings per common share	$0.27	$0.21
Diluted earnings per common share	$0.26	$0.21

	Nine months ended September 30,	
(in thousands, except per share data)	2018	2017
Net income	$129,430	$80,087
Weighted average number of common shares used to compute basic net income per common share	226,939	228,555
Dilutive effect of stock options and restricted stock units	4,674	4,757
Dilutive effect of outstanding warrants	2,210	116
Weighted average number of common shares used to compute diluted net income per common share	233,823	233,428
Outstanding options and awards having no dilutive effect, not included in above calculation	148	63
Outstanding warrants having no dilutive effect, not included in above calculation	33,206	28,890
Basic earnings per common share	$0.57	$0.35
Diluted earnings per common share	$0.55	$0.34

15. Commitments and Contingencies

Contingent Consideration Commitments

Pursuant to the purchase agreements for certain acquisitions and other contractual arrangements, we could be required to make additional contingent cash payments totaling up to $69.3 million based on the achievement of certain revenue and operating results milestones as follows: $5.0 million in the remainder of 2018, $23.7 million in 2019, $16.8 million in 2020, $5.9 million in 2021, $5.9 million in 2024 and $5.0 million and $7.0 million payable in any 12-month period from now through 2028 and 2029, respectively, based on the achievement of certain revenue or other milestones, regulatory approvals or clearances. Of the $69.3 million total contingent obligation as discussed further in

Note 8 "Financial Instruments and Fair Value Measurements," we have assessed the fair value at September 30, 2018 to be $51.4 million, of which $26.0 million is included in accrued and other current liabilities and $25.4 million is included in other long-term liabilities in the accompanying condensed consolidated balance sheet.

Contingencies

In the ordinary course of business, we provide a warranty to customers that our products are free of defects and will conform to published specifications. Generally, the applicable product warranty period is one year from the date of delivery of the product to the customer or of site acceptance, if required. Additionally, we typically provide limited warranties with respect to our services. From

time to time, we also make other warranties to customers, including warranties that our products are manufactured in accordance with applicable laws and not in violation of third-party rights. We provide for estimated warranty costs at the time of the product sale. We believe our warranty reserves of $3.0 million and 3.1 million as of September 30, 2018 and December 31, 2017, appropriately reflect the estimated cost of such warranty obligations.

Litigation

From time to time, we may be party to legal proceedings incidental to our business. As of September 30, 2018, certain claims, suits or legal proceedings arising out of the normal course of business have been filed or were pending against QIAGEN or our subsidiaries. These matters have arisen in the ordinary course and conduct of business, as well as through acquisition. Although it is not possible to predict the outcome of such litigation, we assess the degree of probability and evaluate the reasonably possible losses that we could incur as a result of these matters. We accrue for any estimated loss when it is probable that a liability has been incurred and the amount of probable loss can be estimated. Litigation accruals totaled $8.6 million as of September 30, 2018. The estimated amount of a range of possible losses is between $5.0 million and $9.0 million. Based on the facts known to QIAGEN and after consultation with legal counsel, management believes that such litigation will not have a material adverse effect on our financial position or results of operations above the amounts accrued. However, the outcome of these matters is ultimately uncertain, thus any settlements or judgments against us in excess of management's expectations could have a material adverse effect on our financial position, results of operations or cash flows.

16. Share-Based Compensation

Stock Units

Stock units represent rights to receive our common shares at a future date and include restricted stock units which are subject to time-based vesting only and performance stock units which include performance conditions in addition to time-based vesting. During the three- and nine-month periods ended September 30, 2018, we granted 18.0 thousand and 1.3 million stock awards compared to 8.0 thousand and 1.9 million stock awards for the three- and nine-month periods ended September 30, 2017.

At September 30, 2018, there was $79.5 million remaining in unrecognized compensation expense, less estimated forfeitures, related to these awards which will be recognized over a weighted-average period of 2.35 years.

Share-Based Compensation Expense

Total share-based compensation expense for the three- and nine-month periods ended September 30, 2018 and 2017 is comprised of the following:

	Three months ended September 30,	
Compensation Expense (in thousands)	2018	2017
Cost of sales	$576	$734
Research and development	1,910	1,552
Sales and marketing	2,807	1,763
General and administrative, restructuring, integration and other, net	6,044	4,585
Share-based compensation expense before taxes	11,337	8,634
Less: income tax benefit	2,522	1,994
Net share-based compensation expense	$8,815	$6,640

	Nine months ended September 30,	
Compensation Expense (in thousands)	2018	2017
Cost of sales	$2,124	$2,098
Research and development	4,828	4,001
Sales and marketing	7,377	6,533

General and administrative, restructuring, integration and other, net	16,281	15,060
Share-based compensation expense before taxes	30,610	27,692
Less: income tax benefit	6,629	6,376
Net share-based compensation expense	$23,981	$21,316

No compensation cost was capitalized in inventory at September 30, 2018 or September 30, 2017 as the amounts were not material.

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" below.

Forward-looking and Cautionary Statements

This report contains forward-looking statements that are subject to risks and uncertainties. These statements can be identified by the use of forward-looking terminology, such as "believe," "hope," "plan," "intend," "seek," "may," "will," "coul "should," "would," "expect," "anticipate," "estimate," "continue" or other similar words. 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, including, but not limited to, the following: risks associated with our expansion of operations, including the acquisition of new businesses; variability in our operating results from quarter to quarter; management of growth, international operations, and dependence on key personnel; intense competition; technological change; our ability to develop and protect proprietary products and technologies and to enter into and maintain collaborative commercial relationships; our future capital requirements; general economic conditions and capital market fluctuations; and uncertainties as to the extent of future government regulation of our business. As a result, our future success involves a high degree of risk. For further information, refer to the more specific risks and uncertainties discussed in Part 1, Item 3 "Key Information" of our Annual Report on Form 20-F for the year ended December 31, 2017 and under the heading "Risk Factors" below.

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 September 30, 2018, we employed approximately 4,900 people in more than 35 locations worldwide.

Sustaining growth trajectory with Sample to Insight portfolio

QIAGEN is focused on growth opportunities for its Sample to Insight portfolio across the continuum of molecular testing from basic research to clinical healthcare. Among recent developments:

NeuMoDx, a next-generation automation system for PCR (polymerase chain reaction) testing, opens the important high-throughput segment of molecular diagnostics to QIAGEN. In September, QIAGEN began commercialization of the NeuMoDx™ 288 (high-throughput version) and NeuMoDx™ 96 (mid-throughput) in Europe and other major markets outside the United States. QIAGEN is introducing the platforms along with the first two CE-IVD marked diagnostic tests in a strategic partnership with NeuMoDx Molecular, Inc. NeuMoDx Molecular is responsible for commercialization in the United States. The companies have entered into a merger agreement under which QIAGEN can acquire all remaining shares for approximately $234 million, subject to the achievement of certain regulatory and operational milestones between mid-2019

and mid-2020. The companies are collaborating to develop a growing menu of additional tests to add to the diagnostic insights offered by the NeuMoDx systems.

- QuantiFERON-TB QIAGEN's gold-standard blood test for latent tuberculosis (TB) infection, continues to grow rapidly as authorities increasingly add screening with modern, accurate blood tests such as QuantiFERON-TB Gold Plus (QFT-Plus) to strategies for fighting TB. In September, at the first-ever high-level United Nations meeting on tuberculosis, world leaders committed to mobilize $13 billion a year by 2022 for TB prevention and care, including preventive testing and treatment for 30 million people. Also in September, QIAGEN and DiaSorin launched an automated, CE-marked workflow for processing a version of QFT-Plus on DiaSorin's widely used LIAISON immunodiagnostic instruments. More than 7,000 LIAISON systems have been placed worldwide, primarily in hospital laboratories. Co-marketing has begun in Europe. Availability is planned for the United States in 2019 and China in 2020.
- QIAstat-Dx, the highly flexible, one-step automation system for multiplex PCR analysis, is establishing a footprint in the growing market for syndromic testing. QIAGEN has launched the next-generation solution for diagnosis of complex syndromes in Europe and other markets, with the first two CE-IVD marked tests offering differential diagnosis of respiratory and gastrointestinal (GI) infections. The GI panel was recently upgraded to include comprehensive viral coverage, along with bacterial and parasitic syndromes. QIAstat-Dx benefits patients and saves money in healthcare with easy-to-use tests that can be analyzed rapidly delivering results in about one hour to enable quick, accurate treatment decisions in hospitals, clinics or laboratories. QIAstat-Dx is on track to exceed 100 placements by year-end 2018, and QIAGEN plans regulatory submissions for an expected U.S. launch in 2019.
- Next-generation sequencing (NGS), continues to gain momentum from QIAGEN's universal solutions for DNA and RNA sequencing on any platform, as well as the GeneReader NGS System, the world's first truly Sample to Insight benchtop NGS automation system. QIAGEN recently launched QIAseq FastSelect RNA Removal Kits, a breakthrough technology enabling faster, simpler library preparation to address a bottleneck in RNA sequencing on any platform. The removal kits join QIAGEN's industry-leading portfolio of solutions to optimize RNA sequencing workflows. Meanwhile, the GeneReader system is growing in placements and consumable sales amid ongoing validation from studies of clinical oncology variants presented at research meetings such as the American Society of Human Genetics (ASHG) in October.
- In Personalized Healthcare QIAGEN received U.S. Food and Drug Administration approval in September for the therascreen® EGFR RGQ PCR Kit as a companion diagnostic to help guide the use of Pfizer's VIZIMPRO® (dacomitinib) as a first-line treatment of patients with non-small cell lung cancer (NSCLC). This is QIAGEN's first approved companion diagnostic with Pfizer, and third FDA approval for the therascreen EGFR kit.
- Another strategy for cancer treatment, immuno-oncology, gained visibility recently when the Nobel Prize in Medicine was awarded to two scientists who pioneered research on the interaction of genetically-driven proteins and T-cells, culminating in the development of immuno-oncology drugs. QIAGEN is partnering with leading pharma companies in immuno-oncology to co-develop companion diagnostics that can aid in the selection of patients based on testing with proprietary biomarkers and gene expression profiles that identify those most likely to respond.

Three- and Nine-Month Periods Ended September 30, 2018 compared to Three- and Nine-Month Periods Ended September 30, 2017

Net Sales

In the third quarter of 2018, net sales grew 3.8% to $377.9 million compared to $364.0 million in the third quarter of 2017, and was impacted by 2.7% percentage points from adverse currency movements against the U.S. dollar. We experienced good volume gains across the consumables and related revenues portfolio, while instrument sales were supported by solid placements of the QIAsymphony automation system. Net sales grew 7.6% in the first nine months of 2018 to $1,098.7 million from $1,020.7 million in the year-ago period, including 1.2% percentage points from positive currency movements against the U.S. dollar.

Net sales by product category and customer class	Third quarter 2018			First nine months 2018		
	Sales (In $ m)	% change	% of sales	Sales (In $ m)	% change	% of sales
Consumables and related revenues	$331	+3%	88%	$971	+8%	88%
Instruments	$46	+9%	12%	$127	+8%	12%
Molecular Diagnostics[(1)]	$189	+5%	50%	$537	+10%	49%
Applied Testing	$35	-1%	9%	$98	+1%	9%
Pharma	$71	+3%	19%	$216	+7%	20%
Academia	$83	+4%	22%	$247	+7%	22%

(1) Includes companion diagnostic co-development revenues (Q3 2018: $17 million, +48% and 9M 2018: $39 million, +60%) and U.S. HPV sales (Q3 2018: $6 million vs. Q3 2017: $8 million and 9M 2018: $15 million vs. 9M 2017: $19 million)

Molecular Diagnostics grew 5% in the third quarter of 2018, and this included an adverse currency movement of four percentage points of sales growth, and advanced on gains in QuantiFERON-TB sales and solid growth in Personalized Healthcare, primarily due to higher revenues from companion diagnostic pharma collaborations. In the first nine months of 2018, Molecular Diagnostics advanced 10%, and were supported by one percentage point of sales growth from positive currency movements compared to the year-ago period.

Applied Testing declined 1% during the third quarter of 2018, and this included an adverse currency movement of two percentage points of sales growth. The performance was impacted by the divestment of a portfolio of veterinary testing products in early 2018 and a challenging comparison to strong sales after a new U.S. forensics product launch in 2017. In the first nine months of 2018, Applied Testing sales increased 1%, and were supported by two percentage points of sales growth from positive currency movements.

Pharma sales rose 3% in the third quarter of 2018, and this included an adverse currency movement of two percentage point of sales growth. Positive customer demand trends supported higher sales in the Americas region, which more than offset slower trends in the Asia-Pacific/Japan region. In the first nine months of 2018, Pharma sales increased 7%, and was supported by two percentage points of sales growth from favorable currency movements.

Academia grew 4% in the third quarter of 2018, and this included an adverse currency movement of one percentage point of sales growth. Academia experienced growth in both consumables and instrument sales, and led by a solid performance in the Asia-Pacific/Japan region. In the first nine months of 2018, Academia sales rose 7% and were supported by three percentage points of favorable currency movements to sales growth.

Net sales by geographic region	Third quarter 2018			First nine months 2018		
	Sales (In $ m)	% change	% of sales	Sales (In $ m)	% change	% of sales
Americas	$186	+8%	49%	$524	+10%	48%
Europe / Middle East / Africa	$111	-5%	30%	$347	+5%	32%
Asia-Pacific / Japan	$80	+8%	21%	$225	+6%	20%

Q3 2018 and 9M 2018: Rest of world represented less than 1% of net sales.

The Americas and Asia-Pacific / Japan regions contributed to the improved performance in the third quarter of 2018. The Americas region led with 8% growth with significant growth in Molecular Diagnostics. The EMEA region experienced 5% decline in the third quarter of 2018 including impacts of adverse currency of six percentage points. Weaker sales in France and the Benelux region were partially offset by gains in Italy and Germany as well as the geographic expansion in the Middle East and Africa. The Asia-Pacific/Japan region experienced 8% growth, and this included adverse currency movements of three percentage points. The top seven emerging markets provided 17% of sales and 7% of growth including the loss of twelve percentage points of sales growth due to adverse currency movements. During the first nine months of 2018, these top seven emerging markets delivered 7% growth including

three percentage points of adverse currency movements.

Gross Profit

Gross profit was $256.8 million (68% of net sales) for the three-month period ended September 30, 2018, as compared to $240.9 million (66% of net sales) in the same period in 2017. Gross profit for the nine-month period ended September 30, 2018 was $736.2 million (67% of net sales) as compared to $661.3 million (65% of net sales) for the same period of 2017. Generally, our consumables and related products have a higher gross margin than our instrumentation products and service arrangements. Fluctuations in the sales levels of these products and services can result in fluctuations in gross margin between periods. The 2018 growth in consumables contributed to the higher margin in the nine-month period ended September 30, 2018.

Amortization expense related to developed technology and patent and license rights, which have been acquired in business combinations, is included in cost of sales. In the third quarter of 2018, the amortization expense on acquisition-related intangibles within cost of sales decreased to $13.2 million compared to $16.8 million in the same period of 2017. For the nine-month period ended September 30, 2018, the amortization expense on acquisition-related intangible amortization was $43.6 million compared to $58.3 million in the same period of 2017. The decrease in amortization expense is due to the completion of amortization for significant intangible assets acquired in 2007 and contributed to the increase in gross margin during the nine-month period ended September 30, 2018. We expect that our acquisition-related intangible amortization will increase as a result of future acquisitions.

Research and Development

Research and development expenses increased by 10% to $42.0 million (11% of net sales) in the third quarter of 2018, compared to $38.3 million (11% of net sales) in the same period in 2017. For the nine-month period ended September 30, 2018, research and development expenses increased by 7% to $121.2 million (11% of net sales) compared to $113.1 million (11% of net sales) for the same period in 2017. The increase in research and development costs in 2018 reflects our ongoing investments in NGS and our life sciences portfolio, together with regulatory activity in support of new products. Research and development costs during the first nine months of 2018 also reflect incremental costs due to the acquisition of STAT-Dx in 2018. Lower expense in 2017 includes a $0.7 million reduction in costs as a result of forfeitures of share-based compensation. As we continue to discover, develop and acquire new products and technologies, we expect to incur additional expenses related to facilities, licenses and employees engaged in research and development. Overall, research and development costs are expected to increase as a result of seeking regulatory approvals, including U.S. FDA Pre-Market Approval (PMA), U.S. FDA 510(k) clearance and EU CE approval of certain assays or instruments. Further, business combinations, along with the acquisition of new technologies, may increase our research and development costs in the future. We have a strong commitment to innovation and expect to continue to make investments in our research and development efforts.

Sales and Marketing

Sales and marketing expenses increased by 1% to $96.5 million (26% of net sales) in the third quarter of 2018 from $95.7 million (26% of net sales) in the same period of 2017. For the nine-month period ended September 30, 2018, sales and marketing expenses increased by 4% to $294.4 million (27% of net sales) from $283.3 million (28% of net sales) for the same period in 2017. We experienced efficiencies due to a lower cost base following the realignment of marketing activities as part of restructuring projects which were offset by higher personnel costs as well as initiatives for new product launches. Sales and marketing expenses are primarily associated with personnel, commissions, advertising, trade shows, publications, freight and logistics expenses, and other promotional expenses. We anticipate that absolute sales and marketing costs will increase along with new product introductions and growth in sales of our products, but decrease as a percentage of sales.

General and Administrative, Restructuring, Integration and Other, net

General and administrative, restructuring, integration and other costs, net were $31.9 million (8% of net sales) in the third quarter of 2018 as compared to $32.9 million (9% of net sales) in the third quarter of 2017. During the nine-month period ended September 30, 2018, we recorded general and administrative, restructuring, integration and other costs, net of $112.7 million (10% of net sales) compared to $125.4 million (12% of net sales) for the same period of 2017. The decrease in the nine-month period ended September 30, 2018 compared to the same period of 2017 reflects lower restructuring costs in 2018 compared to $17.9 million in the first nine months of 2017 as discussed in Note 4 "Restructuring". Additionally, litigation related charges totaled $8.2 million in 2018 as compared to $13.4

million in the first nine months of 2017. The first nine months of 2018 include a $4.8 million revaluation gain of a minority interest investment in connection with the acquisition as discussed in Note 5 "Investments", and overall lower acquisition and integration costs which were partially offset higher compensation costs. As we further integrate acquired companies and pursue opportunities to gain efficiencies, we expect to continue to incur additional business integration costs in 2018. Over time, we believe the integration activities will reduce expenses as we improve efficiency in the combined 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 based on the use of the asset.

We recorded amortization expense on acquisition-related intangibles within operating expense of $9.4 million during the quarter ended September 30, 2018 compared to $10.0 million for same period in 2017. We recorded amortization expense on acquisition-related intangibles within operating expense of $29.6 million during the nine-month period ended September 30, 2018 compared to $29.4 million for the same period in 2017. We expect that our acquisition-related intangible amortization will increase as a result of future acquisitions.

Other Income (Expense), net

Total other expense was $4.8 million and $21.0 million in the three- and nine-month periods ended September 30, 2018, respectively, compared to $12.3 million and $29.5 million in the same periods in 2017. Total other expense, net is primarily the result of interest expense, partially offset by interest income and other income (expense), including impacts of foreign currency transactions.

Interest expense increased to $16.3 million during the quarter ended September 30, 2018 compared to $12.0 million in the same period of 2017. During the nine-month periods ended September 30, 2018 and 2017, we recorded interest expense of $47.1 million and $32.7 million, respectively. Interest costs primarily relate to debt, discussed in Note 9 "Debt" in the accompanying notes to the condensed consolidated financial statements and the increase in interest expense reflects the issuance of cash convertible notes in the second half of 2017.

For the three-month periods ended September 30, 2018 and 2017, interest income was $5.3 million and $2.7 million, respectively. For the nine-month period ended September 30, 2018, interest income increased to $15.1 million from $6.3 million in the same period in 2017. Interest income primarily includes interest earned on cash and cash equivalents, short term investments, and income related to certain interest rate derivatives as discussed in Note 7 "Derivatives and Hedging" in the accompanying condensed consolidated financial statements.

Other income, net was $6.1 million and $11.0 million in the three- and nine-month periods ended September 30, 2018, respectively, compared to other expense, net of $2.9 million and $3.1 million in the same periods in 2017. Other income in 2018 primarily reflects the unrealized gains, net on investments as discussed further in Note 5 "Investments", which totaled $1.2 million and $14.8 million for the three and nine months ended September 30, 2018, respectively. In the nine months ended September 30, 2018, we recorded a divestiture gain of $8.0 million as discussed in Note 3 "Acquisitions and Divestitures". Other income was partially offset by impairments, including investment impairments as discussed further in Note 5, which totaled $6.4 million and $17.0 million in the three and nine months ended September 30, 2018. For the three- and nine-month periods ended September 30, 2018, we recorded net losses on foreign currency transactions of $3.6 million and $10.2 million, respectively, compared to $1.0 million, and $3.8 million in the same periods in 2017 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 34%. 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 the third quarters of 2018 and 2017, our effective tax rates were 16.5% and 6.1%, respectively. In the nine-month periods ended September 30, 2018 and 2017, the effective tax rates were 17.7% and 0.5% respectively. Additionally, in 2018 and 2017, tax expense on foreign operations was favorably impacted by lower income tax rates and partial tax exemptions on foreign income primarily derived from operations in Germany, Singapore, Luxembourg, Ireland and Switzerland. These foreign tax benefits are due to a combination of favorable tax laws, rules, rulings, and exemptions in these jurisdictions. In particular, we have pre-tax income in Germany which is statutorily exempt from trade tax on intercompany foreign royalty income. Further, we have intercompany financing arrangements through Luxembourg and Ireland in which the intercompany income is partially exempt.

In future periods, our effective tax rate may fluctuate from similar or other factors as discussed in “Changes in tax laws or their application and the termination or reduction of certain government incentives, could adversely impact our overall effective tax rate, results of operations or financial flexibility” in Item 3 Risk Factors of the Annual Report on Form 20-F for the year ended
December 31, 2017.

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 September 30, 2018 and December 31, 2017, we had cash and cash equivalents of $599.8 million and $657.7 million, respectively. 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 September 30, 2018, cash and cash equivalents had decreased by $57.9 million from December 31, 2017, primarily due to cash provided by operating activities of $249.0 million, offset by cash used in investing activities of $232.6 million and cash used in financing activities of $67.5 million. As of September 30, 2018 and December 31, 2017, we had working capital of $501.0 million and $1.3 billion, respectively.

Operating Activities. For the nine months ended September 30, 2018 and 2017, we generated net cash from operating activities of $249.0 million and $210.7 million, respectively. While net income was $129.4 million for the nine months ended September 30, 2018, non-cash components in income included $156.5 million of depreciation and amortization, $19.6 million of unrealized gains on investments, and $17.0 million of non-cash impairments. Operating cash flows include a net decrease in working capital of $63.3 million excluding changes in fair values of derivative instruments. The current period change in working capital is primarily due to increased inventories, accounts receivable, prepaid expenses and other current assets, and decrease to accounts payable and accrued and other liabilities. Because we rely heavily on cash generated from operating activities to fund our business, a decrease in demand for our products, longer collection cycles or significant technological advances of competitors would have a negative impact on our liquidity.

Investing Activities. Approximately $232.6 million of cash was used in investing activities during the nine months ended September 30, 2018 compared to $371.9 million for the same period in 2017. Cash used in investing activities during the nine months ended September 30, 2018 consisted principally of $172.8 million cash paid for acquisitions, net of cash acquired, $456.2 million paid for short-term investments, $72.3 million paid for purchases of property, plant and equipment, $4.0 million cash paid for collateral assets, as well as $30.7 million paid for intangible assets. These activities were partially offset by $495.6 million from redemptions of short-term investments.

Financing Activities. Financing activities used $67.5 million of cash for the nine months ended September 30, 2018, primarily for purchase of treasury shares totaling $66.6 million. This compares to cash provided by financing activities of $386.0 million for the nine months ended September 30, 2017. Cash provided by financing activities during the nine months ended September 30, 2017 consisted primarily of $329.9 million net cash proceeds from the June 2017 German private placement partially offset by the capital repayment of $243.9 million made to shareholders in connection with the January 2017 synthetic share buyback discussed in Note 12 "Equity."

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 9 "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 9.

In October 2016, we extended the maturity of our €400.0 million syndicated revolving credit facility, which now has a contractual life until December 2021 of which no amounts were utilized at September 30, 2018. The facility can be utilized in euro, British pounds sterling, Swiss franc or U.S. dollar and bears interest of 0.4% 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 September 30, 2018.

In March 2014, we issued $730.0 million aggregate principal amount of Cash Convertible Senior Notes of which $430.0 million is due in 2019 (2019 Notes) and $300.0 million is due in 2021 (2021 Notes). We refer to the 2019 Notes, 2021 Notes and the 2023 Notes, collectively as the “Cash Convertible Notes” which are discussed fully in Note

9. 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. 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 in 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 also have capital lease obligations, including interest, in the aggregate amount of $0.4 million as of September 30, 2018.

Pursuant to the purchase agreements for certain acquisitions and other contractual arrangements, we could be required to make additional contingent cash payments totaling up to $69.3 million based on the achievement of certain revenue and operating results milestones as follows: $5.0 million in the remainder of 2018, $23.7 million in 2019, $16.8 million in 2020, $5.9 million in 2021,$5.9 million in 2024 and $5.0 million and $7.0 million payable in any 12-month period from now through 2028 and 2029, respectively, based on the achievement of certain revenue or other milestones, regulatory approvals or clearances. Of the $69.3 million total contingent obligation, we have assessed the fair value at September 30, 2018 to be $51.4 million, of which $26.0 million is included in accrued and other current liabilities and $25.4 million is included in other long-term liabilities in the accompanying condensed consolidated balance sheet.

In January 2017, we completed a synthetic share repurchase that combined a direct capital repayment with a consolidation of shares. The transaction was announced in August 2016 and involved an approach used by various large, multinational Dutch companies to provide returns to shareholders in a faster and more efficient manner than traditional open-market purchases. $243.9 million was repaid to shareholders through the transaction and the outstanding number of common shares was reduced by 8.9 million, or 3.7%. As discussed further in Note 12 "Equity", the capital repayment program was completed in January 2017.

On April 27, 2016, we announced the launch of our fourth $100 million share repurchase program. As discussed in Note 12, during the third quarter of 2017, we completed the fourth share repurchase program and repurchased 1.9 million QIAGEN shares for $61.0 million (including transaction costs).

On January 31, 2018, we announced our fifth share repurchase program of up to $200 million of our common shares. During 2018, we repurchased 2.0 million QIAGEN shares for $75.3 million (including transaction costs) of which $66.6 million was paid as of September 30, 2018.

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 cannot obtain financing on a timely basis or at satisfactory terms, or implement timely reductions in our expenditures, our business could be adversely affected.

Quantitative and Qualitative Disclosures about Market Risk

Our market risk relates primarily to interest rate exposures on cash, marketable securities, and borrowings and foreign currency exposures on intercompany and third-party transactions. The overall objective of our risk management strategy is to reduce the potential negative earnings effects from changes in interest and foreign currency exchange rates. Exposures are managed through operational methods and financial instruments. We do not use financial instruments for trading or speculative purposes. Our exposure to market risk from changes in interest rates and currency exchange rates has not changed materially from our exposure as discussed in Item 11 of our Annual Report on Form 20-F for the year ended December 31, 2017.

Foreign Currency

QIAGEN N.V.’s functional currency is the U.S. dollar and our subsidiaries’ functional currencies are generally the local currencies of the respective countries in which they are located. 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. Foreign currency transactions in the three- and nine-month periods ended September 30, 2018 resulted in net losses of $3.6 million and $10.2 million, respectively, and $1.0 million and $3.8 million in the same periods ended 2017, respectively, and are included in other income (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 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 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.

We also make use of economic hedges. Further details of our derivative and hedging activities can be found in Note 7 "Derivatives and Hedging" to the accompanying condensed consolidated financial statements.

Recent Authoritative Pronouncements

For information on recent accounting pronouncements impacting our business, see Note 2 to the accompanying condensed consolidated financial statements.

Application of 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 and 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 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 on 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 were reasonably likely to change from period to period, having 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.

Our critical accounting policies are discussed further in Item 5 of our Annual Report on Form 20-F for the year ended December 31, 2017. Actual results in these areas could differ from management’s estimates. Except as discussed below in connection with the adoption of ASC 606, there have been no significant changes in our critical accounting policies during 2018.

Revenue Recognition. We recognize revenue when promised goods or services are transferred to customers in an amount that reflects the consideration that is expected to be received for those goods or services. Identifying performance obligations in a contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation requires management’s judgments and estimates. Sales arrangements which require a measure of progress toward completion by measuring actual hours incurred to date as a proportion of the total budgeted hours of the project also involves management's judgments and estimates. While the majority of our sales agreements contain standard terms and conditions, we do enter into agreements that contain multiple products or services or non-standard terms and conditions. Sometimes it is difficult to determine whether there is more than one performance obligation under a sales agreement and if so, how and when revenue should be recognized is subject to certain estimates or assumptions. Should our judgments and estimates not be correct, revenue recognized for any reporting period could be adversely affected.

Off-Balance Sheet Arrangements

We did not use special purpose entities and did not have off-balance-sheet financing arrangements as of September 30, 2018 and December 31, 2017.

Contractual Obligations

There were no material changes at September 30, 2018 from the contractual obligations disclosed in Item 5 of our Annual Report on Form 20-F for the year ended December 31, 2017.

Legal Proceedings

For information on legal proceedings, see Note 15 "Commitments and Contingencies" to the accompanying condensed consolidated financial statements.

While no assurances can be given regarding the outcome of the proceedings described in Note 15, 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.

Risk Factors

Material risks that may affect our results of operations and financial position appear in Part 1, Item 3 "Key Information" of the Annual Report on Form 20-F for the year ended December 31, 2017. There have been no material changes from the risk factors disclosed in Item 3 of our Form 20-F.