

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

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**FORM 10-Q**

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

**For the quarterly period ended March 30, 2019**

**Commission File Number: 0-18059**

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**PTC Inc.**

**(Exact name of registrant as specified in its charter)**

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**Massachusetts**

(State or other jurisdiction of incorporation or organization)

**04-2866152**

(I.R.S. Employer Identification Number)

**121 Seaport Boulevard, Boston, MA 02210**  
(Address of principal executive offices, including zip code)

**(781) 370-5000**  
(Registrant's telephone number, including area code)

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes  No

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

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

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes  No

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

Title of each class	Trading symbol(s)	Name of each exchange on which registered
Common Stock, \$.01 par value per share	PTC	NASDAQ Global Select Market

There were 115,041,840 shares of our common stock outstanding on May 7, 2019.

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**For the Quarter Ended March 30, 2019**

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**PART I—FINANCIAL INFORMATION**

**ITEM 1. UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**

**PTC Inc.  
CONSOLIDATED BALANCE SHEETS  
(in thousands, except per share data)  
(unaudited)**

	<b>March 30, 2019</b>	<b>September 30, 2018</b>
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$ 294,299	\$ 259,946
Short-term marketable securities	25,428	25,836
Accounts receivable, net of allowance for doubtful accounts of \$719 and \$607 at March 30, 2019 and September 30, 2018, respectively	352,217	129,297
Prepaid expenses	66,210	48,997
Other current assets	52,448	169,708
Total current assets	790,602	633,784
Property and equipment, net	106,837	80,613
Goodwill	1,229,541	1,182,457
Acquired intangible assets, net	192,372	200,202
Long-term marketable securities	30,987	30,115
Deferred tax assets	195,884	165,566
Other assets	169,596	36,285
Total assets	\$ 2,715,819	\$ 2,329,022
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable	\$ 36,685	\$ 53,473
Accrued expenses and other current liabilities	100,319	74,388
Accrued compensation and benefits	73,408	101,784
Accrued income taxes	6,579	18,044
Deferred revenue	381,392	487,590
Total current liabilities	598,383	735,279
Long-term debt	738,700	643,268
Deferred tax liabilities	36,326	5,589
Deferred revenue	10,415	11,852
Other liabilities	84,287	58,445
Total liabilities	1,468,111	1,454,433
Commitments and contingencies (Note 14)		
Stockholders' equity:		
Preferred stock, \$0.01 par value; 5,000 shares authorized; none issued	—	—
Common stock, \$0.01 par value; 500,000 shares authorized; 118,098 and 117,981 shares issued and outstanding at March 30, 2019 and September 30, 2018, respectively	1,181	1,180
Additional paid-in capital	1,523,949	1,558,403
Accumulated deficit	(182,298)	(599,409)
Accumulated other comprehensive loss	(95,124)	(85,585)
Total stockholders' equity	1,247,708	874,589
Total liabilities and stockholders' equity	\$ 2,715,819	\$ 2,329,022

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



**PTC Inc.**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**  
(In thousands, except per share data)  
(unaudited)

	Three months ended		Six months ended	
	March 30, 2019	March 31, 2018	March 30, 2019	March 31, 2018
<b>Revenue:</b>				
License	\$ 61,876	\$ 120,505	\$ 167,198	\$ 240,023
Support and cloud services	187,645	141,948	375,566	287,620
Total software revenue	249,521	262,453	542,764	527,643
Professional services	40,930	45,430	82,376	86,884
Total revenue	290,451	307,883	625,140	614,527
<b>Cost of revenue:</b>				
Cost of license revenue	12,875	11,854	25,438	23,968
Cost of support and cloud services revenue	32,874	34,335	64,071	68,837
Total cost of software revenue	45,749	46,189	89,509	92,805
Cost of professional services revenue	34,155	37,519	67,747	73,938
Total cost of revenue	79,904	83,708	157,256	166,743
Gross margin	210,547	224,175	467,884	447,784
<b>Operating expenses:</b>				
Sales and marketing	103,722	98,390	207,940	197,765
Research and development	61,402	62,197	122,184	126,169
General and administrative	35,371	33,369	73,235	68,389
Amortization of acquired intangible assets	5,930	7,895	11,866	15,716
Restructuring and other charges, net	26,980	114	45,473	219
Total operating expenses	233,405	201,965	460,698	408,258
Operating income (loss)	(22,858)	22,210	7,186	39,526
Interest expense	(11,383)	(10,379)	(21,659)	(20,426)
Other income (expense), net	821	(285)	1,475	(1,083)
Income (loss) before income taxes	(33,420)	11,546	(12,998)	18,017
Provision (benefit) for income taxes	10,093	3,624	9,530	(3,782)
Net income (loss)	\$ (43,513)	\$ 7,922	\$ (22,528)	\$ 21,799
Earnings (loss) per share—Basic	\$ (0.37)	\$ 0.07	\$ (0.19)	\$ 0.19
Earnings (loss) per share—Diluted	\$ (0.37)	\$ 0.07	\$ (0.19)	\$ 0.19
Weighted average shares outstanding—Basic	118,461	116,241	118,392	115,986
Weighted average shares outstanding—Diluted	118,461	117,905	118,392	117,780

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

**PTC Inc.**  
**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)**  
(in thousands)  
(unaudited)

	Three months ended		Six months ended	
	March 30, 2019	March 31, 2018	March 30, 2019	March 31, 2018
Net income (loss)	\$ (43,513)	\$ 7,922	\$ (22,528)	\$ 21,799
Other comprehensive income (loss), net of tax:				
Realized and unrealized hedge gain (loss) arising during the period, net of tax of \$0.2 million and \$0.3 million in the second quarter of 2019 and 2018, respectively, and \$0.2 million and \$0.4 million in the first six months of 2019 and 2018, respectively	(2,955)	(2,046)	826	(2,959)
Net hedge (gain) loss reclassified into earnings, net of tax of \$0 million and \$0.2 million in the second quarter of 2019 and 2018, respectively, and \$0.1 million and \$0.3 million in the first six months of 2019 and 2018, respectively	—	1,511	(549)	2,084
Realized and unrealized gain (loss) on hedging instruments	(2,955)	(535)	277	(875)
Foreign currency translation adjustment, net of tax of \$0 for each period	(4,033)	7,540	(11,602)	12,769
Unrealized gain (loss) on marketable securities, net of tax of \$0 for each period	289	(267)	302	(446)
Amortization of net actuarial pension loss included in net income, net of tax of \$0.2 million and \$0.2 million in the second quarter of 2019 and 2018, respectively and \$0.3 million and \$0.3 million in the first six months of 2019 and 2018, respectively	428	386	858	757
Change in unamortized pension loss during the period related to changes in foreign currency	345	(465)	626	(728)
Other comprehensive income (loss)	(5,926)	6,659	(9,539)	11,477
Comprehensive income (loss)	<u>\$ (49,439)</u>	<u>\$ 14,581</u>	<u>\$ (32,067)</u>	<u>\$ 33,276</u>

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

**PTC Inc.**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(in thousands)  
(unaudited)

	Six months ended	
	March 30, 2019	March 31, 2018
Cash flows from operating activities:		
Net income (loss)	\$ (22,528)	\$ 21,799
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	39,558	42,727
Stock-based compensation	56,374	35,357
Other non-cash items, net	247	189
Loss on disposal of fixed assets	32	22
Changes in operating assets and liabilities, excluding the effects of acquisitions:		
Accounts receivable	54,501	32,027
Accounts payable and accrued expenses	423	(9,474)
Accrued compensation and benefits	(28,291)	(29,656)
Deferred revenue	36,947	59,027
Accrued income taxes	(15,677)	(14,134)
Other current assets and prepaid expenses	1,723	(7,217)
Other noncurrent assets and liabilities	39,035	5,931
<b>Net cash provided by operating activities</b>	<b>162,344</b>	<b>136,598</b>
Cash flows from investing activities:		
Additions to property and equipment	(51,268)	(11,139)
Purchase of intangible asset	—	(3,000)
Purchases of short- and long-term marketable securities	(14,460)	(13,794)
Proceeds from maturities of short- and long-term marketable securities	14,227	8,240
Acquisitions of businesses, net of cash acquired	(69,453)	(3,000)
Purchases of investments	(7,500)	—
Settlement of net investment hedges	114	—
<b>Net cash used in investing activities</b>	<b>(128,340)</b>	<b>(22,693)</b>
Cash flows from financing activities:		
Borrowings under credit facility	205,000	50,000
Repayments of borrowings under credit facility	(110,000)	(120,000)
Repurchases of common stock	(64,994)	—
Proceeds from issuance of common stock	4,158	7,472
Contingent consideration	(1,575)	(3,176)
Payments of withholding taxes in connection with stock-based awards	(34,491)	(33,942)
<b>Net cash used in financing activities</b>	<b>(1,902)</b>	<b>(99,646)</b>
Effect of exchange rate changes on cash, cash equivalents and restricted cash	2,237	5,837
Net increase in cash, cash equivalents, and restricted cash	34,339	20,096
Cash, cash equivalents, and restricted cash, beginning of period	261,093	281,209
Cash, cash equivalents, and restricted cash, end of period	<b>\$ 295,432</b>	<b>\$ 301,305</b>

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

**PTC Inc.**  
**CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**  
(in thousands)  
(unaudited)

Three months ended March 30, 2019

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
<b>Balance as of December 29, 2018</b>	118,657	\$ 1,187	\$ 1,553,875	\$ (138,785)	\$ (95,108)	\$ 1,321,169
Common stock issued for employee stock-based awards	52	—	—	—	—	—
Shares surrendered by employees to pay taxes related to stock-based awards	(8)	—	(703)	—	—	(703)
Common stock issued for employee stock purchase plan	122	1	8,797	—	—	8,798
Compensation expense from stock-based awards	—	—	26,967	—	—	26,967
Net income	—	—	—	(43,513)	—	(43,513)
Repurchases of common stock	(725)	(7)	(64,987)	—	—	(64,994)
Unrealized loss on net investment hedges, net of tax	—	—	—	—	2,955	2,955
Foreign currency translation adjustment	—	—	—	—	(4,033)	(4,033)
Unrealized loss on available-for-sale securities, net of tax	—	—	—	—	289	289
Change in pension benefits, net of tax	—	—	—	—	773	773
<b>Balance as of March 30, 2019</b>	<b>118,098</b>	<b>\$ 1,181</b>	<b>\$ 1,523,949</b>	<b>\$ (182,298)</b>	<b>\$ (95,124)</b>	<b>\$ 1,247,708</b>

Six months ended March 30, 2019

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
<b>Balance as of September 30, 2018</b>	117,981	\$ 1,180	\$ 1,558,403	\$ (599,409)	\$ (85,585)	\$ 874,589
ASU 2016-16 adoption	—	—	—	72,261	—	72,261
ASC 606 adoption	—	—	—	367,378	—	367,378
Common stock issued for employee stock-based awards	1,108	11	(11)	—	—	—
Shares surrendered by employees to pay taxes related to stock-based awards	(388)	(4)	(34,487)	—	—	(34,491)
Common stock issued	—	—	(140)	—	—	(140)
Common stock issued for employee stock purchase plan	122	1	8,797	—	—	8,798
Compensation expense from stock-based awards	—	—	56,374	—	—	56,374
Net income	—	—	—	(22,528)	—	(22,528)
Repurchases of common stock	(725)	(7)	(64,987)	—	—	(64,994)
Unrealized loss on cash flow hedges, net of tax	—	—	—	—	(385)	(385)
Unrealized loss on net investment hedges, net of tax	—	—	—	—	662	662
Foreign currency translation adjustment	—	—	—	—	(11,602)	(11,602)
Unrealized loss on available-for-sale securities, net of tax	—	—	—	—	302	302
Change in pension benefits, net of tax	—	—	—	—	1,484	1,484
<b>Balance as of March 30, 2019</b>	<b>118,098</b>	<b>\$ 1,181</b>	<b>\$ 1,523,949</b>	<b>\$ (182,298)</b>	<b>\$ (95,124)</b>	<b>\$ 1,247,708</b>



Three months ended March 31, 2018

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
<b>Balance as of December 30, 2017</b>	116,126	\$ 1,161	\$ 1,594,546	\$ (637,519)	\$ (69,089)	\$ 889,099
Common stock issued for employee stock-based awards	60	1	(1)	—	—	—
Shares surrendered by employees to pay taxes related to stock-based awards	(6)	—	(454)	—	—	(454)
Common stock issued for employee stock purchase plan	158	1	7,471	—	—	7,472
Compensation expense from stock-based awards	—	—	17,026	—	—	17,026
Net income	—	—	—	7,922	—	7,922
Unrealized loss on hedging instruments, net of tax	—	—	—	—	(535)	(535)
Foreign currency translation adjustment	—	—	—	—	7,540	7,540
Unrealized loss on available-for-sale securities, net of tax	—	—	—	—	(267)	(267)
Change in pension benefits, net of tax	—	—	—	—	(79)	(79)
<b>Balance as of March 31, 2018</b>	<b>116,338</b>	<b>\$ 1,163</b>	<b>\$ 1,618,588</b>	<b>\$ (629,597)</b>	<b>\$ (62,430)</b>	<b>\$ 927,724</b>

Six months ended March 31, 2018

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
<b>Balance as of September 30, 2017</b>	115,333	\$ 1,153	\$ 1,609,030	\$ (650,840)	\$ (73,907)	\$ 885,436
ASU 2016-09 adoption	—	—	681	(556)	—	125
Common stock issued for employee stock-based awards	1,377	14	(14)	—	—	—
Shares surrendered by employees to pay taxes related to stock-based awards	(530)	(5)	(33,937)	—	—	(33,942)
Common stock issued for employee stock purchase plan	158	1	7,471	—	—	7,472
Compensation expense from stock-based awards	—	—	35,357	—	—	35,357
Net income	—	—	—	21,799	—	21,799
Unrealized loss on cash flow hedges, net of tax	—	—	—	—	(875)	(875)
Foreign currency translation adjustment	—	—	—	—	12,769	12,769
Unrealized loss on available-for-sale securities, net of tax	—	—	—	—	(446)	(446)
Change in pension benefits, net of tax	—	—	—	—	29	29
<b>Balance as of March 31, 2018</b>	<b>116,338</b>	<b>\$ 1,163</b>	<b>\$ 1,618,588</b>	<b>\$ (629,597)</b>	<b>\$ (62,430)</b>	<b>\$ 927,724</b>

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

**PTC Inc.**  
**NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**  
**(unaudited)**

**1. Basis of Presentation**

**General**

The accompanying unaudited condensed consolidated financial statements include the accounts of PTC Inc. and its wholly owned subsidiaries and have been prepared by management in accordance with accounting principles generally accepted in the United States of America and in accordance with the rules and regulations of the Securities and Exchange Commission regarding interim financial reporting. Accordingly, they do not include all the information and footnotes required by generally accepted accounting principles for complete financial statements. While we believe that the disclosures presented are adequate in order to make the information not misleading, these unaudited quarterly financial statements should be read in conjunction with our annual consolidated financial statements and related notes included in our Annual Report on Form 10-K for the fiscal year ended September 30, 2018. In the opinion of management, the accompanying unaudited condensed consolidated financial statements contain all adjustments, consisting only of those of a normal recurring nature, necessary for a fair statement of our financial position, results of operations and cash flows at the dates and for the periods indicated. The September 30, 2018 Consolidated Balance Sheet included herein is derived from our audited consolidated financial statements.

Unless otherwise indicated, all references to a year mean our fiscal year, which ends on September 30. Our fiscal quarters end on a Saturday following a thirteen-week calendar and may result in different quarter end dates year to year. The second quarter of 2019 ended on March 30, 2019 and the second quarter of 2018 ended on March 31, 2018. The results of operations for the six months ended March 30, 2019 are not necessarily indicative of the results expected for the remainder of the fiscal year.

**Changes in Presentation and Reclassifications**

On October 1, 2018, we adopted ASU No. 2014-09, Revenue from Contracts with Customers: Topic 606 (ASC 606). Results for reporting periods beginning on or after October 1, 2018 are presented under ASC 606, while prior period amounts are not adjusted and continue to be reported in accordance with the guidance provided by ASC 985-605, *Software-Revenue Recognition* and revenues for non-software deliverables in accordance with ASC 605-25, *Revenue Recognition, Multiple-Element Arrangements* (ASC 605). In connection with the adoption of ASC 606, we changed our presentation of the statement of operations to reflect revenue and associated costs as license, support and cloud services, and professional services. For the prior year period, all components of subscription licenses (including support) are included in license revenue. Prior to our adoption of ASC 606, revenues from subscription licenses and support thereon were not separated and were previously included in subscription revenue in our consolidated statement of operations since we did not have VSOE of fair value for support on subscription sales. In addition, revenue and costs associated with our cloud services, which are immaterial and were previously reported in subscription revenue, are classified as support and cloud services for all periods presented.

Effective at the beginning of fiscal 2019, in accordance with the adoption of ASU 2017-07, Compensation-Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, all non-service net periodic pension costs are now presented in Other income (expense), net on the Consolidated Statement of Operations. The prior period non-service net periodic pension cost amounts have been reclassified for comparability.

Effective at the beginning of fiscal 2019, in accordance with the adoption of ASU 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash, restricted cash is now included with cash and cash equivalents in the net cash increase (decrease), beginning of period total amount and end of period total amount on the Consolidated Statements of Cash Flows. The prior period restricted cash amounts have been reclassified for comparability. As of March 30, 2019 and September 30, 2018, \$1.1 million of restricted cash was included in other current assets.

**Recent Accounting Pronouncements**

*Recently Adopted Accounting Pronouncements*

*Revenue Recognition*

On October 1, 2018, we adopted ASC 606, which supersedes substantially all existing revenue recognition guidance under U.S. GAAP. We adopted ASC 606 using the modified retrospective method, under which the cumulative effect of initially applying ASC 606 was recorded as a reduction to accumulated deficit with no restatement of comparative periods.

The core principle of ASC 606 is to recognize revenue when promised goods or services are transferred to a customer in an amount that reflects the consideration that is expected to be received for those goods or services. Under the new guidance, an entity is required to evaluate revenue recognition through a five-step process: (1) identifying a contract with a customer; (2) identifying the performance obligations in the contract; (3) determining the transaction price; (4) allocating the transaction price to the performance obligations in the contract; and (5) recognizing revenue when (or as) the entity satisfies a performance obligation. The standard also requires disclosure of the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. In applying the principles of ASC 606, more judgment and estimates are required within the revenue recognition process than is required under previous U.S. GAAP, including identifying performance obligations, estimating the amount of variable consideration to include in the transaction price, and estimating the value of each performance obligation to allocate the total transaction price to each separate performance obligation.

The most significant impact of ASC 606 relates to accounting for our subscription arrangements that include term-based on-premise software licenses bundled with support. Under previous GAAP (ASC 605, through September 30, 2018), revenue attributable to these subscription licenses was recognized ratably over the term of the arrangement because VSOE does not exist for the undelivered support element as it is not sold separately. Under the new standard, the requirement to have VSOE for undelivered elements to enable the separation of revenue for the delivered software licenses is eliminated. Accordingly, under the new standard we recognize as revenue a portion of the subscription fee upon delivery of the software license. Revenue recognition related to our perpetual licenses and related support contracts, professional services and cloud offerings is substantially unchanged, with support and cloud revenue being recorded ratably over the contract term. Due to the complexity of certain of our contracts, the actual revenue recognition treatment required under the new standard may be dependent on contract-specific terms and, therefore, may vary in some instances.

Upon implementation of the new standard in fiscal 2019, we made prospective revisions to contract terms with our customers that will result in shortening the initial, non-cancellable term of our multi-year subscriptions to one year for contract periods that begin on or after October 1, 2018. This change will result in annual contractual periods for most of our software subscriptions, the license portion of which will be recognized at the beginning of each annual contract period and the support portion of which will be recognized ratably over the one-year contractual period. As a result, we anticipate one year of subscription revenue will be recognized for each contract each year; however, more of the revenue will be recognized in the quarter that the contract period begins and less will be recognized in the subsequent three quarters of the contract than under ASC 605.

Under the modified retrospective method, we evaluated each contract that was ongoing on October 1, 2018 as if that contract had been accounted for under ASC 606 from contract inception. Some license revenue related to subscription arrangements that would have been recognized in future periods under current GAAP was recast under ASC 606 as if the revenue had been recognized in prior periods. Under this transition method, we did not adjust historical reported revenue amounts. Instead, the revenue that would have been recognized under this method prior to the adoption date was recorded as an adjustment to accumulated deficit and will not be recognized as revenue in future periods as previously expected. Because license revenue associated with subscription contracts is recognized up front instead of over time under ASC 606, a material portion of our deferred revenue was adjusted to accumulated deficit upon adoption.

Another significant provision under ASC 606 includes the capitalization and amortization of costs associated with obtaining a contract, such as sales commissions. Prior to October 1, 2018, we expensed commissions in the period incurred. Under ASC 606, direct and incremental costs to acquire a contract are capitalized and amortized using a systematic basis over the pattern of transfer of the goods and services to which the asset relates.

Refer to *Note 2. Revenue from Contracts with Customers* for further detail about the impact of the adoption of ASC 606 and further disclosures.

*Income Taxes*

In October 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory. The purpose of ASU 2016-16 is to simplify the income tax accounting of an intra-entity transfer of an asset other than inventory and to record its effect when the transfer occurs. We adopted this amendment beginning in the first quarter of 2019 using the modified retrospective method with a cumulative effect adjustment to accumulated deficit of \$72.3 million, with a corresponding increase of \$75.3 million to deferred tax assets, \$6.0 million decrease to income tax assets and a \$3.0 million decrease to income tax liabilities. The adjustment primarily relates to deductible amortization of intangible assets in Ireland. Post adoption, our effective tax rate no longer includes the benefit of this amortization.

#### *Pension Accounting*

In March 2017, the FASB issued ASU 2017-07, Compensation-Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, which provides guidance on the capitalization, presentation and disclosure of net benefit costs related to post-retirement benefit plans. We adopted the new guidance in the first quarter of 2019 on a full retrospective basis, which resulted in the retrospective reclassification of \$0.2 million and \$0.3 million of non-service net periodic pension cost for the three and six months ended March 31, 2018, respectively, from line items within cost of revenue and operating expenses into Other income (expense), net on the Consolidated Statement of Operations.

#### *Equity Investments*

In January 2016, the FASB issued ASU 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities, which provides guidance for the recognition, measurement, presentation, and disclosure of financial assets and liabilities and requires equity securities to be measured at fair value, unless the measurement alternative method has been elected for equity investments without readily determinable fair values. Adoption of this guidance in the first quarter of fiscal 2019 did not have a material impact on our consolidated financial statements.

#### *Restricted Cash*

In November 2016, the FASB issued ASU 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash. The new guidance requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the Statement of Cash Flows. Adoption of this guidance in the first quarter of fiscal 2019 did not have a material impact on our consolidated financial statements.

#### *Pending Accounting Pronouncements*

##### *Derivative Financial Instruments*

In August 2017, the FASB issued ASU No. 2017-12, "Derivatives and Hedging (Topic 815) Targeted Improvements to Accounting for Hedging Activities", which amends and simplifies existing guidance to allow companies to more accurately present the economic effects of risk management activities in the financial statements. The guidance is effective for annual reporting periods beginning after December 15, 2018 (our fiscal 2020) including interim reporting periods within those annual reporting periods and early adoption is permitted. We are currently evaluating the impact of the new guidance on our consolidated financial statements.

##### *Leases*

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842), which will replace the existing guidance in ASC 840, Leases. The updated standard aims to increase transparency and comparability among organizations by requiring lessees to recognize lease assets and lease liabilities on the balance sheet and to disclose important information about leasing arrangements. ASU 2016-02 is effective for annual periods beginning after December 15, 2018 (our fiscal 2020) and interim periods within those annual periods. Early adoption is permitted and modified retrospective application is required. We are currently evaluating the impact of the new guidance on our consolidated financial statements.

## **2. Revenue from Contracts with Customers**

Upon adoption of ASC 606, we recorded a decrease in accumulated deficit of \$431.9 million (\$367.4 million, net of tax) due to the cumulative effect of the ASC 606 adoption, with the impact primarily derived from revenue related to on-premise subscription software licenses.

#### *Nature of Products and Services*

Our sources of revenue include: (1) subscription, (2) perpetual license, (3) perpetual support and (4) professional services. Revenue is derived from the licensing of computer software products and from related support and/or professional services contracts. We enter into contracts that include combinations of products, support and professional services, which are accounted for as separate performance obligations with differing revenue recognition patterns.

<b>Performance Obligation</b>	<b>When Performance Obligation is Typically Satisfied</b>
<b>Term-based subscriptions</b>	
On-premise software licenses	Point in Time: Upon the later of when the software is made available or the subscription term commences
Support and cloud-based offerings	Over Time: Ratably over the contractual term; commencing upon the later of when the software is made available or the subscription term commences
Perpetual software licenses	Point in Time: when the software is made available
Support for perpetual software licenses	Over Time: Ratably over the contractual term
Professional services	Over time: As services are provided

#### *Judgments and Estimates*

Our contracts with customers for subscriptions typically include commitments to transfer term-based on-premise software licenses bundled with support and/or cloud services. On-premise software is determined to be a distinct performance obligation from support which is sold for the same term of the subscription. For subscription arrangements which include cloud services, we assessed whether the cloud component was highly interrelated with on-premise term software licenses. Other than a limited population of subscriptions, the cloud component is not currently deemed to be interrelated with the on-premise term software and, as a result, cloud services will be accounted for as a distinct performance obligation from the software and support components of the subscription.

Judgment is required to allocate the transaction price to each performance obligation. We use the estimated standalone selling price method to allocate the transaction price for items that are not sold separately. The estimated standalone selling price is determined using all information reasonably available to us, including market conditions and other observable inputs. The corresponding revenues are recognized as the related performance obligations are satisfied. We determined that 50% to 55% of the estimated standalone selling price for subscriptions that contain distinct license and support performance obligations are attributable to software licenses and 45% to 50%, depending upon the product offering, is attributable to support for those licenses.

Our multi-year, non-cancellable on-premise subscription contracts provide customers with an annual right to exchange software within the original subscription with other software. Although the exchange right is limited to software products within a similar product grouping, the exchange right is not limited to products with substantially similar features and functionality as those originally delivered. We determined that this right to exchange previously delivered software for different software represents variable consideration to be accounted for as a liability. We have identified a standard portfolio of contracts with common characteristics and applied the expected value method of determining variable consideration associated with this right. Additionally, where there are isolated situations that are outside of the standard portfolio of contracts due to contract size, longer contract duration, or other unique contractual terms, we used the most likely amount method to determine the amount of variable consideration. In both circumstances, the amount of variable consideration included in the transaction price is constrained by an amount where it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. As of March 30, 2019, the total refund liability was \$23.4 million, primarily associated with the annual right to exchange on-premise subscription software.

## Contract Assets and Contract Liabilities

	March 30, 2019	October 1, 2018, as adjusted
	(in thousands)	
Contract asset	\$ 19,628	\$ 26,265
Deferred revenue	\$ 391,807	\$ 357,490

As of March 30, 2019, our contract assets are expected to be transferred to receivables within the next 12 months and therefore are included in other current assets. Approximately \$14.1 million of the October 1, 2018 contract asset balance was transferred to receivables during the six months ended March 30, 2019 as a result of the right to payment becoming unconditional. The majority of both the contract asset balance and the amounts transferred to receivables relates to two large professional services contracts with invoicing terms based on performance milestones. Additions to contract assets of approximately \$7.5 million related to revenue recognized in the period, net of period billings. There were no impairments of contract assets during the six months ended March 30, 2019.

During the six months ended March 30, 2019, \$246.1 million of revenue that was included in the deferred revenue opening balance was recognized. There were additional deferrals of \$280.4 million, which were primarily related to new billings.

### Costs to Obtain or Fulfill a Contract

The new revenue recognition standard requires the capitalization of certain incremental costs of obtaining a contract, which impacts the period in which we record our commission expense. Prior to our adoption of the new revenue standard, we recognized commissions expense as incurred. Under the new revenue recognition standard, we are required to recognize these expenses over the period of benefit associated with these costs. This results in a deferral of certain commission expenses each period. Upon adoption, we reduced our accumulated deficit by \$70.0 million and recognized an offsetting asset for deferred commission related to contracts that were not completed prior to October 1, 2018.

We recognize an asset for the incremental costs of obtaining a contract with a customer if the benefit of those costs is expected to be longer than one year. These deferred costs are amortized proportionately related to revenue over five years, which is generally longer than the term of the initial contract because of anticipated renewals as commissions for renewals are not commensurate with commissions related to our initial contracts. As of March 30, 2019, deferred costs of \$20.1 million were included in other current assets and \$57.6 million were included in other assets (non-current).

As the revenue recognition pattern has changed under ASC 606, the costs to fulfill contracts has also changed to match this pattern of expense recognition. As of October 1, 2018, this resulted in a \$2.8 million increase in our accumulated deficit with recognition of an offsetting current liability.

### Remaining Performance Obligations

Our contracts with customers include amounts allocated to performance obligations that will be satisfied at a later date. The amounts include additional performance obligations that are not yet recorded in the consolidated balance sheets. As of March 30, 2019, amounts allocated to these additional contractual obligations are \$883.7 million, of which we expect to recognize approximately 90% over the next 24 months, with the remaining amount thereafter.

Disaggregation of Revenue

Revenue	Three months ended			Six months ended		
	As Reported ASC 606	ASC 605	As Reported ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
	(in thousands)					
Subscription license	\$ 51,540			\$ 115,057		
Subscription support & cloud services	83,228			160,652		
Total Subscription	134,768	\$ 162,070	\$ 112,931	275,709	\$ 310,483	\$ 212,939
Perpetual support	104,417	103,564	126,683	214,914	212,789	257,880
Total recurring revenue	239,185	265,634	239,614	490,623	523,272	470,819
Perpetual license	10,336	11,267	22,839	52,141	53,017	56,824
Total software revenue	249,521	276,901	262,453	542,764	576,289	527,643
Professional services	40,930	38,598	45,430	82,376	77,967	86,884
Total revenue	\$ 290,451	\$ 315,499	\$ 307,883	\$ 625,140	\$ 654,256	\$ 614,527

For further disaggregation of revenue by geographic region and product area see *Note 11. Segment and Geographic Information*.

*Practical Expedients*

We elected certain practical expedients with the adoption of the new revenue standard. We do not account for significant financing components if the period between revenue recognition and when the customer pays for the products or services will be one year or less. Additionally, we recognize revenue equal to the amount we have a right to invoice, when the amount corresponds directly with the value to the customer of our performance date.

*Transition Disclosures*

In accordance with the modified retrospective method transition requirements, we will present the financial statement line items impacted and adjusted to compare to presentation under ASC 605 for each of the interim and annual periods during the first year of adoption of ASC 606.

The following tables present our Balance Sheets and Statements of Operations as reported under ASC 606 for the current period with comparative periods reported under ASC 605:

	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	September 30, 2018
<b>ASSETS</b>			
Current assets:			
Cash and cash equivalents	\$ 294,299	\$ 294,299	\$ 259,946
Short-term marketable securities	25,428	25,428	25,836
Accounts receivable <sup>(1)</sup>	352,217	110,510	129,297
Prepaid expenses	66,210	66,509	48,997
Other current assets <sup>(2)</sup>	52,448	153,687	169,708
Total current assets	790,602	650,433	633,784
Property and equipment, net	106,837	106,837	80,613
Goodwill	1,229,541	1,229,541	1,182,457
Acquired intangible assets, net	192,372	192,372	200,202
Long-term marketable securities	30,987	30,987	30,115
Deferred tax assets <sup>(3)</sup>	195,884	228,776	165,566
Other assets <sup>(4)</sup>	169,596	41,750	36,285
Total assets	\$ 2,715,819	\$ 2,480,696	\$ 2,329,022
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>			
Current liabilities:			
Accounts payable	\$ 36,685	\$ 36,685	\$ 53,473
Accrued expenses and other current liabilities <sup>(5)</sup>	100,319	73,719	74,388
Accrued compensation and benefits	73,408	73,408	101,784
Accrued income taxes <sup>(3)</sup>	6,579	1,181	18,044
Deferred revenue <sup>(6)</sup>	381,392	545,168	487,590
Total current liabilities	598,383	730,161	735,279
Long-term debt	738,700	738,700	643,268
Deferred tax liabilities <sup>(3)</sup>	36,326	6,079	5,589
Deferred revenue <sup>(6)</sup>	10,415	8,541	11,852
Other liabilities	84,287	84,287	58,445
Total liabilities	1,468,111	1,567,768	1,454,433
Stockholders' equity:			
Preferred stock	—	—	—
Common stock	1,181	1,181	1,180
Additional paid-in capital	1,523,949	1,523,949	1,558,403
Accumulated deficit	(182,298)	(519,930)	(599,409)
Accumulated other comprehensive loss	(95,124)	(92,272)	(85,585)
Total stockholders' equity	1,247,708	912,928	874,589
Total liabilities and stockholders' equity	\$ 2,715,819	\$ 2,480,696	\$ 2,329,022

The changes in balance sheet accounts due to the adoption of ASC 606 are due primarily to the following:

- (1) Up front license recognition under our subscription contracts and billed but uncollected support and subscription receivables that had corresponding deferred revenue, which were included in other current assets prior to our adoption of ASC 606.
- (2) Contract assets and capitalized commission costs.
- (3) The tax effect of the accumulated deficit impact related to the acceleration of revenue and deferral of costs (primarily commissions).
- (4) The long-term portion of unbilled receivables due to the acceleration of license revenue on multi-year subscription contracts and the long-term portion of capitalized commission costs.
- (5) Refund liability, primarily associated with the annual right to exchange on-premise subscription software described above in *Judgments and Estimates*.
- (6) The decrease in deferred revenue recorded to accumulated deficit upon adoption of ASC 606 primarily related to on-premise subscription software licenses.





	Three months ended			Six months ended		
	As Reported ASC 606	ASC 605	As Reported ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
Revenue:						
License <sup>(1)</sup>	\$ 61,876	\$ 156,131	\$ 120,505	\$ 167,198	\$ 330,036	\$ 240,023
Support and cloud services <sup>(1)</sup>	187,645	120,770	141,948	375,566	246,253	287,620
Total software revenue	249,521	276,901	262,453	542,764	576,289	527,643
Professional services	40,930	38,598	45,430	82,376	77,967	86,884
Total revenue	290,451	315,499	307,883	625,140	654,256	614,527
Cost of revenue:						
Cost of license revenue	12,875	12,245	11,854	25,438	24,592	23,968
Cost of support and cloud services revenue	32,874	32,977	34,335	64,071	63,607	68,837
Total cost of software revenue	45,749	45,222	46,189	89,509	88,199	92,805
Cost of professional services revenue	34,155	32,745	37,519	67,747	64,964	73,938
Total cost of revenue <sup>(2)</sup>	79,904	77,967	83,708	157,256	153,163	166,743
Gross margin	210,547	237,532	224,175	467,884	501,093	447,784
Operating expenses:						
Sales and marketing <sup>(3)</sup>	103,722	109,421	98,390	207,940	216,725	197,765
Research and development	61,402	61,402	62,197	122,184	122,184	126,169
General and administrative	35,371	35,371	33,369	73,235	73,235	68,389
Amortization of acquired intangible assets	5,930	5,930	7,895	11,866	11,866	15,716
Restructuring and other charges, net	26,980	26,980	114	45,473	45,473	219
Total operating expenses	233,405	239,104	201,965	460,698	469,483	408,258
Operating income	(22,858)	(1,572)	22,210	7,186	31,610	39,526
Interest expense	(11,383)	(11,383)	(10,379)	(21,659)	(21,659)	(20,426)
Other income (expense), net	821	1,065	(285)	1,475	1,613	(1,083)
Income (loss) before income taxes	(33,420)	(11,890)	11,546	(12,998)	11,564	18,017
Provision (benefit) for income taxes <sup>(4)</sup>	10,093	140	3,624	9,530	4,346	(3,782)
Net income (loss)	\$ (43,513)	\$ (12,030)	\$ 7,922	\$ (22,528)	\$ 7,218	\$ 21,799

(1) The reduction in license revenue and increase in support revenue is a result of the support component of subscription licenses which is included in license revenue under ASC 605. Additionally, for the three months ended March 30, 2019, license revenue decreased by approximately \$58.3 million as a result of the revenue recorded to accumulated deficit, which would have been recognized during the period and approximately \$15.0 million as a result of revenue recognized during the first quarter of 2019 which would have been recognized during the period. For the six months ended March 30, 2019, license revenue decreased by approximately \$123.3 million as a result of the revenue recorded to accumulated deficit which would have been recognized during the period. This was partially offset by approximately \$48.5 million and \$92.0 million of upfront license revenue recognition on new and renewal bookings for the three- and six-months ending March 30, 2019, respectively.

(2) Cost of revenue under ASC 606 is higher than under ASC 605 due to the treatment of deferred professional services costs under the new accounting guidance, partially offset by the timing of revenue recognition under ASC 606 resulting in lower associated royalty costs.

(3) Sales and marketing costs are lower under ASC 606 due to the amortization of commissions costs capitalized upon adoption of ASC 606, offset by the deferral of ongoing commission expenses under the new accounting guidance.

(4) The benefit for income taxes under ASC 606 includes indirect effects of the adoption.

### 3. Restructuring and Other Charges

Restructuring and other charges, net includes restructuring charges (credits) and headquarters relocation charges.

## Restructuring Charges (Credits)

In October 2018, we initiated a restructuring plan to realign our workforce to shift investment to support Industrial Internet of Things and Augmented Reality strategic high growth opportunities. As this is a realignment of resources rather than a cost-savings initiative, we do not expect this realignment to result in significant cost savings. The restructuring plan was completed in the first quarter of 2019 and resulted in restructuring charges of \$16 million for termination benefits associated with approximately 240 employees, substantially all of which we expect will be paid in fiscal 2019. In the second quarter of 2019, we also recorded \$0.3 million of charges related to prior facility restructuring actions.

In January 2019, we relocated our worldwide headquarters to the Boston Seaport District. Because our prior headquarters lease will not expire until November 2022, we are seeking to sublease that space, but have not yet done so. As a result, we will bear overlapping rent obligations for those premises and, in the second quarter of 2019, we incurred a restructuring charge of approximately \$26.7 million, based on the net present value of remaining lease commitments net of estimated sublease income. From a cash perspective, the free rent and estimated sublease income over the first 18 months on the Seaport headquarters total approximately \$30 million, as compared to the estimated cash outflows of \$34 million on the prior headquarters, which will be incurred over the next 44 months (rent obligations and operating expenses net of estimated sublease income). Restructuring charges and estimated cash outflows could increase if we are unable to sublease our prior headquarters as we expect. Other costs associated with the move were recorded as incurred.

The following table summarizes restructuring accrual activity for the six months ended March 30, 2019:

	<b>Employee severance and related benefits</b>	<b>Facility closures and related costs</b>	<b>Total</b>
	<b>(in thousands)</b>		
October 1, 2018	\$ —	\$ 2,415	\$ 2,415
Charges to operations, net	16,034	26,937	42,971
Cash disbursements	(15,085)	(2,847)	(17,932)
Other non-cash charges	—	4,812	4,812
Foreign exchange impact	6	(34)	(28)
Accrual, March 30, 2019	<u>\$ 955</u>	<u>\$ 31,283</u>	<u>\$ 32,238</u>

The following table summarizes restructuring accrual activity for the six months ended March 31, 2018:

	<b>Employee severance and related benefits</b>	<b>Facility closures and related costs</b>	<b>Total</b>
	<b>(in thousands)</b>		
October 1, 2017	\$ 1,736	\$ 4,508	\$ 6,244
Charges (credit) to operations, net	(395)	(339)	(734)
Cash disbursements	(1,120)	(806)	(1,926)
Foreign exchange impact	22	(47)	(25)
Accrual, March 31, 2018	<u>\$ 243</u>	<u>\$ 3,316</u>	<u>\$ 3,559</u>

Of the accrual for facility closures and related costs, as of March 30, 2019, \$12.4 million is included in accrued expenses and other current liabilities and \$18.9 million is included in other liabilities in the Consolidated Balance Sheets. The accrual for facility closures is net of assumed sublease income of \$13.9 million. The accrual for employee severance and related benefits is included in accrued compensation and benefits in the Consolidated Balance Sheets.

Of the accrual for facility closures and related costs, as of March 31, 2018, \$1.9 million is included in accrued expenses and other current liabilities and \$1.4 million is included in other liabilities in the Consolidated Balance Sheets.

In determining the amount of the facilities accrual, we are required to estimate such factors as future vacancy rates, the time required to sublet properties and sublease rates. These estimates are reviewed quarterly based on known real estate market conditions and the credit-worthiness of subtenants, and may result in revisions to established facility reserves. The accrual is based on the net present value of remaining lease commitments net of estimated sublease income. We had \$31.3 million accrued as of March 30, 2019 related to excess facilities (compared to \$2.4 million at September 30, 2018), representing gross lease commitments with agreements expiring at various dates through 2023 of approximately \$43.6 million, net of committed sublease income of approximately \$1.0 million and uncommitted sublease income of approximately \$11.3 million.

#### Other - Headquarters Relocation Charges

Headquarters relocation charges represent other expenses associated with exiting our Needham headquarters facility and relocating to our new worldwide headquarters in the Boston Seaport District. In the first six months of 2019 we recorded \$1.9 million of accelerated depreciation expense related to shortening the estimated useful lives of leasehold improvements related to the Needham location. In January 2019, we made rental payments for both our new and previous headquarters. Headquarters relocation charges for the second quarter of 2019 include \$0.6 million of rental expense for the Needham facility that overlapped with rental expense for the new Seaport headquarters.

#### 4. Stock-based Compensation

Our equity incentive plan provides for grants of nonqualified and incentive stock options, common stock, restricted stock, restricted stock units (RSUs) and stock appreciation rights to employees, directors, officers and consultants. We award RSUs as the principal equity incentive awards, including performance-based awards that are earned based on achievement of performance criteria established by the Compensation Committee of our Board of Directors. Each RSU represents the contingent right to receive one share of our common stock.

We measure the cost of employee services received in exchange for RSU awards based on the fair value of the RSU awards on the date of grant. That cost is recognized over the period during which an employee is required to provide service in exchange for the award. We account for forfeitures as they occur, rather than estimate expected forfeitures.

Our employee stock purchase plan (ESPP), initiated in the fourth quarter of 2016, allows eligible employees to contribute up to 10% of their base salary, up to a maximum of \$25,000 per year and subject to other plan limitations, toward the purchase of our common stock at a discounted price. The purchase price of the shares on each purchase date is equal to 85% of the lower of the fair market value of our common stock on the first and last trading days of each offering period. The ESPP is qualified under Section 423 of the Internal Revenue Code. We estimate the fair value of each purchase right under the ESPP on the date of grant using the Black-Scholes option valuation model and use the straight-line attribution approach to record the expense over the six-month offering period.

<b>Restricted stock unit activity for the six months ended March 30, 2019</b>	<b>Shares</b>	<b>Weighted Average Grant Date Fair Value (Per Share)</b>
	<b>(in thousands)</b>	
Balance of outstanding restricted stock units October 1, 2018	3,284	\$ 65.93
Granted (1)	1,061	\$ 82.09
Vested	(1,108)	\$ 54.42
Forfeited or not earned	(322)	\$ 63.98
Balance of outstanding restricted stock units March 31, 2019	<u>2,915</u>	<u>\$ 76.48</u>

(1) Restricted stock granted includes 141,000 shares from prior period TSR awards that were earned upon achievement of the performance criteria and vested in November 2018.

Grant Period	Restricted Stock Units	
	Performance-based RSUs (1)	Service-based RSUs (2)
	(Number of Units in thousands)	
First six months of 2019	347	573

- (1) Substantially all the performance-based RSUs were granted to our executive officers. Approximately 147,000 shares are eligible to vest based upon annual performance measures over a three-year period. RSUs not earned for a period may be earned in the third period. To the extent earned, those performance-based RSUs will vest in three substantially equal installments on November 15, 2019, November 15, 2020 and November 15, 2021, or the date the Compensation Committee determines the extent to which the applicable performance criteria have been achieved for each performance period. An additional 200,000 performance-based RSUs are eligible to vest based upon a 2019 performance measure, which RSUs will be forfeited to the extent the performance measure is not achieved. These RSUs will vest, to the extent earned, in three substantially equal installments on November 15, 2019, 2020 and 2021.
- (2) The service-based RSUs were granted to employees, including our executive officers. Substantially all service-based RSUs will vest in three substantially equal annual installments on or about the anniversary of the date of grant.

Compensation expense recorded for our stock-based awards was classified in our Consolidated Statements of Operations as follows:

	Three months ended		Six months ended	
	March 30, 2019	March 31, 2018	March 30, 2019	March 31, 2018
	(in thousands)			
Cost of license revenue	\$ 48	\$ 106	\$ 370	\$ 16
Cost of support and cloud services revenue	1,158	992	2,133	2,303
Cost of professional services revenue	1,906	1,669	3,720	3,375
Sales and marketing	9,522	5,038	19,244	9,917
Research and development	5,190	3,383	10,090	6,343
General and administrative	9,143	5,838	20,817	13,403
Total stock-based compensation expense	\$ 26,967	\$ 17,026	\$ 56,374	\$ 35,357

Stock-based compensation expense includes \$1.4 million and \$2.7 million in the second quarter and first six months of 2019, respectively and \$1.0 million and \$2.1 million in the second quarter and first six months of 2018, respectively, related to the ESPP.

## 5. Earnings per Share (EPS) and Common Stock

### EPS

Basic EPS is calculated by dividing net income by the weighted average number of shares outstanding during the period. Diluted EPS is calculated by dividing net income by the weighted average number of shares outstanding plus the dilutive effect, if any, of outstanding RSUs using the treasury stock method. The calculation of the dilutive effect of outstanding equity awards under the treasury stock method includes consideration of unrecognized compensation expense as additional proceeds.

	Three months ended		Six months ended	
	March 30, 2019	March 31, 2018	March 30, 2019	March 31, 2018
<b>Calculation of Basic and Diluted EPS</b>				
<b>(in thousands, except per share data)</b>				
Net income (loss)	\$ (43,513)	\$ 7,922	\$ (22,528)	\$ 21,799
Weighted average shares outstanding—Basic	118,461	116,241	118,392	115,986
Dilutive effect of restricted stock units	—	1,664	—	1,794
Weighted average shares outstanding—Diluted	118,461	117,905	118,392	117,780
Earnings (loss) per share—Basic	\$ (0.37)	\$ 0.07	\$ (0.19)	\$ 0.19
Earnings (loss) per share—Diluted	\$ (0.37)	\$ 0.07	\$ (0.19)	\$ 0.19

There were 23,000 anti-dilutive shares for the six months ended March 30, 2019. There were no anti-dilutive shares for the six months ended March 31, 2018.

#### Common Stock Repurchases

Our Articles of Organization authorize us to issue up to 500 million shares of our common stock.

Our Board of Directors has authorized us to repurchase up to \$1,500 million of our common stock in the period October 1, 2017 through September 30, 2020. We repurchased \$65.0 million of our common stock in the second quarter and first six months of 2019. We did not repurchase any shares in the second quarter and first six months of 2018. All shares of our common stock repurchased are automatically restored to the status of authorized and unissued.

#### 6. Acquisitions

Acquisition-related costs in the second quarter and first six months of 2019 totaled \$0.4 million and \$0.8 million, respectively, compared to \$0.1 million in the second quarter and first six months of 2018, respectively. Acquisition-related costs include direct costs of potential and completed acquisitions (e.g., investment banker fees and professional fees, including legal and valuation services) and expenses related to acquisition integration activities (e.g., professional fees and severance). In addition, subsequent adjustments to our initial estimated amount of contingent consideration associated with specific acquisitions are included within acquisition-related charges. These costs are classified in general and administrative expenses in the accompanying Consolidated Statements of Operations.

##### Frustum

On November 19, 2018, we acquired Frustum Inc. for \$69.5 million (net of cash acquired of \$0.7 million). We financed the acquisition with borrowings under our credit facility. Frustum is engaged in next-generation computer-aided design, including generative design, an approach that leverages artificial intelligence to generate design options. At the time of the acquisition, Frustum had approximately 12 employees and historical annualized revenues were not material. We do not expect the acquisition to add material revenue in fiscal 2019.

The acquisition of Frustum has been accounted for as a business combination. Assets acquired and liabilities assumed have been recorded at their estimated fair values as of the acquisition date. The fair values of intangible assets were based on valuations using a discounted cash flow model which requires the use of significant estimates and assumptions, including estimating future revenues and costs. The excess of the purchase price over the tangible assets, identifiable intangible assets and assumed liabilities was recorded as goodwill.

The purchase price allocation resulted in \$53.7 million of goodwill, \$17.9 million of purchased software and \$2.1 million of other net liabilities. The acquired technology is being amortized over a useful life of 15 years based on the expected benefit pattern of the assets. The acquired goodwill was allocated to our software products segment and will not be deductible for income tax purposes. The resulting amount of goodwill reflects the expected value that will be created by integrating Frustum generative design technology into our CAD solutions.

#### 7. Goodwill and Intangible Assets

We have two operating and reportable segments: (1) Software Products and (2) Professional Services. We assess goodwill for impairment at the reporting unit level. Our reporting units are

determined based on the components of our operating segments that constitute a business for which discrete financial information is available and for which operating results are regularly reviewed by segment management. Our reporting units are the same as our operating segments.

As of March 30, 2019, goodwill and acquired intangible assets in the aggregate attributable to our Software Products segment was \$1,391.9 million and attributable to our Professional Services segment was \$30.0 million. As of September 30, 2018, goodwill and acquired intangible assets in the aggregate attributable to our Software Products segment was \$1,352.4 million and attributable to our Professional Services segment was \$30.2 million. Acquired intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value of the asset may not be recoverable.

We completed our annual goodwill impairment review as of June 30, 2018 based on a qualitative assessment. Our qualitative assessment included company specific (financial performance and long-range plans), industry, and macroeconomic factors, and consideration of the fair value of each reporting unit relative to its carrying value at the last valuation date. Based on our qualitative assessment, we believe it is more likely than not that the fair values of our reporting units exceed their carrying values and no further impairment testing is required.

Goodwill and acquired intangible assets consisted of the following:

	March 30, 2019			September 30, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Amortization	Net Book Value
(In thousands)						
Goodwill (not amortized)			\$ 1,229,541			\$ 1,182,457
Intangible assets with finite lives (amortized) (1):						
Purchased software	\$ 378,842	\$ 265,881	\$ 112,961	\$ 362,679	\$ 254,059	\$ 108,620
Capitalized software	22,877	22,877	—	22,877	22,877	—
Customer lists and relationships	354,600	279,139	75,461	357,586	270,272	87,314
Trademarks and trade names	18,994	15,044	3,950	19,054	14,786	4,268
Other	3,952	3,952	—	4,003	4,003	—
	\$ 779,265	\$ 586,893	\$ 192,372	\$ 766,199	\$ 565,997	\$ 200,202
Total goodwill and acquired intangible assets			\$ 1,421,913			\$ 1,382,659

(1) The weighted-average useful lives of purchased software, customer lists and relationships, and trademarks and trade names with a remaining net book value are 9 years, 10 years, and 11 years, respectively.

#### Goodwill

Changes in goodwill presented by reportable segments were as follows:

	Software Products	Professional Services	Total
	(in thousands)		
Balance, October 1, 2018	\$ 1,152,720	\$ 29,737	\$ 1,182,457
Frustum acquisition	53,673	—	53,673
Foreign currency translation adjustment	(6,423)	(166)	(6,589)
Balance, March 30, 2019	\$ 1,199,970	\$ 29,571	\$ 1,229,541

#### Amortization of Intangible Assets

The aggregate amortization expense for intangible assets with finite lives was classified in our Consolidated Statements of Operations as follows:

	Three months ended		Six months ended	
	March 30, 2019	March 31, 2018	March 30, 2019	March 31, 2018
	(in thousands)			
Amortization of acquired intangible assets	\$ 5,930	\$ 7,895	\$ 11,866	\$ 15,716
Cost of license revenue	6,842	6,556	13,559	13,231
Total amortization expense	\$ 12,772	\$ 14,451	\$ 25,425	\$ 28,947

## 8. Fair Value Measurements

Fair value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required to be recorded at fair value, we consider the principal or most advantageous market in which we would transact and consider assumptions that market participants would use when pricing the asset or liability, such as inherent risk, transfer restrictions, and risk of nonperformance. GAAP prescribes a fair value hierarchy that requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. Three levels of inputs that may be used to measure fair value:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices in active markets for similar assets or liabilities, quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; or
- Level 3: unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

Money market funds, time deposits and corporate notes/bonds are classified within Level 1 of the fair value hierarchy because they are valued based on quoted market prices in active markets.

Certificates of deposit, commercial paper and certain U.S. government agency securities are classified within Level 2 of the fair value hierarchy. These instruments are valued based on quoted prices in markets that are not active or based on other observable inputs consisting of market yields, reported trades and broker/dealer quotes.

The principal market in which we execute our foreign currency contracts is the institutional market in an over-the-counter environment with a relatively high level of price transparency. The market participants usually are large financial institutions. Our foreign currency contracts' valuation inputs are based on quoted prices and quoted pricing intervals from public data sources and do not involve management judgment. These contracts are typically classified within Level 2 of the fair value hierarchy.

The fair value of our contingent consideration arrangements is determined based on our evaluation of the probability and amount of any earn-out that will be achieved based on expected future performances by the acquired entities. These arrangements are classified within Level 3 of the fair value hierarchy.



Our significant financial assets and liabilities measured at fair value on a recurring basis as of March 30, 2019 and September 30, 2018 were as follows:

	<b>March 30, 2019</b>			
	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Total</b>
<b>(in thousands)</b>				
Financial assets:				
Cash equivalents	\$ 97,748	\$ —	\$ —	\$ 97,748
Marketable securities				
Commercial paper	—	1,975	—	1,975
Corporate notes/bonds	53,439	—	—	53,439
U.S. government agency securities	—	1,001	—	1,001
Forward contracts	—	3,900	—	3,900
	<u>\$ 151,187</u>	<u>\$ 6,876</u>	<u>\$ —</u>	<u>\$ 158,063</u>
Financial liabilities:				
Contingent consideration related to acquisitions	\$ —	\$ —	\$ —	\$ —
Forward contracts	—	3,014	—	3,014
	<u>\$ —</u>	<u>\$ 3,014</u>	<u>\$ —</u>	<u>\$ 3,014</u>

	<b>September 30, 2018</b>			
	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Total</b>
<b>(in thousands)</b>				
Financial assets:				
Cash equivalents	\$ 93,058	\$ —	\$ —	\$ 93,058
Marketable securities				
Certificates of deposit	—	219	—	219
Corporate notes/bonds	54,737	—	—	54,737
U.S. government agency securities	—	995	—	995
Forward contracts	—	2,889	—	2,889
	<u>\$ 147,795</u>	<u>\$ 4,103</u>	<u>\$ —</u>	<u>\$ 151,898</u>
Financial liabilities:				
Contingent consideration related to acquisitions	\$ —	\$ —	\$ 1,575	\$ 1,575
Forward contracts	—	3,419	—	3,419
	<u>\$ —</u>	<u>\$ 3,419</u>	<u>\$ 1,575</u>	<u>\$ 4,994</u>

Changes in the fair value of Level 3 contingent consideration liability associated with our acquisitions were as follows:

	<b>Contingent Consideration</b>	
	<b>(in thousands)</b>	
	<b>Other</b>	
Balance, October 1, 2018	\$	1,575
Payment of contingent consideration		(1,575)
Balance, March 30, 2019	<u>\$</u>	<u>—</u>

**Contingent Consideration**

	(in thousands)		
	Kepware	Other	Total
Balance, October 1, 2017	\$ 8,400	\$ —	\$ 8,400
Addition to contingent consideration	—	2,100	2,100
Payment of contingent consideration	(3,757)	—	(3,757)
Balance, March 31, 2018	<u>\$ 4,643</u>	<u>\$ 2,100</u>	<u>\$ 6,743</u>

In the Consolidated Balance Sheet as of March 30, 2019, there is no accrued contingent consideration. In the Consolidated Balance Sheet as of March 31, 2018, there was \$5.7 million of the contingent consideration liability included in accrued expenses and other current liabilities with the remaining \$1.1 million in other liabilities.

Of the \$1.6 million payments in the first six months of 2019, \$1.6 million represents the fair value of the liabilities recorded at the acquisition date and is included in financing activities in the Consolidated Statements of Cash Flows. Of the \$3.8 million payments in the first six months of 2018, \$3.2 million represents the fair value of the liabilities recorded at the acquisition date and is included in financing activities in the Consolidated Statements of Cash Flows.

*Non-Marketable Equity Investments*

We account for non-marketable equity investments at cost, less any impairment, plus or minus adjustments resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer. We monitor non-marketable equity investments for events that could indicate that the investments are impaired, such as deterioration in the investee's financial condition and business forecasts, and lower valuations in recent or proposed financings. Changes in fair value of non-marketable equity investments are recorded in Other income (expense), net on the Consolidated Statements of Operations. The carrying value of our non-marketable equity investments is recorded in other assets on the Consolidated Balance Sheets and totaled \$9.4 million and \$1.7 million as of March 30, 2019 and September 30, 2018, respectively.

**9. Marketable Securities**

The amortized cost and fair value of marketable securities as of March 30, 2019 and September 30, 2018 were as follows:

**March 30, 2019**

	Amortized cost	Gross unrealized		Fair value
		Gross unrealized gains	losses	
(in thousands)				
Commercial paper	1,975	—	—	1,975
Corporate notes/bonds	53,546	52	(159)	53,439
U.S. government agency securities	1,003	—	(2)	1,001
	<u>\$ 56,524</u>	<u>\$ 52</u>	<u>\$ (161)</u>	<u>\$ 56,415</u>

**September 30, 2018**

	Amortized cost	Gross unrealized		Fair value
		Gross unrealized gains	losses	
(in thousands)				
Certificates of deposit	\$ 220	\$ —	\$ (1)	\$ 219
Corporate notes/bonds	55,140	—	(403)	54,737
U.S. government agency securities	1,004	—	(9)	995
	<u>\$ 56,364</u>	<u>\$ —</u>	<u>\$ (413)</u>	<u>\$ 55,951</u>

Our investment portfolio consists of certificates of deposit, commercial paper, corporate notes/bonds and government securities that have a maximum maturity of two years. The longer the duration of these

securities, the more susceptible they are to changes in market interest rates and bond yields. All unrealized losses are due to changes in market interest rates, bond yields and/or credit ratings.

We review our investments to identify and evaluate investments that have an indication of possible impairment. We concluded that, at March 30, 2019, the unrealized losses were temporary. The following tables summarize the fair value and gross unrealized losses aggregated by category and the length of time that individual securities have been in a continuous unrealized loss position as of March 30, 2019 and September 30, 2018.

	March 30, 2019					
	Less than twelve months		Greater than twelve months		Total	
	Fair Value	Gross unrealized loss	Fair Value	Gross unrealized loss	Fair Value	Gross unrealized loss
	(in thousands)					
Corporate notes/bonds	10,810	(15)	26,784	(144)	37,594	(159)
U.S. government agency securities	—	—	1,001	(2)	1,001	(2)
	<u>\$ 10,810</u>	<u>\$ (15)</u>	<u>\$ 27,785</u>	<u>\$ (146)</u>	<u>\$ 38,595</u>	<u>\$ (161)</u>

	September 30, 2018					
	Less than twelve months		Greater than twelve months		Total	
	Fair Value	Gross unrealized loss	Fair Value	Gross unrealized loss	Fair Value	Gross unrealized loss
	(in thousands)					
Certificates of deposit	\$ 219	\$ (1)	\$ —	\$ —	\$ 219	\$ (1)
Corporate notes/bonds	24,067	(70)	30,670	(333)	54,737	(403)
U.S. government agency securities	—	—	995	(9)	995	(9)
	<u>\$ 24,286</u>	<u>\$ (71)</u>	<u>\$ 31,665</u>	<u>\$ (342)</u>	<u>\$ 55,951</u>	<u>\$ (413)</u>

The following table presents our available-for-sale marketable securities by contractual maturity date as of March 30, 2019 and September 30, 2018.

	March 30, 2019		September 30, 2018	
	Amortized cost	Fair value	Amortized cost	Fair value
	(in thousands)			
Due in one year or less	\$ 25,296	\$ 25,238	\$ 25,792	\$ 25,670
Due after one year through three years	31,228	31,177	30,572	30,281
	<u>\$ 56,524</u>	<u>\$ 56,415</u>	<u>\$ 56,364</u>	<u>\$ 55,951</u>

## 10. Derivative Financial Instruments

Our earnings and cash flows are subject to fluctuations due to changes in foreign currency exchange rates. Our most significant foreign currency exposures relate to Western European countries, Japan, China, Israel, India and Canada. Our foreign currency risk management strategy is principally designed to mitigate the future potential financial impact of changes in the U.S. Dollar value of anticipated transactions and balances denominated in foreign currency resulting from changes in foreign currency exchange rates. We enter into derivative transactions, specifically foreign currency forward contracts, to manage the exposures to foreign currency exchange risk to reduce earnings volatility. We do not enter into derivatives transactions for trading or speculative purposes.

### Non-Designated Hedges

We hedge our net foreign currency monetary assets and liabilities primarily resulting from foreign currency denominated receivables and payables with foreign exchange forward contracts to reduce the risk that our earnings and cash flows will be adversely affected by changes in foreign currency

exchange rates. These contracts have maturities of up to approximately three months. Generally, we do not designate these foreign currency forward contracts as hedges for accounting purposes and changes in the fair value of these instruments are recognized immediately in earnings. Because we enter into forward contracts only as an economic hedge, any gain or loss on the underlying foreign-denominated balance would be offset by the loss or gain on the forward contract. Gains and losses on forward contracts and foreign denominated receivables and payables are included in Other income (expense), net.

As of March 30, 2019 and September 30, 2018, we had outstanding forward contracts with notional amounts equivalent to the following:

Currency Hedged	March 30,	September 30,
	2019	2018
	(in thousands)	
Canadian / U.S. Dollar	8,053	7,334
Euro / U.S. Dollar	336,070	297,730
British Pound / U.S. Dollar	8,769	7,074
Israeli Sheqel / U.S. Dollar	7,399	9,778
Japanese Yen / U.S. Dollar	27,101	37,456
Swiss Franc / U.S. Dollar	7,046	11,944
Danish Kroner/ U.S. Dollar	4,044	1,902
Swedish Kronor / U.S. Dollar	19,509	18,207
Chinese Renminbi / U.S. Dollar	9,409	9,010
All other	10,978	5,521
Total	<u>\$ 438,378</u>	<u>\$ 405,956</u>

The following table shows the effect of our non-designated hedges in the Consolidated Statements of Operations for the three and six months ended March 30, 2019 and March 31, 2018:

Derivatives Not Designated as Hedging Instruments	Location of Gain or (Loss) Recognized in Income	Net realized and unrealized gain or (loss) (excluding the underlying foreign currency exposure being hedged)			
		Three months ended		Six months ended	
		March 30, 2019	March 31, 2018	March 30, 2019	March 31, 2018
		(in thousands)			
Forward Contracts	Other income (expense), net	\$ (1,752)	\$ 2,435	\$ (2,739)	\$ 3,022

In the first three and six months ended March 30, 2019 foreign currency losses, net were \$0.2 million and \$0.4 million, respectively. In the first three and six months ended March 31, 2018 foreign currency losses, net were \$1.8 million and \$3.2 million, respectively.

### Cash Flow Hedges

Our foreign exchange risk management program objective is to identify foreign exchange exposures and implement appropriate hedging strategies to minimize earnings fluctuations resulting from foreign exchange rate movements. We designate certain foreign exchange forward contracts as cash flow hedges of Euro, Yen and SEK denominated intercompany forecasted revenue transactions (supported by third-party sales). All foreign exchange forward contracts are carried at fair value on the Consolidated Balance Sheets and the maximum duration of foreign exchange forward contracts is 15 months.

Cash flow hedge relationships are designated at inception, and effectiveness is assessed prospectively and retrospectively using regression analysis monthly. As the forward contracts are highly effective in offsetting changes to future cash flows on the hedged transactions, we record the effective portion of changes in these cash flow hedges in accumulated other comprehensive income and subsequently reclassify it into earnings in the period during which the hedged transactions are recognized in earnings. Changes in the fair value of foreign exchange forward contracts due to changes in time

value are included in the assessment of effectiveness. Our derivatives are not subject to any credit contingent features. We manage credit risk with counterparties by trading among several counterparties and we review our counterparties' credit at least quarterly.

As of March 30, 2019 and September 30, 2018, we had outstanding forward contracts designated as cash flow hedges with notional amounts equivalent to the following:

Currency Hedged	March 30, 2019	September 30, 2018
	(in thousands)	
Euro / U.S. Dollar	\$ —	\$ 8,495
Japanese Yen / U.S. Dollar	—	2,193
Swedish Kronor / U.S. Dollar	—	1,708
Total	\$ —	\$ 12,396

The following table shows the effect of our derivative instruments designated as cash flow hedges in the Consolidated Statements of Operations for the three and six months ended March 30, 2019 and March 31, 2018 (in thousands):

Derivatives Designated as Hedging Instruments	Gain or (Loss) Recognized in OCI-Effective Portion		Location of Gain or (Loss) Reclassified from OCI into Income- Effective Portion	Gain or (Loss) Recognized from OCI into Income- Effective Portion		Location of Gain or (Loss) Recognized- Ineffective Portion	Gain or (Loss) Recognized- Ineffective Portion	
	Three months ended		Total software revenue	Three months ended		Other income (expense), net	Three months ended	
	March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018
	Forward Contracts	\$ —	\$ (2,339)		\$ —	\$ (1,728)		\$ —

Derivatives Designated as Hedging Instruments	Six months ended		Total software revenue	Six months ended		Other income (expense), net	Six months ended		
	March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018	
	Forward Contracts	\$ 187	\$ (3,382)		\$ 627	\$ (2,382)		\$ —	\$ (35)

As of March 30, 2019, we have no cash flow hedges outstanding and no balance in accumulated other comprehensive loss.

If an underlying forecast transaction does not occur, or it becomes probable that it will not occur, the related hedge gains and losses on the cash flow hedge would be immediately reclassified to Other income (expense), net on the Consolidated Statements of Operations. For the six months ended March 30, 2019 and March 31, 2018, there were no such gains or losses.

#### Net Investment Hedges

We translate balance sheet accounts of subsidiaries with foreign functional currencies into the U.S. Dollar using the exchange rate at each balance sheet date. Resulting translation adjustments are reported as a component of accumulated other comprehensive loss on the Consolidated Balance Sheet. We designate certain foreign exchange forward contracts as net investment hedges against exposure on translation of balance sheet accounts of Euro functional subsidiaries. Net investment hedges partially offset the impact of foreign currency translation adjustment recorded in accumulated other comprehensive loss on the Consolidated Balance Sheet. All foreign exchange forward contracts are

carried at fair value on the Consolidated Balance Sheet and the maximum duration of foreign exchange forward contracts is approximately three months.

Net investment hedge relationships are designated at inception, and effectiveness is assessed retrospectively on a quarterly basis using net equity position of Euro functional subsidiaries. As the forward contracts are highly effective in offsetting exchange rate exposure, we record changes in these net investment hedges in accumulated other comprehensive loss and subsequently reclassify them to foreign currency translation adjustment in accumulated other comprehensive loss at the time of forward contract maturity. Changes in the fair value of foreign exchange forward contracts due to changes in time value are excluded from the assessment of effectiveness. Our derivatives are not subject to any credit contingent features. We manage credit risk with counterparties by trading among several counterparties and we review our counterparties' credit at least quarterly.

As of March 30, 2019 and September 30, 2018, we had outstanding forward contracts designated as net investment hedges with notional amounts equivalent to the following:

Currency Hedged	March 30, 2019	September 30, 2018
	(in thousands)	
Euro / U.S. Dollar	\$ 219,995	\$ —
Total	\$ 219,995	\$ —

The following table shows the effect of our derivative instruments designated as net investment hedges in the Consolidated Statements of Operations for the three and six months ended March 30, 2019 and March 31, 2018 (in thousands):

Derivatives Designated as Hedging Instruments	Gain or (Loss) Recognized in OCI- Effective Portion		Location of Gain or (Loss) Reclassified from OCI into Income- Effective Portion	Gain or (Loss) Reclassified from OCI into Income-Effective Portion		Location of Gain or (Loss) Excluded from Effectiveness Testing	Gain or (Loss) Recognized-Ineffective Portion	
	Three months ended		Accumulated other comprehensive loss	Three months ended		Other income (expense), net	Three months ended	
	March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018
	March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018
Forward Contracts	\$ 1,466	\$ —		\$ (1,813)	\$ —		\$ 1,107	\$ —

Derivatives Designated as Hedging Instruments	Six months ended		Accumulated other comprehensive loss	Six months ended		Other income (expense), net	Six months ended	
	March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018
	March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018		March 30, 2019	March 31, 2018
	March 30, 2019	March 31, 2018	March 30, 2019	March 31, 2018	March 30, 2019	March 31, 2018		
Forward Contracts	\$ 768	\$ —		\$ (1,040)	\$ —		\$ 1,593	\$ —

As of March 30, 2019, we estimate that all amounts reported in accumulated other comprehensive loss will be reclassified to income within the next three months.

The following table shows our derivative instruments measured at gross fair value as reflected in the Consolidated Balance Sheets:

	Fair Value of Derivatives Designated As Hedging Instruments		Fair Value of Derivatives Not Designated As Hedging Instruments	
	March 30, 2019	September 30, 2018	March 30, 2019	September 30, 2018
(in thousands)				
Derivative assets (1):				
Forward Contracts	\$ 2,361	\$ 440	\$ 1,539	\$ 2,449
Derivative liabilities (2):				
Forward Contracts	\$ —	\$ —	\$ 3,014	\$ 3,419

(1) As of March 30, 2019 and September 30, 2018, current derivative assets of \$3.9 million and \$2.9 million, respectively, are recorded in other current assets in the Consolidated Balance Sheets.

(2) As of March 30, 2019 and September 30, 2018, current derivative liabilities of \$3.0 million and \$3.4 million, respectively are recorded in accrued expenses and other current liabilities in the Consolidated Balance Sheets.

#### Offsetting Derivative Assets and Liabilities

We have entered into master netting arrangements that allow net settlements under certain conditions. Although netting is permitted, it is currently our policy and practice to record all derivative assets and liabilities on a gross basis in the Consolidated Balance Sheets.

The following table sets forth the offsetting of derivative assets as of March 30, 2019:

As of March 30, 2019	Gross Amounts Offset in the Consolidated Balance Sheets		Net Amounts of Assets Presented in the Consolidated Balance Sheets	Gross Amounts Not Offset in the Consolidated Balance Sheets		
	Gross Amount of Recognized Assets	Gross Amounts Offset in the Consolidated Balance Sheets		Financial Instruments	Cash Collateral Received	Net Amount
(in thousands)						
Forward Contracts	\$ 3,900	\$ —	\$ 3,900	\$ (3,014)	\$ —	\$ 886

The following table sets forth the offsetting of derivative liabilities as of March 30, 2019:

As of March 30, 2019	Gross Amounts Offset in the Consolidated Balance Sheets		Net Amounts of Liabilities Presented in the Consolidated Balance Sheets	Gross Amounts Not Offset in the Consolidated Balance Sheets		
	Gross Amount of Recognized Liabilities	Gross Amounts Offset in the Consolidated Balance Sheets		Financial Instruments	Cash Collateral Pledged	Net Amount
(in thousands)						
Forward Contracts	\$ 3,014	\$ —	\$ 3,014	\$ (3,014)	\$ —	\$ —

## 11. Segment and Geographic Information

We operate within a single industry segment – computer software and related services. Operating segments as defined under GAAP are components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. Our chief operating decision maker is our President and Chief Executive Officer. We have two operating and reportable segments: (1) Software Products, which includes license, subscription and related support revenue (including updates and technical support) for all our products; and (2) Professional Services, which includes consulting, implementation and training services. We do not allocate sales and marketing or general and administrative expense to our operating segments as these activities are managed on a consolidated basis. Additionally, segment profit does not include stock-based compensation, amortization of intangible assets, restructuring charges and certain other identified costs that we do not allocate to the segments for purposes of evaluating their operational performance.

The revenue and profit attributable to our operating segments are summarized below. We do not produce asset information by reportable segment; therefore, it is not reported.

	Three months ended			Six months ended		
	As Reported ASC 606	ASC 605	As Reported ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
(in thousands)						
Software Products						
Revenue	\$ 249,521	\$ 276,901	\$ 262,453	\$ 542,764	\$ 576,289	\$ 527,643
Operating Costs (1)	93,913	93,386	97,349	185,541	184,231	197,081
Profit	155,608	183,515	165,104	357,223	392,058	330,562
Professional Services						
Revenue	40,930	38,598	45,430	82,376	77,967	86,884
Operating Costs (2)	32,326	30,916	35,946	64,189	61,406	70,763
Profit	8,604	7,682	9,484	18,187	16,561	16,121
Total segment revenue	290,451	315,499	307,883	625,140	654,256	614,527
Total segment costs	126,239	124,302	133,295	249,730	245,637	267,844
Total segment profit	164,212	191,197	174,588	375,410	408,619	346,683
Unallocated operating expenses:						
Sales and marketing expenses	94,200	99,899	93,352	188,696	197,481	187,848
General and administrative expenses	25,856	25,856	27,398	51,627	51,627	54,846
Restructuring and other charges, net	26,980	26,980	114	45,473	45,473	219
Intangibles amortization	12,772	12,772	14,451	25,425	25,425	28,947
Stock-based compensation	26,967	26,967	17,026	56,374	56,374	35,357
Other unallocated operating expenses (income) (3)	295	295	37	629	629	(60)
Total operating income	(22,858)	(1,572)	22,210	7,186	31,610	39,526
Interest expense	(11,383)	(11,383)	(10,379)	(21,659)	(21,659)	(20,426)
Other income (expense), net	821	1,065	(285)	1,475	1,613	(1,083)
Income before income taxes	\$ (33,420)	\$ (11,890)	\$ 11,546	\$ (12,998)	\$ 11,564	\$ 18,017



- (1) Operating costs for the Software Products segment include all costs of software revenue and research and development costs, excluding stock-based compensation and intangible amortization.
- (2) Operating costs for the Professional Services segment include all cost of professional services revenue, excluding stock-based compensation, intangible amortization and fair value adjustments for deferred services costs.
- (3) Other unallocated operating expenses include acquisition-related and other transactional costs, pension plan termination-related costs and fair value adjustments for deferred services costs.

We report revenue by the following two product groups:

	Three months ended			Six months ended		
	As Reported ASC 606	ASC 605	As Reported ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
	(in thousands)					
Solutions	\$ 251,171	\$ 272,936	\$ 274,994	\$ 550,413	\$ 571,098	\$ 552,663
IoT	39,280	42,563	32,889	74,727	83,158	61,864
Total revenue	<u>\$ 290,451</u>	<u>\$ 315,499</u>	<u>\$ 307,883</u>	<u>\$ 625,140</u>	<u>\$ 654,256</u>	<u>\$ 614,527</u>

Our international revenue is presented based on the location of our customer. Revenue for the geographic regions in which we operate is presented below.

	Three months ended			Six months ended		
	As Reported ASC 606	ASC 605	As Reported ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
	(in thousands)					
Revenue:						
Americas	\$ 119,717	\$ 137,774	\$ 128,479	\$ 261,570	\$ 272,671	\$ 255,485
Europe	119,045	123,247	121,641	230,397	243,404	243,107
Asia-Pacific	51,689	54,478	57,763	133,173	138,181	115,935
Total revenue	<u>\$ 290,451</u>	<u>\$ 315,499</u>	<u>\$ 307,883</u>	<u>\$ 625,140</u>	<u>\$ 654,256</u>	<u>\$ 614,527</u>

## 12. Income Taxes

In the second quarter and first six months of 2019, our effective tax rate was (30)% on a pre-tax loss of \$(33.4) million, and (73)% on a pre-tax loss of \$(13.0) million, respectively, compared to 31% on pre-tax income of \$11.5 million and (21)% on pre-tax income of \$18.0 million in the second quarter and first six months of 2018, respectively. In the first six months of 2019 and 2018, our effective tax rate differed from the statutory federal income tax rate of 21% due to U.S. tax reform (as described below), our corporate structure in which our foreign taxes are at a net effective tax rate lower than the U.S. rate, the excess tax benefit related to stock-based compensation and, in the first six months of 2019, the reduction of a valuation allowance of \$1.8 million as the result of the Frustum acquisition. Additionally, in the second quarter and first six months of 2019 our effective rate includes the indirect effects of the adoption of ASC 606. A significant amount of our foreign earnings is generated by our subsidiaries organized in Ireland. In 2019 and 2018, the foreign rate differential predominantly relates to these Irish earnings.

On December 22, 2017, the United States enacted tax reform legislation through the Tax Cuts and Jobs Act, (the "Tax Act"), which significantly changed existing U.S. tax laws by a reduction of the corporate tax rate, the implementation of a new system of taxation for non-U.S. earnings, the imposition of a one-time tax on the deemed repatriation of undistributed earnings of non-U.S. subsidiaries, and the expansion of the limitations on the deductibility of executive compensation and interest expense. As we have a September 30 fiscal year-end, there is a blended U.S. statutory federal rate of approximately 24.5% for our fiscal year ending September 30, 2018 and 21% for subsequent fiscal years. The Tax Act also provides that net operating losses generated in years ending after December 31, 2017 may be carried forward indefinitely and can no longer be carried back, and that net operating losses generated in years

beginning after December 31, 2017 can only reduce taxable income by up to 80% when utilized in a future period. The Tax Act includes a provision to tax global intangible low-tax income (GILTI) of foreign subsidiaries and a base erosion anti-abuse tax (BEAT) measure that taxes certain payments between a U.S. corporation and its foreign subsidiaries. The GILTI and BEAT provisions were effective for us beginning October 1, 2018. Our accounting policy is to treat tax on GILTI as a current period cost included in tax expense in the year incurred.

In the first six months of 2018, we provided no federal income taxes payable as a result of the deemed repatriation of undistributed earnings as the tax was offset by a combination of current year losses and existing attributes which had a full valuation allowance recorded against the related deferred tax assets. We recorded state income taxes payable of \$7.1 million on the deemed repatriation. This was subsequently reduced to \$1.5 million to reflect additional guidance on the state implications of the Tax Act. We also recorded a deferred tax benefit of \$14.1 million for the impact of the Tax Act on our net U.S. deferred income tax balances. This was primarily attributable to the reduction of the federal tax rate on the net deferred tax liability in the U.S., and the ability to realize net operating losses from the reversal of existing deferred tax assets which can now be carried forward indefinitely and can therefore be netted against deferred tax liabilities for indefinite lived intangible assets.

The U.S. Securities and Exchange Commission issued rules that allow for a period of up to one year after the enactment date of the Tax Act to finalize the recording of the related tax impacts. We finalized recording the impacts of the Tax Act in the quarter ended December 29, 2018 and did not record any significant adjustments.

In October 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory. The purpose of ASU 2016-16 is to simplify the income tax accounting of an intra-entity transfer of an asset other than inventory and to record its effect when the transfer occurs. We adopted this amendment beginning in the first quarter of 2019 using the modified retrospective method with a cumulative effect adjustment to accumulated deficit of \$72.3 million, with a corresponding increase of \$75.3 million to deferred tax assets, \$6.0 million decrease to income tax assets and a \$3.0 million decrease to income tax liabilities. The adjustment primarily relates to deductible amortization of intangible assets in Ireland. Post adoption, our effective tax rate no longer includes the benefit of this amortization.

We have concluded, based on the weight of available evidence, that a full valuation allowance continues to be required against our U.S. net deferred tax assets as they are not more likely than not to be realized in the future. We will continue to reassess our valuation allowance requirements each financial reporting period.

In the normal course of business, PTC and its subsidiaries are examined by various taxing authorities, including the Internal Revenue Service in the U.S. We regularly assess the likelihood of additional assessments by tax authorities and provide for these matters as appropriate. We are currently under audit by tax authorities in several jurisdictions. Audits by tax authorities typically involve examination of the deductibility of certain permanent items, limitations on net operating losses and tax credits. Although we believe our tax estimates are appropriate, the final determination of tax audits and any related litigation could result in material changes in our estimates.

As of March 30, 2019 and September 30, 2018, we had unrecognized tax benefits of \$10.3 million and \$9.8 million, respectively. If all our unrecognized tax benefits as of March 30, 2019 were to become recognizable in the future, we would record a benefit to the income tax provision of \$10.3 million, which would be partially offset by an increase in the U.S. valuation allowance of \$3.8 million.

Although we believe our tax estimates are appropriate, the final determination of tax audits and any related litigation could result in favorable or unfavorable changes in our estimates. We believe it is reasonably possible that within the next 12 months the amount of unrecognized tax benefits related to the resolution of multi-jurisdictional tax positions could be reduced by up to \$2 million as audits close and statutes of limitations expire.

In the fourth quarter of 2016, we received an assessment of approximately \$12 million from the tax authorities in South Korea. The assessment relates to various tax issues, primarily foreign withholding taxes. We have appealed and intend to vigorously defend our positions. We believe that upon completion of a multi-level appeal process it is more likely than not that our positions will be sustained. Accordingly, we have not recorded a tax reserve for this matter. We paid this assessment in the first quarter of 2017 and have recorded the amount in other assets, pending resolution of the appeal process.

### 13. Debt

At March 30, 2019 and September 30, 2018, we had the following long-term debt obligations:

	March 30, 2019	September 30, 2018
	(in thousands)	
6.000% Senior notes due 2024	\$ 500,000	\$ 500,000
Credit facility revolver	243,125	148,125
Total debt	743,125	648,125
Unamortized debt issuance costs for the Senior notes (1)	(4,425)	(4,857)
Total debt, net of issuance costs (2)	\$ 738,700	\$ 643,268

(1) Unamortized debt issuance costs related to the credit facility were \$3.5 million and \$3.8 million as of March 30, 2019 and September 30, 2018, respectively, and were included in other assets in the Consolidated Balance Sheets.

(2) As of March 30, 2019 and September 30, 2018, all debt was included in long-term debt in the Consolidated Balance Sheets.

#### Senior Notes

In May 2016, we issued \$500 million in aggregate principal amount of 6.0% senior, unsecured long-term debt at par value, due in 2024. We used the net proceeds from the sale of the notes to repay a portion of our outstanding revolving loan under our current credit facility. Interest is payable semi-annually on November 15 and May 15. The debt indenture includes covenants that limit our ability to, among other things, incur additional debt, grant liens on our properties or capital stock, enter into sale and leaseback transactions or asset sales, and make capital distributions. We were in compliance with all the covenants as of March 30, 2019.

On and after May 15, 2019, we may redeem the senior notes at any time in whole or from time to time in part at specified redemption prices. In certain circumstances constituting a change of control, we will be required to make an offer to repurchase the senior notes at a purchase price equal to 101% of the aggregate principal amount of the notes, plus accrued and unpaid interest. Our ability to repurchase the senior notes in such event may be limited by law, by the indenture associated with the senior notes, by our then-available financial resources or by the terms of other agreements to which we may be party at such time. If we fail to repurchase the senior notes as required by the indenture, it would constitute an event of default under the indenture which, in turn, may also constitute an event of default under other obligations.

As of March 30, 2019, the total estimated fair value of the Notes was approximately \$524.4 million, based on quoted prices for the notes on that date.

#### Credit Agreement

We maintain a multi-currency credit facility with a syndicate of sixteen banks for which JPMorgan Chase Bank, N.A. acts as Administrative Agent. We use the credit facility for general corporate purposes, including acquisitions of businesses, share repurchases and working capital requirements. As of March 30, 2019, the fair value of our credit facility approximates its book value.

In September 2018, we amended and restated the credit facility to increase the revolving loan commitment from \$600 million to \$700 million and amend other provisions, including replacing the fixed charge coverage ratio with an interest coverage ratio. The revolving loan commitment does not require amortization of principal and may be repaid in whole or in part prior to the scheduled maturity date at our option without penalty or premium. The credit facility matures on September 13, 2023, when all remaining amounts outstanding will be due and payable in full.

PTC and certain eligible foreign subsidiaries are eligible to borrow under the credit facility. Any borrowings by PTC Inc. under the credit facility would be guaranteed by PTC Inc.'s material domestic subsidiaries that become parties to the subsidiary guaranty, if any. As of the filing of this Form 10-Q, there are no subsidiary guarantors of the obligations under the credit facility. Any borrowings by eligible foreign subsidiary borrowers would be guaranteed by PTC Inc. and any subsidiary guarantors. As of the filing of this Form 10-Q there were no borrowings by eligible foreign subsidiaries. In addition, owned property (including equity interests) of PTC and certain of its material domestic subsidiaries' owned property is subject to first priority perfected liens in favor of the lenders under this credit facility. 100% of the voting equity interests of certain of PTC's domestic subsidiaries and 65% of its material first-tier foreign subsidiaries are pledged as collateral for the obligations under the credit facility.

Loans under the credit facility bear interest at variable rates which reset every 30 to 180 days depending on the rate and period selected by PTC as described below. As of March 30, 2019, the annual rate for borrowings outstanding was 4.2%. Interest rates on borrowings outstanding under the credit facility range from 1.25% to 1.75% above an adjusted LIBO rate for Euro currency borrowings or would range from 0.25% to 0.75% above the defined base rate (the greater of the Prime Rate, the NYFRB rate plus 0.5%, or an adjusted LIBO rate plus 1%) for base rate borrowings, in each case based upon PTC's total leverage ratio. Additionally, PTC may borrow certain foreign currencies at rates set in the same range above the respective London interbank offered interest rates for those currencies, based on PTC's total leverage ratio. A quarterly commitment fee on the undrawn portion of the credit facility is required, ranging from 0.175% to 0.30% per annum based upon PTC's total leverage ratio.

The credit facility limits PTC's and its subsidiaries' ability to, among other things: incur liens or guarantee obligations; pay dividends (other than to PTC) and make other distributions; make investments and enter into joint ventures; dispose of assets; and engage in transactions with affiliates, except on an arms-length basis. Under the credit facility, PTC and its material domestic subsidiaries may not invest cash or property in, or loan to, PTC's foreign subsidiaries in aggregate amounts exceeding \$100.0 million for any purpose and an additional \$200.0 million for acquisitions of businesses. In addition, under the credit facility, PTC and its subsidiaries must maintain the following financial ratios:

- a total leverage ratio, defined as consolidated funded indebtedness to consolidated trailing four quarters EBITDA, not to exceed 4.50 to 1.00 as of the last day of any fiscal quarter;
- a senior secured leverage ratio, defined as senior consolidated total indebtedness (which excludes unsecured indebtedness) to the consolidated trailing four quarters EBITDA, not to exceed 3.00 to 1.00 as of the last day of any fiscal quarter; and
- an interest coverage ratio, defined as the ratio of consolidated trailing four quarters EBITDA to consolidated trailing four quarters of cash basis interest expense, of not less than 3.00 to 1.00 as of the last day of any fiscal quarter.

As of March 30, 2019, our total leverage ratio was 2.14 to 1.00, our senior secured leverage ratio was 0.73 to 1.00 and our interest coverage ratio was 8.64 to 1.00 and we were in compliance with all financial and operating covenants of the credit facility.

Any failure to comply with the financial or operating covenants of the credit facility would prevent PTC from being able to borrow additional funds, and would constitute a default, permitting the lenders to, among other things, accelerate the amounts outstanding, including all accrued interest and unpaid fees, under the credit facility and to terminate the credit facility. A change in control of PTC, as defined in the agreement, also constitutes an event of default, permitting the lenders to accelerate the indebtedness and terminate the credit facility.

We incurred \$2.9 million in financing costs in connection with the September 2018 credit facility amendment and restatement. These origination costs are recorded as deferred debt issuance costs and are included in other assets. Financing costs are expensed over the remaining term of the obligations.

In the second quarter and first six months of 2019 we paid \$3.8 million and \$20.4 million, respectively, of interest on our debt. In the second quarter and first six months of 2018 we paid \$2.5 million and \$19.2 million, respectively, of interest on our debt. The average interest rate on borrowings outstanding during the second quarter and first six months of 2019 was approximately 5.3% and 5.4%, respectively. The average interest rate on borrowings outstanding during the second quarter and first six months of 2018 was approximately 5.1% and 5.0%, respectively.

## **14. Commitments and Contingencies**

### **Legal and Regulatory Matters**

#### *Korean Tax Audit*

In July 2016, we received an assessment of approximately \$12 million from the tax authorities in Korea related to an ongoing tax audit. See *Note 12. Income Taxes* for additional information.

#### *Legal Proceedings*

We are subject to various other legal proceedings and claims that arise in the ordinary course of business. We do not believe that resolving the legal proceedings and claims that we are currently subject to will have a material adverse impact on our financial condition, results of operations or cash flows. However, the results of legal proceedings cannot be predicted with certainty. Should any of these legal proceedings and claims be resolved against us, the operating results for a reporting period could be adversely affected.

#### *Accruals*

With respect to legal proceedings and claims, we record an accrual for a contingency when it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. For legal proceedings and claims for which the likelihood that a liability has been incurred is more than remote but less than probable, we estimate the range of possible outcomes. As of March 30, 2019, we estimate approximately \$0.5 million to \$4.2 million in legal proceedings and claims, of which we had accrued \$0.4 million.

### **Guarantees and Indemnification Obligations**

We enter into standard indemnification agreements in the ordinary course of our business. Under such agreements with our business partners or customers, we indemnify, hold harmless, and agree to reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally in connection with patent, copyright or other intellectual property infringement claims by any third party with respect to our products, claims relating to property damage or personal injury resulting from the performance of services by us or our subcontractors and data breaches. The maximum potential amount of future payments we could be required to make under indemnification agreements for intellectual property and damage and injury claims is unlimited; the maximum potential amount for indemnification for data breaches is capped in those contracts. Historically, our costs to defend lawsuits or settle claims relating to such indemnity agreements have been minimal and, accordingly, we believe the estimated fair value of liabilities under these agreements is immaterial.

We warrant that our software products will perform in all material respects in accordance with our standard published specifications in effect at the time of delivery of the licensed products for a specified period of time. Additionally, we generally warrant that our consulting services will be performed consistent with generally accepted industry standards. In most cases, liability for

these warranties is capped. If necessary, we would provide for the estimated cost of product and service warranties based on specific warranty claims and claim history; however, we have not incurred significant cost under our product or services warranties. As a result, we believe the estimated fair value of these liabilities is immaterial.

## **15. Subsequent Events**

### *Acquisition*

In April 2019, we purchased a services company with expertise in industrial IoT for approximately \$8 million. We do not expect the acquisition to have a material impact in fiscal 2019.

### *Common Stock Repurchases*

In the third quarter of 2019, we continued our share repurchase program. We expect to repurchase approximately \$25 million of our common stock in the quarter.

On July 20, 2018, we entered into an accelerated share repurchase ("ASR") agreement with a major financial institution ("Bank"). The ASR allowed us to buy a large number of shares immediately at a purchase price determined by an average market price over a period of time. Under the ASR, we agreed to purchase \$1,000 million of our common stock, in total, with an initial delivery to us in July 2018 of 8.2 million shares. We settled the ASR in May 2019 and the Bank delivered to us 3.0 million additional shares.

### *Appointment of New Chief Financial Officer*

On April 24, 2019, we announced the appointment of Kristian Talvitie as our Executive Vice President and Chief Financial Officer effective May 15, 2019. Andrew Miller, our current Executive Vice President, Chief Financial Officer, whose intention to retire we announced on January 23, 2019, will remain with PTC for an undetermined period to ensure a smooth transition of the role to Mr. Talvitie. The departure of Mr. Miller may have an impact on the timing and amount of stock-based compensation expense for outstanding unvested awards.

## **ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

### **Business Overview**

PTC is a global software and services company that delivers solutions to enable our industrial customers' digital transformations, helping them to better design, manufacture, operate, and service their products. Our Internet of Things (IoT) and Augmented Reality (AR) solutions are focused on Smart Connected Processes, Smart Connected Products and Smart Connected People that enable companies to connect factories and plants, smart products, and enterprise systems, bridging the physical, digital and human worlds, to transform their businesses. Our Solutions portfolio of innovative Computer-Aided Design (CAD) and Product Lifecycle Management (PLM) solutions enable manufacturers to create, innovate, operate, and service products.

### **Forward-Looking Statements**

Statements in this Quarterly Report on Form 10-Q that are not historic facts, including statements about our future financial and growth expectations and targets, are forward-looking statements that involve risks and uncertainties that could cause actual results to differ materially from those projected. These risks include: the macroeconomic and/or global manufacturing climates may deteriorate due to, among other factors, the geopolitical environment, including the focus on technology transactions with non-U.S. entities and potential expanded prohibitions, and ongoing trade tensions and tariffs; customers may not purchase our solutions or convert existing support contracts to subscription when or at the rates we expect; our businesses, including our Internet of Things (IoT) business, and Augmented Reality business, may not expand and/or generate the revenue we expect; foreign currency exchange rates may vary from our expectations and thereby affect our reported revenue and expense; the mix of revenue between license and subscription solutions, support and professional services could be different than we expect, which could impact our EPS results; our transition to subscription-only licensing could adversely affect sales and revenue; sales of our solutions as subscriptions may not have the longer-term effect on revenue and earnings that we expect; bookings associated with minimum ACV commitments under our Strategic Alliance Agreement with Rockwell Automation may not result in subscription contracts sold through to end-user customers; our strategic initiatives and investments may not generate the revenue we expect; we may be unable to expand our partner ecosystem as we expect and our partners may not generate the revenue we expect; we may be unable to generate sufficient operating cash flow to return 40% of free cash flow to shareholders and other uses of cash or our credit facility limits or other matters could preclude share repurchases. In addition, our assumptions concerning our future GAAP and non-GAAP effective income tax rates are based on estimates and other factors that could change, including the geographic mix of our revenue, expenses and profits, as well as other risks and uncertainties described below throughout or referenced in Part II, Item 1 A. Risk Factors of this report.

### **Future Expectations, Strategies and Risks**

Our 2019 strategic goals are to deliver sustainable growth, expand subscription licensing and expand our margins.



### Sustainable Growth

We are focused on continuing to drive bookings growth both in the high-growth Industrial IoT and AR markets and in our core CAD and PLM markets. We expect that IoT and AR adoption rates will continue to expand and will be the most significant drivers of growth.



### Expand Subscription Licensing

Our goal is to continue to increase the percentage of licenses sold as subscriptions to increase our recurring revenue. Effective January 1, 2019, new software licenses for our core solutions and ThingWorx solutions are available only by subscription worldwide. Kepware will continue to be available under perpetual license. We expect to exit the year with subscription mix of 94%, and an increase of 1000 basis points over 2018.



### Cost Controls and Margin Expansion

Our goal is to drive continued margin expansion over the long term. We continue to proactively manage our cost structure and invest in what we believe are high return opportunities in our business. With the growth opportunities in Industrial IoT and AR, and other strategic initiatives we've undertaken, as well as our continued commitment to operating margin improvement, we realigned our workforce in the beginning of 2019 to shift investment to support these strategic, high growth opportunities. We expect to deliver continued operating margin expansion in 2019 and beyond, as we realize the compounding benefit of our maturing subscription business.

Our results have been impacted, and we expect will continue to be impacted, by our ability to close large transactions. The amount of bookings and revenue, particularly license and subscriptions, attributable to large transactions, and the number of such transactions, may vary significantly from quarter to quarter based on customer purchasing decisions and macroeconomic conditions. Such transactions may have long lead times as they often follow a lengthy product selection and evaluation process and, for existing customers, are influenced by contract expiration cycles. This may cause volatility in our results. In addition, our adoption of ASC 606 will increase the volatility of our revenue results as a significant portion of subscription revenue is recognized at the time of delivery, rather than being recognized ratably over the commitment period.

## Operating and Non-GAAP Financial Measures

Our discussion of results includes discussion of our operating measures (including "license and subscription bookings" and other subscription-related measures) and non-GAAP financial measures. Our operating measures and non-GAAP financial measures, including the reasons we use those measures, are described below in *Results of Operations - Operating Measures* and *Results of Operations - Non-GAAP Financial Measures*, respectively. You should read those sections to understand those operating and non-GAAP financial measures.

## Revenue Sources and Recognition

We sell software subscription and perpetual licenses, support for perpetual licenses, cloud services and professional services.

Subscription revenue is comprised of time-based licenses whereby customers use our software and receive related support for a specified term. Results for reporting periods beginning on or after October 1, 2018 are presented under the Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers: Topic 606 (ASC 606), while prior period amounts are not adjusted and continue to be reported in accordance with the guidance provided by ASC 985-605, *Software-Revenue Recognition* and revenues for non-software deliverables in accordance with ASC 605-25, *Revenue Recognition, Multiple-*

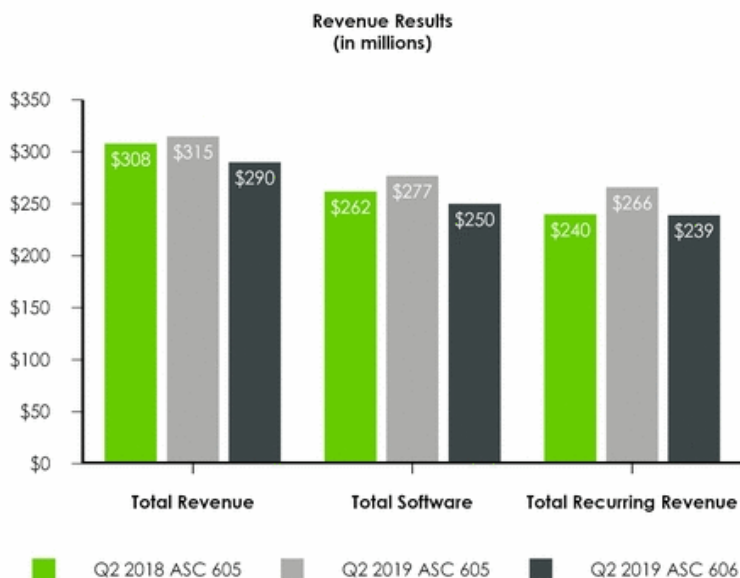
*Element Arrangements* (ASC 605). Through 2018, revenue for our subscription contracts was recognized ratably over the term of the contract under ASC 605; this differs from how revenue for such contracts is recognized under ASC 606. Under ASC 606, revenue is recognized for each performance obligation that can be separately identified under the contract. Accordingly, our on-premise subscription contracts are unbundled into multiple performance obligations (i.e., license, cloud and support). The license portion of such subscription contracts (approximately 50% to 55%) is recognized upfront and the cloud and support portions (approximately 45% to 50%) are recognized ratably over the term. Our subscription revenue includes an immaterial amount of Software as a Service (SaaS) and cloud services for which revenue is generally recognized ratably over the term of the contract.

Perpetual licenses are a perpetual right to use the software, for which revenue is generally recognized upfront upon shipment to the customer. Support revenue is comprised of contracts to maintain new and/or previously purchased licenses, for which revenue is recognized ratably over the term of the contract. Professional services engagements typically result from sales of new licenses, and for which revenue is recognized as the services are performed.

The effects of our adoption of ASC 606, including adjustments to accumulated deficit related to billed and unbilled deferred revenue, are described in "Recent Accounting Pronouncements" in Note 1. *Basis of Presentation* and in Note 2. *Revenue from Contracts with Customers* in the Notes to Consolidated Financial Statements in this Quarterly Report.

### Executive Overview

Our revenue results in the quarter reflect the adoption of subscription licensing by our customers and the compounding effect of the subscription business model as subscription revenue generally recurs and new subscription revenue is added. Under ASC 605, subscription revenue, software revenue and total revenue were all up over the second quarter of 2018. Perpetual license and support revenue decreased year over year because, effective January 1, 2019, we discontinued offering perpetual licenses for our core solutions and ThingWorx solutions which are now only available by subscription worldwide. Under ASC 605, changes in our operating margin and EPS year over year were driven by our revenue growth resulting from the compounding effect of our subscription transition, partially offset by restructuring charges associated with the relocation of our corporate headquarters.





Revenue	Three months ended				
	As Reported ASC			Percent Change	
	606	ASC 605	605	ASC 605	
	March 30, 2019	March 30, 2019	March 31, 2018	Change	Constant Currency
	(in millions)				
Subscription license	\$ 51.5				
Subscription support & cloud services	83.2				
Total Subscription	134.8	\$ 162.1	\$ 112.9	44 %	47 %
Perpetual support	104.4	103.6	126.7	(18)%	(16)%
Total recurring revenue	239.2	265.6	239.6	11 %	14 %
Perpetual license	10.3	11.3	22.8	(51)%	(49)%
Total software revenue (1)	249.5	276.9	262.5	6 %	8 %
Professional services	40.9	38.6	45.4	(15)%	(10)%
Total revenue	\$ 290.5	\$ 315.5	\$ 307.9	2 %	6 %

(1) Total software revenue includes:

License	\$ 61.9	\$ 156.1	\$ 120.5	30 %	33 %
Support and cloud services	187.6	120.8	141.9	(15)%	(12)%
Total software revenue	249.5	276.9	262.5	6 %	8 %

Revenue	Six months ended				
	As Reported ASC			Percent Change	
	606	ASC 605	605	ASC 605	
	March 30, 2019	March 30, 2019	March 31, 2018	Change	Constant Currency
	(in millions)				
Subscription license	\$ 115.1				
Subscription support & cloud services	160.7				
Total Subscription	275.7	\$ 310.5	\$ 212.9	46 %	48 %
Perpetual support	214.9	212.8	257.9	(17)%	(16)%
Total recurring revenue	490.6	523.3	470.8	11 %	13 %
Perpetual license	52.1	53.0	56.8	(7)%	(4)%
Total software revenue (1)	542.8	576.3	527.6	9 %	12 %
Professional services	82.4	78.0	86.9	(10)%	(6)%
Total revenue	\$ 625.1	\$ 654.3	\$ 614.5	6 %	9 %

(1) Total software revenue includes:

License	\$ 167.2	\$ 330.0	\$ 240.0	38 %	40 %
Support and cloud services	375.6	246.3	287.6	(14)%	(12)%
Total software revenue	542.8	576.3	527.6	9 %	12 %

Earnings Measures	Three months ended			Six months ended		
	As Reported ASC		As Reported ASC	As Reported		As Reported ASC
	606	ASC 605	605	ASC 606	ASC 605	605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
Operating Margin	(7.9)%	(0.5)%	7.2%	1.1%	4.8%	6.4%
Earnings (Loss) Per Share	\$ (0.37)	\$ (0.10)	\$ 0.07	\$ (0.19)	\$ 0.06	\$ 0.19
Non-GAAP Operating Margin <sup>(1)</sup>	15.3 %	20.8 %	17.6%	21.7%	24.4%	17.0%
Non-GAAP Earnings Per Share <sup>(1)</sup>	\$ 0.22	\$ 0.38	\$ 0.34	\$ 0.78	\$ 0.95	\$ 0.64

(1) Non-GAAP measures are reconciled to GAAP results under *Results of Operations - Non-GAAP Financial Measures* below.

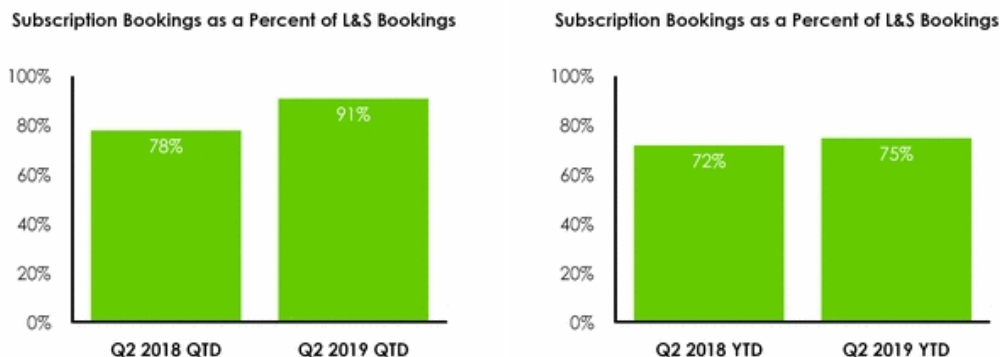
We ended the second quarter of 2019 with cash, cash equivalents and marketable securities of \$351 million, up from \$316 million at the end of 2018. We generated \$162 million of cash from operations in the first six months of 2019 compared to \$137 million in the first six months of 2018. Cash from operations for

the first six months of 2019 includes \$18 million of restructuring payments compared to \$2 million in the year-ago period. Cash used by investing activities in the first six months of 2019 includes \$70 million, net of cash acquired, used to acquire Frustum Inc., an artificial design and generative design technology platform, and \$51 million of capitalized expenditures used primarily for construction costs at our new headquarters in the Boston Seaport District. At March 30, 2019, the balance outstanding under our credit facility was \$243 million and total debt outstanding was \$743 million.

### Operating Measures

We provide these operating measures to help investors understand the progress of our subscription transition. These measures are not necessarily indicative of revenue for the period or any future period.

#### License and Subscription Bookings



License and subscription bookings for the second quarter of 2019 were \$112 million, up 13% (18% on a constant currency basis) from the year ago period due to an exceptionally strong quarter for IoT, which surpassed bookings for both CAD and PLM for the first time.

On a year-to-date basis, license and subscription bookings were \$213 million, up 5% (9% on a constant currency basis) over the first six months of 2018. In the second quarter of 2019, license and subscription bookings were adversely impacted by final perpetual license purchases in Asia Pacific before they were discontinued on January 1, 2019 and due to realignment of our sales force in the first quarter of 2019. For the first half of the year, combined core CAD and PLM bookings grew in the high single digits on a constant currency basis over the year-ago period, IoT (inclusive of Augmented Reality) grew at the high end of the 30-40% market growth rate, offset by a mid-30% constant currency decline in our productivity zone businesses (which includes ALM and parts of SLM). We anticipate that our second-half growth rates will approximate our first-half performance.

Our second quarter 2019 bookings include a \$7.5 million IoT booking for which the contract terms were approved on March 30, but for which the electronic signature process was not fully complete until the morning of March 31.

#### Subscription ACV

Subscription ACV was \$51 million for the quarter, up from \$38.5 million in the year-ago period.

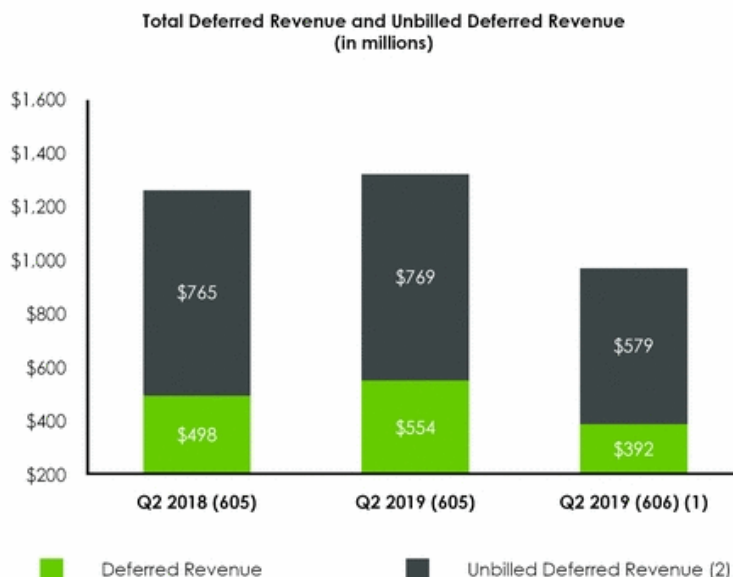
#### Annualized Recurring Revenue (ARR)

ASC 605 ARR was approximately \$1,065 million as of the end of the second quarter of 2019, an increase of 11% compared to the second quarter of 2018 (15% year over year on a constant currency basis); the ninth consecutive quarter of double-digit year-over-year growth.

#### Deferred Revenue and Backlog (Unbilled Deferred Revenue)

Deferred revenue primarily relates to software agreements invoiced to customers for which the revenue has not yet been recognized. Unbilled deferred revenue (backlog) is the aggregate of booked orders for license, support and subscription (including multi-year subscription contracts with start dates

after October 1, 2018 that are subject to a limited annual cancellation right, of which approximately \$146 million was cancellable at March 30, 2019) for which the associated revenue has not been recognized and the customer has not yet been invoiced. We do not record unbilled deferred revenue on our Consolidated Balance Sheets; such amounts are recorded as deferred revenue when we invoice the customer. We provide this view of deferred revenue and backlog to enable investors to understand the significant contractual commitments we have to customers and to provide a view of future revenue that we expect will be recognized, even if those commitments are not reflected on our balance sheet.



	As Reported ASC 606 <sup>(1)</sup>	ASC 605	As Reported ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	September 30, 2018	March 31, 2018
(Dollar amounts in millions)				
Deferred revenue (billed)	\$ 392	\$ 554	\$ 499	\$ 498
Unbilled deferred revenue <sup>(2)</sup>	579	769	911	765
Total	\$ 971	\$ 1,323	\$ 1,410	\$ 1,263

(1) Upon adoption of ASC 606, approximately \$366 million of total deferred revenue was recorded as a decrease to accumulated deficit with an offsetting \$218 million increase to unbilled accounts receivable, a \$142 million decrease to deferred revenue and a \$6 million increase in other assets net of liabilities, primarily as a result of the acceleration of subscription license revenue under ASC 606.

(2) Of the unbilled deferred revenue balance at March 30, 2019, we expect to invoice customers approximately \$460 million within the next twelve months.

We expect that the amount of deferred revenue and unbilled deferred revenue will fluctuate from quarter to quarter due to the specific timing, duration and size of customer subscription and support agreements, varying billing cycles of such agreements, the specific timing of customer renewals (which are typically for one year), foreign currency fluctuations, the timing of when deferred revenue is recognized as revenue and the timing of our fiscal quarter ends. The average contract duration was approximately 2 years for new subscription contracts in 2018 and 2017.

The effects of our adoption of ASC 606, including the adjustments to accumulated deficit related to billed and unbilled deferred revenue, are described in Note 2. Revenue from Contracts with Customers in the Notes to Consolidated Financial Statements.

## Second Quarter Restructuring Charge

In the second quarter of 2019, we moved into our new worldwide headquarters in the Boston Seaport District and vacated our prior headquarters space. Because our prior headquarters lease will not expire until November 2022, we are seeking to sublease that space, but have not yet done so. As a result, we will bear overlapping rent obligations for those premises and, in the second quarter of 2019, we incurred a restructuring charge of approximately \$27 million, based on the net present value of remaining lease commitments net of estimated sublease income. From a cash perspective, the free rent and estimated sublease income over the first 18 months on the Seaport headquarters total approximately \$30 million, as compared to the estimated cash outflows of \$34 million on the prior headquarters, which will be incurred over the next 44 months (rent obligations and operating expenses net of estimated sublease income). Restructuring charges could increase and estimated cash outflows could increase if we are unable to sublease our prior headquarters as we expect. Additionally, we incurred other costs associated with the move which were recorded as incurred.

## Results of Operations

The following table shows the financial measures that we consider the most significant indicators of the performance of our business. In addition to providing operating income, operating margin, and diluted earnings per share as calculated under GAAP, we provide non-GAAP operating income, non-GAAP operating margin, and non-GAAP diluted earnings per share for the reported periods. These non-GAAP financial measures exclude the items described in *Non-GAAP Financial Measures* below. These non-GAAP financial measures provide investors a view of our operating results that is aligned with management budgets and with performance measures in our incentive compensation plans. Investors should use these non-GAAP financial measures only in conjunction with our GAAP results.

	Three months ended					Percent Change			
	As Reported ASC 606		ASC 605		As Reported ASC 605		ASC 605		
	March 30, 2019		March 30, 2019		March 31, 2018		Actual		
							Constant Currency		
(Dollar amounts in millions, except per share data)									
Subscription	\$	134.8	\$	162.1	\$	112.9	44 %	47 %	
Perpetual support		104.4		103.6		126.7	(18)%	(16)%	
Total recurring revenue		239.2		265.6		239.6	11 %	14 %	
Perpetual license		10.3		11.3		22.8	(51)%	(49)%	
Total software revenue		249.5		276.9		262.5	6 %	8 %	
Professional services		40.9		38.6		45.4	(15)%	(10)%	
Total revenue		290.5		315.5		307.9	2 %	6 %	
Total cost of revenue		79.9		78.0		83.7	(7)%		
Gross margin		210.5		237.5		224.2	6 %		
Operating expenses		233.4		239.1		202.0	18 %		
Total costs and expenses		313.3		317.1		285.7	11 %	14 %	
Operating income		(22.9)		(1.6)		22.2	(107)%	(89)%	
Non-GAAP operating income <sup>(1)</sup>	\$	44.4	\$	65.6	\$	54.1	21 %	24 %	
Operating margin		(7.9)%		(0.5)%		7.2%			
Non-GAAP operating margin <sup>(1)</sup>		15.3 %		20.8 %		17.6%			
Diluted earnings per share	\$	(0.37)	\$	(0.10)	\$	0.07			
Non-GAAP diluted earnings per share <sup>(2)</sup>	\$	0.22	\$	0.38	\$	0.34			
Cash flow from operations <sup>(3)</sup>	\$	141.1	\$	141.1	\$	111.1			

## Six months ended

	Six months ended			Percent Change	
	As Reported ASC 606	ASC 605	As Reported ASC 605	ASC 605	
	March 30, 2019	March 30, 2019	March 31, 2018	Actual	Constant Currency
(Dollar amounts in millions, except per share data)					
Subscription	\$ 275.7	\$ 310.5	\$ 212.9	46 %	48 %
Perpetual support	214.9	212.8	257.9	(17)%	(16)%
Total recurring revenue	490.6	523.3	470.8	11 %	13 %
Perpetual license	52.1	53.0	56.8	(7)%	(4)%
Total software revenue	542.8	576.3	527.6	9 %	12 %
Professional services	82.4	78.0	86.9	(10)%	(6)%
Total revenue	625.1	654.3	614.5	6 %	9 %
Total cost of revenue	157.3	153.2	166.7	(8)%	
Gross margin	467.9	501.1	447.8	12 %	
Operating expenses	460.7	469.5	408.3	15 %	
Total costs and expenses	618.0	622.6	575.0	8 %	11 %
Operating income	7.2	31.6	39.5	(20)%	(12)%
Non-GAAP operating income <sup>(1)</sup>	\$ 135.6	\$ 160.0	\$ 104.7	53 %	55 %
Operating margin	1.1%	4.8%	6.4%		
Non-GAAP operating margin <sup>(1)</sup>	21.7%	24.4%	17.0%		
Diluted earnings per share	\$ (0.19)	\$ 0.06	\$ 0.19		
Non-GAAP diluted earnings per share <sup>(2)</sup>	\$ 0.78	\$ 0.95	\$ 0.64		
Cash flow from operations <sup>(3)</sup>	\$ 162.3	\$ 162.3	\$ 136.6		

(1) See Non-GAAP Financial Measures below for a reconciliation of our GAAP results to our non-GAAP financial measures.

(2) We have recorded a full valuation allowance against our U.S. net deferred tax assets. As we are profitable on a non-GAAP basis, the 2019 and 2018 non-GAAP tax provisions are calculated assuming there is no valuation allowance. Income tax adjustments reflect the tax effects of non-GAAP adjustments, which are calculated by applying the applicable tax rate by jurisdiction to the non-GAAP adjustments listed above. We recorded the impact of the Tax Cuts and Jobs Act in our Q1 2018 GAAP earnings, resulting in a non-cash benefit of approximately \$7 million. We have excluded this benefit from our non-GAAP results.

(3) Cash flow from operations for the first six months of 2019 includes \$18 million of restructuring payments. Cash flow from operations for the first six months of 2018 includes \$2 million of restructuring payments.

### Impact of Foreign Currency Exchange on Results of Operations

Approximately 60% of our revenue and 40% of our expenses are transacted in currencies other than the U.S. Dollar. Because we report our results of operations in U.S. Dollars, currency translation, particularly changes in the Euro, Yen, Sheqel, and Rupee relative to the U.S. Dollar, affects our reported results. If actual results under ASC 605 for the second quarter and first six months of 2019 had been converted into U.S. Dollars based on the foreign currency exchange rates in effect for the second quarter and first six months of 2018, revenue would have been higher by \$11.7 million and \$18.9 million, respectively, costs and expenses would have been higher by \$7.6 million and \$13.2 million, respectively, and operating income would have been higher by \$4.1 million and \$5.7 million, respectively. Our constant currency disclosures are calculated by multiplying the actual results for the second quarter and first six months of 2019 by the exchange rates in effect for the comparable periods of 2018, excluding the effect of any hedging.

### Revenue

We discuss our revenue results by line of business, by product group and by geographic region below.

#### Revenue by Line of Business

##### Software

Software revenue consists of subscription, support, and perpetual license revenue. Recurring software revenue consists of subscription and support revenue and approximates 80% of total revenue

and 91% of software revenue for the six months ended March 30, 2019. Our subscription revenue includes an immaterial amount of Software as a Service (SaaS) and cloud services.

As our mix of subscription sales relative to perpetual license sales has increased, perpetual license revenue and support revenue have declined and are expected to continue to decline as customers purchase our solutions as subscriptions and convert existing perpetual licenses with support contracts to subscriptions. As our subscription business matures, recurring software revenue growth is expected to accelerate due to the compounding benefit of a subscription business model.

#### Professional Services

Professional services engagements typically result from sales of new licenses; revenue is recognized over the term of the engagement. Professional services revenue in the second quarter and first six months of 2019 was down 15% (10% constant currency) and 10% (6% constant currency), respectively, compared to the year-ago periods. These results are in line with our expectation that professional services revenue will trend flat-to-down over time due to our strategy to expand margins by migrating more services engagements to our partners and delivering products that require less consulting and training services.

#### Revenue by Product Group

	Three months ended				
	As Reported ASC 606	ASC 605	As Reported ASC 605	Percent Change	
				ASC 605	
	March 30, 2019	March 30, 2019	March 31, 2018	Actual	Constant Currency
(Dollar amounts in millions)					
<b>Solutions Products</b>					
Software revenue	214.1	240.1	233.6	3 %	6 %
Professional services	37.1	32.9	41.4	(21)%	(16)%
Total revenue	\$ 251.2	\$ 272.9	\$ 275.0	(1)%	3 %
<b>IoT Products</b>					
Software revenue	35.4	36.8	28.9	27 %	30 %
Professional services	3.8	5.7	4.0	44 %	49 %
Total revenue	\$ 39.3	\$ 42.6	\$ 32.9	29 %	32 %

	Six months ended				
	As Reported ASC 606	ASC 605	As Reported ASC 605	Percent Change	
				ASC 605	
	March 30, 2019	March 30, 2019	March 31, 2018	Actual	Constant Currency
(Dollar amounts in millions)					
<b>Solutions Products</b>					
Software revenue	475.5	505.0	472.3	7 %	9 %
Professional services	75.0	66.1	80.3	(18)%	(14)%
Total revenue	\$ 550.4	\$ 571.1	\$ 552.7	3 %	6 %
<b>IoT Products</b>					
Software revenue	67.3	71.3	55.3	29 %	31 %
Professional services	7.4	11.8	6.6	81 %	86 %
Total revenue	\$ 74.7	\$ 83.2	\$ 61.9	34 %	37 %

#### Solutions Group

Under ASC 605, Solutions Group software revenue grew in the second quarter due to the acceleration of our subscription model and strong bookings in CAD and core PLM, offset by declines in our productivity zone businesses. Solutions recurring software revenue under ASC 605 in the second quarter and first six months of 2019 grew 9% compared to the year-ago periods (12% and 11%,

respectively, on a constant currency basis), reflecting the bookings growth over the past several years and the compounding benefit of our maturing subscription model.

Solutions professional services revenue for the second quarter and first six months of 2019 declined compared to the year-ago periods due to our strategy to limit the amount of professional services we provide.

#### IoT Group

Under ASC 605, IoT software revenue grew in the second quarter and first six months of 2019 by 27% and 29%, respectively, due to growth of recurring IoT software revenue (31% and 33%, respectively, on a constant currency basis), reflecting the strong bookings growth over the past several years and the compounding benefit of our maturing subscription model.

IoT professional services revenue increased in the second quarter and first six months of 2019 due in part to implementation and adoption services we provide to our IoT customers as part of our efforts to help their IoT initiatives succeed.

#### Revenue by Geographic Region

A significant portion of our total revenue is generated outside of the U.S. In 2019 and 2018, we had approximately 40% of total revenue generated in Americas, 40% in Europe, and 20% in Asia Pacific.

	Three months ended				
	As Reported ASC 606	ASC 605	As Reported ASC 605	Percent Change	
				ASC 605	
	March 30, 2019	March 30, 2019	March 31, 2018	Actual	Constant Currency
(Dollar amounts in millions)					
<b>Americas</b>					
Software revenue	108.0	125.9	113.3	11 %	11 %
Professional services	11.8	11.8	15.1	(22)%	(22)%
Total revenue	\$ 119.7	\$ 137.8	\$ 128.5	7 %	8 %
<b>Europe</b>					
Software revenue	97.3	104.0	98.0	6 %	12 %
Professional services	21.7	19.3	23.6	(18)%	(11)%
Total revenue	\$ 119.0	\$ 123.2	\$ 121.6	1 %	8 %
<b>Asia Pacific</b>					
Software revenue	44.3	47.0	51.1	(8)%	(5)%
Professional services	7.4	7.5	6.7	12 %	17 %
Total revenue	\$ 51.7	\$ 54.5	\$ 57.8	(6)%	(3)%



	Six months ended					
	As Reported ASC 606			ASC 605		Percent Change
	March 30, 2019			March 30, 2019		ASC 605
	March 30, 2019			March 31, 2018		Actual
(Dollar amounts in millions)						
<b>Americas</b>						
Software revenue	237.5	248.5	226.3	10 %	10 %	
Professional services	24.1	24.2	29.2	(17)%	(17)%	
Total revenue	\$ 261.6	\$ 272.7	\$ 255.5	7 %	7 %	
<b>Europe</b>						
Software revenue	186.7	204.4	198.9	3 %	7 %	
Professional services	43.7	39.0	44.2	(12)%	(6)%	
Total revenue	\$ 230.4	\$ 243.4	\$ 243.1	— %	5 %	
<b>Asia Pacific</b>						
Software revenue	118.6	123.4	102.5	20 %	24 %	
Professional services	14.5	14.8	13.5	10 %	14 %	
Total revenue	\$ 133.2	\$ 138.2	\$ 115.9	19 %	23 %	

#### Americas

Software revenue grew in the second quarter and first six months of 2019 over the year-ago periods due to growth in recurring software revenue of 12% in each period.

#### Europe

Software revenue grew in the second quarter and first six months of 2019 over the year-ago periods due to recurring software revenue growth of 6% and 7%, respectively (12% and 11%, respectively, on a constant currency basis) driven by the compounding benefit of the subscription transition. This growth was offset in part by the decline of 49% (46% on a constant currency basis) in perpetual license revenue for the first six months of 2019 due to the end of life of perpetual licenses in Europe as of January 1, 2018.

#### Asia Pacific

In the second quarter and first six months of 2019, Asia Pacific recurring software revenue grew 18% and 19%, respectively, (22% on a constant currency basis) compared to the year ago periods driven by the compounding benefit of the subscription transition. Software revenue declined in the second quarter of 2019 compared to the year ago period due to an 85% decline in perpetual license revenue following the end of life of perpetual licenses on January 1, 2019.

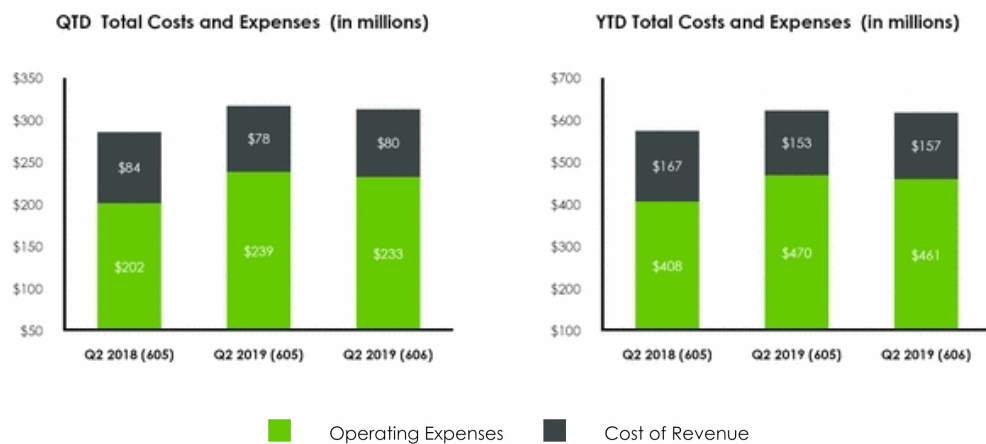
## Gross Margin

	Three months ended				Six months ended			
	As Reported		As Reported		As Reported		As Reported	
	ASC 606	ASC 605	ASC 605	ASC 605	ASC 606	ASC 605	ASC 605	ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change
(Dollar amounts in millions)								
Gross margin	\$ 210.5	\$ 237.5	\$ 224.2	6%	\$ 467.9	\$ 501.1	\$ 447.8	12%
Non-GAAP gross margin <sup>(1)</sup>	220.6	247.6	233.7	6%	488.0	521.2	467.2	12%
Gross margin as a % of revenue:								
License gross margin	79%	92%	90%		85%	93%	90%	
Support and cloud gross margin	82%	73%	76%		83%	74%	76%	
Professional services gross margin	17%	15%	17%		18%	17%	15%	
Gross margin as a % of total revenue								
	72%	75%	73%		75%	77%	73%	
Non-GAAP gross margin as a % of total revenue <sup>(1)</sup>								
	76%	78%	76%		78%	80%	76%	
(1) Non-GAAP financial measures are reconciled to GAAP results under <i>Non-GAAP Financial Measures</i> below.								

The increase in total gross margin in the second quarter and first six months of 2019 compared to the second quarter and first six months of 2018 reflects higher software revenue driven by the maturing subscription model. Total revenue in the second quarter and first six months of 2019 grew 2% and 6% respectively, over the second quarter and first six months of 2018. Margins for license and subscription are beginning to expand as the subscription model matures and revenue that has been deferred begins to contribute to each quarterly period. Support gross margins are down in the second quarter and first six months of 2019 compared to the second quarter and first six months of 2018 primarily due to the decrease in perpetual support revenue of 18% and 17%, respectively.

Professional services gross margin increased 200 basis points for the first six months of 2019 compared to the first six months of 2018 due to cost management.

## Total Costs and Expenses



	Three months ended				Six months ended			
	As Reported		As Reported		As Reported		As Reported	
	ASC 606	ASC 605	ASC 605	ASC 605	ASC 606	ASC 605	ASC 605	ASC 605
March 30, 2019	March 30, 2019	March 31, 2018	Percent Change	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change	

(Dollar amounts in millions)

**Costs and expenses:**

Cost of license revenue	\$ 12.9	\$ 12.2	\$ 11.9	3 %	\$ 25.4	\$ 24.6	\$ 24.0	3 %
Cost of support and cloud services revenue	32.9	33.0	34.3	(4)%	64.1	63.6	68.8	(8)%
Cost of professional services revenue	34.2	32.7	37.5	(13)%	67.7	65.0	73.9	(12)%
Sales and marketing	103.7	109.4	98.4	11 %	207.9	216.7	197.8	10 %
Research and development	61.4	61.4	62.2	(1)%	122.2	122.2	126.2	(3)%
General and administrative	35.4	35.4	33.4	6 %	73.2	73.2	68.4	7 %
Amortization of acquired intangible assets	5.9	5.9	7.9	(25)%	11.9	11.9	15.7	(24)%
Restructuring and other charges, net	27.0	27.0	0.1		45.5	45.5	0.2	
<b>Total costs and expenses</b>	<b>\$ 313.3</b>	<b>\$ 317.1</b>	<b>\$ 285.7</b>	<b>11 %</b>	<b>\$ 618.0</b>	<b>\$ 622.6</b>	<b>\$ 575.0</b>	<b>8 %</b>
Total headcount at end of period	5,921	5,921	6,060	(2)%				

ASC 605 costs and expenses in the second quarter of 2019 compared to costs and expenses in the second quarter of 2018 increased primarily due to the following:

- a \$26.9 million restructuring charge associated with exiting our Needham headquarters facility,
- a \$3.2 million increase in cloud services hosting costs,
- a \$2.8 million increase in total compensation, benefit costs and travel expenses, primarily driven by a \$9.9 million increase in stock-based compensation and a \$1.4 million increase in commissions, offset by an \$8.5 million decrease in cash-based bonus, salary and travel expenses, and
- a \$1.1 million increase in rent expense primarily due to one month of overlapping rent in Needham and the new Seaport location in January,

primarily offset by:

- a \$1.7 million decrease in amortization of intangible assets, and
- a \$1.4 million decrease in event costs.

Costs and expenses for the second quarter of 2019 compared to the year-ago period include an \$7.6 million decrease due to changes in foreign currency exchange rates.

ASC 605 costs and expenses for the first six months of 2019 compared to costs and expenses for the first six months of 2018 increased primarily as a result of the following:

- a \$26.9 million restructuring charge associated with exiting our Needham headquarters facility in the second quarter of 2019 and a \$16.3 million restructuring charge for our workforce realignment in the first quarter of 2019,
- a \$5.0 million increase in cloud services hosting costs,
- a \$5.2 million increase in total compensation, benefit costs and travel expenses, primarily driven by a \$21.0 million increase in stock-based compensation and a \$2.2 million increase in commissions, offset by an \$18.1 million decrease in cash-based bonus, salary and travel expenses, and
- a \$1.0 million increase in rent expense primarily due to one month of overlapping rent in Needham and the new Seaport location in January,

primarily offset by:

- a \$3.5 million decrease in meeting and events costs,
- a \$3.5 million decrease in amortization of intangible assets, and
- a \$2.1 million decrease in professional service fees.

Costs and expenses for the first six months of 2019 compared to the year ago period include a \$13.2 million decrease due to changes in foreign currency exchange rates.

*Cost of License Revenue*

	Three months ended				Six months ended			
	As Reported		As Reported		As Reported		As Reported	
	ASC 606	ASC 605	ASC 605	ASC 605	ASC 606	ASC 605	ASC 605	ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change
(Dollar amounts in millions)								
Cost of license revenue	\$ 12.9	\$ 12.2	\$ 11.9	3%	\$ 25.4	\$ 24.6	\$ 24.0	3%
% of total revenue	4%	4%	4%		4%	4%	4%	
% of total license revenue	21%	8%	10%		15%	7%	10%	

Our cost of license revenue consists of fixed and variable costs associated with reproducing and distributing software and documentation, as well as royalties paid to third parties for technology embedded in or licensed with our software products, amortization of intangible assets associated with acquired products, and cost of subscription licensing. Costs associated with providing post-contract support such as providing software updates and technical support for both our subscription offerings and our perpetual licenses are included in cost of support and cloud service revenue. Cost of license revenue as a percent of license revenue can vary depending on the subscription mix percentage, the product mix sold, the effect of fixed and variable royalties, headcount and the level of amortization of acquired software intangible assets.

Cost of license revenue under ASC 606 is higher in the second quarter and first six months of 2019 than under ASC 605 due to the timing of revenue recognition under ASC 606, resulting in earlier recognition of the associated royalty costs. Under ASC 605, the support component of subscription revenue is included in license revenue, which reduces cost of license as a percentage of total license revenue.

Cost of license revenue in the second quarter and first six months of 2019 compared to the second quarter and first six months of 2018 increased primarily due to increased royalty costs, offset by lower compensation costs.

Cost of license revenue as a percentage of license revenue under ASC 605 decreased in the second quarter and first six months of 2019 compared to the second quarter and first six months of 2018 due to higher revenue as we realize the benefit of our maturing subscription model.

*Cost of Support and Cloud Service Revenue*

	Three months ended				Six months ended			
	As Reported		As Reported		As Reported		As Reported	
	ASC 606	ASC 605	ASC 605	ASC 605	ASC 606	ASC 605	ASC 605	ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change
(Dollar amounts in millions)								
Cost of support and cloud services revenue	\$ 32.9	\$ 33.0	\$ 34.3	(4)%	\$ 64.1	\$ 63.6	\$ 68.8	(8)%
% of total revenue	11%	10%	11%		10%	10%	11%	
% of total support and cloud services revenue	18%	27%	24%		17%	26%	24%	

Our cost of support and cloud services revenue includes costs associated with providing post-contract support such as providing software updates and technical support for both our subscription offerings and our perpetual licenses, cost of cloud services, and cost of software as service revenue. Cost of support and cloud services revenue consists of costs such as salaries, benefits, and computer equipment and facilities associated with customer support and cloud services and the release of support updates (including related royalty costs).

Under ASC 605, the support component of subscription revenue is included in license revenue, which increases the cost of support and cloud services as a percentage of total support and cloud services revenue.

In the second quarter and first six months of 2019 compared to the second quarter and first six months of 2018, total support and cloud services compensation, benefit costs and travel expenses decreased by 4% (\$0.8 million) and 7% (\$2.8 million), respectively, due to lower headcount, as well as lower third-party consulting costs, which decreased by 34% (\$0.7 million) and 36% (\$1.3 million), respectively. Offsetting these lower costs, cloud services hosting costs increased by 52% (\$1.4 million) and 24% (\$1.6 million), respectively.

*Cost of Professional Services Revenue*

Three months ended				Six months ended			
As Reported ASC 606	ASC 605	As Reported ASC 605	ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605	ASC 605
March 30, 2019	March 30, 2019	March 31, 2018	Percent Change	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change

(Dollar amounts in millions)

Cost of professional services revenue	\$ 34.2	\$ 32.7	\$ 37.5	(13)%	\$ 67.7	\$ 65.0	\$ 73.9	(12)%
% of total revenue	12%	10%	12%		11%	10%	12%	
% of total professional services revenue	83%	85%	83%		82%	83%	85%	

Our cost of professional services revenue includes costs such as salaries, benefits, and computer equipment and facilities for our training and consulting personnel, and third-party subcontractor fees.

Cost of professional services revenue is higher in the second quarter and first six months of 2019 under ASC 606 than under ASC 605 due to the timing of professional services revenue recognition and associated professional services costs.

In the second quarter and first six months of 2019 compared to the second quarter and first six months of 2018, total professional services compensation, benefit costs and travel expenses decreased by 20% (\$5.4 million) and 17% (\$9.2 million) respectively, due to lower headcount, partially offset by higher third-party subcontractor fees, which increased by 22% (\$1.4 million) and 15% (\$2.0 million), respectively.

*Sales and Marketing*

Three months ended				Six months ended			
As Reported ASC 606	ASC 605	As Reported ASC 605	ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605	ASC 605
March 30, 2019	March 30, 2019	March 31, 2018	Percent Change	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change

(Dollar amounts in millions)

Sales and marketing	\$ 103.7	\$ 109.4	\$ 98.4	11%	\$ 207.9	\$ 216.7	\$ 197.8	10%
% of total revenue	36%	35%	32%		33%	33%	32%	

Our sales and marketing expenses primarily include salaries and benefits, sales commissions, advertising and marketing programs, travel and facility costs.

Sales and marketing costs are lower under ASC 606 than under ASC 605 due to the deferral of ongoing commission expenses, offset by the amortization of commissions costs capitalized upon adoption of ASC 606.

In the second quarter and first six months of 2019 compared to the second quarter and first six months of 2018, total sales and marketing compensation, benefit costs and travel expenses increased 13% (\$9.9 million) and 12% (\$18.0 million), respectively, due to an increase in headcount, salary increases and stock-based compensation increases, partially offset by lower event costs, which decreased by 48% (\$1.4 million) and 38% (\$2.0 million), respectively.

Research and Development

	Three months ended				Six months ended			
	As Reported		As Reported		As Reported		As Reported	
	ASC 606	ASC 605	ASC 605	ASC 605	ASC 606	ASC 605	ASC 605	ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change
(Dollar amounts in millions)								
Research and development	\$ 61.4	\$ 61.4	\$ 62.2	(1)%	\$ 122.2	\$ 122.2	\$ 126.2	(3)%
% of total revenue	21%	19%	20%		20%	19%	21%	

Our research and development expenses consist principally of salaries and benefits, costs of computer equipment and facility expenses. Major research and development activities include developing new products and releases and updates of our software that enhance functionality and add features. In the second quarter and first six months of 2019 compared to the second quarter and first six months of 2018, total research and development compensation, benefit costs and travel expenses decreased 3% (\$1.6 million) and 4% (\$3.8 million), respectively, primarily due to a decrease in headcount.

General and Administrative

	Three months ended				Six months ended			
	As Reported		As Reported		As Reported		As Reported	
	ASC 606	ASC 605	ASC 605	ASC 605	ASC 606	ASC 605	ASC 605	ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change
(Dollar amounts in millions)								
General and administrative	\$ 35.4	\$ 35.4	\$ 33.4	6%	\$ 73.2	\$ 73.2	\$ 68.4	7%
% of total revenue	12%	11%	11%		12%	11%	11%	

Our general and administrative expenses include the costs of our corporate, finance, information technology, human resources, legal and administrative functions, as well as acquisition-related charges, bad debt expense and outside professional services, including accounting and legal fees.

In the second quarter and first six months of 2019 compared to the second quarter and first six months of 2018 total general and administrative compensation, benefit costs and travel expenses increased by 7% (\$1.9 million) and 8% (\$4.3 million), respectively, primarily due to higher stock-based compensation expense, offset by lower bonus expenses due to a portion of the annual bonus being payable in stock for 2019.

Amortization of Acquired Intangible Assets

	Three months ended				Six months ended			
	As Reported		As Reported		As Reported		As Reported	
	ASC 606	ASC 605	ASC 605	ASC 605	ASC 606	ASC 605	ASC 605	ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change	March 30, 2019	March 30, 2019	March 31, 2018	Percent Change
(Dollar amounts in millions)								
Amortization of acquired intangible assets	\$ 5.9	\$ 5.9	\$ 7.9	(25)%	\$ 11.9	\$ 11.9	\$ 15.7	(24)%
% of total revenue	2%	2%	3%		2%	2%	3%	

Amortization of acquired intangible assets reflects the amortization of acquired non-product related intangible assets, primarily customer and trademark-related intangible assets, recorded in connection with completed acquisitions. The decrease in amortization of acquired intangible assets in the second quarter and first six months of 2019 compared to the second quarter and first six months of 2018 is due to some assets being fully amortized as well as the impact of foreign currency exchange rates.

Restructuring and Other Charges, Net

	Three months ended			Six months ended		
	As Reported ASC 606	ASC 605	As Reported ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
	(in millions)					
Restructuring charges (credits), net	\$ 26.4	\$ 26.4	\$ (0.9)	\$ 43.0	\$ 43.0	\$ (0.7)
Headquarters relocation charges	0.6	0.6	1.0	2.5	2.5	1.0
Restructuring and Other Charges, Net	\$ 27.0	\$ 27.0	\$ 0.1	\$ 45.5	\$ 45.5	\$ 0.2

In January 2019 we relocated to our new worldwide headquarters in the Boston Seaport District. Because our prior headquarters lease will not expire until November 2022, we are seeking to sublease that space, but have not yet done so. As a result, we bear overlapping rent obligations for those premises. In the second quarter of 2019 we incurred a restructuring charge of \$26.9 million associated with the restructuring of our prior headquarters. The facility restructuring charge is based on the net present value of remaining lease commitments net of estimated sublease income. From a cash perspective, the free rent and estimated sublease income over the first 18 months on our Seaport headquarters total approximately \$30 million, as compared to the estimated cash outflows of \$34 million on the prior headquarters, which will be incurred over the next 44 months (rent obligations and operating expenses net of estimated sublease income). Restructuring charges and estimated cash outflows could increase if we are unable to sublease our prior headquarters as we expect.

The headquarters relocation charges include accelerated depreciation expense and double rent for January associated with exiting our prior headquarters facility and relocating to the Seaport.

In the first quarter of 2019, we initiated a restructuring plan to realign our workforce to shift investment to support Industrial Internet of Things and Augmented Reality strategic opportunities. As this is a realignment of resources rather than a cost-savings initiative, we do not expect this realignment to result in significant cost savings. The restructuring plan was completed in the first quarter of 2019. In the first six months of 2019 we recorded restructuring charges of \$16.0 million related to this restructuring plan.

In the second quarter and first six months of 2019, we made cash payments related to restructuring charges of \$9.6 million and \$17.9 million, respectively. At March 30, 2019, accrued restructuring totaled \$32.2 million, of which we expect to pay \$13.4 million within the next twelve months.

Interest Expense

	Three months ended			Six months ended		
	As Reported ASC 606	ASC 605	As Reported ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
	(in millions)					
Interest expense	\$ (11.4)	\$ (11.4)	\$ (10.4)	\$ (21.7)	\$ (21.7)	\$ (20.4)

Interest expense includes interest under our credit facility and senior notes. We had \$743 million of total debt at March 30, 2019, compared to \$648 million at March 31, 2018.

Other Income (Expense), net

	Three months ended			Six months ended		
	As Reported ASC 606	ASC 605	As Reported ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
	(in millions)					
Interest income	\$ 1.0	\$ 1.0	\$ 0.9	\$ 1.9	\$ 1.9	\$ 1.6
Other expense, net	(0.1)	0.1	(1.1)	(0.5)	(0.3)	(2.7)
Other income (expense), net	\$ 0.8	\$ 1.1	\$ (0.3)	\$ 1.5	\$ 1.6	\$ (1.1)

Other income (expense), net includes interest income, foreign currency net losses and other non-operating gains and losses. Foreign currency net losses include costs of forward contracts, certain realized and unrealized foreign currency transaction gains or losses, and foreign exchange gains or losses resulting from the required period-end currency re-measurement of the assets and liabilities of our subsidiaries that use the U.S. Dollar as their functional currency. We use foreign currency forward contracts to reduce our exposure to fluctuations in foreign currency exchange rates.

Income Taxes

	Three months ended			Six months ended		
	As Reported ASC 606	ASC 605	As Reported ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
(Dollar amounts in millions)						
Income before income taxes	\$ (33.4)	\$ (11.9)	\$ 11.5	\$ (13.0)	\$ 11.6	\$ 18.0
Provision (benefit) for income taxes	10.1	0.1	3.6	9.5	4.3	(3.8)
Effective income tax rate	(30)%	(1)%	31%	(73)%	38%	(21)%

In the first six months of 2019 and 2018, our effective tax rate differed from the statutory federal income tax rate of 21% due to U.S. tax reform (as described below), our corporate structure in which our foreign taxes are at a net effective tax rate lower than the U.S. rate, the excess tax benefit related to stock-based compensation and, in the first quarter of 2019, the reduction of a valuation allowance of \$1.8 million as the result of the Frustum acquisition. Additionally, ASC 606 includes indirect effects of the adoption at the beginning of the first quarter of fiscal 2019. A significant amount of our foreign earnings is generated by our subsidiaries organized in Ireland. In 2019 and 2018, the foreign rate differential predominantly relates to these Irish earnings.

On December 22, 2017, the United States enacted tax reform legislation through the Tax Cuts and Jobs Act, (the "Tax Act"), which significantly changed existing U.S. tax laws by a reduction of the corporate tax rate, the implementation of a new system of taxation for non-U.S. earnings, the imposition of a one-time tax on the deemed repatriation of undistributed earnings of non-U.S. subsidiaries, and the expansion of the limitations on the deductibility of executive compensation and interest expense. As we have a September 30 fiscal year-end, there is a blended U.S. statutory federal rate of approximately 24.5% for our fiscal year ending September 30, 2018 and 21% for subsequent fiscal years. The Tax Act also provides that net operating losses generated in years ending after December 31, 2017 may be carried forward indefinitely and can no longer be carried back, and that net operating losses generated in years beginning after December 31, 2017 can only reduce taxable income by up to 80% when utilized in a future period. The Tax Act includes a provision to tax global intangible low-tax income (GILTI) of foreign subsidiaries and a base erosion anti-abuse tax (BEAT) measure that taxes certain payments between a U.S. corporation and its foreign subsidiaries. The GILTI and BEAT provisions were effective for us beginning October 1, 2018. Our accounting policy is to treat tax on GILTI as a current period cost included in tax expense in the year incurred.

In the first quarter of 2018, we provided no federal income taxes payable as a result of the deemed repatriation of undistributed earnings as the tax was offset by a combination of current year losses and existing attributes which had a full valuation allowance recorded against the related deferred tax assets. We recorded state income taxes payable of \$7.1 million on the deemed repatriation. This was subsequently reduced to \$1.5 million to reflect additional guidance on the state implications of the Tax Act. We also recorded a deferred tax benefit of \$14.1 million for the impact of the Tax Act on our net U.S. deferred income tax balances. This was primarily attributable to the reduction of the federal tax rate on the net deferred tax liability in the U.S., and the ability to realize net operating losses from the reversal of existing deferred tax assets which can now be carried forward indefinitely and can therefore be netted against deferred tax liabilities for indefinite lived intangible assets.

The U.S. Securities and Exchange Commission issued rules that allow for a period of up to one year after the enactment date of the Tax Act to finalize the recording of the related tax impacts. We finalized recording the impacts of the Tax Act in the quarter ended December 29, 2018 and did not record any significant adjustments.

In October 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory. The



purpose of ASU 2016-16 is to simplify the income tax accounting of an intra-entity transfer of an asset other than inventory and to record its effect when the transfer occurs. We adopted this amendment beginning in the first quarter of 2019 using the modified retrospective method with a cumulative effect adjustment to accumulated deficit of \$72.3 million, with a corresponding increase of \$75.3 million to deferred tax assets, a \$6.0 million decrease to income tax assets and a \$3.0 million decrease to income tax liabilities. The adjustment primarily relates to deductible amortization of intangible assets in Ireland. Post adoption, our effective tax rate no longer includes the benefit of this amortization.

We have concluded, based on the weight of available evidence, that a full valuation allowance continues to be required against our U.S. net deferred tax assets as they are not more likely than not to be realized in the future. We will continue to reassess our valuation allowance requirements each financial reporting period.

In the normal course of business, PTC and its subsidiaries are examined by various taxing authorities, including the Internal Revenue Service in the U.S. We regularly assess the likelihood of additional assessments by tax authorities and provide for these matters as appropriate. We are currently under audit by tax authorities in several jurisdictions. Audits by tax authorities typically involve examination of the deductibility of certain permanent items, limitations on net operating losses and tax credits. Although we believe our tax estimates are appropriate, the final determination of tax audits and any related litigation could result in material changes in our estimates.

In the fourth quarter of 2016, we received an assessment of approximately \$12 million from the tax authorities in South Korea. The assessment relates to various tax issues, primarily foreign withholding taxes. We have appealed and intend to vigorously defend our positions. We believe that upon completion of a multi-level appeal process it is more likely than not that our positions will be sustained. Accordingly, we have not recorded a tax reserve for this matter. We paid this assessment in the first quarter of 2017 and have recorded the amount in other assets, pending resolution of the appeal process.

### **Operating Measures**

#### *Subscription Bookings and Subscription ACV*

Given the difference in revenue recognition between the sale of a perpetual software license and a subscription, we use bookings for internal planning, forecasting and reporting of new license and cloud services transaction (as subscription bookings includes cloud services bookings).

In order to normalize between perpetual and subscription licenses, we define **subscription bookings** as the subscription annualized contract value (subscription ACV) of new subscription contracts multiplied by a conversion factor of 2. We arrived at the conversion factor of 2 by considering a number of variables, including pricing, support, length of term, and renewal rates. In 2018 and 2017, the average subscription contract term was approximately two years.

We define **subscription ACV** as the total value of a new subscription contract (which may include annual values that increase over time) divided by the term of the contract (in days), multiplied by 365. If the term of the subscription contract is less than a year, and is not associated with an existing contract, the booking is equal to the total contract value. Beginning in the third quarter of 2018, minimum ACV commitments under our Strategic Alliance Agreement with Rockwell Automation are included in subscription ACV if the period-to-date minimum ACV commitment exceeds actual ACV sold under the Agreement.

We define **license and subscription bookings** as subscription bookings plus perpetual license bookings.

Because subscription bookings is a metric we use to approximate the value of subscription sales if sold as perpetual licenses, it does not represent the actual revenue that will be recognized with respect to subscription sales or that would be recognized if the sales were perpetual licenses, nor does the annualized value of monthly software rental bookings represent the value of any such booking.

#### *Annualized Recurring Revenue (ARR)*

Annualized Recurring Revenue (ARR) for a given quarter is calculated by dividing the portion of ASC 605 non-GAAP software revenue attributable to subscription and support for the quarter by the number of days in the quarter and multiplying by 365. ARR should be viewed independently of revenue and deferred revenue as it is an operating measure and is not intended to be combined with or to replace either of those items.

## Non-GAAP Financial Measures

The non-GAAP financial measures presented in the discussion of our results of operations and the respective most directly comparable GAAP measures are:

- non-GAAP revenue—GAAP revenue
- non-GAAP gross margin—GAAP gross margin
- non-GAAP operating income—GAAP operating income
- non-GAAP operating margin—GAAP operating margin
- non-GAAP net income—GAAP net income
- non-GAAP diluted earnings or loss per share—GAAP diluted earnings or loss per share

The non-GAAP financial measures exclude fair value adjustments related to acquired deferred revenue and deferred costs, stock-based compensation expense, amortization of acquired intangible assets, acquisition-related charges, restructuring and headquarters relocation charges, pension plan termination-related costs, non-operating credit facility refinancing costs, identified discrete charges included in non-operating other expense, net and the related tax effects of the preceding items, and any other identified tax items.

These items are normally included in the comparable measures calculated and presented in accordance with GAAP. Our management excludes these items when evaluating our ongoing performance and/or predicting our earnings trends, and therefore excludes them from our non-GAAP financial measures. Investors should consider non-GAAP measures only in conjunction with our GAAP results.

*Fair value of acquired deferred revenue* is a purchase accounting adjustment recorded to reduce acquired deferred revenue to the fair value of the remaining obligation, so our GAAP revenue for the periods after an acquisition do not reflect the full amount of revenue that would have been reported if the acquired deferred revenue was not written down to fair value. We believe excluding these adjustments to revenue from these contracts (and associated costs in *fair value of acquired deferred costs*) is useful to investors as an additional means to assess revenue trends of our business.

*Stock-based compensation* is a non-cash expense relating to stock-based awards issued to executive officers, employees and outside directors and to our employee stock purchase program. We exclude this expense as it is a non-cash expense and we assess our internal operations excluding this expense and believe it facilitates comparisons to the performance of other companies in our industry.

*Amortization of acquired intangible assets* is a non-cash expense that is impacted by the timing and magnitude of our acquisitions. We believe the assessment of our operations excluding these costs is relevant to our assessment of internal operations and comparisons to the performance of other companies in our industry.

*Acquisition-related and other transactional charges included in general and administrative costs* are direct costs of potential and completed acquisitions and expenses related to acquisition integration activities, including transaction fees, due diligence costs, severance and professional fees. Subsequent adjustments to our initial estimated amount of contingent consideration associated with specific acquisitions are also included within acquisition-related charges. Other transactional charges include third-party costs related to structuring unusual transactions. We do not include these costs when reviewing our operating results internally. The occurrence and amount of these costs will vary depending on the timing and size of acquisitions.

*Restructuring charges* include excess facility restructuring charges and severance costs resulting from reductions of personnel driven by modifications to our business strategy. We do not include these costs when reviewing our operating results internally. These costs may vary in size based on our restructuring plan.

*Headquarters relocation charges* include non-cash accelerated depreciation expense recorded in anticipation of exiting our current headquarters facility due to changes in the estimated useful lives of fixed assets. We do not include these costs when reviewing our operating results internally.

*Income tax adjustments* include the tax impact of the items above and assumes that we are profitable on a non-GAAP basis in the U.S. and one foreign jurisdiction. It also eliminates the effect of the valuation

allowance recorded against our net deferred tax assets in those jurisdictions. Additionally, we exclude other material tax items that we do not include when reviewing our operating results internally.

We use these non-GAAP measures, and we believe that they assist our investors, to make period-to-period comparisons of our operational performance because they provide a view of our operating results without items that are not, in our view, indicative of our core operating results. We believe that these non-GAAP measures help illustrate underlying trends in our business, and we use the measures to establish budgets and operational goals (communicated internally and externally) for managing our business and evaluating our performance. We believe that providing non-GAAP measures also affords investors a view of our operating results that may be more easily compared to the results of other companies in our industry that use similar financial measures to supplement their GAAP results.

The items excluded from the non-GAAP measures often have a material impact on our financial results and many of such items recur. Accordingly, the non-GAAP measures included in this Quarterly Report should be considered in addition to, and not as a substitute for or superior to, the comparable measures prepared in accordance with GAAP. The following tables reconcile each of these non-GAAP measures to its most closely comparable GAAP measure on our financial statements.

	Three months ended			Six months ended		
	As Reported ASC 606	ASC 605	As Reported ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
(in millions, except per share amounts)						
GAAP revenue	\$ 290.5	\$ 315.5	\$ 307.9	\$ 625.1	\$ 654.3	\$ 614.5
Fair value of acquired deferred revenue	0.2	0.2	0.3	0.5	0.5	0.7
Non-GAAP revenue	\$ 290.7	\$ 315.7	\$ 308.2	\$ 625.6	\$ 654.7	\$ 615.2
GAAP gross margin	\$ 210.5	\$ 237.5	\$ 224.2	\$ 467.9	\$ 501.1	\$ 447.8
Fair value of acquired deferred revenue	0.2	0.2	0.3	0.5	0.5	0.7
Fair value of acquired deferred costs	(0.1)	(0.1)	(0.1)	(0.2)	(0.2)	(0.2)
Stock-based compensation	3.1	3.1	2.8	6.2	6.2	5.7
Amortization of acquired intangible assets included in cost of revenue	6.8	6.8	6.6	13.6	13.6	13.2
Non-GAAP gross margin	\$ 220.6	\$ 247.6	\$ 233.7	\$ 488.0	\$ 521.2	\$ 467.2
GAAP operating income	\$ (22.9)	\$ (1.6)	\$ 22.2	\$ 7.2	\$ 31.6	\$ 39.5
Fair value of acquired deferred revenue	0.2	0.2	0.3	0.5	0.5	0.7
Fair value of acquired deferred costs	(0.1)	(0.1)	(0.1)	(0.2)	(0.2)	(0.2)
Stock-based compensation	27.0	27.0	17.0	56.4	56.4	35.4
Amortization of acquired intangible assets included in cost of revenue	6.8	6.8	6.6	13.6	13.6	13.2
Amortization of acquired intangible assets	5.9	5.9	7.9	11.9	11.9	15.7
Acquisition-related and other transactional charges included in general and administrative expenses	0.4	0.4	0.1	0.8	0.8	0.1
Headquarters relocation charges	0.6	0.6	1.0	2.5	2.5	1.0
Restructuring charges, net	26.4	26.4	(0.8)	43.0	43.0	(0.7)
Non-GAAP operating income	\$ 44.4	\$ 65.6	\$ 54.1	\$ 135.6	\$ 160.0	\$ 104.7
GAAP net income	\$ (43.5)	\$ (12.0)	\$ 7.9	\$ (22.5)	\$ 7.2	\$ 21.8
Fair value of acquired deferred revenue	0.2	0.2	0.3	0.5	0.5	0.7
Fair value of acquired deferred costs	(0.1)	(0.1)	(0.1)	(0.2)	(0.2)	(0.2)
Stock-based compensation	27.0	27.0	17.0	56.4	56.4	35.4
Amortization of acquired intangible assets included in cost of revenue	6.8	6.8	6.6	13.6	13.6	13.2
Amortization of acquired intangible assets	5.9	5.9	7.9	11.9	11.9	15.7

Acquisition-related and other transactional charges included in general and administrative expenses	0.4	0.4	0.1	0.8	0.8	0.1
Headquarters relocation charges	0.6	0.6	1.0	2.5	2.5	1.0
Restructuring charges, net	26.4	26.4	(0.8)	43.0	43.0	(0.7)
Income tax adjustments <sup>(1)</sup>	2.1	(10.4)	(0.1)	(12.7)	(22.5)	(11.1)
Non-GAAP net income	\$ 25.8	\$ 44.8	\$ 39.8	\$ 93.1	\$ 113.1	\$ 75.9
GAAP diluted earnings per share	\$ (0.37)	\$ (0.10)	\$ 0.07	\$ (0.19)	\$ 0.06	\$ 0.19
Fair value of acquired deferred revenue	—	—	—	—	—	0.01
Stock-based compensation	0.23	0.23	0.14	0.47	0.47	0.30
Amortization of acquired intangible assets	0.11	0.11	0.12	0.21	0.21	0.25
Acquisition-related and other transactional charges included in general and administrative expenses	—	—	—	0.01	0.01	—
Headquarters relocation charges	—	—	0.01	0.02	0.02	0.01
Restructuring charges, net	0.22	0.22	(0.01)	0.36	0.36	(0.01)
Income tax adjustments <sup>(1)</sup>	0.02	(0.09)	—	(0.11)	(0.19)	(0.09)
Non-GAAP diluted earnings per share	\$ 0.22	\$ 0.38	\$ 0.34	\$ 0.78	\$ 0.95	\$ 0.64

(1) We have recorded a full valuation allowance against our U.S. net deferred tax assets. As we are profitable on a non-GAAP basis, the 2019 and 2018 non-GAAP tax provisions are calculated assuming there is no valuation allowance. Income tax adjustments reflect the tax effects of non-GAAP adjustments, which are calculated by applying the applicable tax rate by jurisdiction to the non-GAAP adjustments listed above. We recorded the impact of the Tax Cuts and Jobs Act in our Q1 2018 GAAP earnings, resulting in a non-cash benefit of approximately \$7 million. We have excluded this benefit from our non-GAAP results.

Operating margin impact of non-GAAP adjustments:

	Three months ended			Six months ended		
	As Reported ASC 606	ASC 605	As Reported ASC 605	As Reported ASC 606	ASC 605	As Reported ASC 605
	March 30, 2019	March 30, 2019	March 31, 2018	March 30, 2019	March 30, 2019	March 31, 2018
GAAP operating margin	(7.9)%	(0.5)%	7.2%	1.1%	4.8%	6.4%
Fair value of acquired deferred revenue	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Stock-based compensation	9.3%	8.5%	5.5%	9.0%	8.6%	5.8%
Amortization of acquired intangible assets	4.4%	4.0%	4.7%	4.1%	3.9%	4.7%
Acquisition-related and other transactional charges included in general and administrative expenses	0.1%	0.1%	—%	0.1%	0.1%	—%
Headquarters relocation charges	0.2%	0.2%	0.3%	0.4%	0.4%	0.2%
Restructuring charges, net	9.1%	8.4%	(0.3)%	6.9%	6.6%	(0.1)%
Non-GAAP operating margin	15.3%	20.8%	17.6%	21.7%	24.4%	17.0%

### Critical Accounting Policies and Estimates

On October 1, 2018, we adopted ASU No. 2014-09, Revenue from Contracts with Customers: Topic 606 (ASC 606). Refer to *Note 1. Basis of Presentation* and *Note 2. Revenue from Contracts with Customers* to the Condensed Consolidated Financial Statements of this Quarterly Report on Form 10-Q for estimates related to our adoption of ASC 606. The financial information included in Item 1 reflects no other material changes in our critical accounting policies and estimates as set forth under the heading *Critical Accounting Policies and Estimates* in Part II, Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations of our 2018 Annual Report on Form 10-K.

### Recent Accounting Pronouncements

In accordance with recently issued accounting pronouncements, we will be required to comply with certain changes in accounting rules and regulations, some of which are expected to have a material

impact on our consolidated financial statements. Refer to *Note 1. Basis of Presentation* to the Condensed Consolidated Financial Statements of this Quarterly Report on Form 10-Q for all recently issued accounting pronouncements, which is incorporated herein by reference.

### Liquidity and Capital Resources

	March 30, 2019	March 31, 2018
	(in thousands)	
Cash and cash equivalents	\$ 294,299	\$ 299,776
Restricted cash	1,133	1,529
Short- and long-term marketable securities	56,415	55,264
<b>Total</b>	<b>\$ 351,847</b>	<b>\$ 356,569</b>

	Six months ended	
	March 30, 2019	March 31, 2018
	(in thousands)	
Cash provided by operating activities	\$ 162,344	\$ 136,598
Cash used by investing activities	(128,340)	(22,693)
Cash used by financing activities	(1,902)	(99,646)

#### Cash, cash equivalents and restricted cash

We invest our cash with highly rated financial institutions and in diversified domestic and international money market mutual funds. Cash and cash equivalents include highly liquid investments with original maturities of three months or less. In addition, we hold investments in marketable securities totaling approximately \$56 million with an average maturity of 12 months. At March 30, 2019, cash and cash equivalents totaled \$294 million, compared to \$260 million at September 30, 2018, reflecting \$162 million in operating cash flows and \$95 million in net borrowings under our credit facility, offset by \$69 million used for the Frustum acquisition, \$51 million used to acquire capital assets, \$35 million used to pay withholding taxes on stock-based awards, \$4 million from the issuance of common stock, and \$2 million used to pay for contingent consideration.

A significant portion of our cash is generated and held outside the U.S. At March 30, 2019, we had cash and cash equivalents of \$25 million in the U.S., \$105 million in Europe, \$134 million in Asia Pacific (including India), and \$30 million in other non-U.S. countries. All the marketable securities are held in Europe. We have substantial cash requirements in the United States, but we believe that the combination of our existing U.S. cash and cash equivalents, marketable securities, our ability to repatriate cash to the U.S. more cost effectively with the recent U.S. tax law changes, future U.S. operating cash flows and cash available under our credit facility, will be sufficient to meet our ongoing U.S. operating expenses and known capital requirements.

#### Cash provided by operating activities

Cash provided by operating activities was \$162 million in the first six months of 2019, compared to \$137 million in the first six months of 2018. The increase is primarily due to higher accounts receivable collections of \$40 million, offset by restructuring payments of \$18 million.

Net loss for the first six months of 2019 was \$23 million compared to net income of \$22 million for the first six months of 2018.

### Cash used in investing activities

	Six months ended	
	March 30, 2019	March 31, 2018
	(in thousands)	
Cash used in investing activities included the following:		
Additions to property and equipment	\$ (51,268)	\$ (11,139)
Acquisitions of businesses, net of cash acquired	(69,453)	(3,000)
Purchase of intangible asset	—	(3,000)
Purchases of short- and long-term marketable securities	(14,460)	(13,794)
Proceeds from maturities of short- and long-term marketable securities	14,227	8,240
Settlement of net investment hedges	114	—
	<u>\$ (128,340)</u>	<u>\$ (22,693)</u>

The increase in property, plant and equipment payments is primarily attributable to expenditures made for construction of our new worldwide headquarters in the Boston Seaport District (a portion of which is offset by landlord reimbursements included in cash from operations above). In the first six months of 2019 we also used \$69.5 million to acquire Frustum.

### Cash used in financing activities

	Six months ended	
	March 30, 2019	March 31, 2018
	(in thousands)	
Cash used in financing activities included the following:		
Net borrowings (repayments) of debt	\$ 95,000	\$ (70,000)
Repurchases of common stock	(64,994)	—
Payments of withholding taxes in connection with stock-based awards	(34,491)	(33,942)
Proceeds from issuance of common stock	4,158	7,472
Contingent consideration	(1,575)	(3,176)
	<u>\$ (1,902)</u>	<u>\$ (99,646)</u>

The net borrowings in the first six months of 2019 reflect borrowings of \$205 million under our credit facility to fund the working capital requirements and Frustum acquisition, offset by repayments of \$110 million. In the first six months of 2019 we paid \$34.5 million in withholding taxes in connection with stock-based awards, received \$4.2 million in proceeds from issuance of common stock under our ESPP, and made \$1.6 million in contingent consideration payments.

### Credit Agreement

Our credit facility is a multi-currency credit facility with a syndicate of sixteen banks for which JPMorgan Chase Bank, N.A. acts as Administrative Agent. The total revolving loan commitment under the facility is \$700 million. Outstanding revolving loan amounts may be repaid in whole or in part, without penalty or premium, prior to the September 13, 2023 maturity date, when all remaining amounts outstanding will be due and payable in full.

We use the credit facility for general corporate purposes, including acquisitions of businesses, share repurchases and working capital requirements. As of March 30, 2019, we had \$243.1 million in revolving loans outstanding under the credit facility, the fair value of which approximated its book value. As of March 30, 2019, we have approximately \$456.9 million undrawn, of which \$441.4 million would be available to borrow, the availability of which is reduced by letters of credit and certain other long-term liabilities.

Any borrowings by PTC Inc. or certain of our foreign subsidiaries under the credit facility would be guaranteed, respectively, by our material domestic subsidiaries that become parties to the subsidiary guaranty, if any, and/or by PTC Inc. Borrowings are also secured by first priority liens on property of PTC and certain of our material domestic subsidiaries, including 100% of the voting equity interests of certain of

our domestic subsidiaries and 65% of our material first-tier foreign subsidiaries. Loans under the credit facility bear interest at variable rates that reset every 30 to 180 days depending on the rate and period selected by us and based upon our total leverage ratio. In the second quarter and first six months of 2019, the weighted average annual interest rate for amounts outstanding was 5.3% and 5.4% respectively. We are currently evaluating the anticipated impact of the phase-out of LIBOR in 2021, which may be material. We also pay a quarterly commitment fee on the undrawn portion of the credit facility ranging from 0.175% to 0.30% per year based on our total leverage ratio.

The credit facility imposes customary covenants that limit our ability to incur liens or guarantee obligations, pay dividends and make other distributions, make investments and engage in certain other transactions. In addition, we and our material domestic subsidiaries may not invest in, or loan to, our foreign subsidiaries in aggregate amounts exceeding \$100 million for any purpose and an additional \$200 million for acquisitions of businesses. We also must maintain the following financial ratios:

	<u>Required Ratio</u>	<u>Ratio as of March 30, 2019</u>
<b>Total Leverage Ratio</b>		
Ratio of consolidated total indebtedness to the consolidated trailing four quarters EBITDA.	<b>Not &gt; 4.50:1.00</b>	<b>2.14 to 1.00</b>
<b>Interest Coverage Ratio</b>		
Ratio of consolidated trailing four quarters EBITDA to consolidated trailing four quarters cash basis interest expense.	<b>&gt; 3.00:1.00</b>	<b>8.64 to 1.00</b>
<b>Senior Secured Leverage Ratio</b>		
Ratio of senior consolidated total indebtedness (which excludes unsecured indebtedness) to consolidated trailing four quarters EBITDA as of the last day of any fiscal quarter.	<b>Not &gt; 3.00:1.00</b>	<b>0.73 to 1.00</b>

As of March 30, 2019, we were in compliance with all financial and operating covenants of the credit facility.

Any failure to comply with such covenants would prevent us from being able to borrow additional funds, and would constitute a default, permitting the lenders to, among other things, accelerate the amounts outstanding and terminate the credit facility.

The terms and conditions of the credit facility are described in *Note 13. Debt* in the Financial Statements.

#### **Outstanding Notes**

On May 12, 2016, we issued \$500 million of 6.00% senior unsecured notes due 2024. Interest on the notes is payable twice per year in May and November.

We may redeem the notes, in whole or in part, subject to certain conditions, including in some cases a payment of premium, prior to their maturity date. In addition, if we undergo a change of control, we will be required to make an offer to purchase all the notes at a price equal to 101% of the principal amount of the notes plus accrued and unpaid interest.

The notes were issued under an indenture that contains customary covenants. Subject to certain exceptions, our ability to incur certain additional debt is limited unless, after giving pro forma effect to such incurrence and the application of the proceeds thereof, the ratio of our EBITDA to our Consolidated Fixed Charges is not greater than 2.00 to 1.00. The indenture also restricts our ability to incur liens, pay dividends or make certain other distributions, sell assets or engage in sale/leaseback transactions. Any failure to comply with these and other covenants included in the indenture could constitute an event of default that could result in the acceleration of the payment of the aggregate principal amount of the notes then outstanding and accrued interest. As of March 30, 2019, we were in compliance with all such covenants.

#### **Share Repurchases**

Our Articles of Organization authorize us to issue up to 500 million shares of our common stock.

Our Board of Directors has authorized us to repurchase up to \$1,500 million of our common stock in the period October 1, 2017 through September 30, 2020. We repurchased \$65 million of our common stock in the second quarter and first six months of 2019. We did not repurchase any stock under the current authorization in the second quarter and first six months of 2018. We expect to repurchase

additional material amounts over the remainder of 2019. We intend to use cash from operations and borrowings under our credit facility to make such repurchases. All shares of our common stock repurchased are automatically restored to the status of authorized and unissued.

### **Future Expectations**

We believe that existing cash and cash equivalents, together with cash generated from operations and amounts available under the credit facility, will be sufficient to meet our working capital and capital expenditure requirements (which capital expenditures we expect to be approximately \$40 million in 2019, net of expected landlord funding of leasehold improvements) and fund our intended share repurchases through at least the next twelve months and to meet our known long-term capital requirements.

Our expected uses of cash could change, our cash position could be reduced and we could incur additional debt obligations if we decide to retire debt or to engage in strategic transactions, any of which could be commenced, suspended or completed at any time. Any such purchases or retirement of debt will depend on prevailing market conditions, our liquidity requirements, contractual restrictions and other factors. We also evaluate possible strategic transactions on an ongoing basis and at any given time may be engaged in discussions or negotiations with respect to possible strategic transactions. The amounts involved in any debt repurchases or strategic transactions may be material.

### **ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

There have been no significant changes in our market risk exposure as described in Item 7A: *Quantitative and Qualitative Disclosures about Market Risk* of our 2018 Annual Report on Form 10-K.

### **ITEM 4. CONTROLS AND PROCEDURES**

#### ***Evaluation of Effectiveness of Disclosure Controls and Procedures***

Our management maintains disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act") that are designed to provide reasonable assurance that information required to be disclosed in our reports filed or submitted under the Exchange Act is processed, recorded, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer (our principal executive officer and principal financial officer, respectively), as appropriate, to allow for timely decisions regarding required disclosure.

We evaluated, under the supervision and with the participation of management, including our principal executive and principal financial officers, the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this quarterly report. Based on this evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of March 30, 2019.

#### ***Changes in Internal Control over Financial Reporting***

Effective October 1, 2018, we adopted Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers, as amended (ASC 606). In connection with our adoption of ASC 606, we implemented changes to our systems, processes, policies and internal controls. These changes will have a material effect on our internal control over financial reporting in 2019.

There were no other changes in our internal control over financial reporting identified in management's evaluation pursuant to Rules 13a or 15(d) of the Exchange Act that occurred during the period ended March 30, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.



## PART II—OTHER INFORMATION

### ITEM 1A. RISK FACTORS

In addition to other information set forth in this report, you should carefully consider the risk factors described in Part I. Item 1A. Risk Factors in our 2018 Annual Report on Form 10-K, which could materially affect our business, financial condition or future results. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially and adversely affect our business, financial condition and/or operating results.

### ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

The table below shows the shares of our common stock we repurchased in the second quarter of 2019.

Period (1)	Total Number of Shares (or Units) Purchased	Average Price Paid per Share (or Unit)	Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares (or Units) that May Yet Be Purchased Under the Plans or Programs
December 30, 2018 - January 26, 2019	18,430	\$ 81.77	18,430	\$398,500,360 (2)
January 27, 2019 - February 23, 2019	367,368	\$ 87.76	367,368	\$366,252,574 (2)
February 24, 2019 - March 30, 2019	339,689	\$ 91.89	339,689	\$335,005,304 (2)
<b>Total</b>	<b>725,397</b>	<b>\$ 89.83</b>	<b>725,397</b>	<b>\$335,005,304 (2)</b>

(1) Periods are our fiscal months within the fiscal quarter.

(2) Our Board of Directors has authorized us to repurchase up to \$1,500 million of our common stock for the period October 1, 2017 through September 30, 2020, which program we initially announced on September 19, 2017 and expanded in July 2018.

### ITEM 6. EXHIBITS

- 3.1 [Restated Articles of Organization of PTC Inc. adopted August 4, 2015 \(filed as Exhibit 3.1 to our Annual Report on Form 10-K for the fiscal year ended September 30, 2015 \(File No. 0-18059\) and incorporated herein by reference\).](#)
- 3.2 [By-Laws, as amended and restated, of PTC Inc. \(filed as Exhibit 3.2 to our Quarterly Report on Form 10-Q for the fiscal quarter ended March 29, 2014 \(File No. 0-18059\) and incorporated herein by reference\).](#)
- 4.1 [Indenture, dated as of May 12, 2016, by and between the Company and The Bank of New York Mellon, as Trustee \(filed as Exhibit 4.1 to our Current Report on Form 8-K filed on May 18, 2016 \(File No. 0-18059\) and incorporated herein by reference\).](#)
- 4.2 [First Supplemental Indenture, dated as of May 12, 2016, by and between the Company and The Bank of New York Mellon, as Trustee \(filed as Exhibit 4.2 to our Current Report on Form 8-K filed on May 18, 2016 \(File No. 0-18059\) and incorporated herein by reference\).](#)
- 4.3 [6.000% Senior Notes due 2024 \(filed as Exhibit 4.3 to our Current Report on Form 8-K filed on May 18, 2016 \(File No. 0-18059\) and incorporated herein by reference\).](#)
- 31.1 [Certification of the Chief Executive Officer Pursuant to Exchange Act Rules 13a-14\(a\) and 15d-14\(a\).](#)
- 31.2 [Certification of the Chief Financial Officer Pursuant to Exchange Act Rules 13a-14\(a\) and 15d-14\(a\).](#)
- 32\* [Certification of Periodic Financial Report Pursuant to 18 U.S.C. Section 1350.](#)
- 101 The following materials from PTC Inc.'s Quarterly Report on Form 10-Q for the quarter ended March 30, 2019 formatted in XBRL (eXtensible Business Reporting Language): (i) Condensed Consolidated Balance Sheets as of March 30, 2019 and September 30, 2018; (ii) Condensed Consolidated Statements of Operations for the three and six months ended March 30, 2019 and March 31, 2018; (iii) Condensed Consolidated Statements of Comprehensive Income for the three and six months ended March 30, 2019 and March 31, 2018; (iv) Condensed Consolidated Statements of Cash Flows for the six months ended March 30, 2019 and March 31, 2018; (v) Consolidated Statements of Stockholders' Equity for the three and six months ended March 30, 2019 and March 31, 2018; and (vi) Notes to Condensed Consolidated Financial Statements.

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\* Indicates that the exhibit is being furnished, not filed, with this report.

**SIGNATURE**

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 hereunto duly authorized.

PTC Inc.

By:

\_\_\_\_\_  
/S/ ANDREW MILLER

**Andrew Miller**  
**Executive Vice President and Chief Financial**  
**Officer (Principal Financial Officer)**

Date: May 9, 2019

## CERTIFICATION

I, James Heppelmann, certify that:

1. I have reviewed this quarterly report on Form 10-Q of PTC Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 9, 2019

/S/ JAMES HEPPELMANN

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**James Heppelmann**  
*President and Chief Executive Officer*

## CERTIFICATION

I, Andrew Miller, certify that:

1. I have reviewed this quarterly report on Form 10-Q of PTC Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 9, 2019

/S/ ANDREW MILLER

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**Andrew Miller**  
*Executive Vice President and Chief Financial Officer*

**Certification of Periodic Financial Report**

**Pursuant to 18 U.S.C. Section 1350**

Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, each of the undersigned officers of PTC Inc. (the "Company") certifies that, to his knowledge, the Quarterly Report on Form 10-Q of the Company for the quarter ended March 30, 2019 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and information contained in that Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 9, 2019

\_\_\_\_\_  
/S/ JAMES HEPELMANN

**James Heppelmann**

*President and Chief Executive Officer*

Date: May 9, 2019

\_\_\_\_\_  
/S/ ANDREW MILLER

**Andrew Miller**

*Executive Vice President and Chief Financial Officer*