PTC INC.
Form 10-Q
August 01, 2018

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

FORM 10-Q

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF
THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended June 30, 2018
Commission File Number: 0-18059

PTC Inc.
(Exact name of registrant as specified in its charter)

Massachusetts	04-2866152
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

140 Kendrick Street, Needham, MA 02494
(Address of principal executive offices, including zip code)
(781) 370-5000
(Registrant's telephone number, including area code)

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 þ No ¨
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes þ No ¨
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 þ	Accelerated filer ¨	Non-accelerated filer ¨ (Do not check if a smaller reporting company)	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 þ
There were 117,829,713 shares of our common stock outstanding on July 27, 2018.

PTC Inc.
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For the Quarter Ended June 30, 2018

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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)

	June 30, 2018	September 30, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$266,552	$280,003
Short-term marketable securities	22,356	18,408
Accounts receivable, net of allowance for doubtful accounts of $591 and $1,062 at June 30, 2018 and September 30, 2017, respectively	130,079	152,299
Prepaid expenses	46,600	49,913
Other current assets	122,625	165,933
Total current assets	588,212	666,556
Property and equipment, net	64,456	63,600
Goodwill	1,182,462	1,182,772
Acquired intangible assets, net	214,657	257,908
Long-term marketable securities	31,816	31,907
Deferred tax assets	138,958	123,166
Other assets	35,070	34,475
Total assets	$2,255,631	$2,360,384
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$37,773	$35,160
Accrued expenses and other current liabilities	58,296	80,761
Accrued compensation and benefits	87,401	110,957
Accrued income taxes	6,683	5,735
Deferred revenue	474,957	446,296
Total current liabilities	665,110	678,909
Long-term debt	693,053	712,406
Deferred tax liabilities	5,862	17,880
Deferred revenue	8,994	12,611
Other liabilities	48,227	53,142
Total liabilities	1,421,246	1,474,948
Commitments and contingencies (Note 13)		
Stockholders' equity:		
Preferred stock, $0.01 par value; 5,000 shares authorized; none issued	—	—
Common stock, $0.01 par value; 500,000 shares authorized; 115,491 and 115,333 shares issued and outstanding at June 30, 2018 and September 30, 2017, respectively	1,155	1,153
Additional paid-in capital	1,524,399	1,609,030
Accumulated deficit	(612,600)	(650,840)
Accumulated other comprehensive loss	(78,569)	(73,907)
Total stockholders' equity	834,385	885,436
Total liabilities and stockholders' equity	$2,255,631	$2,360,384

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		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
Revenue:				
Subscription	$126,712	$74,859	$339,651	$195,001
Support	121,127	140,428	379,007	433,624
Total recurring revenue	247,839	215,287	718,658	628,625
Perpetual license	25,780	32,348	82,604	94,099
Total subscription, support and license revenue	273,619	247,635	801,262	722,724
Professional services	41,158	43,658	128,041	134,936
Total revenue	314,777	291,293	929,303	857,660
Cost of revenue:				
Cost of license and subscription revenue	24,010	21,648	71,505	62,333
Cost of support revenue	22,223	23,635	67,453	69,028
Total cost of software revenue	46,233	45,283	138,958	131,361
Cost of professional services revenue	35,323	36,985	109,187	114,852
Total cost of revenue	81,556	82,268	248,145	246,213
Gross margin	233,221	209,025	681,158	611,447
Operating expenses:				
Sales and marketing	107,741	93,101	305,386	271,568
Research and development	61,218	59,850	187,381	175,474
General and administrative	33,082	35,294	101,439	108,789
Amortization of acquired intangible assets	7,850	7,973	23,566	23,986
Restructuring and other charges, net	1,627	1,551	1,846	8,300
Total operating expenses	211,518	197,769	619,618	588,117
Operating income	21,703	11,256	61,540	23,330
Interest expense	(10,646)	(10,200)	(31,072)	(32,239)
Interest income and other expense, net	(1,086)	(357)	(2,481)	2,049
Income (loss) before income taxes	9,971	699	27,987	(6,860)
Provision (benefit) for income taxes	(7,026)	1,650	(10,809)	4,336
Net income (loss)	$16,997	$(951)	$38,796	$(11,196)
Earnings (loss) per share—Basic	$0.15	$(0.01)	$0.33	$(0.10)
Earnings (loss) per share—Diluted	$0.14	$(0.01)	$0.33	$(0.10)
Weighted average shares outstanding—Basic	115,774	115,615	115,915	115,511
Weighted average shares outstanding—Diluted	117,500	115,615	117,687	115,511

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		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
Net income (loss)	$16,997	$(951)	$38,796	$(11,196)
Other comprehensive income (loss), net of tax:				
Unrealized hedge gain (loss) arising during the period, net of tax of $0.6 million and $0.3 million in the third quarter of 2018 and 2017, respectively, and $0.1 million and $0 million in the first nine months of 2018 and 2017, respectively	3,910	(2,298)	950	224
Net hedge (gain) loss reclassified into earnings, net of tax of $0 million in both the third quarter of 2018 and 2017, respectively, and $0.3 million and $0.1 million in the first nine months of 2018 and 2017, respectively	242	75	2,327	(777)
Unrealized gain (loss) on hedging instruments	4,152	(2,223)	3,277	(553)
Foreign currency translation adjustment, net of tax of $0 for each period	(21,628)	17,553	(8,859)	3,893
Unrealized gain (loss) on marketable securities, net of tax of $0 for each period	67	21	(379)	(50)
Amortization of net actuarial pension loss included in net income, net of tax of $0.1 million and $0.2 million in the third quarter of 2018 and 2017, respectively, and $0.5 million and $0.7 million in the first nine months of 2018 and 2017, respectively	386	597	1,143	1,687
Change in unamortized pension loss during the period related to changes in foreign currency	884	(1,721)	156	(343)
Other comprehensive income (loss)	(16,139)	14,227	(4,662)	4,634
Comprehensive income (loss)	$858	$13,276	$34,134	$(6,562)

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

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

	Nine months ended	
	June 30, 2018	July 1, 2017
Cash flows from operating activities:		
Net income (loss)	$38,796	$(11,196)
Adjustments to reconcile net income (loss) to net cash provided (used) by operating activities:		
Depreciation and amortization	65,303	64,187
Stock-based compensation	52,015	56,139
Other non-cash items, net	304	1,536
Changes in operating assets and liabilities, excluding the effects of acquisitions:		
Accounts receivable	21,195	34,913
Accounts payable and accrued expenses	(16,539)	2,594
Accrued compensation and benefits	(22,348)	(50,518)
Deferred revenue	82,794	45,985
Accrued income taxes	(30,005)	(17,832)
Other current assets and prepaid expenses	(5,434)	(7,317)
Other noncurrent assets and liabilities	(759)	(16,028)
Net cash provided by operating activities	185,322	102,463
Cash flows from investing activities:		
Additions to property and equipment	(18,666)	(19,333)
Purchase of intangible asset	(3,000)	—
Purchases of short- and long-term marketable securities	(18,063)	(14,173)
Proceeds from maturities of short- and long-term marketable securities	13,640	13,440
Acquisitions of businesses, net of cash acquired	(3,000)	(4,960)
Purchases of investments	(1,000)	—
Proceeds from sales of investments	—	15,218
Net cash used by investing activities	(30,089)	(9,808)
Cash flows from financing activities:		
Borrowings under credit facility	200,000	150,000
Repayments of borrowings under credit facility	(220,000)	(190,000)
Repurchases of common stock	(100,000)	(34,994)
Proceeds from issuance of common stock	7,472	3,978
Credit facility origination costs	—	(184)
Contingent consideration	(7,750)	(11,054)
Payments of withholding taxes in connection with vesting of stock-based awards	(44,797)	(26,244)
Net cash used in financing activities	(165,075)	(108,498)
Effect of exchange rate changes on cash and cash equivalents	(3,609)	(1,397)
Net increase (decrease) in cash and cash equivalents	(13,451)	(17,240)
Cash and cash equivalents, beginning of period	280,003	277,935
Cash and cash equivalents, end of period	$266,552	$260,695

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, 2017. 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, 2017 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 third quarter of 2018 ended on June 30, 2018 and the third quarter of 2017 ended on July 1, 2017. The results of operations for the nine months ended June 30, 2018 are not necessarily indicative of the results expected for the remainder of the fiscal year.

Reclassifications

Effective at the beginning of fiscal 2018, in accordance with the adoption of ASU 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, excess tax benefits are now classified as an operating activity on the statement of cash flows rather than as a financing activity. The prior period excess tax benefits have been reclassified for comparability.

Segments

In fiscal 2017, we had three operating and reportable segments: (1) the Solutions Group, which included license, subscription, support and cloud services revenue for our core CAD, SLM and PLM products; (2) the IoT Group, which included license, subscription, support and cloud services revenue for our IoT, analytics and augmented reality solutions; and (3) Professional Services, which included consulting, implementation and training revenue.

With a change in our organizational structure to streamline our operations, we merged our Solution Group segment with our IoT Group segment and revised the information that our chief executive officer, who is also our chief operating decision maker ("CODM"), regularly reviews for purposes of allocating resources and assessing performance. As a result, effective with the beginning of the first quarter of fiscal 2018, we changed our operating and reportable segments from three to two: (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.

Revenue and operating income in Note 10. Segment Information have been reclassified to conform to the current period presentation.

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

Stock Compensation

In March 2016, the FASB issued ASU No. 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. We adopted ASU No. 2016-09 in the first quarter of 2018.

Effective with the adoption, stock-based compensation excess tax benefits or deficiencies are reflected in the Consolidated Statements of Operations as a component of the provision for income taxes when the awards vest or are settled. Previously they were recognized in equity. Upon adoption, under the modified retrospective transition method, we recognized the previously unrecognized excess tax benefits of $37.0 million as increases in deferred tax assets for tax loss carryovers and tax credits, $36.9 million of which were offset by an increase in our U.S. valuation allowance. Additionally, on our Consolidated Statements of Cash Flows excess tax benefits from stock-based awards will no longer be separately classified as a financing activity apart from other income tax, and will be presented as an operating activity. As a result of the adoption of ASU 2016-09, the Consolidated Statement of Cash Flows for the nine months ended July 1, 2017 was adjusted as follows: a $0.4 million increase to net cash provided by operating activities and a $0.4 million decrease to net cash used in financing activities.

Finally, we have elected to account for forfeitures as they occur, rather than estimate expected forfeitures, which resulted in a cumulative effect adjustment of $0.7 million to reduce retained earnings as of October 1, 2017.

Pending Accounting Pronouncements

Derivative Financial Instruments

In August 2017, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (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.

Income Taxes

In October 2016, the FASB issued ASU 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory (“ASU 2016-16”). 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. The guidance is effective for annual reporting periods beginning after December 15, 2017 (our fiscal 2019) 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. We expect to record a net deferred tax asset of approximately $77 million upon adoption, primarily relating to deductible amortization of intangible assets in Ireland. Post adoption, our effective tax rate will no longer include the benefit of this amortization, which is reflected in our effective tax rate reconciliation under the current guidance.

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.

Revenue Recognition

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers: Topic 606 (ASU 2014-09). ASU 2014-09 supersedes nearly all existing revenue recognition guidance under U.S. GAAP. The FASB has also issued additional standards to provide clarification and implementation guidance on ASU 2014-09.

The core principle of ASU 2014-09 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

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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 ASU 2014-09, it is possible more judgment and estimates may be required within the revenue recognition process than is required under existing 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.

ASU 2014-09 is effective for us in our first quarter of fiscal 2019. Companies may adopt ASU 2014-09 using either the retrospective method, under which each prior reporting period is presented under ASU 2014-09, with the option to elect certain permitted practical expedients, or the modified retrospective method, under which a company adopts ASU 2014-09 from the beginning of the year of initial application with no restatement of comparative periods, with the cumulative effect of initially applying ASU 2014-09 recognized at the date of initial application, with certain additional required disclosures. We currently expect to adopt ASU 2014-09 using the modified retrospective method. While we are continuing to assess the impact of the new standard, we currently believe the most significant impact relates to accounting for our subscription arrangements that include term-based on-premise software licenses bundled with support. Under current GAAP, revenue attributable to these subscription licenses is 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 will be required to recognize as revenue a portion of the subscription fee upon delivery of the software license. We currently expect revenue related to our perpetual licenses and related support contracts, professional services and cloud offerings to remain substantially unchanged. 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 expect to make 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 upon delivery of the licenses 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 the current accounting rules.

Under the modified retrospective method, we will evaluate each contract that is ongoing on the adoption date as if that contract had been accounted for under ASU 2014-09 from contract inception. Some license revenue related to subscription arrangements that would have been recognized in future periods under current GAAP will be recast under ASU 2014-09 as if the revenue had been recognized in prior periods. Under this transition method, we will not adjust historical reported revenue amounts. Instead, the revenue that would have been recognized under this method prior to the adoption date will be an adjustment to retained earnings and will not be recognized as revenue in future periods as previously expected. Because we expect that license revenue associated with subscription contracts will be recognized up front instead of over time under ASU 2014-09, we expect a material portion of our deferred revenue will be adjusted to retained earnings upon adoption. During the first year of adoption, we will record and disclose the amount of this retained earnings adjustment and intend to provide supplemental disclosure of how this revenue would have been recognized under the current rules.

Another significant provision under ASU 2014-09 includes the capitalization and amortization of costs associated with obtaining a contract, such as sales commissions. Currently, we expense sales commissions in the period incurred. Under ASU 2014-09, 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. While we are continuing to assess the impact of this provision of ASU 2014-09, we likely will be required to capitalize incremental costs such as commissions and amortize those costs over the period the capitalized assets are expected to contribute to future cash flows.

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Furthermore, we have made and will continue to make investments in systems and processes to enable timely and accurate reporting under the new standard. We currently expect that necessary operational and internal control structural changes will be implemented prior to the adoption date.

2. Deferred Revenue and Related Customer Receivables

Deferred Revenue

Deferred revenue primarily relates to software agreements billed to customers for which the subscription and support services have not yet been provided. The liability associated with performing these subscription and support services is included in deferred revenue and, if not yet paid, the related customer receivable is included in prepaid expenses and other current assets. Billed but uncollected support and subscription-related amounts included in other current assets at June 30, 2018 and September 30, 2017 were $108.7 million and $160.9 million, respectively.

3. Restructuring and Other Charges

Restructuring Charges (Credits)

In fiscal 2016, we initiated a plan to restructure our workforce and consolidate select facilities to reduce our cost structure and to realign our investments with what we believe to be our higher growth opportunities. The actions have resulted in total restructuring charges of $84.5 million, primarily associated with termination benefits associated with approximately 800 employees. This restructuring plan was substantially completed in 2017.

The following table summarizes restructuring accrual activity for the nine months ended June 30, 2018:

	Employee severance and related benefits	Facility closures and related costs	Total
	(in thousands)		
October 1, 2017	$1,736	$4,508	$6,244
Credit to operations, net	(509)	(505)	(1,014)
Cash disbursements	(1,247)	(1,207)	(2,454)
Foreign exchange impact	20	(80)	(60)
Accrual, June 30, 2018	$—	$2,716	$2,716

The following table summarizes restructuring accrual activity for the nine months ended July 1, 2017:

	Employee severance and related benefits	Facility closures and related costs	Total
	(in thousands)		
October 1, 2016	$35,177	$1,431	$36,608
Charges to operations, net	2,582	5,718	8,300
Cash disbursements	(33,979)	(1,351)	(35,330)
Other non-cash charges	—	(704)	(704)
Foreign exchange impact	(800)	98	(702)
Accrual, July 1, 2017	$2,980	$5,192	$8,172

Of the accrual for facility closures and related costs, as of June 30, 2018, $1.6 million is included in accrued expenses and other current liabilities and $1.1 million is included in other liabilities in the Consolidated Balance Sheets. The accrual for facility closures is net of assumed sublease income of $3.1 million. The accrual for employee severance and related benefits is included in accrued compensation and benefits in the Consolidated Balance Sheets.

Other - Headquarters relocation charges

Headquarters relocation charges represent accelerated depreciation expense recorded in anticipation of exiting our current headquarters facility. In 2019, we will be moving into a new worldwide headquarters in the Boston Seaport District, and we will be vacating our current headquarters space. Because our current headquarters lease will not expire until November 2022, we are seeking to sublease that space. Further, if we are unable to sublease our current headquarters space for an amount at least equal to our rent obligations under the current headquarters lease, we will bear overlapping rent obligations for those premises and will be required to record additional headquarters relocation charges related to any rent shortfall. A charge for such shortfall will be recorded in the earlier of the period that we cease using the space (which will likely occur in the second quarter of our fiscal 2019) or the period we exit the lease contract. Additionally, we will incur other costs associated with the move which will be recorded as incurred. In the third quarter and first nine months of 2018, we recorded $1.9 million and $2.9 million, respectively, of accelerated depreciation expense related to shortening the estimated useful lives of leasehold improvements in our current facility.

4. Stock-based Compensation

We measure the cost of employee services received in exchange for restricted stock unit (RSU) awards based on the fair value of 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.

Our equity incentive plan provides for grants of nonqualified and incentive stock options, common stock, restricted stock, 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.

Beginning in the first quarter of 2018, 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.

Restricted stock unit activity for the nine months ended June 30, 2018	Shares	Weighted Average Grant Date Fair Value (Per Share)
	(in thousands)	
Balance of outstanding restricted stock units October 1, 2017	3,487	$ 45.57
Granted (1)	2,167	$ 75.99
Vested	(1,804)	$ 43.94
Forfeited or not earned	(531)	$ 50.95
Balance of outstanding restricted stock units June 30, 2018	3,319	$ 65.48

(1) Restricted stock granted includes 184,000 shares from prior period TSR awards that were earned upon achievement of the performance criteria and vested in November 2018.

	Restricted Stock Units	
Grant Period	Performance-based RSUs (1)	Service-based RSUs (2)
	(Number of Units in thousands)	
First nine months of 2018	961	1,022

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(1) Substantially all the performance-based RSUs were granted to our executive officers. Approximately 189,000 shares are eligible to vest based upon annual performance measures, measured over a three-year period. RSUs not earned for a period may be earned in the third period. An additional 250,000 shares are eligible to vest based upon a 2018 performance measure. To the extent earned, those performance-based RSUs will vest in three substantially equal installments on November 15, 2018, November 15, 2019 and November 15, 2020, or the date the Compensation Committee determines the extent to which the applicable performance criteria have been achieved for each performance period. An additional 500,000 shares are eligible to vest based upon annual performance measures, measured over a three-year period in fiscal years 2021, 2022 and 2023. RSUs not earned for a period may be earned in the third period.

(2) The service-based RSUs were granted to employees, our executive officers and our directors. 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		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
	(in thousands)			
Cost of license and subscription revenue	$421	$347	$1,242	$954
Cost of support revenue	527	1,139	2,025	3,638
Cost of professional services revenue	1,471	1,505	4,846	4,500
Sales and marketing	4,910	3,296	14,827	11,047
Research and development	3,283	2,805	9,626	9,753
General and administrative	6,046	7,482	19,449	26,247
Total stock-based compensation expense	$16,658	$16,574	$52,015	$56,139

Stock-based compensation expense includes $1.1 million and $3.2 million in the third quarter and first nine months of 2018, respectively, and $0.9 million and $2.2 million in the third quarter and first nine months of 2017, 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.

Calculation of Basic and Diluted EPS	Three months ended		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
	(in thousands, except per share data)			
Net income (loss)	$16,997	$(951)	$38,796	$(11,196)
Weighted average shares outstanding—Basic	115,774	115,615	115,915	115,511
Dilutive effect of restricted stock units	1,726	—	1,772	—
Weighted average shares outstanding—Diluted	117,500	115,615	117,687	115,511
Earnings (loss) per share—Basic	$0.15	$(0.01)	$0.33	$(0.10)
Earnings (loss) per share—Diluted	$0.14	$(0.01)	$0.33	$(0.10)

There were 0.1 million antidilutive shares for the nine months ended June 30, 2018. Total antidilutive shares were 2.0 million for the nine months ended July 1, 2017. For the nine months ended July 1, 2017 the diluted net loss per share is the same as the basic net loss per share as the effects of all our potential common stock equivalents are antidilutive, because we reported a loss for the period.

Common Stock Repurchases

Our Articles of Organization authorize us to issue up to 500 million shares of our common stock. Our Board of Directors periodically authorizes the repurchase of shares of our common stock. All shares of our common stock repurchased are automatically restored to the status of authorized and unissued.

On September 14, 2017, our Board of Directors authorized us to repurchase up to $500 million of our common stock in the period October 1, 2017 through September 30, 2020. In the first nine months of 2018 and 2017, we repurchased $100 million and $35 million, respectively, of our common stock. The 2018 repurchase was accomplished through an accelerated share repurchase ("ASR") agreement with a major financial institution that we entered into in April 2018. Under this ASR, we repurchased our common stock at a purchase price determined by the average market price over a period of time, with final settlement in June 2018.

In July 2018, our Board of Directors has authorized us to repurchase up to an additional $1,000 million of our common stock through September 30, 2020. We entered into a new $1,000 million ASR as described in Note 14. Subsequent Events. Final settlement of this ASR is expected to occur in 7.5 to 10 months.

6. Goodwill and Intangible Assets

In 2017, we had three operating and reportable segments: (1) Solutions Group, (2) IoT Group and (3) Professional Services. Effective with the beginning of the first quarter of 2018, we changed our operating and reportable segments from three to two: (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 June 30, 2018, goodwill and acquired intangible assets in the aggregate attributable to our Software Products segment was $1,366.8 million and our Professional Services segment was $30.3 million. As of September 30, 2017, goodwill and acquired intangible assets in the aggregate attributable to our Software Products segment was $1,410.0 million and our Professional Services segment was $30.6 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:

	June 30, 2018			September 30, 2017		
	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Amortization	Net Book Value
	(in thousands)					
Goodwill (not amortized)			$1,182,462			$1,182,772
Intangible assets with finite lives (amortized) (1):						
Purchased software	$362,992	$ 247,694	$115,298	$362,955	$ 228,377	$134,578
Capitalized software	22,877	22,877	—	22,877	22,877	—
Customer lists and relationships	357,904	262,982	94,922	359,932	241,554	118,378
Trademarks and trade names	19,080	14,643	4,437	19,138	14,186	4,952
Other	4,013	4,013	—	4,030	4,030	—
	$766,866	$ 552,209	$214,657	$768,932	$ 511,024	$257,908
Total goodwill and acquired intangible assets			$1,397,119			$1,440,680

(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 10 years, respectively.

Goodwill

Changes in goodwill presented by reportable segments were as follows:

	Software Products	Professional Services	Total
	(in thousands)		
Balance, October 1, 2017	$1,152,917	$ 29,855	$1,182,772
Acquisition	4,350	—	4,350
Foreign currency translation adjustment	(4,542)	(118)	(4,660)
Balance, June 30, 2018	$1,152,725	$ 29,737	$1,182,462

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		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
	(in thousands)			
Amortization of acquired intangible assets	$7,850	$7,973	$23,566	$23,986
Cost of license and subscription revenue	6,798	6,517	20,029	19,294
Total amortization expense	$14,648	$14,490	$43,595	$43,280

7. 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. Generally accepted accounting principles prescribe 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 June 30, 2018 and September 30, 2017 were as follows:

	June 30, 2018			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Financial assets:				
Cash equivalents	$85,382	$—	$—	$85,382
Marketable securities				
Certificates of deposit	—	219	—	219
Corporate notes/bonds	52,962	—	—	52,962
U.S. government agency securities	—	991	—	991
Forward contracts	—	4,956	—	4,956
	$138,344	$6,166	$—	$144,510
Financial liabilities:				
Contingent consideration related to acquisitions	$—	$—	$2,100	$2,100
Forward contracts	—	1,190	—	1,190
	$—	$1,190	$2,100	$3,290

	September 30, 2017			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Financial assets:				
Cash equivalents	$49,845	$—	$—	$49,845
Marketable securities				
Certificates of deposit	—	240	—	240
Corporate notes/bonds	47,673	—	—	47,673
U.S. government agency securities	—	2,402	—	2,402
Forward contracts	—	1,163	—	1,163
	$97,518	$3,805	$—	$101,323
Financial liabilities:				
Contingent consideration related to acquisitions	$—	$—	$8,400	$8,400
Forward contracts	—	4,347	—	4,347
	$—	$4,347	$8,400	$12,747

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

	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	(8,400)	—	(8,400)
Balance, June 30, 2018	$—	$2,100	$2,100

	Contingent Consideration (in thousands)		
	ColdLight	Kepware	Total
Balance, October 1, 2016	$2,500	$17,070	$19,570
Change in present value of contingent consideration	—	392	392
Payment of contingent consideration	(2,500)	(9,600)	(12,100)
Balance, July 1, 2017	$—	$7,862	$7,862

In the Consolidated Balance Sheet as of June 30, 2018, $1.1 million of the contingent consideration liability is included in accrued expenses and other current liabilities with the remaining $1.0 million in other liabilities.

Of the $8.4 million payments in the first nine months of 2018, $7.8 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 $12.1 million payments in the first nine months of 2017, $11.1 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.

In connection with our acquisition of Kepware, the former shareholders were eligible to receive additional consideration of up to $18.0 million, which was contingent on the achievement of certain Financial Performance, Product Integration and Business Integration targets (as defined in the Stock Purchase Agreement) within 24 months from April 1, 2016. The estimated undiscounted range of outcomes for the contingent consideration was $16.9 million to $18.0 million at the acquisition date. As of June 30, 2018, we had made $18.0 million in payments and had no liability remaining.

8. Marketable Securities

The amortized cost and fair value of marketable securities as of June 30, 2018 and September 30, 2017 were as follows:

	June 30, 2018			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
	(in thousands)			
Certificates of deposit	$221	$—	$(2)	$219
Corporate notes/bonds	53,474	—	(512)	52,962
U.S. government agency securities	1,000	—	(9)	991
	$54,695	$—	$(523)	$54,172

	September 30, 2017			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
	(in thousands)			
Certificates of deposit	$240	$—	$—	$240
Corporate notes/bonds	47,811	2	(140)	47,673
U.S. government agency securities	2,407	—	(5)	2,402
	$50,458	$2	$(145)	$50,315

Our investment portfolio consists of certificates of deposit, commercial paper, corporate notes/bonds and government securities that have a maximum maturity of three 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 June 30, 2018, 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 June 30, 2018 and September 30, 2017.

	June 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	$ (2)	$—	$ —	$219	$ (2)
Corporate notes/bonds	31,516	(358)	21,446	(154)	52,962	(512)
U.S. government agency securities	—	—	991	(9)	991	(9)
	$31,735	$ (360)	$22,437	$ (163)	$54,172	$ (523)

	September 30, 2017					
	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	$240	$ —	$—	$ —	$240	$ —
Corporate notes/bonds	15,254	(43)	28,885	(97)	44,139	(140)
U.S. government agency securities	—	—	2,402	(5)	2,402	(5)
	$15,494	$ (43)	$31,287	$ (102)	$46,781	$ (145)

The following table presents our available-for-sale marketable securities by contractual maturity date as of June 30, 2018 and September 30, 2017.

	June 30, 2018		September 30, 2017	
	Amortized cost	Fair value	Amortized cost	Fair value
	(in thousands)		(in thousands)	
Due in one year or less	$22,300	$22,170	$18,274	$18,244
Due after one year through three years	32,395	32,002	32,184	32,071
	$54,695	$54,172	$50,458	$50,315

9. 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 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 interest income and other expense, net.

As of June 30, 2018 and September 30, 2017, we had outstanding forward contracts with notional amounts equivalent to the following:

Currency Hedged	June 30, 2018	September 30, 2017
	(in thousands)	
Australian / U.S. Dollar	$3,226	$ 1,585
Canadian / U.S. Dollar	7,421	12,809
Swiss Franc / Euro	—	7,157
Chinese Yuan offshore / Euro	—	10,423
Euro / U.S. Dollar	309,733	244,000
Japanese Yen / Euro	—	17,694
Israeli Shekel / U.S. Dollar	7,677	8,820
Japanese Yen / U.S. Dollar	18,152	3,198
Swedish Krona / U.S. Dollar	8,568	4,627
Danish Krona / U.S. Dollar	2,645	1,743
Hong Kong / U.S. Dollar	2,628	915
All other	8,151	5,548
Total	$368,201	$ 318,519

The following table shows the effect of our non-designated hedges in the Consolidated Statements of Operations for the three and nine months ended June 30, 2018 and July 1, 2017:

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		Nine months ended	
		June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
		(in thousands)			
Forward Contracts	Interest income and other expense, net	$(9,392)	$6,669	$(6,370)	$(1,422)

In the three and nine months ended June 30, 2018, foreign currency losses, net were $2.2 million and $5.4 million, respectively. In the three and nine months ended July 1, 2017, foreign currency losses, net were $0.7 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

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contingent features. We manage credit risk with counterparties by trading among several counterparties and we review our counterparties' credit at least quarterly.

As of June 30, 2018 and September 30, 2017, we had outstanding forward contracts designated as cash flow hedges with notional amounts equivalent to the following:

Currency Hedged	June 30, 2018	September 30, 2017
	(in thousands)	
Euro / U.S. Dollar	$44,699	$ 64,831
Japanese Yen / U.S. Dollar	11,830	22,675
SEK / U.S. Dollar	10,521	14,091
Total	$67,050	$ 101,597

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 nine months ended June 30, 2018 and July 1, 2017 (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) Recognized-Ineffective Portion	Gain or (Loss) Recognized-Ineffective Portion	
	Three months ended			Three months ended			Three months ended	
	June 30, 2018	July 1, 2017		June 30, 2018	July 1, 2017		June 30, 2018	July 1, 2017
Forward Contracts	$4,468	$(2,627)	Subscription, support and license revenue	$(277)	$(86)	Interest income and other expense, net	$ 52	$ (29)
	Nine months ended			Nine months ended			Nine months ended	
	June 30, 2018	July 1, 2017		June 30, 2018	July 1, 2017		June 30, 2018	July 1, 2017
Forward Contracts	$1,086	$256	Subscription, support and license revenue	$(2,659)	$888	Interest income and other expense, net	$ 17	$ (23)

As of June 30, 2018, we estimated that all amounts reported in accumulated other comprehensive income will be reclassified to income within the next twelve months.

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 interest income and other expense, net on the Consolidated Statements of Operations. For the three and nine months ended June 30, 2018 and July 1, 2017, there were no such gains or losses.

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	
	June 30, 2018	September 30, 2017	June 30, 2018	September 30, 2017
	(in thousands)		(in thousands)	
Derivative assets (1):				
Forward Contracts	$1,994	$ 540	$2,962	$ 623
Derivative liabilities (2):				
Forward Contracts	$16	$ 2,352	$1,174	$ 1,995

(1) As of June 30, 2018, $4,956 thousand current derivative assets are recorded in other current assets, in the Consolidated Balance Sheets. As of September 30, 2017, $1,128 thousand current derivative assets are recorded in other current assets, and $35 thousand long-term derivative assets are recorded in other assets in the Consolidated Balance Sheets.

(2) As of June 30, 2018, $1,190 thousand current derivative liabilities are recorded in accrued expenses and other current liabilities in the Consolidated Balance Sheets. As of September 30, 2017, $4,329 thousand current derivative liabilities are recorded in accrued expenses and other current liabilities, and $18 thousand long term derivative liabilities are recorded in other 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 June 30, 2018:

	Gross Amounts Offset in the Consolidated Balance Sheets			Gross Amounts Not Offset in the Consolidated Balance Sheets		
As of June 30, 2018	Gross Amount of Recognized Assets	Gross Amounts Offset in the Consolidated Balance Sheets	Net Amounts of Assets Presented in the Consolidated Balance Sheets	Financial Instruments	Cash Collateral Received	Net Amount
	(in thousands)					
Forward Contracts	$4,956	$ —	$ 4,956	$ (1,190)	$ —	$ 3,766

The following table sets forth the offsetting of derivative liabilities as of June 30, 2018:

	Gross Amounts Offset in the Consolidated Balance Sheets			Gross Amounts Not Offset in the Consolidated Balance Sheets		

As of June 30, 2018	Gross Amount of Recognized Liabilities	Gross Amounts Offset in the Consolidated Balance Sheets	Net Amounts of Liabilities Presented in the Consolidated Balance Sheets	Financial Instruments	Cash Collateral Pledged	Net Amount
	(in thousands)					
Forward Contracts	$1,190	$ —	$ 1,190	$ (1,190)	$ —	$ —

10. Segment Information

Effective with the beginning of fiscal 2018, we changed our segments, see Note 1. Basis of Presentation for additional 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 & 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		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
	(in thousands)			
Software Products				
Revenue	$273,619	$247,635	$801,262	$722,724
Operating Costs (1)	96,422	94,325	293,417	273,196
Profit	177,197	153,310	507,845	449,528
Professional Services				
Revenue	41,158	43,658	128,041	134,936
Operating Costs (2)	33,945	35,588	104,634	110,681
Profit	7,213	8,070	23,407	24,255
Total segment revenue	314,777	291,293	929,303	857,660
Total segment costs	130,367	129,913	398,051	383,877
Total segment profit	184,410	161,380	531,252	473,783
Unallocated operating expenses:				
Sales and marketing expenses	102,831	89,805	290,559	260,521
General and administrative expenses	25,458	27,263	80,272	81,270
Restructuring and headquarters relocation charges, net	1,627	1,551	1,846	8,300
Intangibles amortization	14,648	14,490	43,595	43,280
Stock-based compensation	16,658	16,574	52,015	56,139
Other unallocated operating expenses (3)	1,485	441	1,425	943
Total operating income	21,703	11,256	61,540	23,330
Interest expense	(10,646)	(10,200)	(31,072)	(32,239)
Interest income and other expense, net	(1,086)	(357)	(2,481)	2,049
Income (loss) before income taxes	$9,971	$699	$27,987	$(6,860)

(1) Operating costs for the Software Products segment includes all cost of software revenue and research and development costs, excluding stock-based compensation and intangible amortization.
(2) Operating costs for the Professional Services segment includes 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.

11. Income Taxes

In the third quarter and first nine months of 2018, our effective tax rate was (70)% on pre-tax income of $10.0 million, and (39)% on pre-tax income of $28.0 million, respectively, compared to 236% on pre-tax income of $0.7 million, and (63)% on a pre-tax loss of $6.9 million in the third quarter and first nine months of 2017, respectively. In the first nine months of 2018 and 2017, our effective tax rate was lower than the statutory federal income tax rates (21% and 35%, respectively) due to U.S. tax reform, as described below, and our corporate structure in which our foreign taxes are at a net effective tax rate lower than the U.S. rate. A significant amount of our foreign earnings is generated by our subsidiaries organized in Ireland. In 2018 and 2017, the foreign rate differential predominantly relates to these Irish earnings. Our foreign rate differential in 2018 and 2017 includes the continuing rate benefit from a business realignment completed on September 30, 2014 in which intellectual property was transferred between two wholly-owned foreign subsidiaries. For the first nine months of 2018 and 2017, this realignment resulted in tax benefits of approximately $9 million and $21 million, respectively.

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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 by 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 will 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.

We estimate no federal income taxes payable as a result of the deemed repatriation of undistributed earnings as we estimate that the tax will be offset by a combination of current year losses and existing attributes which had a full valuation allowance recorded against the related deferred tax assets. In the third quarter we reduced our estimate for state income taxes payable by $5.4 million to reflect additional guidance on the state implications of the Tax Act. In the first nine months of 2018, we recorded a reasonable estimate of state income taxes payable on the deemed repatriation of $1.7 million. We also recorded a deferred tax benefit of $14.1 million as a reasonable estimate of 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.

We are continuing to assess the effects of the Tax Act on our indefinite reinvestment assertion and the realizability of our U.S. deferred tax assets. We are not able to make reasonable estimates at this time of the effects of certain provisions of the Tax Act that will apply to us beginning in our fiscal year ending September 30, 2019, including the Global Intangible Low Tax Income tax (the "GILTI" tax).

The changes included in the Tax Act are broad and complex. The final transition impacts of the Tax Act may differ from the above estimates, possibly materially, due to, among other things, changes in interpretations of the Tax Act, any legislative action to address questions that arise because of the Tax Act, actions taken by U.S. state governments and taxing authorities in response to the Tax Act, any changes in accounting standards for income taxes or related interpretations in response to the Tax Act, or any updates or changes to estimates we have utilized to calculate the transition impacts, including impacts from changes to current year earnings estimates and foreign currency exchange rates of foreign subsidiaries. The Securities Exchange Commission has issued rules that allow for a measurement period of up to one year after the enactment date of the Tax Act to finalize the recording of the related tax impacts. We currently anticipate finalizing and recording any resulting adjustments by the end of our current fiscal year ending September 30, 2018.

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 June 30, 2018 and September 30, 2017, we had unrecognized tax benefits of $9.7 million and $14.8 million, respectively. If all our unrecognized tax benefits as of June 30, 2018 were to become recognizable in the future, we would record a benefit to the income tax provision of $9.7 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

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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 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.

In the first quarter of 2018, as a result of the adoption of ASU 2016-09, we recognized previously unrecognized tax benefits of $37.0 million as increases in deferred tax assets for tax loss carryovers and tax credits, primarily in the U.S. A corresponding increase to the valuation allowance of $36.9 million was recorded to the extent that it was not more likely than not that these benefits would be realized.

12. Debt

At June 30, 2018 and September 30, 2017, we had the following long-term debt obligations:

	June 30, 2018	September 30, 2017
	(in thousands)	
6.000% Senior notes due 2024	$500,000	$ 500,000
Credit facility revolver	198,125	218,125
Total debt	698,125	718,125
Unamortized debt issuance costs for the Senior notes (1)	(5,072)	(5,719)
Total debt, net of issuance costs (2)	$693,053	$ 712,406

(1) Unamortized debt issuance costs related to the credit facility were $1.3 million and $2.0 million as of June 30, 2018 and September 30, 2017, respectively, and were included in other assets.

(2) As of June 30, 2018 and September 30, 2017, all debt was included in long-term debt.

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 June 30, 2018.

On or 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 would 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 governing the senior notes which, in turn, may also constitute an event of default under other obligations.

As of June 30, 2018, the total estimated fair value of the Notes was approximately $520 million, based on quoted prices for the notes on that date.

Credit Agreement

In November 2015, we entered into 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 June 30, 2018, the fair value of our credit facility approximates its book value.

The credit facility consists of a $600 million revolving loan commitment. The loan commitment may be increased by an additional $500 million (in the form of revolving loans or term loans, or a combination

thereof) if the existing or additional lenders are willing to make such increased commitments. 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 15, 2019, when all remaining amounts outstanding will be due and payable in full.

PTC and certain eligible foreign subsidiaries may 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. In addition, PTC's and certain of its material domestic subsidiaries' owned property (including equity interests) is subject to first priority perfected liens in favor of the lenders of 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.

As of June 30, 2018, we had $198.1 million in loans outstanding 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 June 30, 2018, the annual interest rate for borrowings outstanding was 3.88%. 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 FRBNY 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 $75.0 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 total indebtedness to the 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
- a fixed charge coverage ratio, defined as the ratio of consolidated trailing four quarters EBITDA less consolidated capital expenditures to consolidated fixed charges, of not less than 3.50 to 1.00 as of the last day of any fiscal quarter.

As of June 30, 2018, our total leverage ratio was 2.45 to 1.00, our senior secured leverage ratio was 0.73 to 1.00 and our fixed charge coverage ratio was 6.82 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.

13. 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 11. 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 June 30, 2018, we estimate approximately $1.1 million to $3.1 million in legal proceedings and claims, of which we had accrued $1.0 million.

Accounts Receivable

Accounts receivable as of June 30, 2018 includes an amount invoiced under a multi-year contract for which the period of performance, and related revenue recognized, has spanned a number of years (with no revenue recognized since the first quarter of 2017). The invoiced amount is being disputed by the customer. If we are unable to reach a mutual business resolution, we intend to vigorously pursue collection of the full invoiced amount. If we are unsuccessful in collecting the full invoiced amount, there could be a write-down of accounts receivable and professional services revenue, which could range from $0 to $17.3 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, as well as claims relating to property damage or personal injury resulting from the performance of services by us or our subcontractors. The maximum potential amount of future payments we could be required to make under these indemnification agreements is unlimited. 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.

14. Subsequent Events

Investment in PTC

As part of a strategic partnership, on July 19, 2018, Rockwell Automation made a $1,000 million equity investment in PTC, by acquiring 10,582,010 shares at a price of $94.50 per share, which represented a premium over our closing share price on June 11, 2018, the date upon which we entered into a securities purchase agreement. The Chairman and CEO of Rockwell Automation has joined PTC's board of directors.

Share Repurchases

We entered into a $1,000 million accelerated share repurchase ("ASR") agreement with a major financial institution ("Bank") on July 20, 2018. We used cash proceeds from the Rockwell Automation investment to fund the repurchase.

On July 20, 2018, 8,244,873 shares repurchased at the market price of $97.03 per share were delivered to us (totaling $800 million). The remaining $200 million represents the amount held back by the Bank pending final settlement of the ASR. Upon settlement of the ASR, the total shares repurchased by us will equal up to $1,000 million divided by a share price equal to the average daily volume weighted-average price of our common stock during the term of the ASR program less a fixed per share discount. Final settlement of the ASR will occur between 7.5-months and 10-months after execution, at the Bank's discretion. All shares repurchased are automatically restored to the status of authorized and unissued.

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

Forward-Looking Statements

Statements in this Quarterly Report on Form 10-Q that are not historic facts, including statements about our fourth quarter and full fiscal 2018 targets, and other future financial and growth expectations and targets and anticipated tax rates, 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; 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, 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 & 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; 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 improve performance in Japan when or as 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.

Business Overview

PTC is a global computer software and services company. We offer industrial Internet of Things (IoT) solutions that enable companies to connect smart things and environments, manage and analyze data generated by those things and environments, and create industrial IoT applications and Augmented Reality (AR) experiences that transform the way users create, operate, and service products. We also offer a solutions portfolio of innovative Computer-Aided Design (CAD), Product Lifecycle Management (PLM) and Service Lifecycle Management (SLM) solutions that enable manufacturers to create, innovate, operate, and service products.

2018 Strategic Goals

Sustainable Growth	Our goals are predicated on continuing to drive bookings growth both in the high-growth IoT market and in our core CAD and PLM markets.
Expand Subscription Licensing	Our goal is to increase the percentage of licenses sold as subscriptions to increase our recurring revenue. Effective January 1, 2018, new software licenses for our core solutions and ThingWorx solutions are available only by subscription in the Americas and Western Europe. Perpetual and subscription licenses will be available to customers outside the Americas and Western Europe through December 31, 2018. Effective January 1, 2019, only subscription software licenses for our core solutions and ThingWorx industrial innovation platform will be available. Kepware will continue to be available under perpetual licensing.
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. We expect to deliver continued operating margin expansion in 2018, and we expect further margin expansion in 2019 and beyond, as we realize the compounding benefit of our maturing subscription business.

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.

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 recurs and new subscription revenue is added in the year. Subscription revenue, software revenue and total revenue were all up over the third quarter of 2017, despite a 1,400 basis point increase in subscription mix year over year. Recurring revenue represented approximately 91% of our software revenue in the third quarter of 2018, up from 87% a year ago. Our revenue results also drove our operating margin results for the quarter despite increases in sales and marketing and research and development expenses, with both GAAP and non-GAAP operating margins, and EPS up over the prior year period.

In fiscal 2018, we have focused on several new strategic partnerships. We continued to see momentum with the Microsoft partnership that we signed early in the second quarter, closing ten new joint deals in the quarter. In the third quarter, we entered into a significant strategic alliance agreement with Rockwell Automation to align our respective factory automation software solutions and sell a combined software suite into our respective markets. We also entered into a strategic agreement with Ansys to embed breakthrough simulation capabilities inside our Creo product to create the first fully-integrated CAD and real-time simulation solution.

Revenue	Three months ended June 30, 2018	July 1, 2017	Change	Constant Currency Change	Nine months ended June 30, 2018	July 1, 2017	Change	Constant Currency Change
	(in millions)							
Subscription	$126.7	$74.9	69 %	65 %	$339.7	$195.0	74 %	69 %
Support	121.1	140.4	(14)%	(17)%	379.0	433.6	(13)%	(16)%
Total recurring revenue	247.8	215.3	15 %	12 %	718.7	628.6	14 %	11 %
Perpetual license	25.8	32.3	(20)%	(23)%	82.6	94.1	(12)%	(15)%
Total subscription, support and license revenue	273.6	247.6	10 %	7 %	801.3	722.7	11 %	7 %
Professional services	41.2	43.7	(6)%	(8)%	128.0	134.9	(5)%	(10)%
Total revenue	$314.8	$291.3	8 %	5 %	$929.3	$857.7	8 %	5 %

Earnings Measures	Three months ended June 30, 2018	July 1, 2017	Change	Nine months ended June 30, 2018	July 1, 2017	Change
Operating Margin	6.9 %	3.9 %		6.6 %	2.7 %	
Earnings (Loss) Per Share	$0.14	$(0.01)	1,859%	$0.33	$(0.10)	440 %
Non-GAAP Operating Margin[(1)]	17.9 %	15.4 %		17.3 %	15.6 %	
Non-GAAP Earnings Per Share[(1)]	$0.36	$0.28	29 %	$1.00	$0.84	20 %

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

We ended the quarter with cash, cash equivalents and marketable securities of $321 million. We generated $185 million of cash from operations in the first nine months of 2018, compared to $102 million in the first nine months of 2017. As part of our previously announced share repurchase program, we completed a $100 million accelerated stock repurchase agreement and retired 1.15 million shares during the quarter. We borrowed $150 million, in part to finance the share repurchase, $100 million of which was repaid prior to quarter end. At June 30, 2018, the balance outstanding under our credit facility was $198 million and total debt outstanding was $693 million, net of deferred financing fees.

Operating Measures

We provide these 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 third quarter of 2018 were $113 million, up 26% (23% on a constant currency basis) compared to the third quarter of 2017. On a year-to-date basis, license and subscription bookings were $316 million, up 15% (11% on a constant currency basis) over the first nine months of 2017. For the first nine months of 2018 we saw continued strength in license and subscription bookings across our product portfolio, particularly from PLM, CAD, and IoT (when adjusted for an eight-figure booking in the first quarter of 2017), which all grew at or above our estimated market growth rates. For the second quarter in a row, SLM posted solid license and subscription bookings. IoT license and subscription bookings also benefited from customer expansions, which accounted for over 50% of our ThingWorx bookings. Additionally, our global channel continues to exceed expectations, growing license and subscription bookings in double-digits for the tenth consecutive quarter.

Subscription bookings as a percentage of license and subscription bookings in the third quarter and first nine months of 2018 increased by 1400 basis points and 700 basis points, respectively, compared to the third quarter and first nine months of 2017. Subscription bookings as a percentage of license and subscription bookings continued to grow in the third quarter of 2018 despite foreign exchange headwinds and a geographic mix of sales slightly more weighted to Asia Pacific, where we still sell perpetual licenses. Subscription license bookings increased in part due to customers finding our subscription license offerings more attractive than our perpetual license and support offerings, our incentive plans that are designed to drive subscription sales and the fact that we began offering our software (other than Kepware) only by subscription in the Americas and Western Europe at the beginning of our second quarter of 2018. Subscription license bookings also increased due to support contract conversion and channel program incentives. We have further significant opportunities to convert support contracts to subscriptions.

Americas license and subscription bookings grew 9% and 8% in the third quarter and the first nine months of 2018 compared to the year-ago periods. European license and subscription bookings increased 16% (11% constant currency) and 11% (3% constant currency) in the third quarter and first nine months of 2018 compared to the year-ago periods; the year-over-year comparison is negatively impacted by a $7 million deal we closed in the fourth quarter of 2017 instead of the first quarter of 2018. Asia Pacific license and subscription bookings increased by more than 20% in the third quarter and the first nine months of 2018 compared to the year-ago periods, driven by solid performance in China, Taiwan and Korea and by an easier comparison due to weak performance in Japan in the third quarter of 2017. Japan performed above our expectations in the third quarter, and we believe the challenges there are behind us.

Subscription ACV

Subscription ACV increased 54% over the third quarter of 2017 to $44 million. The increase in subscription ACV is primarily due to strong subscription bookings in the quarter. The subscription mix increased year over year to 78% of total bookings. Both of these measures are tied to the increase in bookings discussed above.

Annualized Recurring Revenue (ARR)

ARR was approximately $994 million for the third quarter of 2018, which increased 15% ($129 million) year over year and grew 3% ($33 million) sequentially.

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 is the aggregate of contractually committed orders for license, subscription and support for which the associated revenue has not been recognized and the customer has not been invoiced. We generally do not invoice prior to the contractual subscription start date and for multi-year contracts we generally invoice annually. We do not record unbilled deferred revenue on our Consolidated Balance Sheet. When we invoice the customer, we record it as deferred revenue (billed).

	June 30, 2018	September 30, 2017	July 1, 2017
	(Dollar amounts in millions)		
Deferred revenue (billed)	$484	$ 459	$ 465
Unbilled deferred revenue	726	633	443
Total	$1,210	$ 1,092	$ 909

Total billed and unbilled deferred revenue increased 33% year-over-year and declined 4% compared to the second quarter of 2018 (sequentially). Billed deferred revenue grew 4% year-over-year and declined 3% sequentially, due to the timing of billings in the year. Recurring revenue billings on July 1, which were included in the third quarter of 2017 but not in the third quarter of 2018, were approximately $39 million in 2018. Unbilled deferred revenue grew 64% year-over-year and declined 5% sequentially; the sequential decline was due to the timing of billings in the year and exchange rate headwinds. The average contract duration has remained approximately 2 years for new subscription contracts.

We expect that the amount of unbilled deferred revenue and billed deferred revenue will change from quarter to quarter due to the specific timing, duration and size of large customer subscription and support agreements, varying billing cycles of such agreements, the specific timing of customer renewals, the timing of our fiscal quarter ends, foreign currency fluctuations and the timing of when revenue is recognized.

Results of Operations

The following table shows the financial measures that we consider the most significant indicators of the performance of our business. Results include combined software revenue from direct sales and our reseller channel. In addition to operating income, operating margin, and diluted earnings per share as calculated under GAAP, the table also includes non-GAAP operating income, non-GAAP operating margin, and non-GAAP diluted earnings per share for the reported periods. We discuss the non-GAAP measures in detail, including items excluded from the measures, and provide a reconciliation to the comparable GAAP measures under Non-GAAP Financial Measures below.

	Three months ended		Percent Change 2017 to 2018		Nine months ended		Percent Change 2017 to 2018	
	June 30, 2018	July 1, 2017	Actual	Constant Currency	June 30, 2018	July 1, 2017	Actual	Constant Currency
	(Dollar amounts in millions, except per share data)							
Subscription	$126.7	$74.9	69 %	65 %	$339.7	$195.0	74 %	69 %
Support	121.1	140.4	(14)%	(17)%	379.0	433.6	(13)%	(16)%
Total recurring revenue	247.8	215.3	15 %	12 %	718.7	628.6	14 %	11 %
Perpetual license	25.8	32.3	(20)%	(23)%	82.6	94.1	(12)%	(15)%
Total subscription, support and license revenue	273.6	247.6	10 %	7 %	801.3	722.7	11 %	7 %
Professional services	41.2	43.7	(6)%	(8)%	128.0	134.9	(5)%	(10)%
Total revenue	314.8	291.3	8 %	5 %	929.3	857.7	8 %	5 %
Total cost of revenue	81.6	82.3	(1)%		248.1	246.2	1 %	
Gross margin	233.2	209.0	12 %		681.2	611.4	11 %	
Operating expenses	211.5	197.8	7 %		619.6	588.1	5 %	
Total costs and expenses	293.1	280.0	5 %	2 %	867.8	834.3	4 %	1 %
Operating income	21.7	11.3	93 %	45 %	$61.5	$23.3	164 %	6 %
Non-GAAP operating income [1]	$56.4	$44.9	26 %	13 %	$161.4	$134.2	20 %	3 %
Operating margin	6.9 %	3.9 %			6.6 %	2.7 %		
Non-GAAP operating margin [1]	17.9 %	15.4 %			17.3 %	15.6 %		
Diluted earnings (loss) per share	$0.14	$(0.01)			$0.33	$(0.10)		
Non-GAAP diluted earnings per share [2]	$0.36	$0.28			$1.00	$0.84		
Cash flow from operations [3]	$49.0	$73.7			$185.3	$102.5		

(1) See Non-GAAP Financial Measures below for a reconciliation of our GAAP results to our non-GAAP measures.
(2) We have a full valuation allowance against our U.S. net deferred tax assets and a valuation allowance against net deferred tax assets in certain foreign jurisdictions. As we are profitable on a non-GAAP basis, the 2018 and 2017 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 have recorded the impact of the Tax Cuts and Jobs Act in our first quarter 2018 GAAP earnings, resulting in a non-cash benefit of approximately $7 million. In the third quarter of 2018, we increased the non-cash benefit by approximately $5 million to reflect additional guidance on the state tax implications of the act. We have excluded this benefit from our non-GAAP results.
(3) Cash flow from operations for the nine months ended June 30, 2018 includes $2.5 million of restructuring payments. Cash flow from operations for the nine months ended July 1, 2017 includes $35.3 million of restructuring payments, a $12 million payment related to a Korea tax audit, and $3.3 million of legal settlement payments.

Impact of Foreign Currency Exchange on Results of Operations

Approximately two-thirds of our revenue and half 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, Shekel, and Rupee relative to the U.S. Dollar, affects our reported results. If actual results for the third quarter and first nine months of 2018 had been converted into U.S. Dollars based on the foreign currency exchange rates in effect for the third quarter and first nine months of 2017, revenue would have been lower by $9.6 million and $35.8 million, respectively, costs and expenses would have been lower by $5.9 million and $22.4 million, respectively, and operating income would have been lower by $3.7 million and $13.4 million, respectively. Our constant currency disclosures are calculated by multiplying the actual results for the first nine months of 2018 by the exchange rates in effect for the comparable period of 2017 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. Subscription revenue is comprised of time-based licenses whereby customers use our software and receive related support for a specified term, and for which revenue is recognized ratably over the term of the contract. Support revenue is comprised of contracts to maintain new and/or previously purchased perpetual licenses, for which revenue is recognized ratably over the term of the contract. Perpetual licenses are a perpetual right to use the software, for which revenue is generally recognized up front upon shipment to the customer. 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.

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

Consulting and training services engagements typically result from sales of new licenses; revenue is recognized over the term of the engagement. Professional services revenue was down 6% (8% constant currency) in the third quarter and down 5% (10% constant currency) for the first nine months of 2018 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				Nine months ended			
			Percent Change				Percent Change	
	June 30, 2018	July 1, 2017	Actual	Constant Currency	June 30, 2018	July 1, 2017	Actual	Constant Currency
	(Dollar amounts in millions)							
Solutions Products								
Software revenue	241.8	222.4	9 %	5 %	714.1	654.3	9 %	5 %
Professional services	37.3	41.0	(9)%	(11)%	117.6	128.1	(8)%	(13)%
Total revenue	$279.1	$263.5	6 %	3 %	$831.8	$782.4	6 %	2 %
IoT Products								
Software revenue	31.8	25.2	26 %	24 %	87.1	68.4	27 %	25 %
Professional services	3.9	2.6	49 %	46 %	10.4	6.9	52 %	47 %
Total revenue	$35.7	$27.8	28 %	26 %	$97.5	$75.3	30 %	27 %

Solutions Group

Software revenue for the third quarter and first nine months of 2018 increased over the third quarter and first nine months of 2017 as a result of strong CAD, PLM and global channel license and subscription bookings over the past two years, offset by a significant increase in the subscription mix in the current period. Subscription sales have increased in part due to our support conversion programs that we have been offering over the past few years whereby customers may convert existing perpetual licenses and support to a new subscription. Recurring software revenue grew 13% both in the third quarter and first nine months of 2018 over the third quarter and first nine months of 2017, and has grown double-digits for six consecutive quarters.

Professional services revenue for the third quarter and first nine months of 2018 declined compared to the third quarter and first nine months of 2017 due to our strategy to limit the amount of professional services we provide.

IoT Group

Software revenue for the third quarter and first nine months of 2018 increased compared to the third quarter and first nine months of 2017 due to increases in license and subscription bookings over the past two years, offset by a significant increase in the subscription mix. Software revenue for the third quarter of 2018 increased 10% sequentially over the second quarter of 2018. Recurring software revenue grew 33% both in the third quarter and first nine months of 2018 over the third quarter and first nine months of 2017. Recurring software revenue increased 7% sequentially over the second quarter of 2018.

Professional services revenue increased in the third quarter and first nine months of 2018 due in part to implementation and adoption services we provide to our IoT customers as part of our efforts to help their IoT initiatives be successful.

Revenue by Geographic Region

Total revenue grew in all regions for the third quarter and first nine months of 2018 compared to the year-ago periods.

	Three months ended				Nine months ended			
			Percent Change				Percent Change	
	June 30, 2018	July 1, 2017	Actual	Constant Currency	June 30, 2018	July 1, 2017	Actual	Constant Currency
	(Dollar amounts in millions)							
Americas								
Software revenue	118.0	107.8	9 %	9 %	344.3	321.3	7 %	7 %
Professional services	15.4	16.1	(5)%	(4)%	44.6	51.7	(14)%	(14)%
Total revenue	$133.4	$124.0	8 %	8 %	$388.9	$373.0	4 %	4 %
Europe								
Software revenue	100.9	91.1	11 %	3 %	299.8	256.4	17 %	9 %
Professional services	18.9	20.2	(6)%	(10)%	63.2	59.7	6 %	(3)%
Total revenue	$119.9	$111.3	8 %	1 %	$363.0	$316.1	15 %	6 %
Asia Pacific								
Software revenue	54.7	48.7	12 %	9 %	157.1	145.0	8 %	5 %
Professional services	6.8	7.3	(7)%	(10)%	20.3	23.6	(14)%	(17)%
Total revenue	$61.5	$56.0	10 %	7 %	$177.4	$168.6	5 %	2 %

Americas

Strong license and subscription bookings have been driving revenue growth in the Americas, with new license and subscriptions bookings up 9% and 8% for the third quarter and first nine months of 2018 compared to the year-ago periods, despite a significant increase in the subscription mix.

Europe

Europe revenue growth is the result of seven double-digit year-over-year license and subscription bookings growth quarters between the fourth quarter of 2016 and the third quarter of 2018, despite an increase in subscription mix in the third quarter of 2018 compared to the third quarter of 2017.

Asia Pacific

Asia Pacific revenue growth is due to improved license and subscription bookings performance of more than 20% in the third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017, driven by solid performance in China, Taiwan and Korea and by an easier

comparison due to weak performance in Japan in the third quarter of 2017, despite a significant increase in the subscription mix.

Gross Margin

	Three months ended			Nine months ended		
	June 30, 2018	July 1, 2017	Percent Change	June 30, 2018	July 1, 2017	Percent Change
	(Dollar amounts in millions)					
Gross margin	$233.2	$209.0	12 %	$681.2	$611.4	11 %
Non-GAAP gross margin (1)	242.6	219.1	11 %	710.0	641.7	11 %
Gross margin as a % of revenue:						
License and subscription gross margin	84 %	80 %		83 %	78 %	
Support gross margin	82 %	83 %		82 %	84 %	
Professional services gross margin	14 %	15 %		15 %	15 %	
Gross margin as a % of total revenue	74 %	72 %		73 %	71 %	
Non-GAAP gross margin as a % of total revenue (1)	77 %	75 %		76 %	75 %	

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

The increase in total gross margin in the third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017 is in line with total revenue growth. Total revenue in both the third quarter and first nine months of 2018 grew 8% over the third quarter and first nine months of 2017. 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 third quarter and first nine months of 2018 compared to the third quarter and first nine months 2017 primarily due to decreases in support revenue of 14% and 13%, respectively. The support revenue decreases are associated with an increase in our subscription mix and the conversion of existing customers from perpetual licenses with support contracts to subscription.

The professional services gross margin decreased slightly in the third quarter of 2018 compared to the third quarter of 2017 and remained flat in the first nine months of 2018 compared to the first nine months of 2017 due to the decline in revenue, offset by cost management. Professional services revenue declined 6% and 5% in the third quarter and first nine months of 2018, respectively, compared to the year ago periods. The decline in professional services revenue in the first nine months of 2018 is in line with our strategy to migrate more services engagements to our partners and to deliver products that require less consulting and training services.

Total Costs and Expenses

	Three months ended			Nine months ended		
	June 30, 2018	July 1, 2017	Percent Change	June 30, 2018	July 1, 2017	Percent Change
	(Dollar amounts in millions)					
Costs and expenses:						
Cost of license and subscription revenue	$24.0	$21.6	11 %	$71.5	$62.3	15 %
Cost of support revenue	22.2	23.6	(6)%	67.5	69.0	(2)%
Cost of professional services revenue	35.3	37.0	(4)%	109.2	114.9	(5)%
Sales and marketing	107.7	93.1	16 %	305.4	271.6	12 %
Research and development	61.2	59.9	2 %	187.4	175.5	7 %
General and administrative	33.1	35.3	(6)%	101.4	108.8	(7)%
Amortization of acquired intangible assets	7.9	8.0	(2)%	23.6	24.0	(2)%
Restructuring and other charges, net	1.6	1.6	5 %	1.8	8.3	(78)%
Total costs and expenses	$293.1	$280.0	5 %	$867.8	$834.3	4 %
Total headcount at end of period	6,065	5,983	1 %			

Costs and expenses in the third quarter of 2018 compared to the third quarter of 2017 increased primarily as a result of the following:

- a $10.7 million ($6.0 million constant currency) increase in compensation expense primarily due to salary and headcount increases and an increase in commission expenses,
- a $2.5 million increase in cloud services hosting costs; of which $1.3 million is included in cost of license and subscription revenue, and
- a $1.6 million increase in transactional charges related to structuring strategic agreements,

offset by:

- a $1.8 million decrease in restructuring charges.

Costs and expenses for the third quarter of 2018 compared to the year ago period include a $5.9 million increase due to changes in foreign currency exchange rates.

Costs and expenses for the first nine months of 2018 compared to the first nine months of 2017 increased primarily as a result of the following:

- a $33.4 million ($16.9 million constant currency) increase in compensation expense primarily due to salary and headcount increases and an increase in commission expenses,
- a $6.5 million increase in cloud services hosting costs, of which $3.1 million is included in cost of license and subscription revenue,
- a $1.9 million increase in facility costs (including depreciation), and
- a $1.1 million increase in acquisition-related and transactional charges related to structuring strategic agreements,

offset by:

- a $9.3 million decrease in restructuring charges, and
- a $3.8 million decrease in professional fees.

Costs and expenses for the first nine months of 2018 compared to the year ago period include a $22.4 million increase due to changes in foreign currency exchange rates.

Cost of License, Subscription and Support Revenue

Cost of License and Subscription Revenue

	Three months ended			Nine months ended		
	June 30, 2018	July 1, 2017	Percent Change	June 30, 2018	July 1, 2017	Percent Change
	(Dollar amounts in millions)					
Cost of license and subscription revenue	$24.0	$21.6	11 %	$71.5	$62.3	15 %
% of total revenue	8 %	7 %		8 %	7 %	
% of total license and subscription revenue	16 %	20 %		17 %	22 %	

Our cost of license and subscription includes cost of license, which 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, which includes our cost of cloud services and our cost of software as a service revenue. 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 revenue. Cost of license and subscription revenue as a percent of license and subscription 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.

In the third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017, total compensation increased 2% ($0.2 million) and 13% ($3.4 million), respectively, due to increases in salaries, benefit costs and higher travel expenses. Cloud services hosting costs increased by 42% ($1.3 million) and 38% ($3.1 million), respectively, in the third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017.

Cost of license and subscription revenue as a percentage of license and subscription revenue has decreased in the third quarter and first nine months of 2018 compared to the year-ago periods due to higher revenue as we realize the benefit of our maturing subscription model.

Cost of Support Revenue

	Three months ended			Nine months ended		
	June 30, 2018	July 1, 2017	Percent Change	June 30, 2018	July 1, 2017	Percent Change
	(Dollar amounts in millions)					
Cost of support revenue	$22.2	$23.6	(6)%	$67.5	$69.0	(2)%
% of total revenue	7 %	8 %		7 %	8 %	
% of total support revenue	18 %	17 %		18 %	16 %	

Cost of support revenue consists of costs such as salaries, benefits, and computer equipment and facilities associated with customer support and the release of support updates (including related royalty costs) associated with providing support for both our perpetual licenses and subscription licenses.

Cost of support revenue in the third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017 decreased primarily due to lower headcount, decreases in royalty expense and decreases in professional fees.

Cost of Professional Services Revenue

	Three months ended			Nine months ended		
	June 30, 2018	July 1, 2017	Percent Change	June 30, 2018	July 1, 2017	Percent Change
	(Dollar amounts in millions)					
Cost of professional services revenue	$35.3	$37.0	(4)%	$109.2	$114.9	(5)%
% of total revenue	11 %	13 %		12 %	13 %	
% of total professional services revenue	86 %	85 %		85 %	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. In

the third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017, total compensation, benefit costs and travel expenses decreased by 11% ($3.1 million) and 6% ($5.2 million), respectively, due to lower headcount; partially offset by higher third-party subcontractor fees, which increased by 17% ($1.0 million) and 3% ($0.7 million), respectively.

Sales and Marketing	Three months ended			Nine months ended		
	June 30, 2018	July 1, 2017	Percent Change	June 30, 2018	July 1, 2017	Percent Change
	(Dollar amounts in millions)					
Sales and marketing	$107.7	$93.1	16 %	$305.4	$271.6	12 %
% of total revenue	34 %	32 %		33 %	32 %	

Our sales and marketing expenses primarily include salaries and benefits, sales commissions, advertising and marketing programs, travel and facility costs. In the third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017, total compensation, benefit costs and travel expenses increased 20% ($13.9 million) and 14% ($29.5 million), respectively, due to higher commission costs, an increase in headcount, salary increases and stock-based compensation increases.

Research and Development	Three months ended			Nine months ended		
	June 30, 2018	July 1, 2017	Percent Change	June 30, 2018	July 1, 2017	Percent Change
	(Dollar amounts in millions)					
Research and development	$61.2	$59.9	2 %	$187.4	$175.5	7 %
% of total revenue	19 %	21 %		20 %	20 %	

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 third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017 total compensation, benefit costs and travel expenses increased 3% ($1.6 million) and 9% ($12.0 million), respectively, due to an increase in headcount, salary increases and stock-based compensation increases.

General and Administrative	Three months ended			Nine months ended		
	June 30, 2018	July 1, 2017	Percent Change	June 30, 2018	July 1, 2017	Percent Change
	(Dollar amounts in millions)					
General and administrative	$33.1	$35.3	(6)%	$101.4	$108.8	(7)%
% of total revenue	11 %	12 %		11 %	13 %	

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 third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017 total compensation, benefit costs and travel expenses decreased 4% ($1.0 million) and 5% ($3.8 million), respectively, primarily due to lower stock-based compensation, offset by increases in headcount and salary increases. Professional fees also declined by $1.1 million and $2.8 million, respectively in the third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017.

Amortization of Acquired Intangible Assets	Three months ended			Nine months ended		
	June 30, 2018	July 1, 2017	Percent Change	June 30, 2018	July 1, 2017	Percent Change
	(Dollar amounts in millions)					
Amortization of acquired intangible assets	$7.9	$8.0	(2)%	$23.6	$24.0	(2)%
% of total revenue	2 %	3 %		3 %	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

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with completed acquisitions. The decrease in amortization of acquired intangible assets in the third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017 is due to certain assets being fully amortized as well as the impact of foreign currency exchange rates.

Restructuring and Other Charges, Net	Three months ended		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
	(in millions)			
Restructuring charges (credits), net	$(0.3)	$ 1.6	$(1.0)	$ 8.3
Headquarters relocation charges	1.9	—	2.9	—
Restructuring and Other Charges, Net	$1.6	$ 1.6	$1.8	$ 8.3

In fiscal 2016, we committed to a plan to restructure our global workforce and consolidate select facilities to reduce our cost structure and to realign our investments with our identified growth opportunities. The actions have resulted in a total restructuring charge of $84.5 million and was substantially completed in 2017. We expect that the expense reductions will be offset by planned cost increases, investments in other areas of our business and the anticipated effects of foreign currency fluctuations, which effects are contemplated in our most recent financial targets for fiscal 2018. In the third quarter and first nine months of 2018, we recorded restructuring credits of $0.3 million and $1.0 million, respectively, primarily related to changes in estimated costs related to the closure of excess facilities. In the third quarter and first nine months of 2018, we made cash payments related to restructuring charges of $0.5 million and $2.5 million, respectively, compared to $6.4 million and $35.3 million in the third quarter and first nine months of 2017, respectively. At June 30, 2018, accrued restructuring totaled $2.7 million, of which we expect to pay $1.6 million within the next twelve months.

Headquarters relocation charges represent accelerated depreciation expense recorded in anticipation of exiting our current headquarters facility. In 2019, we will be moving into a new worldwide headquarters in the Boston Seaport District, and we will be vacating our current headquarters space. Because our current headquarters lease will not expire until November 2022, we are seeking to sublease that space. Further, if we are unable to sublease our current headquarters space for an amount at least equal to our rent obligations under the current headquarters lease, we will bear overlapping rent obligations for those premises and will be required to record additional headquarters relocation charges related to any rent shortfall. A charge for such shortfall will be recorded in the earlier of the period that we cease using the existing space (which will likely occur in the second quarter of our fiscal 2019) or the period we exit the lease contract. Additionally, we will incur other costs associated with the move which will be recorded as incurred.

Interest Expense	Three months ended		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
	(in millions)			
Interest expense	$(10.6)	$(10.2)	(31.1)	(32.2)

In March 2017 we modified our credit facility to decrease the loan commitment to $600 million from $900 million, which reduced interest expense in the third quarter and first nine months of 2018 compared to the third quarter and first nine months of 2017 by $0.1 million and $1.7 million, respectively, due to the write-off of deferred financing fees and reduction of the associated commitment fees. We had $698 million of total debt at June 30, 2018, compared to $718 million at July 1, 2017.

Interest Income and Other Expense, net	Three months ended		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
	(in millions)			
Interest income	$0.9	$0.8	$2.5	$ 2.4
Other expense, net	(2.0)	(1.2)	(5.0)	(0.4)
Total interest income and other expense, net	$(1.1)	$(0.4)	$(2.5)	$ 2.0

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Interest income and other 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		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
	(Dollar amounts in millions)			
Pre-tax income (loss)	$10.0	$0.7	$28.0	$(6.9)
Tax provision (benefit)	(7.0)	1.7	(10.8)	4.3
Effective income tax rate	(70)%	236 %	(39)%	(63)%

In the first nine months of 2018 and 2017, our effective tax rate was lower than the statutory federal income tax rates (21% and 35%, respectively) due to U.S. tax reform, as described below, and our corporate structure in which our foreign taxes are at a net effective tax rate lower than the U.S. rate. A significant amount of our foreign earnings is generated by our subsidiaries organized in Ireland. In 2018 and 2017, the foreign rate differential predominantly relates to these Irish earnings. Our foreign rate differential in 2018 and 2017 includes the continuing rate benefit from a business realignment completed on September 30, 2014 in which intellectual property was transferred between two wholly-owned foreign subsidiaries. For the first nine months of 2018 and 2017, this realignment resulted in tax benefits of approximately $9 million and $21 million, respectively.

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 by the expansion of the limitations on the deductibility of executive compensation and interest expense. As we have a September 30 fiscal year-end, the impact of the Tax Act results in 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 will 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.

We estimate no federal income taxes payable as a result of the deemed repatriation of undistributed earnings, as we estimate that the tax will be offset by a combination of current year losses and existing attributes which had a full valuation allowance recorded against the related deferred tax assets. In the third quarter we reduced our estimate for state income taxes payable by $5.4 million to reflect additional guidance on the state implications of the Tax Act. In the first nine months of 2018, we have recorded a reasonable estimate of state income taxes payable on the deemed repatriation of $1.7 million. We also recorded a deferred tax benefit of $14.1 million as a reasonable estimate of 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.

We are continuing to assess the effects of the Tax Act on our indefinite reinvestment assertion and the realizability of our U.S. deferred tax assets. We are not able to make reasonable estimates at this time of the effects of certain provisions of the Tax Act that will apply to us beginning in our fiscal year ending September 30, 2019, including the Global Intangible Low Tax Income tax (the "GILTI" tax).

The changes included in the Tax Act are broad and complex. The final transition impacts of the Tax Act may differ from the above estimates, possibly materially, due to, among other things, changes in interpretations of the Tax Act, any legislative action to address questions that arise because of the Tax Act, actions taken by U.S. state governments and taxing authorities in response to the Tax Act, any changes in accounting standards for income taxes or related

interpretations in response to the Tax Act, or

any updates or changes to estimates we have utilized to calculate the transition impacts, including impacts from changes to current year earnings estimates and foreign currency exchange rates of foreign subsidiaries. The U.S. Securities Exchange Commission has issued rules that allow for a measurement period of up to one year after the enactment date of the Tax Act to finalize the recording of the related tax impacts. We currently anticipate finalizing and recording any resulting adjustments by the end of our current fiscal year ending September 30, 2018.

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 $12 million from the tax authorities in Korea. The assessment relates to various tax issues but primarily to 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, 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 (revenue is recognized at the time of sale) and a subscription (revenue is recognized ratably over the subscription term), we use bookings for internal planning, forecasting and reporting of new license and subscription sales and cloud services transactions.

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

We define subscription ACV as the total value of a new subscription booking divided by the term of the contract (in days), multiplied by 365. If the term of the subscription contract is less than a year, the ACV 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 plus any monthly software rental bookings during the period.

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 had been perpetual licenses.

Annualized Recurring Revenue (ARR)

Annualized Recurring Revenue (ARR) for a given quarter is calculated by dividing the non-GAAP subscription and support software revenue 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. ARR is not a forecast and does not include perpetual license or professional services revenues.

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 measures exclude fair value adjustments related to acquired deferred revenue and deferred costs, stock-based compensation expense, amortization of acquired intangible assets expense, 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. Management uses, and investors should consider, non-GAAP measures 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 adjustment to deferred services cost) 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		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
	(in millions, except per share amounts)			
GAAP revenue	$314.8	$291.3	$929.3	$857.7
Fair value of acquired deferred revenue	0.3	0.6	1.0	2.2
Non-GAAP revenue	$315.1	$291.9	$930.3	$859.9
GAAP gross margin	$233.2	$209.0	$681.2	$611.4
Fair value of acquired deferred revenue	0.3	0.6	1.0	2.2
Fair value of acquired deferred costs	(0.1)	(0.1)	(0.3)	(0.3)
Stock-based compensation	2.4	3.0	8.1	9.1
Amortization of acquired intangible assets included in cost of revenue	6.8	6.5	20.0	19.3
Non-GAAP gross margin	$242.6	$219.1	$710.0	$641.7
GAAP operating income	$21.7	$11.3	$61.5	$23.3
Fair value of acquired deferred revenue	0.3	0.6	1.0	2.2
Fair value of acquired deferred costs	(0.1)	(0.1)	(0.3)	(0.3)
Stock-based compensation	16.7	16.6	52.0	56.1
Amortization of acquired intangible assets included in cost of revenue	6.8	6.5	20.0	19.3
Amortization of acquired intangible assets	7.9	8.0	23.6	24.0
Acquisition-related and other transactional charges included in general and administrative expenses	1.6	0.3	1.7	1.0
U.S. pension plan termination-related costs	—	0.3	—	0.3
Headquarters relocation charges	1.9	—	2.9	—
Restructuring charges, net	(0.3)	1.6	(1.0)	8.3
Non-GAAP operating income	$56.4	$44.9	$161.4	$134.2
GAAP net income (loss)	$17.0	$(1.0)	$38.8	$(11.2)
Fair value of acquired deferred revenue	0.3	0.6	1.0	2.2
Fair value of acquired deferred costs	(0.1)	(0.1)	(0.3)	(0.3)
Stock-based compensation	16.7	16.6	52.0	56.1
Amortization of acquired intangible assets included in cost of revenue	6.8	6.5	20.0	19.3
Amortization of acquired intangible assets	7.9	8.0	23.6	24.0
Acquisition-related and other transactional charges included in general and administrative expenses	1.6	0.3	1.7	1.0
U.S. pension plan termination-related costs	—	0.3	—	0.3
Headquarters relocation charges	1.9	—	2.9	—
Restructuring charges, net	(0.3)	1.6	(1.0)	8.3
Non-operating credit facility refinancing costs	—	—	—	1.2
Income tax adjustments [(1)]	(9.7)	(0.2)	(20.7)	(2.8)
Non-GAAP net income	$42.1	$32.6	$117.9	$98.0
GAAP diluted earnings (loss) per share	$0.14	$(0.01)	$0.33	$(0.10)
Fair value of acquired deferred revenue	—	0.01	0.01	0.02
Stock-based compensation	0.14	0.14	0.44	0.48
Amortization of acquired intangible assets	0.12	0.12	0.37	0.37
	0.01	—	0.01	0.01

Acquisition-related and other transactional charges included in general and administrative expenses				
Headquarters relocation charges	0.02	—	0.02	—
Restructuring charges, net	—	0.01	(0.01)	0.07
Non-operating credit facility refinancing costs	—	—	—	0.01
Income tax adjustments [(1)]	(0.08)	—	(0.18)	(0.02)
Non-GAAP diluted earnings per share	$0.36	$0.28	$1.00	$0.84

Operating margin impact of non-GAAP adjustments:

	Three months ended		Nine months ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
GAAP operating margin	6.9 %	3.9 %	6.6 %	2.7 %
Fair value of acquired deferred revenue	0.1 %	0.2 %	0.1 %	0.3 %
Stock-based compensation	5.3 %	5.7 %	5.6 %	6.5 %
Amortization of acquired intangible assets	4.7 %	5.0 %	4.7 %	5.0 %
Acquisition-related and other transactional charges included in general and administrative expenses	0.5 %	0.1 %	0.2 %	0.1 %
U.S. pension plan termination-related costs	— %	0.1 %	— %	— %
Headquarters relocation charges	0.6 %	— %	0.3 %	— %
Restructuring charges, net	(0.1)%	0.5 %	(0.1)%	1.0 %
Non-GAAP operating margin	17.9 %	15.4 %	17.3 %	15.6 %

(1) We have a full valuation allowance against our U.S. net deferred tax assets and a valuation allowance against net deferred tax assets in certain foreign jurisdictions. As we are profitable on a non-GAAP basis, the 2018 and 2017 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 first quarter 2018 GAAP earnings, resulting in a non-cash benefit of approximately $7 million. In the third quarter of 2018, we increased the non-cash benefit by approximately $5 million to reflect additional guidance on the state tax implications of the act. We have excluded these benefits from our non-GAAP results.

Critical Accounting Policies and Estimates

The financial information included in Item 1 reflects no 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 2017 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 in this Form 10-Q for all recently issued accounting pronouncements which is incorporated herein by reference.

Liquidity and Capital Resources

	June 30, 2018	July 1, 2017
	(in thousands)	
Cash and cash equivalents	$266,552	$260,695
Short- and long-term marketable securities	54,172	50,189
Total	$320,724	$310,884

	Nine months ended	
	June 30, 2018	July 1, 2017
	(in thousands)	
Cash provided by operating activities	$185,322	$102,463
Cash used by investing activities	(30,089)	(9,808)
Cash used by financing activities	(165,075)	(108,498)

Cash and cash equivalents

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 $54 million with an average maturity of 15 months. At June 30, 2018, cash and cash equivalents totaled $267 million, compared to $280 million at September 30, 2017, reflective of $185 million in operating cash flows and $7.5 million from the issuance of common stock under our Employee Stock Purchase Plan, offset by $100 million used to repurchase common stock, $45 million used to pay withholding taxes on stock-based awards that vested in the period, $20 million of net repayments made under our credit facility, $19 million used to acquire capital assets, $8 million used to pay contingent consideration, $6 million used to purchase businesses and intangible assets and $5 million used to purchase investments and marketable securities.

A significant portion of our cash is generated and held outside the U.S. At June 30, 2018, we had cash and cash equivalents of $17 million in the U.S., $97 million in Europe, $123 million in Asia Pacific (including India), and $29 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 $185 million in the first nine months of 2018, compared to $102 million in the first nine months of 2017. The increase is primarily due to higher collections of accounts receivable, lower restructuring payments (down $33 million year over year), and the $12 million payment related to the Korean tax audit made in the first quarter of 2017.

Net income for the first nine months of 2018 was $39 million compared to a net loss for the first nine months of 2017 of $11 million.

Cash used by investing activities

	Nine months ended	
	June 30, 2018	July 1, 2017
	(in thousands)	
Cash provided (used) by investing activities included the following:		
Additions to property and equipment	$(18,666)	$(19,333)
Acquisitions of businesses, net of cash acquired	(3,000)	(4,960)
Purchase of intangible asset	(3,000)	—
Purchases of short- and long-term marketable securities	(18,063)	(14,173)
Proceeds from maturities of short- and long-term marketable securities	13,640	13,440
Purchases of investments	(1,000)	—
Proceeds from sales of investments	—	15,218
	$(30,089)	$(9,808)

Our expenditures for property and equipment consisted primarily of computer equipment, software, office equipment and facility improvements. In the first nine months of 2018 we also used net $4 million to purchase additional marketable securities, $3 million to acquire developed software, $3 million for a small business acquisition and $1 million for a small investment.

Cash used by financing activities

	Nine months ended	
	June 30, 2018	July 1, 2017
	(in thousands)	
Cash used by financing activities included the following:		
Net borrowings (repayments) of debt	$(20,000)	$(40,000)
Repurchases of common stock	(100,000)	(34,994)
Payments of withholding taxes in connection with vesting of stock-based awards	(44,797)	(26,244)
Proceeds from issuance of common stock	7,472	3,978
Contingent consideration	(7,750)	(11,054)
Credit facility origination costs	—	(184)
	$(165,075)	$(108,498)

The net repayments in the first nine months of 2018 reflect borrowings of $200 million under our credit facility to fund working capital requirements and stock repurchases, offset by repayments of $220 million. In the first nine months of 2018 we repurchased $100 million in common stock. We also paid $45 million in withholding taxes in connection with vesting of stock based awards, made $8 million in contingent consideration payments, and received $7 million from the sale of common stock under our ESPP plan.

Credit Agreement

We maintain a multi-currency credit facility with a syndicate of banks with a $600 million revolving loan commitment. The revolving loan commitment may be increased by an additional $500 million if the existing or additional lenders are willing to make such increased commitments. Outstanding revolving loan amounts may be repaid in whole or in part, without penalty or premium, prior to the September 15, 2019 maturity date, when all remaining amounts outstanding will be due and payable in full. As of June 30, 2018, the fair value of our credit facility approximates its book value.

We and certain of our foreign subsidiaries may borrow under the credit facility. Any amounts borrowed by us would be guaranteed by our material domestic subsidiaries that become parties to the subsidiary guaranty, if any. Any amounts borrowed by one of our foreign subsidiaries would be guaranteed by us and any subsidiary guarantors. The credit facility is secured by our assets and those of some of our U.S. subsidiaries (which include equity interests in some of our other subsidiaries).

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As of June 30, 2018, we had $198.1 million in revolving loans outstanding 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 us. As of June 30, 2018, the weighted average annual interest rate for amounts outstanding was 3.88%. 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 limits our and our subsidiaries' ability to, among other things: incur liens or guarantee obligations; pay dividends and make other distributions; make investments and enter into joint ventures; dispose of assets; engage in transactions with foreign subsidiaries and engage in transactions with affiliates, except on an arms-length basis. In addition, the credit facility requires us to maintain the financial ratios set forth below.

	Required Ratio	Ratio as of June 30, 2018
Total Leverage Ratio Ratio of consolidated total indebtedness to the consolidated trailing four quarters EBITDA as of the last day of any fiscal quarter.	Not > 4.50:1.00	2.45 to 1.00
Fixed Charge Coverage Ratio Ratio of consolidated trailing four quarters EBITDA less consolidated capital expenditures to consolidated fixed charges as of the last day of any fiscal quarter.	> 3.50:1.00	6.82 to 1.00
Senior Secured Leverage Ratio 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.	Not > 3.00:1.00	0.73 to 1.00

As of the end of the third quarter of 2018, we had approximately $384 million of borrowing capacity under the credit facility.

As of June 30, 2018, 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 us 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 Inc., as defined in the agreement, would also constitute an event of default, permitting the lenders to accelerate the indebtedness and terminate the credit facility.

The terms and conditions of the credit facility are described in Note 12 to 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 June 30, 2018, 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 periodically authorizes the repurchase of shares of our common stock. All shares of our common stock repurchased are automatically restored to the status of authorized and unissued.

On September 14, 2017, our Board of Directors authorized us to repurchase up to $500 million of our common stock in the period October 1, 2017 through September 30, 2020. In the third quarter of 2018, we repurchased $100 million of our common stock through an ASR agreement with a major financial institution at a purchase price determined by the average market price over a period of time, with final settlement in June 2018. In July 2018, our Board of Directors has authorized us to repurchase up to an additional $1,000 million of our common stock through September 30, 2020. We entered into a new, $1,000 million ASR as described in Note 14. Subsequent Events. Final settlement of this ASR is expected to occur in 7.5 to 10 months.

Future Expectations

Our transition to a subscription licensing model has had, and will continue to have, an adverse impact on revenue, operating margin and EPS relative to periods in which we primarily sold perpetual licenses until the expected transition of our customer base to subscription is completed and the model has matured. This also affects consolidated EBITDA as calculated under our credit facility. Notwithstanding the effect of the subscription transition and those limitations, 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 we expect to be $40 million in 2018) 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 decided to purchase our outstanding shares or 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 share or 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 2017 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 June 30, 2018.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the quarter ended June 30, 2018 that has materially affected, or is 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 set forth below and the risk factors described in Part I. Item 1A. Risk Factors in our 2017 Annual Report on Form 10-K, which could materially affect our business, financial condition or future results. The risk described below and the risks described in our 2017 Annual Report on Form 10-K are not the only risks we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition and/or operating results.

On September 7, 2017, we entered into a lease for a new worldwide headquarters in the Boston Seaport District, beginning in January 2019. Because our current headquarters lease will not expire until November 2022, we are seeking to exit our current headquarters lease or sublease that space. If we are unable to do so, or unable to do so for an amount at least equal to our rent obligations under the current headquarters lease, we will bear overlapping rent obligations for those premises and will be required to record a charge related to any rent shortfall, which could adversely affect our financial condition.

Under our current headquarters lease, we pay approximately $7.4 million in annual base rent plus operating expenses (together "rent obligations," an aggregate annual total of approximately $12.0 million). We will begin paying rent under our new headquarters lease on July 1, 2020. Our rent under the new lease when we begin paying rent will be an annual base rent amount of $11.3 million plus our pro rata portions of building operating expenses and real estate taxes (approximately 63% of such amounts, estimated to be approximately $7.1 million in 2020). The base rent will increase by $0.3 million each year over the term of the lease. Accordingly, we will be required to pay rent for both locations from July 1, 2020 until November 30, 2022 unless we can successfully negotiate an exit to our current lease or sublease our current premises. We may be unable to negotiate a financially desirable termination of our current lease or to sublease our current premises for an amount at least equal to our rent obligations under the current lease, which would require us to bear the overlapping rent obligations and to record a charge related to such shortfall, and could adversely affect our cash flow and financial condition.

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 third quarter of 2018.

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
April 1, 2018 - April 28, 2018	951,814	87.19	951,814	$420,000,000 (2)(3)
April 29, 2018 - May 26, 2018	—	—	—	$420,000,000 (2)(3)
May 27, 2018 - June 30, 2018	195,160	87.19	195,160	$400,000,000 (2)(3)
Total				$400,000,000 (2)

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

(2) On September 14, 2017, our Board authorized us to repurchase up to $500 million worth of our shares in the period October 1, 2017 through September 30, 2020, which repurchase program we announced on September 19, 2017. Our Board expanded this authorization to $1,500 million on July 19, 2018, upon closing of the $1,000 million investment by Rockwell Automation.

(3) In April 2018, we made a $100 million payment to repurchase shares pursuant to an ASR with a major financial institution, of which 951,814 shares were repurchased in April and an additional 195,160 shares were repurchased in

June 2018. See Note 5. Earnings per Share (EPS) and Common Stock of "Notes to Consolidate Financial Statements" included in this Quarterly Report.

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).
10.1	Amended and Restated Strategic Alliance Agreement by and between PTC Inc. and Rockwell Automation, Inc. dated as of June 18, 2018.
10.2	Securities Purchase Agreement by and between PTC Inc. and Rockwell Automation, Inc., dated as of June 11, 2018 (filed as Exhibit 10.1 to our Current Report on Form 8-K filed on July 20, 2018 (File No. 0-18059) and incorporated herein by reference)
10.3	Registration Rights Agreement, by and between the Company and Rockwell Automation, Inc., dated July 19, 2018 (filed as Exhibit 10.1 to our Current Report on Form 8-K filed on June 11, 2018 (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 June 30, 2018 formatted in XBRL (eXtensible Business Reporting Language): (i) Condensed Consolidated Balance Sheets as of June 30, 2018 and September 30, 2017; (ii) Condensed Consolidated Statements of Operations for the three and nine months ended June 30, 2018 and July 1, 2017; (iii) Condensed Consolidated Statements of Comprehensive Income for the three and nine months ended June 30, 2018 and July 1, 2017; (iv) Condensed Consolidated Statements of Cash Flows for the nine months ended June 30, 2018 and July 1, 2017; and (v) Notes to Condensed Consolidated Financial Statements.

*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: July 31, 2018