ANSYS INC
Form 10-Q
November 08, 2018

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-Q
(Mark One)
x QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended September 30, 2018
OR
o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
Commission File Number: 0-20853
ANSYS, Inc.
(Exact name of registrant as specified in its charter)

Delaware	04-3219960
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
2600 ANSYS Drive, Canonsburg, PA	15317
(Address of principal executive offices)	(Zip Code)

844-462-6797
(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 x No o
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).
Yes x No o
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

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

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.
o
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).
Yes o No x
The number of shares of the Registrant's Common Stock, par value $.01 per share, outstanding as of October 31, 2018 was 83,560,018 shares.

ANSYS, INC. AND SUBSIDIARIES
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PART I – UNAUDITED FINANCIAL INFORMATION
Item 1.Financial Statements:
ANSYS, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS

(in thousands, except share and per share data)	September 30, 2018 (Unaudited)	December 31, 2017 (Audited)
ASSETS		
Current assets:		
Cash and cash equivalents	$ 729,180	$ 881,501
Short-term investments	211	286
Accounts receivable, less allowance for doubtful accounts of $8,100 and $6,800, respectively	235,547	124,659
Other receivables and current assets	162,629	263,820
Total current assets	1,127,567	1,270,266
Property and equipment, net	57,902	57,096
Goodwill	1,575,567	1,378,553
Other intangible assets, net	219,564	157,625
Other long-term assets	53,226	35,972
Deferred income taxes	22,285	42,111
Total assets	$ 3,056,111	$ 2,941,623
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 6,767	$ 6,042
Accrued bonuses and commissions	46,720	69,925
Accrued income taxes	5,911	5,760
Other accrued expenses and liabilities	83,169	86,335
Deferred revenue	272,872	440,491
Total current liabilities	415,439	608,553
Long-term liabilities:		
Deferred income taxes	29,955	1,461
Other long-term liabilities	62,171	85,778
Total long-term liabilities	92,126	87,239
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $.01 par value; 2,000,000 shares authorized; zero shares issued or outstanding	—	—
Common stock, $.01 par value; 300,000,000 shares authorized; 93,236,023 shares issued	932	932
Additional paid-in capital	850,616	873,357
Retained earnings	2,766,259	2,316,916
Treasury stock, at cost: 9,213,790 and 9,044,498 shares, respectively	(1,008,370)	(907,530)
Accumulated other comprehensive loss	(60,891)	(37,844)
Total stockholders' equity	2,548,546	2,245,831
Total liabilities and stockholders' equity	$ 3,056,111	$ 2,941,623

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

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ANSYS, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF INCOME
(Unaudited)

(in thousands, except per share data)	Three Months Ended		Nine Months Ended	
	September 30, 2018	September 30, 2017	September 30, 2018	September 30, 2017
Revenue:				
Software licenses	$109,103	$ 156,580	$350,296	$ 448,368
Maintenance and service	180,315	119,005	527,908	344,546
Total revenue	289,418	275,585	878,204	792,914
Cost of sales:				
Software licenses	4,291	7,395	12,301	24,197
Amortization	5,530	9,004	23,403	26,892
Maintenance and service	26,487	19,584	80,092	58,263
Total cost of sales	36,308	35,983	115,796	109,352
Gross profit	253,110	239,602	762,408	683,562
Operating expenses:				
Selling, general and administrative	97,576	80,015	280,443	230,483
Research and development	59,019	50,144	174,906	153,524
Amortization	3,491	3,260	10,421	9,506
Total operating expenses	160,086	133,419	465,770	393,513
Operating income	93,024	106,183	296,638	290,049
Interest income	3,213	1,910	7,674	4,827
Other expense, net	(974)	(168)	(2,289)	(1,512)
Income before income tax provision	95,263	107,925	302,023	293,364
Income tax provision	5,927	34,295	35,811	86,698
Net income	$89,336	$ 73,630	$266,212	$ 206,666
Earnings per share – basic:				
Earnings per share	$1.06	$ 0.87	$3.17	$ 2.43
Weighted average shares	84,158	84,774	84,065	85,132
Earnings per share – diluted:				
Earnings per share	$1.04	$ 0.85	$3.09	$ 2.38
Weighted average shares	86,043	86,588	86,060	86,902

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

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ANSYS, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited)

(in thousands)	Three Months Ended		Nine Months Ended	
	September 30, 2018	September 30, 2017	September 30, 2018	September 30, 2017
Net income	$89,336	$ 73,630	$266,212	$ 206,666
Other comprehensive (loss) income:				
Foreign currency translation adjustments	(5,102)	4,149	(23,047)	18,225
Comprehensive income	$84,234	$ 77,779	$243,165	$ 224,891

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

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ANSYS, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

(in thousands)	Nine Months Ended September 30, 2018	September 30, 2017
Cash flows from operating activities:		
Net income	$ 266,212	$ 206,666
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	47,341	49,939
Deferred income tax benefit	(28,175)	(4,217)
Provision for bad debts	1,389	1,382
Stock-based compensation expense	58,887	39,408
Other	2,039	241
Changes in operating assets and liabilities:		
Accounts receivable	32,356	17,899
Other receivables and current assets	23,207	60,754
Other long-term assets	2,458	4,495
Accounts payable, accrued expenses and current liabilities	(31,243)	(22,362)
Accrued income taxes	(2,581)	(221)
Deferred revenue	1,175	(35,502)
Other long-term liabilities	(19,562)	8,478
Net cash provided by operating activities	353,503	326,960
Cash flows from investing activities:		
Acquisitions, net of cash acquired	(283,026)	(25,998)
Capital expenditures	(13,077)	(14,815)
Other investing activities	(5,510)	(20,810)
Net cash used in investing activities	(301,613)	(61,623)

Cash flows from financing activities:				
Purchase of treasury stock	(192,787)		(223,291)	
Restricted stock withholding taxes paid in lieu of issued shares	(26,955)		(10,075)	
Proceeds from shares issued for stock-based compensation	37,398		47,992	
Other financing activities	(4,939)		—	
Net cash used in financing activities	(187,283)		(185,374)	
Effect of exchange rate fluctuations on cash and cash equivalents	(16,928)		17,129	
Net (decrease) increase in cash and cash equivalents	(152,321)		97,092	
Cash and cash equivalents, beginning of period	881,501		822,479	
Cash and cash equivalents, end of period	$	729,180	$	919,571
Supplemental disclosure of cash flow information:				
Income taxes paid	$	74,086	$	84,760

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

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ANSYS, INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
September 30, 2018
(Unaudited)

1. Organization

ANSYS, Inc. (hereafter the Company or ANSYS) develops and globally markets engineering simulation software and services widely used by engineers, designers, researchers and students across a broad spectrum of industries and academia, including aerospace and defense, automotive, electronics, semiconductors, energy, materials and chemical processing, turbomachinery, consumer products, healthcare, and sports.

As defined by the accounting guidance for segment reporting, the Company operates as one segment.

Given the integrated approach to the multi-discipline problem-solving needs of the Company's customers, a single sale of software may contain components from multiple product areas and include combined technologies. The Company also has a multi-year product and integration strategy that will result in new, combined products or changes to the historical product offerings. As a result, it is impracticable for the Company to provide accurate historical or current reporting among its various product lines.

2. Accounting Policies

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared by ANSYS in accordance with accounting principles generally accepted in the United States for interim financial information for commercial and industrial companies and the instructions to the Quarterly Report on Form 10-Q and Rule 10-01 of Regulation S-X. Accordingly, the accompanying statements do not include all of the information and footnotes required by accounting principles generally accepted in the United States for complete financial statements. The accompanying condensed consolidated financial statements should be read in conjunction with the Company's audited consolidated financial statements (and notes thereto) included in the Company's Annual Report on Form 10-K for the year ended December 31, 2017. The condensed consolidated December 31, 2017 balance sheet presented is derived from the audited December 31, 2017 balance sheet included in the most recent Annual Report on Form 10-K. In the opinion of management, all adjustments considered necessary for a fair presentation of the financial statements have been included, and all adjustments are of a normal and recurring nature. Certain items in the notes to the condensed consolidated financial statements of prior years have been reclassified to conform to the current year's presentation. These reclassifications had no effect on reported net income, comprehensive income, cash flows, total assets or total liabilities and stockholders' equity. Operating results for the three and nine months ended September 30, 2018 are not necessarily indicative of the results that may be expected for any future period.

Changes in Accounting Policies

The Company’s accounting policies are described in Note 2, “Accounting Policies,” in the Company’s Annual Report on Form 10-K for the year ended December 31, 2017. Summarized below is the accounting guidance adopted subsequent to December 31, 2017.

Revenue from contracts with customers: In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers (Topic 606) (ASU 2014-09). The Company adopted ASU 2014-09 and its related amendments (collectively known as ASC 606) effective January 1, 2018 using the modified retrospective approach. See Note 3 for the required disclosures related to the impact of adopting this standard and a discussion of the Company's updated policies related to revenue recognition.

Income taxes: In October 2016, the FASB issued Accounting Standards Update No. 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory (ASU 2016-16). The Company adopted ASU 2016-16 effective January 1, 2018 using the modified retrospective approach. Previous guidance required the tax effects from intra-entity asset transfers to be deferred until the asset was sold to a third party or recovered through use. ASU 2016-16 eliminated this deferral for all intra-entity asset transfers other than inventory. The adoption of the standard did not have a material effect on the Company’s condensed consolidated financial statements.

Business combinations: In January 2017, the FASB issued Accounting Standards Update No. 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business (ASU 2017-01). The Company prospectively adopted ASU 2017-01 effective January 1, 2018. This standard narrows the definition of a business. If substantially all the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets, the acquiree is not a business. The standard also requires a business to include an input and a substantive process that significantly contributes to the

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ability to create outputs. This definition is expected to reduce the number of acquisitions accounted for as business combinations, which will impact the accounting treatment of certain items, including the accounting treatment of contingent consideration and transaction expenses.

Accounting Guidance Issued and Not Yet Adopted

Leases: In February 2016, the FASB issued Accounting Standards Update No. 2016-02, Leases (Topic 842) (ASU 2016-02). ASU 2016-02 requires virtually all leases, other than leases that meet the definition of a short-term lease or leases of intangible assets, to be recorded on the balance sheet with a right-of-use asset and a corresponding lease liability. Leases will be classified as either operating or finance leases based on certain criteria. This classification will determine the timing and presentation of expenses on the income statement, as well as the presentation of related cash flows. The standard is effective for annual periods beginning after December 15, 2018, including interim periods within that reporting period. A modified retrospective transition is required upon adoption. The Company plans to adopt ASU 2016-02 effective January 1, 2019 and continues to evaluate the effect that this update will have on its financial results upon adoption. The Company's preliminary assessment is that this update will materially increase the Company's assets and liabilities upon adoption. The Company has completed the inventory of its leases and policy elections, and expects that it will primarily have operating leases. The Company is currently implementing new processes and controls to meet the accounting and disclosure requirements under the new standard.

Credit losses: In June 2016, the FASB issued Accounting Standards Update No. 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments (ASU 2016-13). The current guidance requires the allowance for doubtful accounts to be estimated based on an incurred loss model, which considers past and current conditions. ASU 2016-13 requires companies to use an expected loss model that also considers reasonable and supportable forecasts of future conditions. ASU 2016-13 is effective for annual periods beginning after December 15, 2019, including interim periods within that reporting period. Early adoption is permitted for annual periods beginning after December 15, 2018, including interim periods within that reporting period. The standard requires a cumulative-effect adjustment to the balance sheet as of the beginning of the first reporting period in which the guidance is effective. The Company is currently evaluating the effect that this update will have on its financial results upon adoption.

Implementation cost accounting for cloud computing arrangements: In August 2018, the FASB issued Accounting Standards Update No. 2018-15, Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract (ASU 2018-15). The standard aligns the accounting for costs incurred to implement a cloud computing arrangement (CCA) that is a service arrangement with the guidance on capitalizing costs associated with developing or obtaining internal-use software. Under ASU 2018-15, an entity would apply Subtopic 350-40 to determine which implementation costs related to a CCA that is a service contract should be capitalized. The standard does not change the accounting for the service component of a CCA. The associated cash flows will be reflected within operating activities. ASU 2018-15 is effective for annual periods beginning after December 15, 2019, including interim periods within that reporting period. Early adoption is permitted, including adoption in any interim period for which financial statements have not been issued. Entities can choose to adopt the new guidance (1) prospectively to eligible costs incurred on or after the date the guidance is first applied or (2) retrospectively. The Company is currently evaluating the effect that this update will have on its financial results upon adoption.

Cash and Cash Equivalents

Cash and cash equivalents consist primarily of highly liquid investments such as deposits held at major banks and money market funds. Cash equivalents are carried at cost, which approximates fair value. The Company’s cash and cash equivalent balances comprise the following:

	September 30, 2018		December 31, 2017	
(in thousands, except percentages)	Amount	% of Total	Amount	% of Total
Cash accounts	$332,097	45.5	$568,587	64.5
Money market funds	397,083	54.5	312,914	35.5
Total	$729,180		$881,501	

The Company's money market fund balances are held in various funds of a single issuer.

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3. Revenue from Contracts with Customers

Adoption of ASC 606, Revenue from Contracts with Customers

The Company adopted ASC 606 on January 1, 2018 using the modified retrospective approach for all contracts not completed as of the date of adoption. Results for reporting periods beginning after January 1, 2018 are presented under ASC 606, while prior period amounts are not adjusted and continue to be reported in accordance with ASC 605, Revenue Recognition (ASC 605). The adoption of ASC 606 represents a change in accounting principle that will more closely align revenue recognition with the delivery of the Company's software licenses, maintenance and services. ASC 606 requires an entity to evaluate revenue recognition by identifying a contract with a customer, identifying the performance obligations in the contract, determining the transaction price, allocating the transaction price to the performance obligations in the contract, and recognizing revenue when (or as) the entity satisfies a performance obligation.

The Company recorded an increase to retained earnings of $242.4 million, or $183.1 million net of tax, on January 1, 2018 due to the cumulative effect of the ASC 606 adoption, with the impact primarily derived from revenue related to time-based software lease licenses.

Revenue Recognition

Revenue is derived principally from the licensing of computer software products and from related maintenance contracts. The Company enters into contracts that include combinations of products, maintenance and services, which are accounted for as separate performance obligations with differing revenue recognition patterns.

Revenue from perpetual licenses is classified as software license revenue. Software license revenue is recognized up front upon delivery of the licensed product and the utility that enables the customer to access authorization keys, provided that a signed contract has been received. Typically, the Company's perpetual licenses are sold with post-contract support (PCS), which includes unspecified technical enhancements and customer support. The Company allocates value in bundled perpetual and PCS arrangements based on the standalone selling prices of the perpetual license and PCS. Revenue from PCS is classified as maintenance revenue and is recognized ratably over the term of the contract, as the Company satisfies the PCS performance obligation over time.

In addition to perpetual licenses, the Company sells time-based lease licenses. Lease licenses are sold only as a bundled arrangement that includes the rights to a term software license and PCS. Maximizing the use of observable inputs, the Company determined that 50% of the estimated standalone selling price of the lease license is attributable to the term license and 50% is attributable to the PCS. Consistent with the perpetual sales, the license component is classified as software license revenue and recognized as revenue up front at the commencement of the lease. The PCS is classified as maintenance revenue and is recognized ratably over the term of the contract, as the Company provides the PCS benefit over time.

Revenue from training, support and other services is recognized as the services are performed. For contracts in which the service consists of a single performance obligation, such as providing a training class to a customer, the Company recognizes revenue upon completion of the performance obligation. For service contracts that are longer in duration and often include multiple performance obligations (for example, both training and consulting), the Company measures the progress toward completion of the obligations and recognizes revenue accordingly. In measuring progress towards the completion of performance obligations, the Company typically utilizes output-based estimates for services with contractual billing arrangements that are not based on time and materials, and estimates output based on the total tasks completed as compared to the total tasks required for each work contract. Input-based estimates are utilized for services that involve general consultations with contractual billing arrangements based on time and materials, utilizing direct labor as the input measure.

The Company also executes arrangements through independent channel partners in which the channel partners are authorized to market and distribute the Company's software products to end users of the Company's products and services in specified territories. In sales facilitated by channel partners, the channel partner bears the risk of collection from the end-user customer. The Company recognizes revenue from transactions with channel partners when the channel partner submits a purchase commitment, collectability from the channel partner is probable, a license agreement signed by the end-user customer is received and the performance obligation was met, at a point in time or over time as appropriate, provided that all other revenue recognition criteria are satisfied. Revenue from channel

partner transactions is the amount remitted to the Company by the channel partners. This amount includes a fee for PCS that is compensation for providing technical enhancements and the second level of technical support to the end user, which is recognized over the period that PCS is to be provided. The Company does not offer right of return, product rotation or price protection to any of its channel partners.

Non-income related taxes collected from customers and remitted to governmental authorities are recorded on the condensed consolidated balance sheet as accounts receivable and accrued expenses. The collection and payment of these amounts are reported on a net basis in the condensed consolidated statements of income and do not impact reported revenues or expenses.

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The Company warrants to its customers that its software will perform substantially as specified in the Company's current user manuals. The Company has not experienced significant claims related to software warranties beyond the scope of maintenance support, which the Company is already obligated to provide. The warranty is not sold, and cannot be purchased, separately. The warranty does not provide any type of additional service to the customer or performance obligation for the Company.

Significant Judgments

The Company’s contracts with customers typically include promises to transfer licenses and services to a customer. Judgment is required to determine if the promises are separate performance obligations, and if so, the allocation of the transaction price to each performance obligation. The Company uses the estimated standalone selling price method to allocate the transaction price for items that are not sold separately, particularly lease licenses sold with PCS. The estimated standalone selling price is determined using all information reasonably available to the Company, including market conditions and other observable inputs. The corresponding revenues are recognized as the related performance obligations are satisfied.

The Company applies a practical expedient to expense sales commissions as incurred when the amortization period would have been one year or less. Sales commissions associated with the initial year of multi-year contracts are expensed as incurred due to their immateriality. Sales commissions associated with multi-year contracts beyond the initial year are subject to an employee service requirement and are expensed as incurred as they are not considered incremental costs to obtain a contract.

The Company is required to adjust promised amounts of consideration for the effects of the time value of money if the timing of the payments provides the customer or the Company with a significant financing benefit. The Company considers various factors in assessing whether a financing component exists, including the duration of the contract, market interest rates and the timing of payments. The Company’s contracts do not include a significant financing component requiring adjustment to the transaction price.

Impact of ASC 606 on Condensed Consolidated Financial Statement Line Items

The following table compares the impacted assets and liabilities on the condensed consolidated balance sheet as of September 30, 2018 to the amounts had ASC 605 been in effect:

	September 30, 2018		
(in thousands)	As Reported (ASC 606)	ASC 605	Change
Accounts receivable, less allowance for doubtful accounts of $8,100	$235,547	$102,626	$132,921
Other receivables and current assets	162,629	255,654	(93,025)
Other long-term assets	53,226	38,670	14,556
Deferred income tax assets	22,285	61,123	(38,838)
Accrued income taxes	5,911	5,853	58
Other accrued expenses and liabilities	83,169	84,836	(1,667)
Deferred revenue - current	272,872	434,129	(161,257)
Deferred income tax liabilities	29,955	22,535	7,420
Other long-term liabilities	62,171	73,008	(10,837)
Stockholders' equity	$2,548,546	$2,366,649	$181,897

The Company recorded $244.1 million of deferred revenue to retained earnings upon the adoption of ASC 606 on January 1, 2018. The pattern of software lease license revenue recognition has changed under ASC 606. Software lease license revenue was recognized ratably over the term of the contract under the previous guidance; however, approximately 50% of the contract is recognized up front at the commencement of the lease under ASC 606. This change in the pattern of revenue recognition, coupled with the recording of deferred revenue to retained earnings at the adoption date, resulted in the changes to the condensed consolidated balance sheet line items as noted in the table above.

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The following table compares the impacted amounts on the condensed consolidated statements of income for the three and nine months ended September 30, 2018 to the amounts had ASC 605 been in effect:

	Three Months Ended September 30, 2018			Nine Months Ended September 30, 2018		
(in thousands, except per share data)	As Reported (ASC 606)	ASC 605	Change	As Reported (ASC 606)	ASC 605	Change
Revenue:						
Software licenses	$109,103	$166,606	$(57,503)	$350,296	$482,656	$(132,360)
Maintenance and service	180,315	135,350	44,965	527,908	397,895	130,013
Cost of sales:						
Software licenses	4,291	8,488	(4,197)	12,301	25,078	(12,777)
Maintenance and service	26,487	22,290	4,197	80,092	67,315	12,777
Income tax provision	5,927	7,685	(1,758)	35,811	36,089	(278)
Earnings per share:						
Basic	$1.06	$1.19	$(0.13)	$3.17	$3.19	$(0.02)
Diluted	$1.04	$1.16	$(0.12)	$3.09	$3.12	$(0.03)

The impacts to reported software licenses revenue, and maintenance and service revenue, were primarily due to the PCS portion of lease license contracts now being allocated to maintenance and service revenue under ASC 606. Under the previous guidance, this revenue was reported as software licenses revenue. This decrease to software licenses revenue was partially offset by the upfront recognition of the license component of lease revenue, which would have been recognized ratably over the contract under prior guidance. Consistent with the change in revenue, there was a corresponding reclassification within cost of sales. Costs incurred related to the PCS portion of lease license contracts are reflected in cost of maintenance and service. Under the previous guidance, such costs were reflected within cost of software licenses.

The adoption of ASC 606 had no impact on the Company’s cash flows from operations. However, with the adoption of ASC 606, there will be income tax payments associated with deferred revenue and backlog credited to retained earnings and never recognized as revenue in the financial statements. The 2018 tax payments related to the adoption of ASC 606 are expected to be $12.0 million - $15.0 million.

Disaggregation of Revenue

The following tables summarize revenue:

	Three Months Ended September 30,		
(in thousands)	2018 (ASC 606)	2018 (ASC 605)	2017 (ASC 605)
Revenue:			
Lease licenses	$43,202	$106,461	$93,956
Perpetual licenses	65,901	60,145	62,624
Software licenses	109,103	166,606	156,580
Maintenance	171,463	126,436	112,300
Service	8,852	8,914	6,705
Maintenance and service	180,315	135,350	119,005
Total revenue	$289,418	$301,956	$275,585

The Company’s software licenses revenue is recognized up front, while maintenance and service revenue is generally recognized over the term of the contract. Under ASC 606, the Company derived 24.5% of its total revenue through the indirect sales channel for the three months ended September 30, 2018. Under ASC 605, the Company derived 23.5% and 24.1% of its total revenue through the indirect sales channel for the three months ended September 30, 2018 and

2017, respectively.

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(in thousands)	Nine Months Ended September 30, 2018 (ASC 606)	2018 (ASC 605)	2017 (ASC 605)
Revenue:			
Lease licenses	$148,795	$308,699	$279,855
Perpetual licenses	201,501	173,957	168,513
Software licenses	350,296	482,656	448,368
Maintenance	500,962	370,847	324,338
Service	26,946	27,048	20,208
Maintenance and service	527,908	397,895	344,546
Total revenue	$878,204	$880,551	$792,914

Under ASC 606, the Company derived 23.9% of its total revenue through the indirect sales channel for the nine months ended September 30, 2018. Under ASC 605, the Company derived 23.5% and 24.3% of its total revenue through the indirect sales channel for the nine months ended September 30, 2018 and 2017, respectively.

Deferred Revenue

Deferred revenue consists of billings made or payments received in advance of revenue recognition from software license and maintenance agreements. The timing of revenue recognition may differ from the timing of billings to customers. Payment terms vary by the type and location of customer and the products or services offered. The time between invoicing and when payment is due is not significant. The changes in deferred revenue, inclusive of both current and long-term, are as follows:

(in thousands)	Nine Months Ended September 30, 2018
Beginning balance – January 1	$299,730
Acquired deferred revenue	2,470
Recognition of deferred revenue	(878,204)
Deferral of revenue	868,522
Currency translation	(6,065)
Ending balance – September 30	$286,453

Revenue allocated to remaining performance obligations represents contracted revenue that has not yet been recognized, which includes deferred revenue and backlog. The Company's backlog represents installment billings for periods beyond the current quarterly billing cycle and customer orders received but not processed. Revenue recognized during the nine months ended September 30, 2018 reflected above of $878.2 million included amounts in deferred revenue and backlog at the beginning of the period of $334.4 million. Total revenue allocated to remaining performance obligations was $544.7 million as of September 30, 2018 and will be recognized as revenue as follows:

(in thousands)	
Next 12 months	$412,113
Months 13-24	97,182
Months 25-36	26,976
Thereafter	8,444
Total revenue allocated to remaining performance obligations	$544,715

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4. Acquisition

On May 2, 2018, the Company completed the acquisition of 100% of the shares of OPTIS, a premier provider of software for scientific simulation of light, human vision and physics-based visualization, for a purchase price of $291.0 million, paid in cash. The acquisition will extend the Company's portfolio into the area of optical simulation to provide comprehensive sensor solutions, covering visible and infrared light, electromagnetics and acoustics for camera, radar and lidar. The acquisition met the definition of a business under ASU 2017-01.

The operating results of OPTIS have been included in the Company's condensed consolidated financial statements since May 2, 2018, the date of acquisition.

The assets and liabilities of OPTIS have been recorded based upon management's estimates of their fair market values as of the acquisition date. The following tables summarize the fair value of consideration transferred and the fair values of identified assets acquired and liabilities assumed at the acquisition date:

Fair Value of Consideration Transferred:

(in thousands)	
Cash	$290,983

Recognized Amounts of Identifiable Assets Acquired and Liabilities Assumed:

(in thousands)	
Cash	$7,957
Accounts receivable and other tangible assets	16,026
Developed software and core technologies (9 – 10 year life)	47,593
Customer lists (12 year life)	41,303
Trade names (4 – 10 year life)	10,749
Accounts payable and other liabilities	(13,396)
Deferred revenue	(2,470)
Net deferred tax liabilities	(21,576)
Total identifiable net assets	$86,186
Goodwill	$204,797

The goodwill, which is not tax-deductible, is attributed to intangible assets that do not qualify for separate recognition, including the assembled workforce of the acquired business and the synergies expected to arise as a result of the acquisition of OPTIS.

The fair values of the assets acquired and liabilities assumed are based on preliminary calculations. The estimates and assumptions for these items are subject to change as additional information about what was known and knowable at the acquisition date is obtained during the measurement period (up to one year from the acquisition date). During the period since the OPTIS acquisition date, the Company adjusted the fair values of the assets acquired and liabilities assumed, with the offset recorded as a $2.1 million increase to goodwill. These adjustments were based on refinements to assumptions used in the preliminary valuation of accounts receivable and other tangible assets, developed software and core technologies, accounts payable and other liabilities, and information about what was known and knowable as of the acquisition date in the calculation of the net deferred tax liabilities.

In valuing deferred revenue on the OPTIS balance sheet as of the acquisition date, the Company applied the fair value provisions applicable to the accounting for business combinations. Acquired deferred revenue with a historical carrying value of $14.2 million under ASC 606, and $22.3 million under ASC 605, was ascribed a fair value of $2.5 million on the opening balance sheet. As a result, the Company's post-acquisition revenue will be less than the sum of what would have otherwise been reported by ANSYS and OPTIS absent the acquisition. Under ASC 606, the impacts on reported revenue for the three and nine months ended September 30, 2018 were $3.5 million and $6.2 million, respectively. The expected impacts on reported revenue are $2.5 million and $8.7 million for the quarter ending December 31, 2018 and for the year ending December 31, 2018, respectively. Under ASC 605, the impacts on reported revenue for the three and nine months ended September 30, 2018 were $5.9 million and $10.4 million, respectively. The expected impacts on reported revenue are $4.1 million and $14.5 million for the quarter ending December 31, 2018 and for the year ending December 31, 2018, respectively.

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Full pro forma results of operations have not been presented as the effects of the OPTIS business combination were not material to the Company's consolidated results of operations. The table presented below reflects the impact of OPTIS from the date of acquisition to September 30, 2018. The operating loss is derived from the OPTIS legal structure and does not include integration costs borne directly by ANSYS, Inc. and its non-OPTIS subsidiaries as a result of the acquisition.

	Three Months Ended September 30, 2018		Nine Months Ended September 30, 2018	
(in thousands)	ASC 606	ASC 605	ASC 606	ASC 605
Revenue	$6,021	$3,803	$9,187	$5,873
Operating loss	$(2,769)	$(4,987)	$(6,081)	$(9,395)

5. Receivables and Other Current Assets

The Company's receivables and other current assets comprise the following balances:

(in thousands)	September 30, 2018	December 31, 2017
Accounts receivable, less allowance for doubtful accounts of $8,100 and $6,800, respectively	$ 235,547	$ 124,659
Receivables related to unrecognized revenue	$ 93,960	$ 215,155
Income taxes receivable, including overpayments and refunds	32,444	21,663
Prepaid expenses and other current assets	36,225	27,002
Total other receivables and current assets	$ 162,629	$ 263,820

Receivables for unrecognized revenue represent the current portion of billings made for software maintenance that have not yet been recognized as revenue.

Upon the adoption of ASC 606 on January 1, 2018, the opening balances of accounts receivable and receivables related to unrecognized revenue were $278.8 million and $136.4 million, respectively.

6. Earnings Per Share

Basic earnings per share (EPS) amounts are computed by dividing earnings by the weighted average number of common shares outstanding during the period. Diluted EPS amounts assume the issuance of common stock for all potentially dilutive equivalents outstanding. To the extent stock awards are anti-dilutive, they are excluded from the calculation of diluted EPS.

The details of basic and diluted EPS are as follows:

	Three Months Ended		Nine Months Ended	
(in thousands, except per share data)	September 30, 2018	September 30, 2017	September 30, 2018	September 30, 2017
Net income	$89,336	$ 73,630	$266,212	$ 206,666
Weighted average shares outstanding – basic	84,158	84,774	84,065	85,132
Dilutive effect of stock plans	1,885	1,814	1,995	1,770
Weighted average shares outstanding – diluted	86,043	86,588	86,060	86,902
Basic earnings per share	$1.06	$ 0.87	$3.17	$ 2.43
Diluted earnings per share	$1.04	$ 0.85	$3.09	$ 2.38
Anti-dilutive shares	—	27	—	112

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7. Goodwill and Intangible Assets

The Company's intangible assets and estimated useful lives are classified as follows:

(in thousands)	September 30, 2018 Gross Carrying Amount	September 30, 2018 Accumulated Amortization	December 31, 2017 Gross Carrying Amount	December 31, 2017 Accumulated Amortization
Finite-lived intangible assets:				
Developed software and core technologies (3 – 11 years)	$411,406	$ (311,938)	$365,317	$ (297,645)
Customer lists and contract backlog (5 – 15 years)	209,172	(113,881)	171,048	(104,522)
Trade names (2 – 10 years)	137,402	(112,954)	127,200	(104,130)
Total	$757,980	$ (538,773)	$663,565	$ (506,297)
Indefinite-lived intangible asset:				
Trade name	$357		$357	

Amortization expense for the intangible assets reflected above was $9.0 million and $12.3 million for the three months ended September 30, 2018 and 2017, respectively. Amortization expense for the intangible assets reflected above was $33.8 million and $36.4 million for the nine months ended September 30, 2018 and 2017, respectively.

As of September 30, 2018, estimated future amortization expense for the intangible assets reflected above is as follows:

(in thousands)	
Remainder of 2018	$7,142
2019	31,618
2020	32,823
2021	30,029
2022	26,342
2023	23,429
Thereafter	67,824
Total intangible assets subject to amortization	219,207
Indefinite-lived trade name	357
Other intangible assets, net	$219,564

The changes in goodwill during the nine months ended September 30, 2018 and 2017 were as follows:

(in thousands)	2018	2017
Beginning balance – January 1	$1,378,553	$1,337,215
Acquisitions and adjustments[(1)]	204,271	11,719
Currency translation	(7,257)	4,510
Ending balance – September 30	$1,575,567	$1,353,444

[(1)] In accordance with the accounting for business combinations, the Company recorded adjustments to goodwill for the effect of changes in the provisional fair values of the assets acquired and liabilities assumed during the measurement period (up to one year from the acquisition date) as the Company obtained new information about facts and circumstances that existed as of the acquisition date that, if known, would have affected the measurement of the amounts recognized as of that date.

During the first quarter of 2018, the Company completed the annual impairment test for goodwill and the indefinite-lived intangible asset and determined that these assets had not been impaired as of the test date, January 1, 2018. No other events or circumstances changed during the nine months ended September 30, 2018 that would indicate that the fair values of the Company's reporting unit and indefinite-lived intangible asset are below their carrying amounts.

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8. Fair Value Measurement

The valuation hierarchy for disclosure of assets and liabilities reported at fair value prioritizes the inputs for such valuations into three broad levels:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument; or
- Level 3: unobservable inputs based on the Company's own assumptions used to measure assets and liabilities at fair value.

A financial asset's or liability's classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

The following tables provide the assets carried at fair value and measured on a recurring basis:

(in thousands)	September 30, 2018	Fair Value Measurements at Reporting Date Using: Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Cash equivalents	$ 397,083	$ 397,083	$ —	$ —
Short-term investments	$ 211	$ —	$ 211	$ —
Deferred compensation plan investments	$ 1,840	$ 1,840	$ —	$ —

(in thousands)	December 31, 2017	Fair Value Measurements at Reporting Date Using: Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Cash equivalents	$312,914	$ 312,914	$ —	$ —
Short-term investments	$286	$ —	$ 286	$ —
Deferred compensation plan investments	$3,742	$ 3,742	$ —	$ —

The cash equivalents in the preceding tables represent money market funds.

The short-term investments in the preceding tables represent deposits held by certain foreign subsidiaries of the Company. The deposits have fixed interest rates with maturity dates ranging from three months to one year.

The deferred compensation plan investments in the preceding tables represent trading securities held in a rabbi trust for the benefit of the non-employee directors. These securities consist of mutual funds traded in an active market with quoted prices. As a result, the plan assets are classified as Level 1 in the fair value hierarchy. The plan assets are recorded within other long-term assets on the Company's condensed consolidated balance sheets.

The carrying values of cash, accounts receivable, accounts payable, accrued expenses, other accrued liabilities and short-term obligations approximate their fair values because of their short-term nature.

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9. Income Taxes

Tax Cuts and Jobs Act

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (Tax Reform), making broad and complex changes to the U.S. tax code. The SEC staff issued Staff Accounting Bulletin (SAB) 118, which provides guidance on accounting for the tax effects of Tax Reform and allows for provisional adjustments recorded in the December 31, 2017 financial statements to be adjusted as calculations are completed during the measurement period. SAB 118 provides a measurement period that should not extend beyond one year from enactment for companies to complete the accounting under ASC 740, Income Taxes. As further discussed below, in accordance with SAB 118, the Company was able to complete final or provisional calculations for certain elements of Tax Reform, and the amounts and estimates are included in the financial statements and have been updated as additional information was gathered. For other elements, the Company was not yet able to make reasonable estimates, and therefore, those elements have not been recorded and are accounted for in accordance with ASC 740 on the basis of the tax laws in effect before Tax Reform.

The Company's accounting for the transition tax is incomplete. However, reasonable estimates of certain effects could be calculated, and a provisional adjustment of $16.0 million was recorded in the December 31, 2017 financial statements. To determine the amount of the transition tax, the Company must determine, in addition to other factors, the amount of post-1986 earnings and profits (E&P) of the relevant subsidiaries, as well as the amount of non-U.S. income taxes paid on such earnings. Based on revised E&P calculations updated during the measurement period, the Company recognized an additional measurement-period adjustment of $0.9 million to the transition tax obligation and a corresponding adjustment to tax expense, resulting in a total transition tax obligation of $16.9 million. The Company plans to elect to pay this liability over eight years; however, in accordance with IRS issued guidance, tax overpayments from the year ended December 31, 2017 are required to be applied to the transition tax obligation. Based on this guidance, $15.7 million of the obligation has been paid, with the remaining $1.2 million recorded in other long-term liabilities at September 30, 2018. The Company will continue to gather additional information to more precisely compute the final amount as further adjustments to E&P are determined. The Company expects to complete the accounting within the prescribed measurement period.

The Company's accounting for the indefinite reinvestment assertion is incomplete. However, a reasonable estimate of book and tax basis was calculated, and the Company made a provisional assertion. In general, it is the practice and intention of the Company to repatriate previously taxed earnings and to reinvest all other earnings of its non-U.S. subsidiaries. As part of Tax Reform, the Company incurred U.S. tax on substantially all of the earnings of its non-U.S. subsidiaries as part of the transition tax. This tax increased the Company's previously taxed earnings and allows for the repatriation of the majority of its foreign earnings without any residual U.S. federal tax. The Company does not believe that there is an excess of the financial reporting basis over the tax basis of investments in foreign subsidiaries. Accordingly, any repatriation in excess of previously taxed earnings will be a non-taxable return of basis. This assertion is subject to change as additional information is gathered to precisely compute the book and tax bases of the Company's non-U.S. subsidiaries. During the quarter ended June 30, 2018, the Company repatriated $144.3 million of foreign cash. The Company has not made any measurement-period adjustments related to its indefinite reinvestment assertion during the nine months ended September 30, 2018. However, the Company will continue to gather additional information and expects to complete the accounting within the measurement period.

The Company's accounting for the global intangible low-taxed income tax (GILTI) is incomplete. Due to the complexity of the new GILTI tax rules, the Company is continuing to evaluate this provision of Tax Reform and its application under ASC 740. Under U.S. GAAP, the Company is allowed to make an accounting policy choice of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the period cost method) or (2) factoring such amounts into the Company's measurement of its deferred taxes (the deferred method). The Company's selection of an accounting policy with respect to the new GILTI tax rules will depend, in part, on analyzing global income to determine whether future U.S. inclusions in taxable income related to GILTI are expected and, if so, the anticipated impact. Whether the Company expects to have future U.S. inclusions in taxable income related to GILTI depends not only on the current structure and estimated future results of global operations, but also on the Company's intent and ability to modify the structure and/or the business. The Company has

not made the accounting policy decision regarding whether to record deferred taxes on GILTI or expense taxes as incurred on GILTI. The current GILTI impact, which was immaterial for the three and nine months ended September 30, 2018, was recorded in the financial statements. The Company expects to complete the accounting for GILTI within the prescribed measurement period.

Other Income Tax Matters

The Company has $30.2 million of unrecognized tax benefits, including estimated interest and penalties, that have been recorded in other long-term liabilities in accordance with income tax accounting guidance and for which the Company is uncertain as to if or when such amounts may be settled.

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10. Geographic Information

Revenue to external customers is attributed to individual countries based upon the location of the customer. Revenue by geographic area is as follows:

	Three Months Ended September 30,		
(in thousands)	2018 (ASC 606)	2018 (ASC 605)	2017 (ASC 605)
United States	$106,229	$121,131	$105,480
Japan	36,309	33,331	30,779
Germany	27,831	30,728	28,395
China	14,568	14,703	14,043
France	14,035	15,116	13,438
South Korea	12,943	14,068	15,292
Other Europe, Middle East and Africa (EMEA)	45,602	43,066	40,887
Other international	31,901	29,813	27,271
Total revenue	$289,418	$301,956	$275,585

	Nine Months Ended September 30,		
(in thousands)	2018 (ASC 606)	2018 (ASC 605)	2017 (ASC 605)
United States	$327,784	$345,886	$305,661
Japan	109,050	101,789	94,612
Germany	97,262	92,262	79,160
South Korea	45,468	46,305	45,633
France	44,638	45,511	37,997
China	38,616	37,870	35,429
Other EMEA	136,719	132,482	116,844
Other international	78,667	78,446	77,578
Total revenue	$878,204	$880,551	$792,914

Property and equipment by geographic area is as follows:

(in thousands)	September 30, 2018	December 31, 2017
United States	$ 44,117	$ 45,498
India	3,708	3,704
EMEA	6,326	5,114
Other international	3,751	2,780
Total property and equipment, net	$ 57,902	$ 57,096

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11. Stock-Based Compensation

Total stock-based compensation expense and its net impact on basic and diluted earnings per share are as follows:

(in thousands, except per share data)	Three Months Ended		Nine Months Ended	
	September 30, 2018	September 30, 2017	September 30, 2018	September 30, 2017
Cost of sales:				
Software licenses	$—	$ 140	$—	$ 711
Maintenance and service	1,438	739	3,880	1,894
Operating expenses:				
Selling, general and administrative	13,484	8,782	33,288	23,310
Research and development	8,061	5,112	21,719	13,493
Stock-based compensation expense before taxes	22,983	14,773	58,887	39,408
Related income tax benefits	(8,611)	(6,080)	(30,311)	(23,980)
Stock-based compensation expense, net of taxes	$14,372	$ 8,693	$28,576	$ 15,428
Net impact on earnings per share:				
Basic earnings per share	$(0.17)	$ (0.10)	$(0.34)	$ (0.18)
Diluted earnings per share	$(0.17)	$ (0.10)	$(0.33)	$ (0.18)

12. Stock Repurchase Program

Under the Company's stock repurchase program, the Company repurchased shares as follows:

(in thousands, except per share data)	Nine Months Ended	
	September 30, 2018	September 30, 2017
Number of shares repurchased	1,174	2,000
Average price paid per share	$164.14	$ 111.65
Total cost	$192,787	$ 223,291

In February 2018, the Company's Board of Directors increased the number of shares authorized for repurchase to a total of 5.0 million shares under the stock repurchase program. As of September 30, 2018, 4.3 million shares remained available for repurchase under the program.

13. Restructuring

During the fourth quarter of 2016, the Company initiated workforce realignment activities to reallocate resources to align with the Company's future strategic plans. The Company completed the workforce realignment activities as of September 30, 2017. The Company incurred related restructuring charges as follows:

(in thousands)	Gross	Net of Tax
Q4 2016	$3,419	$2,355
Q1 2017	9,273	6,176
Q2 2017	2,000	1,435
Q3 2017	466	331
Total restructuring charges	$15,158	$10,297

The restructuring charges are included in the presentation of cost of software licenses; cost of maintenance and service; research and development expense; and selling, general and administrative expense. The gross charges were fully paid as of March 31, 2018.

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14. Contingencies and Commitments

The Company is subject to various investigations, claims and legal proceedings that arise in the ordinary course of business, including commercial disputes, labor and employment matters, tax audits, alleged infringement of intellectual property rights and other matters. In the opinion of the Company, the resolution of pending matters is not expected to have a material adverse effect on the Company's consolidated results of operations, cash flows or financial position. However, each of these matters is subject to various uncertainties and it is possible that an unfavorable resolution of one or more of these proceedings could materially affect the Company's results of operations, cash flows or financial position.

An Indian subsidiary of the Company has several service tax audits pending that have resulted in formal inquiries being received on transactions through mid-2012. The Company could incur tax charges and related liabilities of approximately $6.8 million. The service tax issues raised in the Company’s notices and inquiries are very similar to the case, M/s Microsoft Corporation (I) (P) Ltd. Vs. Commissioner of Service Tax, New Delhi, wherein the Delhi Customs, Excise and Service Tax Appellate Tribunal (CESTAT) passed a favorable ruling to Microsoft. The Microsoft case ruling was subsequently challenged in the Supreme Court by the Indian tax authority. The Company can provide no assurances on the impact that the present Microsoft case’s decision will have on the Company’s cases. The Company is uncertain as to when these service tax matters will be concluded.

The Company sells software licenses and services to its customers under proprietary software license agreements. Each license agreement contains the relevant terms of the contractual arrangement with the customer, and generally includes certain provisions for indemnifying the customer against losses, expenses and liabilities from damages that are incurred by or awarded against the customer in the event the Company's software or services are found to infringe upon a patent, copyright or other proprietary right of a third party. To date, the Company has not had to reimburse any of its customers for any losses related to these indemnification provisions and no material claims asserted under these indemnification provisions are outstanding as of September 30, 2018. For several reasons, including the lack of prior material indemnification claims, the Company cannot determine the maximum amount of potential future payments, if any, related to such indemnification provisions.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of ANSYS, Inc.

Results of Review of Interim Financial Information

We have reviewed the accompanying condensed consolidated balance sheet of ANSYS, Inc. and subsidiaries (the "Company") as of September 30, 2018, the related condensed consolidated statements of income and comprehensive income for the three-month and nine-month periods then ended and of cash flows for the nine-month period then ended, and the related notes (collectively referred to as the "interim financial information"). Based on our review, we are not aware of any material modifications that should be made to the accompanying interim financial information for it to be in conformity with accounting principles generally accepted in the United States of America.

We have previously audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheet of the Company as of December 31, 2017, and the related consolidated statements of income, comprehensive income, stockholders' equity, and cash flows for the year then ended (not presented herein); and in our report dated February 22, 2018, we expressed an unqualified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying condensed consolidated balance sheet as of December 31, 2017, is fairly stated, in all material respects, in relation to the consolidated balance sheet from which it has been derived.

Basis for Review Results

This interim financial information is the responsibility of the Company's management. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our review in accordance with standards of the PCAOB. A review of interim financial information consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with the standards of the PCAOB, the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly, we do not express such an opinion.

/s/ Deloitte & Touche LLP
Pittsburgh, Pennsylvania
November 8, 2018

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Item 2.Management’s Discussion and Analysis of Financial Condition and Results of Operations

Overview:

Overall GAAP Results

The Company's growth rates of GAAP results for the three and nine months ended September 30, 2018 as compared to the three and nine months ended September 30, 2017 were as follows:

	Three Months Ended September 30, 2018			Nine Months Ended September 30, 2018		
	Under ASC 605	Impact of ASC 606 Adoption	Total	Under ASC 605	Impact of ASC 606 Adoption	Total
Revenue	9.6 %	(4.6)%	5.0 %	11.1%	(0.3)%	10.8%
Operating income	(0.6)%	(11.8)%	(12.4)%	3.1 %	(0.8)%	2.3 %
Diluted earnings per share	36.5 %	(14.1)%	22.4 %	31.1%	(1.3)%	29.8%

Under ASC 605, the Company experienced higher revenue during the nine months ended September 30, 2018 across all classes of revenue, including license revenue, maintenance and services. The Company also experienced increased operating expenses primarily due to increased personnel costs, higher stock-based compensation and OPTIS expenses for the period from the acquisition date (May 2, 2018) through September 30, 2018. These increases were partially offset by restructuring in 2017 that did not reoccur in 2018.

Overall Non-GAAP Results

The Company's growth rates of non-GAAP results for the three and nine months ended September 30, 2018 as compared to the three and nine months ended September 30, 2018 were as follows:

	Three Months Ended September 30, 2018			Nine Months Ended September 30, 2018		
	Under ASC 605	Impact of ASC 606 Adoption	Total	Under ASC 605	Impact of ASC 606 Adoption	Total
Revenue	11.3%	(5.4)%	5.9 %	12.2%	(0.8)%	11.4%
Operating income	6.7 %	(11.1)%	(4.4)%	7.7 %	(1.8)%	5.9 %
Diluted earnings per share	39.0%	(14.2)%	24.8 %	33.3%	(2.0)%	31.3%

The non-GAAP results exclude the income statement effects of the acquisition accounting adjustment to deferred revenue, stock-based compensation, amortization of acquired intangible assets, restructuring charges, transaction costs related to business combinations, and the impact of the enactment of the Tax Cuts and Jobs Act. For further disclosure regarding non-GAAP results, see the section titled "Non-GAAP Results" immediately preceding the section titled "Liquidity and Capital Resources."

Impact of OPTIS

On May 2, 2018, the Company completed the acquisition of OPTIS. The tables presented below reflect the impact of OPTIS from the date of acquisition to September 30, 2018. The operating (loss) income is derived from the OPTIS legal structure and does not include integration costs borne directly by ANSYS, Inc. and its non-OPTIS subsidiaries as a result of the acquisition.

	Three Months Ended September 30, 2018			
	ASC 606		ASC 605	
(in thousands)	GAAP	Non-GAAP	GAAP	Non-GAAP
Revenue	$6,021	$ 9,509	$3,803	$ 9,663
Operating (loss) income	$(2,769)	$ 1,401	$(4,987)	$ 1,555
	Nine Months Ended September 30, 2018			
	ASC 606		ASC 605	
(in thousands)	GAAP	Non-GAAP	GAAP	Non-GAAP
Revenue	$9,187	$ 15,430	$5,873	$ 16,266
Operating (loss) income	$(6,081)	$ 1,312	$(9,395)	$ 2,148

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Impact of Foreign Currency

The Company's comparative financial results were impacted by fluctuations in the U.S. Dollar during the three and nine months ended September 30, 2018 as compared to the three and nine months ended September 30, 2017. The impacts on the Company's revenue and operating income due to currency fluctuations are reflected in the tables below.

	Three Months Ended September 30, 2018			
	ASC 606		ASC 605	
(in thousands)	GAAP	Non-GAAP	GAAP	Non-GAAP
Revenue	$(2,124)	$ (2,142)	$(1,811)	$ (1,843)
Operating income	$(759)	$ (804)	$(918)	$ (485)

	Nine Months Ended September 30, 2018			
	ASC 606		ASC 605	
(in thousands)	GAAP	Non-GAAP	GAAP	Non-GAAP
Revenue	$20,135	$ 20,199	$19,125	$ 19,231
Operating income	$11,647	$ 11,979	$10,646	$ 11,028

Using ASC 606 and ASC 605 results for the three and nine months ended September 30, 2018 and 2017, respectively, the Company's constant currency[(1)] growth rates were as follows:

	Three Months Ended September 30, 2018		Nine Months Ended September 30, 2018	
	GAAP	Non-GAAP	GAAP	Non-GAAP
Revenue	5.8 %	6.6 %	8.2 %	8.8 %
Operating income	(11.7)%	(3.8)%	(1.7)%	2.7 %

In constant currency, the Company's growth rates under ASC 605 were as follows:

	Three Months Ended September 30, 2018		Nine Months Ended September 30, 2018	
	GAAP	Non-GAAP	GAAP	Non-GAAP
Revenue	10.2%	11.9 %	8.6 %	9.8 %
Operating income	0.3 %	7.0 %	(0.6)%	4.8 %

[(1)] Constant currency amounts exclude the effect of foreign currency fluctuations on the reported results. To present this information, the 2018 results for entities whose functional currency is a currency other than the U.S. Dollar were converted to U.S. Dollars at rates that were in effect for 2017, rather than the actual exchange rates in effect for 2018.

Other Financial Information

The Company’s financial position includes $729.4 million in cash and short-term investments, and working capital of $712.1 million as of September 30, 2018.

During the nine months ended September 30, 2018, the Company repurchased 1.2 million shares for $192.8 million at an average price of $164.14 per share.

Business:

ANSYS develops and globally markets engineering simulation software and services widely used by engineers, designers, researchers and students across a broad spectrum of industries and academia, including aerospace and defense, automotive, electronics, semiconductors, energy, materials and chemical processing, turbomachinery, consumer products, healthcare, and sports. Headquartered south of Pittsburgh, Pennsylvania, the Company employed approximately 3,300 people as of September 30, 2018. ANSYS focuses on the development of open and flexible solutions that enable users to analyze designs directly on the desktop, providing a common platform for fast, efficient and cost-conscious product development, from design concept to final-stage testing and validation. The Company distributes its suite of simulation technologies through a global network of independent channel partners and direct sales offices in strategic, global locations. It is the Company’s intention to continue to maintain this hybrid sales and distribution model.

The Company licenses its technology to businesses, educational institutions and governmental agencies. Growth in the Company’s revenue is affected by the strength of global economies, general business conditions, currency exchange rate

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fluctuations, customer budgetary constraints and the competitive position of the Company's products. The Company believes that the features, functionality and integrated multiphysics capabilities of its software products are as strong as they have ever been. However, the software business is generally characterized by long sales cycles. These long sales cycles increase the difficulty of predicting sales for any particular quarter. The Company makes many operational and strategic decisions based upon short- and long-term sales forecasts that are impacted not only by these long sales cycles but also by current global economic conditions. As a result, the Company believes that its overall performance is best measured by fiscal-year results rather than by quarterly results.

The Company's management considers the competition and price pressure that it faces in the short- and long-term by focusing on expanding the breadth, depth, ease of use and quality of the technologies, features, functionality and integrated multiphysics capabilities of its software products as compared to its competitors; investing in research and development to develop new and innovative products and increase the capabilities of its existing products; supplying new products and services; focusing on customer needs, training, consulting and support; and enhancing its distribution channels. From time to time, the Company also considers acquisitions to supplement its global engineering talent, product offerings and distribution channels.

Geographic Trends:

Compared to the ASC 605 revenue for the three and nine months ended September 30, 2017, the Company's geographic constant currency revenue growth during the three and nine months ended September 30, 2018 was as follows:

	Three Months Ended September 30, 2018		Nine Months Ended September 30, 2018	
	ASC 606	ASC 605	ASC 606	ASC 605
Americas	1.2 %	14.0%	6.1 %	11.7%
EMEA	7.0 %	8.6 %	11.8%	8.8 %
Asia-Pacific	11.0%	6.6 %	7.6 %	4.2 %
Total	5.8 %	10.2%	8.2 %	8.6 %

Due to the change in revenue recognition under ASC 606, the ASC 606 growth rates presented above, which compare the 2018 results under ASC 606 to the 2017 results under ASC 605, are less representative of the underlying operations of each region than those presented under ASC 605.

The Company continues to focus on a number of sales improvement activities across the geographic regions, including sales hiring, pipeline building, productivity initiatives and customer engagement activities.

Industry Commentary:

Consistent with the first half of 2018, the automotive industry remained strong due to continued investments in autonomous vehicles and electrification. Investments in smart, connected products and 5G by companies around the globe bolstered the high-tech industry in the third quarter. The industrial equipment industry saw growth as companies continued to focus on the use of simulation in maintenance, repair and overhaul projects. Aerospace and defense had strong performance due to increased defense spending in both the United States and Europe.

Note About Forward-Looking Statements

The following discussion should be read in conjunction with the accompanying unaudited condensed consolidated financial statements and notes thereto for the nine months ended September 30, 2018, and with the Company's audited consolidated financial statements and notes thereto for the year ended December 31, 2017 filed on the Annual Report on Form 10-K with the Securities and Exchange Commission. The Company's discussion and analysis of its financial condition and results of operations are based upon the Company's condensed consolidated financial statements, which have been prepared in accordance with GAAP. The preparation of these financial statements requires the Company to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an ongoing basis, the Company evaluates its estimates, including those related to the fair values of stock awards, bad debts, contract revenue, acquired deferred revenue, the

standalone selling prices of its products and services, the valuation of goodwill and other intangible assets, deferred compensation, income taxes, uncertain tax positions, tax valuation reserves, useful lives for depreciation and amortization, and contingencies and litigation. The Company bases its estimates on historical experience, market experience, estimated future cash flows and various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily available from other sources. Actual results may differ from these estimates.

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, including, but not limited to, the following statements, as well as statements that contain such words as "anticipates", "intends", "believes", "plans" and other similar expressions:

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- The Company's assessment of the ultimate liabilities arising from various investigations, claims and legal proceedings.
- The Company's expectations regarding the outcome of its service tax audit cases.
- The Company's expectations regarding future claims related to indemnification obligations.
- The Company's expectations regarding the impacts of new accounting guidance.
- The Company's intentions regarding its hybrid sales and distribution model.
- The Company's statement regarding the strength of the features, functionality and integrated multiphysics capabilities of its software products.
- The Company's belief that its overall performance is best measured by fiscal-year results rather than by quarterly results.
- The Company's expectations regarding the adverse impact on license and maintenance revenue growth in the near term, as well as increased lease license volatility, due to an increased customer preference for time-based licenses.
- The Company's estimates regarding the expected impact on reported revenue related to the acquisition accounting treatment of deferred revenue.
- The Company's expectation that it will continue to make targeted investments in its global sales and marketing organization and its global business infrastructure to enhance and support its revenue-generating activities.
- The Company's intentions related to investments in research and development, particularly as it relates to expanding the ease of use and capabilities of its broad portfolio of simulation software products.
- The Company's intention to repatriate previously taxed earnings and to reinvest all other earnings of its non-U.S. subsidiaries.
- The Company's plans related to future capital spending.
- The sufficiency of existing cash and cash equivalent balances to meet future working capital and capital expenditure requirements.
- The Company's belief that the best uses of its excess cash are to invest in the business and to repurchase stock in order to both offset dilution and return capital to stockholders, in excess of its requirements, with the goal of increasing stockholder value.
- The Company's intentions related to investments in complementary companies, products, services and technologies.
- The Company's expectation that changes in currency exchange rates will affect the Company's financial position, results of operations and cash flows.
- The Company's expectations regarding the impacts of the Tax Cuts and Jobs Act.

Forward-looking statements should not be unduly relied upon because they involve known and unknown risks, uncertainties and other factors, some of which are beyond the Company’s control. The Company’s actual results could differ materially from those set forth in forward-looking statements. Certain factors, among others, that might cause such a difference include risks and uncertainties disclosed in the Company’s most recent Annual Report on Form 10-K, Part I, Item 1A. Information regarding new risk factors or material changes to these risk factors have been included within Part II, Item 1A of this Quarterly Report on Form 10-Q.

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Results of Operations

Three Months Ended September 30, 2018 Compared to Three Months Ended September 30, 2017

Revenue:

(in thousands, except percentages)	Three Months Ended September 30, 2018 (ASC 606)	2017 (ASC 605)	Change Amount	%	Constant Currency %
Revenue:					
Lease licenses	$43,202	$93,956	$(50,754)	(54.0)	(53.4)
Perpetual licenses	65,901	62,624	3,277	5.2	6.2
Software licenses	109,103	156,580	(47,477)	(30.3)	(29.6)
Maintenance	171,463	112,300	59,163	52.7	53.5
Service	8,852	6,705	2,147	32.0	32.6
Maintenance and service	180,315	119,005	61,310	51.5	52.3
Total revenue	$289,418	$275,585	$13,833	5.0	5.8

The Company adopted ASC 606 on January 1, 2018 using the modified retrospective approach for all contracts not completed as of the date of adoption. The adoption of ASC 606 significantly impacted the timing, allocation and presentation of lease license, perpetual license and maintenance revenue. Among the most significant changes is the PCS portion of lease license contracts now being allocated to maintenance revenue. Under the previous guidance, this revenue was reported as lease licenses revenue. This decrease to lease licenses revenue was partially offset by the upfront recognition of the license component of lease revenue, which would have been recognized ratably over the contract under the prior guidance. For further information on the impact of this adoption on the Company's results, see Note 3 to the condensed consolidated financial statements included in Item 1 of this Quarterly Report on Form 10-Q. For purposes of comparability, the changes in the following table and the related discussion that follows are presented in accordance with ASC 605.

(in thousands, except percentages)	Three Months Ended September 30, 2018 (ASC 605)	2017 (ASC 605)	Change Amount	%	Constant Currency %
Revenue:					
Lease licenses	$106,461	$93,956	$12,505	13.3	13.8
Perpetual licenses	60,145	62,624	(2,479)	(4.0)	(3.1)
Software licenses	166,606	156,580	10,026	6.4	7.1
Maintenance	126,436	112,300	14,136	12.6	13.3
Service	8,914	6,705	2,209	32.9	33.6
Maintenance and service	135,350	119,005	16,345	13.7	14.4
Total revenue	$301,956	$275,585	$26,371	9.6	10.2

The Company’s ASC 605 revenue in the quarter ended September 30, 2018 increased 9.6% as compared to the quarter ended September 30, 2017, while revenue grew 10.2% in constant currency. The growth rate was favorably impacted by the Company’s continued investment in its global sales, support and marketing organizations, as well as its May 2, 2018 acquisition of OPTIS. Lease license revenue increased 13.3%, or 13.8% in constant currency, as compared to the prior-year quarter. Annual maintenance contracts that were sold with new perpetual licenses, along with maintenance contracts for new perpetual licenses sold in previous quarters, contributed to maintenance revenue growth of 12.6%, or 13.3% in constant currency. Service revenue, driven primarily by a focus on service offerings that provide on-site mentorship on simulation best practices, training and expanding simulation adoption, increased 32.9%, or 33.6% in

constant currency, as compared to the prior-year quarter. Perpetual license revenue, which is derived primarily from new sales during the quarter, decreased 4.0%, or 3.1% in constant currency, as compared to the prior-year quarter.

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With respect to revenue, on average for the quarter ended September 30, 2018, the U.S. Dollar was approximately 1.4% stronger and 1.3% stronger, when measured against the Company's primary foreign currencies, than for the quarter ended September 30, 2017 under ASC 606 and ASC 605, respectively. The table below presents the impacts of currency fluctuations on revenue for the quarter ended September 30, 2018. Amounts in brackets indicate an adverse impact from currency fluctuations.

	Three Months Ended September 30, 2018	
(in thousands)	ASC 606	ASC 605
Euro	$(875)	$(882)
Indian Rupee	(809)	(634)
Japanese Yen	(198)	(174)
British Pound	(120)	(45)
Other	(122)	(76)
Total	$(2,124)	$(1,811)

The net overall stronger U.S. Dollar also resulted in decreased operating income of $0.8 million and $0.9 million for the quarter ended September 30, 2018 as compared to the quarter ended September 30, 2017 under ASC 606 and ASC 605, respectively.

A substantial portion of the Company's lease license and maintenance revenue is derived from annual lease and maintenance contracts. These contracts are generally renewed on an annual basis and have a high rate of customer renewal. In addition to the recurring revenue base associated with these contracts, a majority of customers purchasing new perpetual licenses also purchase related annual maintenance contracts. As a result of the significant recurring revenue base, the Company's lease license and maintenance revenue growth rate in any period does not necessarily correlate to the growth rate of new licenses sold during that period under ASC 605. The same is true for maintenance revenue growth under ASC 606. However, under ASC 606, lease license revenue is entirely attributed to license sales completed during the period, resulting in a higher correlation of lease license revenue growth to the growth rate of new lease license sales than that under ASC 605. To the extent the rate of customer renewal for lease and maintenance contracts is high, incremental lease contracts, and maintenance contracts sold with new perpetual licenses, will result in lease license and maintenance growth in constant currency. Conversely, if the rate of renewal for these contracts is adversely affected by economic or other factors, the Company's lease license and maintenance growth will be adversely affected.

The Company has been experiencing an increased interest by some of its larger customers in enterprise agreements that often include longer-term, time-based licenses involving a larger number of the Company's software products. While these arrangements typically involve a higher overall transaction price, the revenue from these contracts is typically deferred and recognized over the period of the contract under ASC 605, resulting in increased deferred revenue and backlog. To the extent these types of contracts replace sales of perpetual licenses, there could be a near-term adverse impact on software license and maintenance revenue growth. Under ASC 606, the upfront recognition of license revenue related to these larger, multi-year transactions can result in significantly higher lease license revenue volatility. As software products, across a large variety of applications and industries, become increasingly distributed in software-as-a-service, cloud and other subscription environments in which the licensing approach is time-based rather than perpetual, the Company is also experiencing a shifting preference from perpetual licenses to time-based licenses across a broader spectrum of its customers, particularly in the more mature geographic markets, such as the U.S. and Japan. To the extent this shift continues or becomes more prevalent, the result could be a similar and incremental near-term adverse impact on software license and maintenance revenue growth under ASC 605, as well as an adverse impact on maintenance revenue growth and increased lease license volatility under ASC 606.

As a percentage of revenue, the Company's international and domestic revenues, and the Company's direct and indirect revenues, are as follows:

	Three Months Ended September 30,		
	2018 (ASC 606)	2018 (ASC 605)	2017 (ASC 605)
International	63.3%	59.9%	61.7%
Domestic	36.7%	40.1%	38.3%
Direct revenue	75.5%	76.5%	75.9%
Indirect revenue	24.5%	23.5%	24.1%

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In valuing deferred revenue on the balance sheets of the Company's recent acquisitions as of their respective acquisition dates, the Company applied the fair value provisions applicable to the accounting for business combinations, resulting in a reduction of deferred revenue as compared to its historical carrying amount. As a result, the Company's post-acquisition revenue will be less than the sum of what would have otherwise been reported by ANSYS and each acquiree absent the acquisitions. Under ASC 606, the impacts on reported revenue were $3.5 million for the quarter ended September 30, 2018. The expected impacts on reported revenue are $2.5 million and $9.4 million for the quarter ending December 31, 2018 and for the year ending December 31, 2018, respectively. Under ASC 605, the impacts on revenue were $6.0 million and $1.2 million for the quarters ended September 30, 2018 and 2017, respectively. The expected impacts on revenue are $4.2 million and $15.6 million for the quarter ending December 31, 2018 and for the year ending December 31, 2018, respectively.

Deferred Revenue and Backlog:

Deferred revenue consists of billings made or payments received in advance of revenue recognition from software license and maintenance agreements. The deferred revenue on the Company's condensed consolidated balance sheets does not represent the total value of annual or multi-year noncancellable software license and maintenance agreements. The Company's backlog represents installment billings for periods beyond the current quarterly billing cycle and customer orders received but not processed. The Company's deferred revenue and backlog as of September 30, 2018 and December 31, 2017 consist of the following:

ASC 606	Balance at September 30, 2018		
(in thousands)	Total	Current	Long-Term
Deferred revenue	$286,453	$272,872	$ 13,581
Backlog	258,262	139,241	119,021
Total	$544,715	$412,113	$ 132,602

ASC 605	Balance at September 30, 2018		
(in thousands)	Total	Current	Long-Term
Deferred revenue	$458,547	$434,129	$ 24,418
Backlog	303,013	133,673	169,340
Total	$761,560	$567,802	$ 193,758

ASC 605	Balance at December 31, 2017		
(in thousands)	Total	Current	Long-Term
Deferred revenue	$468,560	$440,491	$ 28,069
Backlog	301,150	97,283	203,867
Total	$769,710	$537,774	$ 231,936

Revenue associated with deferred revenue and backlog that will be recognized in the subsequent twelve months is classified as current in the tables above.

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Cost of Sales and Gross Profit:

The table below reflects the Company's operating results as presented on the condensed consolidated statements of income, which are inclusive of foreign currency translation impacts. The adoption of ASC 606 resulted in a reclassification of expenses within cost of sales from software licenses to maintenance and service. Amounts included in the discussion that follows are provided in constant currency and do not include the impact of the OPTIS acquisition. The impact of the OPTIS acquisition on each expense line is provided separately, where material. The impact, where material, of foreign exchange translation on each expense line is also provided separately and is inclusive of the OPTIS acquisition.

	Three Months Ended September 30,					
	2018		2017		Change	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Cost of sales:						
Software licenses	$4,291	1.5	$7,395	2.7	$(3,104)	(42.0)
Amortization	5,530	1.9	9,004	3.3	(3,474)	(38.6)
Maintenance and service	26,487	9.2	19,584	7.1	6,903	35.2
Total cost of sales	36,308	12.5	35,983	13.1	325	0.9
Gross profit	$253,110	87.5	$239,602	86.9	$13,508	5.6

Software Licenses: The decrease in the cost of software licenses was primarily due to the following:

- Reclassification of $4.2 million of cost of sales, previously reflected within software licenses, to maintenance and service due to the adoption of ASC 606 in 2018.
- OPTIS-related software license expenses of $0.4 million.

Amortization: The decrease in amortization expense was primarily due to a net decrease in the amortization of trade names and acquired technology due to assets that have become fully amortized.

Maintenance and Service: The increase in maintenance and service costs was primarily due to the following:

- Reclassification of $4.2 million of cost of sales, previously reflected within software licenses, to maintenance and service due to the adoption of ASC 606 in 2018.
- Increased third-party technical support of $1.1 million.
- OPTIS-related maintenance and service expenses of $1.1 million.

The improvement in gross profit was a result of the increase in revenue, partially offset by the increase in the related cost of sales.

Operating Expenses:

The table below reflects the Company's operating results as presented on the condensed consolidated statements of income, which are inclusive of foreign currency translation impacts. The adoption of ASC 606 did not impact operating expenses. Amounts included in the discussion that follows are provided in constant currency and do not include the impact of the OPTIS acquisition. The impact of the OPTIS acquisition on each expense line is provided separately, where material. The impact, where material, of foreign exchange translation on each expense line is also provided separately and is inclusive of the OPTIS acquisition.

	Three Months Ended September 30,					
	2018		2017		Change	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Operating expenses:						
Selling, general and administrative	$97,576	33.7	$80,015	29.0	$17,561	21.9
Research and development	59,019	20.4	50,144	18.2	8,875	17.7
Amortization	3,491	1.2	3,260	1.2	231	7.1
Total operating expenses	$160,086	55.3	$133,419	48.4	$26,667	20.0

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Selling, General and Administrative: The net increase in selling, general and administrative costs was primarily due to the following:

- Increased salaries and incentive compensation of $6.6 million.
- OPTIS-related selling, general and administrative expenses of $4.8 million.
- Increased stock-based compensation of $4.8 million.
- Increased severance expense and business travel, each of $1.1 million.
- Decreased consulting costs of $1.6 million.
- Decreased third-party commissions of $1.2 million.

The Company anticipates that it will continue to make targeted investments in its global sales and marketing organization and its global business infrastructure to enhance and support its revenue-generating activities.

Research and Development: The increase in research and development costs was primarily due to the following:

- Increased stock-based compensation of $2.9 million.
- Increased salaries of $2.7 million.
- OPTIS-related research and development expenses of $1.8 million.

The Company has traditionally invested significant resources in research and development activities and intends to continue to make investments in expanding the ease of use and capabilities of its broad portfolio of simulation software products.

Interest Income: Interest income for the quarter ended September 30, 2018 was $3.2 million as compared to $1.9 million for the quarter ended September 30, 2017. Interest income increased as a result of an increase in the average rate of return on invested cash balances.

Other Expense, net: The Company's other expense consists of the following:

	Three Months Ended September 30,	
(in thousands)	2018	2017
Foreign currency losses, net	$(1,023)	$ (209)
Other	49	41
Total other expense, net	$(974)	$ (168)

Income Tax Provision: The Company's income before income tax provision, income tax provision and effective tax rate were as follows:

	Three Months Ended September 30,		
(in thousands, except percentages)	2018 (ASC 606)	2018 (ASC 605)	2017 (ASC 605)
Income before income tax provision	$95,263	$107,801	$107,925
Income tax provision	$5,927	$7,685	$34,295
Effective tax rate	6.2 %	7.1 %	31.8 %

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On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (Tax Reform), making broad and complex changes to the U.S. tax code. The SEC staff issued Staff Accounting Bulletin (SAB) 118, which provides guidance on accounting for the tax effects of Tax Reform and allows for provisional adjustments recorded in the December 31, 2017 financial statements to be adjusted as calculations are completed during the measurement period. SAB 118 provides a measurement period that should not extend beyond one year from enactment for companies to complete the accounting under ASC 740, Income Taxes. As further discussed below, in accordance with SAB 118, the Company was able to complete final or provisional calculations for certain elements of Tax Reform, and the amounts and estimates are included in the financial statements and have been updated as additional information was gathered. For other elements, the Company was not yet able to make reasonable estimates, and therefore, those elements have not been recorded and are accounted for in accordance with ASC 740 on the basis of the tax laws in effect before Tax Reform.

The Company's accounting for the transition tax is incomplete. However, reasonable estimates of certain effects could be calculated, and a provisional adjustment of $16.0 million was recorded in the December 31, 2017 financial statements. To determine the amount of the transition tax, the Company must determine, in addition to other factors, the amount of post-1986 earnings and profits (E&P) of the relevant subsidiaries, as well as the amount of non-U.S. income taxes paid on such earnings. Based on revised E&P calculations updated during the measurement period, the Company recognized an additional measurement-period adjustment of $0.9 million to the transition tax obligation and a corresponding adjustment to tax expense, resulting in a total transition tax obligation of $16.9 million. The Company plans to elect to pay this liability over eight years; however, in accordance with IRS issued guidance, tax overpayments from the year ended December 31, 2017 are required to be applied to the transition tax obligation. Based on this guidance, $15.7 million of the obligation has been paid, with the remaining $1.2 million recorded in other long-term liabilities at September 30, 2018. The Company will continue to gather additional information to more precisely compute the final amount as further adjustments to E&P are determined. The Company expects to complete the accounting within the prescribed measurement period.

The Company's accounting for the indefinite reinvestment assertion is incomplete. However, a reasonable estimate of book and tax basis was calculated, and the Company made a provisional assertion. In general, it is the practice and intention of the Company to repatriate previously taxed earnings and to reinvest all other earnings of its non-U.S. subsidiaries. As part of Tax Reform, the Company incurred U.S. tax on substantially all of the earnings of its non-U.S. subsidiaries as part of the transition tax. This tax increased the Company's previously taxed earnings and allows for the repatriation of the majority of its foreign earnings without any residual U.S. federal tax. The Company does not believe that there is an excess of the financial reporting basis over the tax basis of investments in foreign subsidiaries. Accordingly, any repatriation in excess of previously taxed earnings will be a non-taxable return of basis. This assertion is subject to change as additional information is gathered to precisely compute the book and tax bases of the Company's non-U.S. subsidiaries. During the quarter ended June 30, 2018, the Company repatriated $144.3 million of foreign cash. The Company has not made any measurement-period adjustments related to its indefinite reinvestment assertion during the nine months ended September 30, 2018. However, the Company will continue to gather additional information and expects to complete the accounting within the measurement period.

The Company's accounting for the global intangible low-taxed income tax (GILTI) is incomplete. Due to the complexity of the new GILTI tax rules, the Company is continuing to evaluate this provision of Tax Reform and its application under ASC 740. Under U.S. GAAP, the Company is allowed to make an accounting policy choice of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the period cost method) or (2) factoring such amounts into the Company's measurement of its deferred taxes (the deferred method). The Company's selection of an accounting policy with respect to the new GILTI tax rules will depend, in part, on analyzing global income to determine whether future U.S. inclusions in taxable income related to GILTI are expected and, if so, the anticipated impact. Whether the Company expects to have future U.S. inclusions in taxable income related to GILTI depends not only on the current structure and estimated future results of global operations, but also on the Company's intent and ability to modify the structure and/or the business. The Company has not made the accounting policy decision regarding whether to record deferred taxes on GILTI or expense taxes as incurred on GILTI. The current GILTI impact, which was immaterial for the three and nine months ended September

30, 2018, was recorded in the financial statements. The Company expects to complete the accounting for GILTI within the prescribed measurement period.

The decrease in the effective tax rate from the prior year is primarily due to the reduction in the U.S. federal corporate tax rate from 35 percent to 21 percent enacted as part of Tax Reform and a net $6.8 million benefit related to global legal entity restructuring activities. The effective tax rate was also reduced by the foreign-derived intangible income deduction, increased research and development credits and increased stock-based compensation benefits, partially offset by the loss of the domestic manufacturing deduction, which was repealed as part of Tax Reform.

When compared to the federal and state combined statutory rate for each respective period, the effective tax rates for the quarters ended September 30, 2018 and 2017 were favorably impacted by tax benefits from stock-based compensation and research and development credits.

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Net Income: The Company's net income, diluted earnings per share and weighted average shares used in computing diluted earnings per share were as follows:

	Three Months Ended September 30,		
(in thousands, except per share data)	2018 (ASC 606)	2018 (ASC 605)	2017 (ASC 605)
Net income	$89,336	$100,116	$73,630
Diluted earnings per share	$1.04	$1.16	$0.85
Weighted average shares outstanding - diluted	86,043	86,043	86,588

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Nine Months Ended September 30, 2018 Compared to Nine Months Ended September 30, 2017

Revenue:

(in thousands, except percentages)	Nine Months Ended September 30, 2018 (ASC 606)	2017 (ASC 605)	Change Amount	%	Constant Currency %
Revenue:					
Lease licenses	$148,795	$279,855	$(131,060)	(46.8)	(48.1)
Perpetual licenses	201,501	168,513	32,988	19.6	17.0
Software licenses	350,296	448,368	(98,072)	(21.9)	(23.6)
Maintenance	500,962	324,338	176,624	54.5	50.8
Service	26,946	20,208	6,738	33.3	30.8
Maintenance and service	527,908	344,546	183,362	53.2	49.7
Total revenue	$878,204	$792,914	$85,290	10.8	8.2

The adoption of ASC 606 significantly impacted the timing, allocation and presentation of lease license, perpetual license and maintenance revenue. For further information on the impact of this adoption on the Company's results, see Note 3 to the condensed consolidated financial statements included in Item 1 of this Quarterly Report on Form 10-Q. For purposes of comparability, the changes in the following table and the related discussion that follows are presented in accordance with ASC 605.

(in thousands, except percentages)	Nine Months Ended September 30, 2018 (ASC 605)	2017 (ASC 605)	Change Amount	%	Constant Currency %
Revenue:					
Lease licenses	$308,699	$279,855	$28,844	10.3	8.5
Perpetual licenses	173,957	168,513	5,444	3.2	1.0
Software licenses	482,656	448,368	34,288	7.6	5.7
Maintenance	370,847	324,338	46,509	14.3	11.3
Service	27,048	20,208	6,840	33.8	31.4
Maintenance and service	397,895	344,546	53,349	15.5	12.5
Total revenue	$880,551	$792,914	$87,637	11.1	8.6

The Company’s ASC 605 revenue in the nine months ended September 30, 2018 increased 11.1% as compared to the nine months ended September 30, 2017, while revenue grew 8.6% in constant currency. The growth rate was favorably impacted by the Company’s continued investment in its global sales, support and marketing organizations. Lease license revenue increased 10.3%, or 8.5% in constant currency, as compared to the nine months ended September 30, 2017. Perpetual license revenue, which is derived primarily from new sales during the year, increased 3.2%, or 1.0% in constant currency, as compared to the nine months ended September 30, 2017. Annual maintenance contracts that were sold with new perpetual licenses, along with maintenance contracts for new perpetual licenses sold in previous quarters, contributed to maintenance revenue growth of 14.3%, or 11.3% in constant currency. Service revenue, driven primarily by a focus on service offerings that provide on-site mentorship on simulation best practices, training and expanding simulation adoption, increased 33.8%, or 31.4% in constant currency, as compared to the nine months ended September 30, 2017.

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With respect to revenue, on average for the nine months ended September 30, 2018, the U.S. Dollar was approximately 4.5% weaker and 4.7% weaker, when measured against the Company's primary foreign currencies, than for the nine months ended September 30, 2017 under ASC 606 and ASC 605, respectively. The table below presents the impacts of currency fluctuations on revenue for the nine months ended September 30, 2018. Amounts in brackets indicate an adverse impact from currency fluctuations.

	Nine Months Ended September 30, 2018	
(in thousands)	ASC 606	ASC 605
Euro	$16,142	$14,656
Japanese Yen	1,998	2,020
South Korean Won	1,501	1,455
British Pound	1,202	1,403
Other	(708)	(409)
Total	$20,135	$19,125

The net overall weaker U.S. Dollar also resulted in increased operating income of $11.6 million and $10.6 million for the nine months ended September 30, 2018 as compared to the nine months ended September 30, 2017 under ASC 606 and ASC 605, respectively.

As a percentage of revenue, the Company's international and domestic revenues, and the Company's direct and indirect revenues, are as follows:

	Nine Months Ended September 30,		
	2018 (ASC 606)	2018 (ASC 605)	2017 (ASC 605)
International	62.7%	60.7%	61.5%
Domestic	37.3%	39.3%	38.5%
Direct revenue	76.1%	76.5%	75.7%
Indirect revenue	23.9%	23.5%	24.3%

In valuing deferred revenue on the balance sheets of the Company's recent acquisitions as of their respective acquisition dates, the Company applied the fair value provisions applicable to the accounting for business combinations, resulting in a reduction of deferred revenue as compared to its historical carrying amount. As a result, the Company's post-acquisition revenue will be less than the sum of what would have otherwise been reported by ANSYS and each acquiree absent the acquisitions. Under ASC 606, the impacts on reported revenue were $6.9 million for the nine months ended September 30, 2018. Under ASC 605, the impacts on revenue were $11.4 million and $1.7 million for the nine months ended September 30, 2018 and 2017, respectively.

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Cost of Sales and Gross Profit:

The table below reflects the Company's operating results as presented on the condensed consolidated statements of income, which are inclusive of foreign currency translation impacts. The adoption of ASC 606 resulted in a reclassification of expenses within cost of sales from software licenses to maintenance and service. Amounts included in the discussion that follows are provided in constant currency and do not include the impact of the OPTIS acquisition. The impact of the OPTIS acquisition on each expense line is provided separately, where material. The impact, where material, of foreign exchange translation on each expense line is also provided separately and is inclusive of the OPTIS acquisition.

	Nine Months Ended September 30,					
	2018		2017		Change	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Cost of sales:						
Software licenses	$12,301	1.4	$24,197	3.1	$(11,896)	(49.2)
Amortization	23,403	2.7	26,892	3.4	(3,489)	(13.0)
Maintenance and service	80,092	9.1	58,263	7.3	21,829	37.5
Total cost of sales	115,796	13.2	109,352	13.8	6,444	5.9
Gross profit	$762,408	86.8	$683,562	86.2	$78,846	11.5

Software Licenses: The decrease in the cost of software licenses was primarily due to the following:

- Reclassification of $12.8 million of cost of sales, previously reflected within software licenses, to maintenance and service due to the adoption of ASC 606 in 2018.

Amortization: The decrease in amortization expense was primarily due to a net decrease in the amortization of trade names and acquired technology due to assets that have become fully amortized.

Maintenance and Service: The increase in maintenance and service costs was primarily due to the following:

- Reclassification of $12.8 million of cost of sales, previously reflected within software licenses, to maintenance and service due to the adoption of ASC 606 in 2018.
- Increased third-party technical support of $3.5 million.
- Increased salaries of $1.9 million.
- OPTIS-related maintenance and service expenses of $1.7 million for the period from the acquisition date (May 2, 2018) through September 30, 2018.

The improvement in gross profit was a result of the increase in revenue, partially offset by the increase in the related cost of sales.

Operating Expenses:

The table below reflects the Company's operating results as presented on the condensed consolidated statements of income, which are inclusive of foreign currency translation impacts. The adoption of ASC 606 did not impact operating expenses. Amounts included in the discussion that follows are provided in constant currency and do not include the impact of the OPTIS acquisition. The impact of the OPTIS acquisition on each expense line is provided separately, where material. The impact, where material, of foreign exchange translation on each expense line is also provided separately and is inclusive of the OPTIS acquisition.

	Nine Months Ended September 30,					
	2018		2017		Change	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Operating expenses:						
Selling, general and administrative	$280,443	31.9	$230,483	29.1	$49,960	21.7
Research and development	174,906	19.9	153,524	19.4	21,382	13.9
Amortization	10,421	1.2	9,506	1.2	915	9.6
Total operating expenses	$465,770	53.0	$393,513	49.6	$72,257	18.4

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Selling, General and Administrative: The net increase in selling, general and administrative costs was primarily due to the following:

- Increased salaries, incentive compensation and other headcount-related costs of $21.6 million.
- Increased stock-based compensation of $10.0 million.
- OPTIS-related selling, general and administrative expenses of $8.4 million for the period from the acquisition date (May 2, 2018) through September 30, 2018.
- Cost increase related to foreign exchange translation of $3.4 million due to a weaker U.S. Dollar.
- Increased business travel of $3.0 million.
- Increased IT maintenance and software hosting costs of $2.1 million.
- Increased severance expenses of $2.1 million.
- Decreased consulting and professional fees of $4.5 million.
- Restructuring costs of $2.8 million related to 2017 workforce realignment activities that did not reoccur in 2018.

Research and Development: The net increase in research and development costs was primarily due to the following:

- Increased salaries, incentive compensation and other headcount-related costs of $11.3 million.
- Increased stock-based compensation of $8.2 million.
- OPTIS-related research and development expenses of $3.3 million for the period from the acquisition date (May 2, 2018) through September 30, 2018.
- Increased IT maintenance and software hosting costs of $1.4 million.
- Cost increase related to foreign exchange translation of $1.4 million due to a weaker U.S. Dollar.
- Restructuring costs of $6.8 million related to 2017 workforce realignment activities that did not reoccur in 2018.

Interest Income: Interest income for the nine months ended September 30, 2018 was $7.7 million as compared to $4.8 million for the nine months ended September 30, 2017. Interest income increased as a result of an increase in the average rate of return on invested cash balances.

Other Expense, net: The Company's other expense consists of the following:

(in thousands)	Nine Months Ended September 30,	
	2018	2017
Foreign currency losses, net	$(2,346)	$ (1,499)
Other	57	(13)
Total other expense, net	$(2,289)	$ (1,512)

Income Tax Provision: The Company's income before income tax provision, income tax provision and effective tax rate were as follows:

(in thousands, except percentages)	Nine Months Ended September 30,		
	2018 (ASC 606)	2018 (ASC 605)	2017 (ASC 605)
Income before income tax provision	$302,023	$304,370	$293,364
Income tax provision	$35,811	$36,089	$86,698
Effective tax rate	11.9 %	11.9 %	29.6 %

The decrease in the effective tax rate from the prior year is primarily due to the reduction in the U.S. federal corporate tax rate from 35 percent to 21 percent enacted as part of Tax Reform. The effective tax rate was also reduced by the foreign-derived intangible income deduction, net benefits from global legal entity restructuring activities, increased research and development credits, and increased stock-based compensation benefits, partially offset by the loss of the domestic manufacturing deduction, which was repealed as part of Tax Reform.

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When compared to the federal and state combined statutory rate for each respective period, the effective tax rates for the nine months ended September 30, 2018 and 2017 were favorably impacted by tax benefits from stock-based compensation and research and development credits.

Net Income: The Company's net income, diluted earnings per share and weighted average shares used in computing diluted earnings per share were as follows:

	Nine Months Ended September 30,		
(in thousands, except per share data)	2018 (ASC 606)	2018 (ASC 605)	2017 (ASC 605)
Net income	$266,212	$268,281	$206,666
Diluted earnings per share	$3.09	$3.12	$2.38
Weighted average shares outstanding - diluted	86,060	86,060	86,902

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Non-GAAP Results

The Company provides non-GAAP revenue, non-GAAP operating income, non-GAAP operating profit margin, non-GAAP net income and non-GAAP diluted earnings per share as supplemental measures to GAAP regarding the Company's operational performance. These financial measures exclude the impact of certain items and, therefore, have not been calculated in accordance with GAAP. A detailed explanation and a reconciliation of each non-GAAP financial measure to its most comparable GAAP financial measure are described below.

(in thousands, except percentages and per share data)	ASC 606 Three Months Ended September 30, 2018 GAAP Results	Adjustments		Non-GAAP Results
Total revenue	$289,418	$ 3,548	(1)	$292,966
Operating income	93,024	35,889	(2)	128,913
Operating profit margin	32.1 %			44.0 %
Net income	$89,336	$ 23,557	(3)	$112,893
Earnings per share – diluted:				
Earnings per share	$1.04			$1.31
Weighted average shares	86,043			86,043

(1) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(2) Amount represents $23.0 million of stock-based compensation expense, $0.3 million of excess payroll taxes related to stock-based awards, $9.0 million of amortization expense associated with intangible assets acquired in business combinations and the $3.5 million adjustment to revenue as reflected in (1) above.

(3) Amount represents the impact of the adjustments to operating income referred to in (2) above, decreased for the related income tax impact of $11.7 million, a measurement-period adjustment related to the Tax Cuts and Jobs Act of $0.5 million, and rabbi trust income of $0.1 million.

(in thousands, except percentages and per share data)	ASC 606 Nine Months Ended September 30, 2018 GAAP Results	Adjustments		Non-GAAP Results
Total revenue	$878,204	$ 6,897	(1)	$885,101
Operating income	296,638	105,796	(2)	402,434
Operating profit margin	33.8 %			45.5 %
Net income	$266,212	$ 65,591	(3)	$331,803
Earnings per share – diluted:				
Earnings per share	$3.09			$3.86
Weighted average shares	86,060			86,060

(1) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(2) Amount represents $58.9 million of stock-based compensation expense, $3.8 million of excess payroll taxes related to stock-based awards, $33.8 million of amortization expense associated with intangible assets acquired in business combinations, $2.4 million of transaction expenses related to business combinations and the $6.9 million adjustment to revenue as reflected in (1) above.

(3) Amount represents the impact of the adjustments to operating income referred to in (2) above, decreased for the related income tax impact of $41.0 million and rabbi trust income of $0.1 million, and increased for a measurement-period adjustment related to the Tax Cuts and Jobs Act of $0.9 million.

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(in thousands, except percentages and per share data)	ASC 605 Three Months Ended September 30, 2018 GAAP Results	Adjustments		Non-GAAP Results	September 30, 2017 GAAP Results	Adjustments		Non-GAAP Results
Total revenue	$301,956	$ 5,972	(1)	$307,928	$275,585	$ 1,181	(4)	$276,766
Operating income	105,562	38,313	(2)	143,875	106,183	28,711	(5)	134,894
Operating profit margin	35.0 %			46.7 %	38.5 %			48.7 %
Net income	$100,116	$ 25,280	(3)	$125,396	$73,630	$ 17,638	(6)	$91,268
Earnings per share – diluted:								
Earnings per share	$1.16			$1.46	$0.85			$1.05
Weighted average shares	86,043			86,043	86,588			86,588

(1) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(2) Amount represents $23.0 million of stock-based compensation expense, $0.3 million of excess payroll taxes related to stock-based awards, $9.0 million of amortization expense associated with intangible assets acquired in business combinations, and the $6.0 million adjustment to revenue as reflected in (1) above.

(3) Amount represents the impact of the adjustments to operating income referred to in (2) above, decreased for the related income tax impact of $12.4 million, a measurement-period adjustment related to the Tax Cuts and Jobs Act of $0.5 million and rabbi trust income of $0.1 million.

(4) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(5) Amount represents $14.8 million of stock-based compensation expense, $12.3 million of amortization expense associated with intangible assets acquired in business combinations, $0.5 million of restructuring charges, and the $1.2 million adjustment to revenue as reflected in (4) above.

(6) Amount represents the impact of the adjustments to operating income referred to in (5) above, adjusted for the related income tax impact of $11.0 million and rabbi trust income of $0.1 million.

(in thousands, except percentages and per share data)	ASC 605 Nine Months Ended September 30, 2018 GAAP Results	Adjustments		Non-GAAP Results	September 30, 2017 GAAP Results	Adjustments		Non-GAAP Results
Total revenue	$880,551	$ 11,436	(1)	$891,987	$792,914	$ 1,748	(4)	$794,662
Operating income	298,985	110,335	(2)	409,320	290,049	89,985	(5)	380,034
Operating profit margin	34.0 %			45.9 %	36.6 %			47.8 %
Net income	$268,281	$ 68,827	(3)	$337,108	$206,666	$ 48,480	(6)	$255,146
Earnings per share – diluted:								
Earnings per share	$3.12			$3.92	$2.38			$2.94
Weighted average shares	86,060			86,060	86,902			86,902

(1) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(2) Amount represents $58.9 million of stock-based compensation expense, $3.8 million of excess payroll taxes related to stock-based awards, $33.8 million of amortization expense associated with intangible assets acquired in business combinations, $2.4 million of transaction expenses related to business combinations and the $11.4 million adjustment to revenue as reflected in (1) above.

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(3) Amount represents the impact of the adjustments to operating income referred to in (2) above, decreased for the related income tax impact of $42.3 million and rabbi trust income of $0.1 million, and increased for a measurement-period adjustment related to the Tax Cuts and Jobs Act of $0.9 million.

(4) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(5) Amount represents $39.4 million of stock-based compensation expense, $36.4 million of amortization expense associated with intangible assets acquired in business combinations, $11.7 million of restructuring charges, $0.7 million of transaction expenses related to business combinations and the $1.7 million adjustment to revenue as reflected in (4) above.

(6) Amount represents the impact of the adjustments to operating income referred to in (5) above, adjusted for the related income tax impact of $41.4 million and rabbi trust income of $0.1 million.

Non-GAAP Measures

Management uses non-GAAP financial measures (a) to evaluate the Company's historical and prospective financial performance as well as its performance relative to its competitors, (b) to set internal sales targets and spending budgets, (c) to allocate resources, (d) to measure operational profitability and the accuracy of forecasting, (e) to assess financial discipline over operational expenditures and (f) as an important factor in determining variable compensation for management and its employees. In addition, many financial analysts that follow the Company focus on and publish both historical results and future projections based on non-GAAP financial measures. The Company believes that it is in the best interest of its investors to provide this information to analysts so that they accurately report the non-GAAP financial information. Moreover, investors have historically requested, and the Company has historically reported, these non-GAAP financial measures as a means of providing consistent and comparable information with past reports of financial results.

While management believes that these non-GAAP financial measures provide useful supplemental information to investors, there are limitations associated with the use of these non-GAAP financial measures. These non-GAAP financial measures are not prepared in accordance with GAAP, are not reported by all of the Company's competitors and may not be directly comparable to similarly titled measures of the Company's competitors due to potential differences in the exact method of calculation. The Company compensates for these limitations by using these non-GAAP financial measures as supplements to GAAP financial measures and by reviewing the reconciliations of the non-GAAP financial measures to their most comparable GAAP financial measures.

The adjustments to these non-GAAP financial measures, and the basis for such adjustments, are outlined below:

Acquisition accounting for deferred revenue and its related tax impact. Historically, the Company has consummated acquisitions in order to support its strategic and other business objectives. In accordance with the fair value provisions applicable to the accounting for business combinations, acquired deferred revenue is often recorded on the opening balance sheet at an amount that is lower than the historical carrying value. Although this acquisition accounting requirement has no impact on the Company's business or cash flow, it adversely impacts the Company's reported GAAP revenue in the reporting periods following an acquisition. In order to provide investors with financial information that facilitates comparison of both historical and future results, the Company provides non-GAAP financial measures which exclude the impact of the acquisition accounting adjustment. The Company believes that this non-GAAP financial adjustment is useful to investors because it allows investors to (a) evaluate the effectiveness of the methodology and information used by management in its financial and operational decision-making, and (b) compare past and future reports of financial results of the Company as the revenue reduction related to acquired deferred revenue will not recur when related annual lease licenses and software maintenance contracts are renewed in future periods.

Amortization of intangible assets from acquisitions and its related tax impact. The Company incurs amortization of intangible assets, included in its GAAP presentation of amortization expense, related to various acquisitions it has made. Management excludes these expenses and their related tax impact for the purpose of calculating non-GAAP operating income, non-GAAP operating profit margin, non-GAAP net income and non-GAAP diluted earnings per share when it evaluates the continuing operational performance of the Company because these costs are fixed at the time of an acquisition, are then amortized over a period of several years after the acquisition and generally cannot be

changed or influenced by management after the acquisition. Accordingly, management does not consider these expenses for purposes of evaluating the performance of the Company during the applicable time period after the acquisition, and it excludes such expenses when making decisions to allocate resources. The Company believes that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate the effectiveness of the methodology and information used by management in its financial and operational decision-making, and (b) compare past reports of financial results of the Company as the Company has historically reported these non-GAAP financial measures.

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Stock-based compensation expense and its related tax impact. The Company incurs expense related to stock-based compensation included in its GAAP presentation of cost of software licenses; cost of maintenance and service; research and development expense; and selling, general and administrative expense. This non-GAAP adjustment also includes excess payroll tax expense related to stock-based compensation. Stock-based compensation expense (benefit) incurred in connection with the Company's deferred compensation plan held in a rabbi trust includes an offsetting benefit (charge) recorded in other income (expense). Although stock-based compensation is an expense of the Company and viewed as a form of compensation, management excludes these expenses for the purpose of calculating non-GAAP operating income, non-GAAP operating profit margin, non-GAAP net income and non-GAAP diluted earnings per share when it evaluates the continuing operational performance of the Company. Management similarly excludes income (expense) related to assets held in a rabbi trust in connection with the Company's deferred compensation plan. Specifically, the Company excludes stock-based compensation and income (expense) related to assets held in the deferred compensation plan rabbi trust during its annual budgeting process and its quarterly and annual assessments of the Company's and management's performance. The annual budgeting process is the primary mechanism whereby the Company allocates resources to various initiatives and operational requirements. Additionally, the annual review by the board of directors during which it compares the Company's historical business model and profitability to the planned business model and profitability for the forthcoming year excludes the impact of stock-based compensation. In evaluating the performance of senior management and department managers, charges related to stock-based compensation are excluded from expenditure and profitability results. In fact, the Company records stock-based compensation expense into a stand-alone cost center for which no single operational manager is responsible or accountable. In this way, management is able to review, on a period-to-period basis, each manager's performance and assess financial discipline over operational expenditures without the effect of stock-based compensation. The Company believes that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate the Company's operating results and the effectiveness of the methodology used by management to review the Company's operating results, and (b) review historical comparability in the Company's financial reporting as well as comparability with competitors' operating results.

Restructuring charges and the related tax impact. The Company occasionally incurs expenses for restructuring its workforce included in its GAAP presentation of cost of software licenses; cost of maintenance and service; research and development expense; and selling, general and administrative expense. Management excludes these expenses for the purpose of calculating non-GAAP operating income, non-GAAP operating profit margin, non-GAAP net income and non-GAAP diluted earnings per share when it evaluates the continuing operational performance of the Company, as it generally does not incur these expenses as a part of its operations. The Company believes that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate the Company's operating results and the effectiveness of the methodology used by management to review the Company's operating results, and (b) review historical comparability in the Company's financial reporting as well as comparability with competitors' operating results.

Transaction costs related to business combinations. The Company incurs expenses for professional services rendered in connection with business combinations, which are included in its GAAP presentation of selling, general and administrative expense. These expenses are generally not tax-deductible. Management excludes these acquisition-related transaction expenses, derived from announced acquisitions, for the purpose of calculating non-GAAP operating income, non-GAAP operating profit margin, non-GAAP net income and non-GAAP diluted earnings per share when it evaluates the continuing operational performance of the Company, as it generally would not have otherwise incurred these expenses in the periods presented as a part of its operations. The Company believes that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate the Company's operating results and the effectiveness of the methodology used by management to review the Company's operating results, and (b) review historical comparability in the Company's financial reporting as well as comparability with competitors' operating results.

Tax Cuts and Jobs Act. The Company recorded charges in its income tax provision related to the enactment of the Tax Cuts and Jobs Act, specifically for the transition tax related to unrepatriated cash. Management excludes these charges for the purpose of calculating non-GAAP net income and non-GAAP diluted earnings per share when it evaluates the

continuing operational performance of the Company, as (i) the charges are not expected to recur as part of its normal operations and (ii) the charges resulted from the extremely infrequent event of major U.S. tax reform, the last such reform having occurred in 1986. The Company believes that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate the Company's operating results and the effectiveness of the methodology used by management to review the Company's operating results, and (b) review historical comparability in the Company's financial reporting.

Non-GAAP financial measures are not in accordance with, or an alternative for, GAAP. The Company's non-GAAP financial measures are not meant to be considered in isolation or as a substitute for comparable GAAP financial measures and should be read only in conjunction with the Company's consolidated financial statements prepared in accordance with GAAP.

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The Company has provided a reconciliation of the non-GAAP financial measures to the most directly comparable GAAP financial measures as listed below:

GAAP Reporting Measure	Non-GAAP Reporting Measure
Revenue	Non-GAAP Revenue
Operating Income	Non-GAAP Operating Income
Operating Profit Margin	Non-GAAP Operating Profit Margin
Net Income	Non-GAAP Net Income
Diluted Earnings Per Share	Non-GAAP Diluted Earnings Per Share

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Liquidity and Capital Resources

(in thousands)	September 30, 2018	December 31, 2017	Change
Cash, cash equivalents and short-term investments	$ 729,391	$ 881,787	$(152,396)
Working capital	$ 712,128	$ 661,713	$50,415

Cash, cash equivalents and short-term investments decreased during the current fiscal year primarily due to cash utilized in the May 2, 2018 acquisition of OPTIS.

Cash, Cash Equivalents and Short-Term Investments

Cash and cash equivalents consist primarily of highly liquid investments such as money market funds and deposits held at major banks. Short-term investments consist primarily of deposits held by certain foreign subsidiaries of the Company with original maturities of three months to one year. The following table presents the Company's foreign and domestic holdings of cash, cash equivalents and short-term investments as of September 30, 2018 and December 31, 2017:

(in thousands, except percentages)	September 30, 2018	% of Total	December 31, 2017	% of Total
Domestic	$ 564,689	77.4	$ 561,417	63.7
Foreign	164,702	22.6	320,370	36.3
Total	$ 729,391		$ 881,787	

In general, it is the practice and intention of the Company to repatriate previously taxed earnings and to reinvest all other earnings of its non-U.S. subsidiaries. As part of the Tax Cuts and Jobs Act enacted in the United States in 2017, the Company incurred U.S. tax on substantially all of the earnings of its non-U.S. subsidiaries. This tax increased the Company’s previously taxed earnings and allows for the repatriation of the majority of its foreign earnings without any residual U.S. federal tax. During the quarter ended June 30, 2018, the Company repatriated $144.3 million of foreign cash, which increased the percentage of domestic cash, cash equivalents and short-term investments at September 30, 2018. The Company does not believe that there is an excess of the financial reporting basis over the tax basis of investments in foreign subsidiaries. Accordingly, any repatriation in excess of previously taxed earnings will be a non-taxable return of basis.

The amount of cash, cash equivalents and short-term investments held by foreign subsidiaries is subject to translation adjustments caused by changes in foreign currency exchange rates as of the end of each respective reporting period, the offset to which is recorded in accumulated other comprehensive loss on the Company's condensed consolidated balance sheet.

Cash Flows from Operating Activities

	Nine Months Ended September 30,		
(in thousands)	2018	2017	Change
Net cash provided by operating activities	$353,503	$326,960	$26,543

Net cash provided by operating activities increased during the current fiscal year due to increased net income (net of non-cash operating adjustments) of $54.3 million, partially offset by decreased net cash flows from operating assets and liabilities of $27.7 million.

Cash Flows from Investing Activities

	Nine Months Ended September 30,		
(in thousands)	2018	2017	Change
Net cash used in investing activities	$(301,613)	$(61,623)	$(239,990)

Net cash used in investing activities increased during the current fiscal year due primarily to increased acquisition-related net cash outlays of $257.0 million. The Company currently plans capital spending of $20 million to $25 million for the 2018 fiscal year as compared to the $19.1 million that was spent in 2017. The level of spending will depend on various factors, including the growth of the business and general economic conditions.

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Cash Flows from Financing Activities

	Nine Months Ended September 30,		
(in thousands)	2018	2017	Change
Net cash used in financing activities	$(187,283)	$(185,374)	$(1,909)

The change in net cash used in financing activities during the current fiscal year was due primarily to increased restricted stock withholding taxes paid in lieu of issued shares of $16.9 million and decreased proceeds from shares issued for stock-based compensation of $10.6 million, offset by decreased stock repurchases of $30.5 million.

Other Cash Flow Information

The Company believes that existing cash and cash equivalent balances of $729.2 million, together with cash generated from operations, will be sufficient to meet the Company’s working capital and capital expenditure requirements through the next twelve months. The Company’s cash requirements in the future may also be financed through additional equity or debt financings. There can be no assurance that such financings can be obtained on favorable terms, if at all.

Under the Company's stock repurchase program, the Company repurchased shares during the nine months ended September 30, 2018 and 2017, as follows:

	Nine Months Ended September 30,	
(in thousands, except per share data)	2018	2017
Number of shares repurchased	1,174	2,000
Average price paid per share	$164.14	$ 111.65
Total cost	$192,787	$ 223,291

In February 2018, the Company's Board of Directors increased the number of shares authorized for repurchase to a total of 5.0 million shares under the stock repurchase program. As of September 30, 2018, 4.3 million shares remained available for repurchase under the program.

The Company's repurchase authorization does not have an expiration date and the pace of the repurchase activity will depend on factors such as working capital needs, cash requirements for acquisitions, the Company's stock price, and economic and market conditions. The Company's stock repurchases may be effected from time to time through open market purchases or pursuant to a Rule 10b5-1 plan.

The Company continues to generate positive cash flows from operating activities and believes that the best uses of its excess cash are to invest in the business and to repurchase stock in order to both offset dilution and return capital, in excess of its requirements, to stockholders with the goal of increasing stockholder value. Additionally, the Company has in the past, and expects in the future, to acquire or make investments in complementary companies, products, services and technologies. Any future acquisitions may be funded by available cash and investments, cash generated from operations, credit facilities or the issuance of additional securities.

Off-Balance-Sheet Arrangements

The Company does not have any special-purpose entities or off-balance-sheet financing.

Contractual Obligations

There were no material changes to the Company’s significant contractual obligations during the nine months ended September 30, 2018 as compared to those previously reported in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” within the Company’s most recent Annual Report on Form 10-K.

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Critical Accounting Policies and Estimates

During the first quarter of 2018, the Company completed the annual impairment test for goodwill and the indefinite-lived intangible asset and determined that these assets had not been impaired as of the test date, January 1, 2018. No other events or circumstances changed during the nine months ended September 30, 2018 that would indicate that the fair values of the Company's reporting unit and indefinite-lived intangible asset are below their carrying amounts.

The Company’s critical accounting policies and estimates are described in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the Company’s most recent Annual Report on Form 10-K. The Company has updated its revenue recognition policies in conjunction with the adoption of ASC 606 as further described in Note 3 to the accompanying condensed consolidated financial statements. No other significant changes have occurred to the Company's critical accounting policies and estimates.

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Item 3. Quantitative and Qualitative Disclosures About Market Risk

Interest Income Rate Risk. Changes in the overall level of interest rates affect the interest income that is generated from the Company's cash, cash equivalents and short-term investments. For the three and nine months ended September 30, 2018, total interest income was $3.2 million and $7.7 million, respectively. Cash and cash equivalents consist primarily of highly liquid investments such as money market funds and deposits held at major banks. Short-term investments consist primarily of deposits held by certain foreign subsidiaries of the Company with original maturities of three months to one year.

Foreign Currency Transaction Risk. As the Company operates in international regions, a portion of its revenue, expenses, cash, accounts receivable and payment obligations are denominated in foreign currencies. As a result, changes in currency exchange rates will affect the Company's financial position, results of operations and cash flows. The Company is most impacted by movements in and among the British Pound, Euro, Japanese Yen, South Korean Won, and U.S. Dollar.

With respect to revenue, on average for the quarter ended September 30, 2018, the U.S. Dollar was approximately 1.4% stronger and 1.3% stronger, when measured against the Company's primary foreign currencies, than for the quarter ended September 30, 2017 under ASC 606 and ASC 605, respectively. The table below presents the impacts of currency fluctuations on revenue for the quarter ended September 30, 2018. Amounts in brackets indicate a net adverse impact from currency fluctuations.

	Three Months Ended September 30, 2018	
(in thousands)	ASC 606	ASC 605
Euro	$(875)	$(882)
Indian Rupee	(809)	(634)
Japanese Yen	(198)	(174)
British Pound	(120)	(45)
Other	(122)	(76)
Total	$(2,124)	$(1,811)

The net overall stronger U.S. Dollar also resulted in decreased operating income of $0.8 million and $0.9 million for the quarter ended September 30, 2018 as compared to the quarter ended September 30, 2017 under ASC 606 and ASC 605, respectively.

With respect to revenue, on average for the nine months ended September 30, 2018, the U.S. Dollar was approximately 4.5% weaker and 4.7% weaker, when measured against the Company's primary foreign currencies, than for the nine months ended September 30, 2017 under ASC 606 and ASC 605, respectively. The table below presents the impacts of currency fluctuations on revenue for the nine months ended September 30, 2018. Amounts in brackets indicate a net adverse impact from currency fluctuations.

	Nine Months Ended September 30, 2018	
(in thousands)	ASC 606	ASC 605
Euro	$16,142	$14,656
Japanese Yen	1,998	2,020
South Korean Won	1,501	1,455
British Pound	1,202	1,403
Other	(708)	(409)
Total	$20,135	$19,125

The net overall weaker U.S. Dollar also resulted in increased operating income of $11.6 million and $10.6 million for the nine months ended September 30, 2018 as compared to the nine months ended September 30, 2017 under ASC 606 and ASC 605, respectively.

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The most significant currency impacts on revenue and operating income are typically attributable to U.S. Dollar exchange rate changes against the British Pound, Euro, Japanese Yen and South Korean Won. The relevant exchange rates for these currencies are as reflected in the charts below:

	Period-End Exchange Rates			
As of	GBP/USD	EUR/USD	USD/JPY	USD/KRW
September 30, 2017	1.340	1.181	112.511	1,146.263
December 31, 2017	1.351	1.200	112.701	1,068.376
September 30, 2018	1.303	1.161	113.714	1,110.371

	Average Exchange Rates			
Three Months Ended	GBP/USD	EUR/USD	USD/JPY	USD/KRW
September 30, 2017	1.309	1.175	111.006	1,133.658
September 30, 2018	1.303	1.163	111.532	1,121.957

	Average Exchange Rates			
Nine Months Ended	GBP/USD	EUR/USD	USD/JPY	USD/KRW
September 30, 2017	1.276	1.113	111.887	1,139.197
September 30, 2018	1.352	1.195	109.636	1,091.862

No other material change has occurred in the Company’s market risk subsequent to December 31, 2017.

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Item 4.Controls and Procedures

Evaluation of Disclosure Controls and Procedures. As required by Rules 13a-15 and 15d-15 of the Securities Exchange Act of 1934, as amended, or the Exchange Act, the Company has evaluated, with the participation of management, including the Chief Executive Officer and the Chief Financial Officer, the effectiveness of the design and operation of its disclosure controls and procedures as of the end of the period covered by this report. Based on such evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that such disclosure controls and procedures are effective, as defined in Rule 13a-15(e) of the Exchange Act.

The Company believes, based on its knowledge, that the financial statements and other financial information included in this report fairly present, in all material respects, the financial condition, results of operations and cash flows of the Company as of and for the periods presented in this report. The Company is committed to both a sound internal control environment and to good corporate governance.

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

From time to time, the Company reviews the disclosure controls and procedures and may make changes to enhance their effectiveness and to ensure that the Company’s systems evolve with its business.

Changes in Internal Control. The Company is in the process of extending its internal controls to its acquisition of OPTIS. Otherwise, there were no changes in the Company’s internal control over financial reporting that occurred during the three months ended September 30, 2018 that materially affected, or were reasonably likely to materially affect, the Company's internal control over financial reporting.

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PART II – OTHER INFORMATION

Item 1.Legal Proceedings
The Company is subject to various investigations, claims and legal proceedings that arise in the ordinary course of business, including commercial disputes, labor and employment matters, tax audits, alleged infringement of intellectual property rights and other matters. In the opinion of the Company, the resolution of pending matters is not expected to have a material adverse effect on the Company's consolidated results of operations, cash flows or financial position. However, each of these matters is subject to various uncertainties and it is possible that an unfavorable resolution of one or more of these proceedings could materially affect the Company's results of operations, cash flows or financial position.

Item 1A.Risk Factors
The Company cautions investors that its performance (and, therefore, any forward-looking statement) is subject to risks and uncertainties. Various important factors may cause the Company’s future results to differ materially from those projected in any forward-looking statement. These factors were disclosed in, but are not limited to, the items within the Company’s most recent Annual Report on Form 10-K, Part I, Item 1A. No material changes have occurred regarding the Company's risk factors subsequent to December 31, 2017.

Item 2.Unregistered Sales of Equity Securities and Use of Proceeds
(c) Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under Plans or Programs[1]
July 1 - July 31, 2018	—	$—	—	4,750,000
August 1 - August 31, 2018	380,335	$175.65	380,335	4,369,665
September 1 - September 30, 2018	44,160	$184.54	44,160	4,325,505
Total	424,495	$176.58	424,495	4,325,505

[1] The Company initially announced its stock repurchase program in February 2000, and subsequently announced various amendments to the program. The most recent amendment to the program, authorizing the repurchase of up to 5,000,000 shares, was approved by the Company's Board of Directors in February 2018. There is no expiration date to this amendment.

Item 3.Defaults Upon Senior Securities
None.

Item 4.Mine Safety Disclosures
Not applicable.

Item 5.Other Information
None.

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Item 6.Exhibits

Exhibit No	Exhibit
15	Independent Registered Public Accountant's Letter Regarding Unaudited Financial Information.
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase

*Indicates management contract or compensatory plan, contract or arrangement.

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SIGNATURES

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

ANSYS, Inc.

Date: November 8, 2018 By: /s/ Ajei S. Gopal
Ajei S. Gopal
President and Chief Executive Officer

Date: November 8, 2018 By: /s/ Maria T. Shields
Maria T. Shields
Chief Financial Officer