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ANSYS INC
Form 10-Q
May 02, 2019

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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2019

OR

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 No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§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 No

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

Large accelerated filer Accelerated filer

Non-accelerated filer Smaller reporting company

Emerging growth company

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

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

Title Name of

of exchange

Trading Symbol(s) on which

each registered

class registered

Common **The**

Stock, **Nasdaq**

\$0.01 **Global**

par **Select**

value **Market**

**per
share**

The number of shares of the Registrant's Common Stock, par value \$.01 per share, outstanding as of April 26, 2019 was 83,928,433 shares.

ANSYS, INC. AND SUBSIDIARIES
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	March 31, 2019	December 31, 2018
	(Unaudited)	(Audited)
<i>(in thousands, except share and per share data)</i>		
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 607,391	\$ 777,139
Short-term investments	237	225
Accounts receivable, less allowance for doubtful accounts of \$8,600 and \$8,000, respectively	268,526	317,700
Other receivables and current assets	186,657	216,113
Total current assets	1,062,811	1,311,177
Long-term assets:		
Property and equipment, net	63,301	61,655
Operating lease right-of-use assets	99,991	—
Goodwill	1,748,228	1,572,455
Other intangible assets, net	278,327	211,272
Other long-term assets	97,699	82,775
Deferred income taxes	21,906	26,630
Total long-term assets	2,309,452	1,954,787
Total assets	\$ 3,372,263	\$ 3,265,964
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 11,502	\$ 7,953
Accrued bonuses and commissions	20,506	79,945
Accrued income taxes	15,694	8,726
Other accrued expenses and liabilities	124,818	99,559
Deferred revenue	330,890	328,584
Total current liabilities	503,410	524,767
Long-term liabilities:		
Deferred income taxes	38,370	30,077
Long-term operating lease liabilities	87,259	—
Other long-term liabilities	58,843	61,573
Total long-term liabilities	184,472	91,650
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	824,997	867,462
Retained earnings	3,005,641	2,919,411
Treasury stock, at cost: 9,357,968 and 9,601,670 shares, respectively	(1,077,252)	(1,075,879)
Accumulated other comprehensive loss	(69,937)	(62,379)
Total stockholders' equity	2,684,381	2,649,547
Total liabilities and stockholders' equity	\$ 3,372,263	\$ 3,265,964
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)

<i>(in thousands, except per share data)</i>	Three Months Ended	
	March 31, 2019	March 31, 2018
Revenue:		
Software licenses	\$123,044	\$110,046
Maintenance and service	194,086	172,827
Total revenue	317,130	282,873
Cost of sales:		
Software licenses	4,708	3,911
Amortization	4,547	8,786
Maintenance and service	25,560	26,341
Total cost of sales	34,815	39,038
Gross profit	282,315	243,835
Operating expenses:		
Selling, general and administrative	112,169	87,809
Research and development	70,738	57,530
Amortization	3,759	3,435
Total operating expenses	186,666	148,774
Operating income	95,649	95,061
Interest income	3,442	2,285
Other expense, net	(425)	(308)
Income before income tax provision	98,666	97,038
Income tax provision	12,436	12,758
Net income	\$86,230	\$84,280
Earnings per share – basic:		
Earnings per share	\$1.03	\$1.00
Weighted average shares	83,764	83,931
Earnings per share – diluted:		
Earnings per share	\$1.01	\$0.98
Weighted average shares	85,493	86,152

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

Table of Contents**ANSYS, INC. AND SUBSIDIARIES**
CONDENSED CONSOLIDATED STATEMENTS OF
COMPREHENSIVE INCOME
(Unaudited)

<i>(in thousands)</i>	Three Months Ended	
	March 31, 2019	March 31, 2018
Net income	\$86,230	\$84,280
Other comprehensive (loss) income:		
Foreign currency translation adjustments	(7,558)	8,243
Comprehensive income	\$78,672	\$92,523

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)

<i>(in thousands)</i>	Three Months Ended	
	March 31,	March 31,
	2019	2018
Cash flows from operating activities:		
Net income	\$86,230	\$84,280
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	17,898	16,613
Deferred income tax benefit	(1,387)	(3,245)
Provision for bad debts	390	64
Stock-based compensation expense	23,800	15,269
Other	1,093	272
Changes in operating assets and liabilities:		
Accounts receivable	43,983	22,507
Other receivables and current assets	28,363	6,167
Other long-term assets	(2,516)	1,189
Accounts payable, accrued expenses and current liabilities	(54,050)	(40,009)
Accrued income taxes	5,999	(1,807)
Deferred revenue	2,235	31,704
Other long-term liabilities	(460)	(583)
Net cash provided by operating activities	151,578	132,421
Cash flows from investing activities:		
Acquisitions, net of cash acquired	(244,323)	—
Capital expenditures	(6,900)	(2,933)
Other investing activities	(460)	(4,303)
Net cash used in investing activities	(251,683)	(7,236)
Cash flows from financing activities:		
Purchase of treasury stock	(44,856)	(117,831)
Restricted stock withholding taxes paid in lieu of issued shares	(32,994)	(24,333)
Proceeds from shares issued for stock-based compensation	10,376	12,759
Other financing activities	(1,617)	—
Net cash used in financing activities	(69,091)	(129,405)
Effect of exchange rate fluctuations on cash and cash equivalents	(552)	8,212
Net (decrease) increase in cash and cash equivalents	(169,748)	3,992
Cash and cash equivalents, beginning of period	777,139	881,501
Cash and cash equivalents, end of period	\$607,391	\$885,493
Supplemental disclosure of cash flow information:		
Income taxes paid	\$4,832	\$3,402

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 STOCKHOLDERS' EQUITY
(Unaudited)

<i>(in thousands)</i>	Three Months Ended March 31, 2019							
	Common Stock		Additional Paid-In Capital	Retained Earnings	Treasury Stock		Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount			Shares	Amount		
Balance, January 1, 2019	93,236	\$ 932	\$ 867,462	\$ 2,919,411	9,602	\$ (1,075,879)	\$ (62,379)	\$ 2,649,547
Treasury shares acquired					250	(44,856)		(44,856)
Stock-based compensation activity			(42,465)		(494)	43,483		1,018
Other comprehensive loss							(7,558)	(7,558)
Net income				86,230				86,230
Balance, March 31, 2019	93,236	\$ 932	\$ 824,997	\$ 3,005,641	9,358	\$ (1,077,252)	\$ (69,937)	\$ 2,684,381

<i>(in thousands)</i>	Three Months Ended March 31, 2018							
	Common Stock		Additional Paid-In Capital	Retained Earnings	Treasury Stock		Accumulated Other Comprehensive (Loss)/Income	Total Stockholders' Equity
	Shares	Amount			Shares	Amount		
Balance, January 1, 2018	93,236	\$ 932	\$ 873,357	\$ 2,316,916	9,044	\$ (907,530)	\$ (37,844)	\$ 2,245,831
Cumulative effect of the ASC 606 adoption				183,132				183,132
Treasury shares acquired					750	(117,831)		(117,831)
Stock-based compensation activity			(39,943)		(492)	43,648		3,705
Other comprehensive income							8,243	8,243
Net income				84,280				84,280
Balance, March 31, 2018	93,236	\$ 932	\$ 833,414	\$ 2,584,328	9,302	\$ (981,713)	\$ (29,601)	\$ 2,407,360

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
March 31, 2019
(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, the instructions to Form 10-Q and Rule 10-01 of Regulation S-X. Accordingly, the accompanying unaudited condensed consolidated financial 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 unaudited 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, 2018 (2018 Form 10-K). The condensed consolidated December 31, 2018 balance sheet presented is derived from the audited December 31, 2018 balance sheet included in the 2018 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. Operating results for the three months ended March 31, 2019 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 2018 Form 10-K. Summarized below is the accounting guidance adopted subsequent to December 31, 2018.

Leases: In February 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2016-02, *Leases (Topic 842)* (ASU 2016-02). The Company adopted ASU 2016-02 and its related amendments (collectively known as Accounting Standards Codification (ASC) 842) on January 1, 2019 using the modified retrospective approach. Results for reporting periods beginning after January 1, 2019 are presented under ASC 842, while prior period amounts are not adjusted and continue to be reported in accordance with ASC 840, *Leases*. ASC 842 requires virtually all leases, other than leases of intangible assets, to be recorded on the balance sheet with a right-of-use (ROU) asset and a corresponding lease liability.

The Company elected the package of practical expedients permitted under the transition guidance within the new standard, which allowed the Company to carry forward its historical assessments of whether a contract contains a lease, lease classification and initial direct costs. In addition, the Company elected the accounting policy to combine the lease and nonlease components as a single component for all asset classes.

The Company determines if an arrangement is a lease at inception. Leases are classified as either operating or finance leases based on certain criteria. This classification determines the timing and presentation of expenses on the income

statement, as well as the presentation of the related cash flows and balance sheet. Operating leases are recorded on the balance sheet as operating lease right-of-use assets, other accrued expenses and liabilities, and long-term operating lease liabilities. The Company currently has no finance leases.

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ROU assets and related liabilities are recorded at lease commencement based on the present value of the lease payments over the expected lease term. Lease payments include future increases unless the increases are based on changes in an index or rate. As the Company's leases do not usually provide an implicit rate, the Company's incremental borrowing rate is used to calculate ROU assets and related liabilities. The incremental borrowing rate is determined based on the Company's estimated credit rating, the term of the lease, the economic environment where the asset resides and full collateralization. The ROU assets and related lease liabilities include optional renewals for which the Company is reasonably certain to exercise; whereas, optional terminations are included unless it is reasonably certain not to be elected.

The adoption of the new standard resulted in the recognition of ROU assets of \$90.9 million and lease liabilities of \$92.5 million, and corresponding deferred tax assets and liabilities, on the Company's condensed consolidated balance sheet as of January 1, 2019. The adoption had no impact on the Company's condensed consolidated statements of income or cash flows.

Accounting Guidance Issued and Not Yet Adopted

Credit losses: In June 2016, the FASB issued ASU 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 did not early adopt the standard. 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 ASU 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:

	March 31, 2019		December 31, 2018	
<i>(in thousands, except percentages)</i>	Amount	% of Total	Amount	% of Total
Cash accounts	\$379,831	62.5	\$331,084	42.6
Money market funds	227,560	37.5	446,055	57.4
Total	\$607,391		\$777,139	

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

Table of Contents**3. Revenue from Contracts with Customers****Disaggregation of Revenue**

The following table summarizes revenue:

<i>(in thousands)</i>	Three Months Ended	
	March 31, 2019	March 31, 2018
Revenue:		
Lease licenses	\$69,256	\$48,772
Perpetual licenses	53,788	61,274
Software licenses	123,044	110,046
Maintenance	181,461	163,896
Service	12,625	8,931
Maintenance and service	194,086	172,827
Total revenue	\$317,130	\$282,873

The Company's software licenses revenue is recognized up front, while maintenance and service revenue is generally recognized over the term of the contract. The Company derived 29.5% and 23.5% of its total revenue through the indirect sales channel for the three months ended March 31, 2019 and 2018, 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 deferred revenue, during the three months ended March 31, 2019 and 2018 were as follows:

<i>(in thousands)</i>	2019	2018
Beginning balance – January	\$343,174	\$299,730
Acquired deferred revenue	2,349	—
Deferral of revenue	318,279	307,978
Recognition of revenue	(317,130)	(282,873)
Currency translation	(2,396)	4,559
Ending balance – March 31	\$344,276	\$329,394

Revenue allocated to remaining performance obligations represents contracted revenue that has not yet been recognized, and includes both 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 three months ended March 31, 2019 and 2018 included amounts in deferred revenue and backlog at the beginning of the period of \$172.6 million and \$145.8 million, respectively. Total revenue allocated to remaining performance obligations as of March 31, 2019 will be recognized as revenue as follows:

<i>(in thousands)</i>	
Next 12 months	\$477,092
Months 13-24	119,694
Months 25-36	44,061
Thereafter	31,801
Total revenue allocated to remaining performance obligations	\$672,648

Table of Contents**4. Acquisitions**

During the three months ended March 31, 2019, the Company acquired 100% of the shares of Granta Design Limited (Granta Design) and Helic, Inc. (Helic) for a combined purchase price of \$260.8 million, paid in cash. The acquisition of Granta Design, the premier provider of materials information technology, expands ANSYS' portfolio into this important area, giving customers access to material intelligence, including data that is critical to successful simulations. The acquisition of Helic, the industry-leading provider of electromagnetic crosstalk solutions for systems on chips, combined with ANSYS' flagship electromagnetic and semiconductor solvers, will provide a comprehensive solution for on-chip, 3D integrated circuit and chip-package-system electromagnetics and noise analysis.

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

Fair Value of Consideration Transferred:

<i>(in thousands)</i>	Granta Design	Helic	Total
Cash	\$198,723	\$62,086	\$260,809

Recognized Amounts of Identifiable Assets Acquired and Liabilities Assumed:*(in thousands)*

Cash	\$13,644	\$2,842	\$16,486
Accounts receivable and other tangible assets	6,926	6,008	12,934
Developed software and core technologies (12 year weighted-average life)	32,445	8,600	41,045
Customer lists (13 year weighted-average life)	20,016	11,500	31,516
Trade names (10 year weighted-average life)	4,579	890	5,469
Accounts payable and other liabilities	(6,176)	(3,477)	(9,653)
Deferred revenue	(1,426)	(923)	(2,349)
Net deferred tax liabilities	(9,822)	(5,049)	(14,871)
Total identifiable net assets	\$60,186	\$20,391	\$80,577
Goodwill	\$138,537	\$41,695	\$180,232

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 acquisitions.

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).

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 extends 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 operating results of each acquisition have been included in the Company's condensed consolidated financial statements since each respective date of acquisition. The effects of the business combinations were not material to the Company's consolidated results of operations individually or in the aggregate.

Table of Contents**5. Other Receivables and Current Assets**

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

<i>(in thousands)</i>	March 31, 2019	December 31, 2018
Receivables related to unrecognized revenue	\$129,917	\$ 167,144
Income taxes receivable, including overpayments and refunds	13,662	13,709
Prepaid expenses and other current assets	43,078	35,260
Total other receivables and current assets	\$186,657	\$ 216,113

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

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 using the treasury stock method. 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:

<i>(in thousands, except per share data)</i>	Three Months Ended	
	March 31, 2019	March 31, 2018
Net income	\$86,230	\$ 84,280
Weighted average shares outstanding – basic	83,764	83,931
Dilutive effect of stock plans	1,729	2,221
Weighted average shares outstanding – diluted	85,493	86,152
Basic earnings per share	\$1.03	\$ 1.00
Diluted earnings per share	\$1.01	\$ 0.98
Anti-dilutive shares	—	—

7. Goodwill and Intangible Assets

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

<i>(in thousands)</i>	March 31, 2019		December 31, 2018	
	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Finite-lived intangible assets:				
Developed software and core technologies (3 – 15 years)	\$450,361	\$(318,209)	\$410,680	\$(314,730)
Customer lists and contract backlog (5 – 15 years)	238,629	(120,682)	209,031	(117,614)
Trade names (2 – 10 years)	142,409	(114,538)	137,225	(113,677)
Total	\$831,399	\$(553,429)	\$756,936	\$(546,021)
Indefinite-lived intangible asset:				
Trade name	\$357		\$357	

Amortization expense for the intangible assets reflected above was \$8.3 million and \$12.2 million for the three months ended March 31, 2019 and 2018, respectively.

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As of March 31, 2019, estimated future amortization expense for the intangible assets reflected above is as follows:

(in thousands)

Remainder of 2019	\$25,433
2020	36,001
2021	33,709
2022	32,306
2023	30,442
2024	27,932
Thereafter	92,147
Total intangible assets subject to amortization	277,970
Indefinite-lived trade name	357
Other intangible assets, net	\$278,327

The changes in goodwill during the three months ended March 31, 2019 and 2018 were as follows:

(in thousands)	2019	2018
Beginning balance – January 1	\$1,572,455	\$1,378,553
Acquisitions and adjustments ⁽¹⁾	181,201	—
Currency translation	(5,428) 905
Ending balance – March 31	\$1,748,228	\$1,379,458

⁽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 2019, 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, 2019. No other events or circumstances changed during the three months ended March 31, 2019 that would indicate that the fair values of the Company's reporting unit and indefinite-lived intangible asset are below their carrying amounts.

Table of Contents**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.

The classification of a financial asset or liability 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:

<i>(in thousands)</i>	March 31, 2019	Fair Value Measurements at Reporting Date Using:		
		Quoted Prices in Active Markets (Level 1)	Significant Observable Inputs (Level 2)	Other Significant Unobservable Inputs (Level 3)
Assets				
Cash equivalents	\$227,560	\$227,560	\$ —	\$ —
Short-term investments	\$237	\$ —	\$ 237	\$ —
Deferred compensation plan investments	\$2,138	\$2,138	\$ —	\$ —

<i>(in thousands)</i>	December 31, 2018	Fair Value Measurements at Reporting Date Using:		
		Quoted Prices in Active Markets (Level 1)	Significant Observable Inputs (Level 2)	Other Significant Unobservable Inputs (Level 3)
Assets				
Cash equivalents	\$446,055	\$446,055	\$ —	\$ —
Short-term investments	\$225	\$ —	\$ 225	\$ —
Deferred compensation plan investments	\$1,646	\$1,646	\$ —	\$ —

The cash equivalents in the preceding tables represent money market funds, valued at net asset value, with carrying values which approximate their fair values because of their short-term nature.

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 original maturities 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.

9. Leases

The Company primarily has operating leases for office space and leased cars included in its ROU assets and lease liabilities. The Company's executive offices and those related to certain domestic product development, marketing, production and administration are located in a 186,000 square foot office facility in Canonsburg, Pennsylvania. The term of the lease is 183 months, which began on October 1, 2014 and expires on December 31, 2029. The lease agreement includes options to renew the contract through August 2044, an option to lease additional space in January 2025 and an option to terminate the lease in December 2025. No options are included in the lease liability as renewal is not reasonably certain. In addition, the Company is reasonably certain it will not terminate the lease agreement. Absent the exercise of options in the lease, the Company's base rent

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(inclusive of property taxes and certain operating costs) is \$4.3 million per annum for the first five years of the lease term, \$4.5 million per annum for years six through ten and \$4.7 million per annum for years eleven through fifteen. The components of the Company's global lease cost reflected in the condensed consolidated statements of income for the three months ended March 31, 2019 are as follows:

(in thousands)

Lease liability cost	\$5,285
Variable lease cost not included in the lease liability ⁽¹⁾	797
Total lease cost	\$6,082

⁽¹⁾ Variable lease cost includes common area maintenance, property taxes, utilities and fluctuations in rent due to a change in an index or rate.

Lease cost totaled \$4.9 million for the three months ended March 31, 2018.

Other information related to operating leases for the three months ended March 31, 2019 is as follows:

(in thousands)

Cash paid for amounts included in the measurement of the lease liability:

Operating cash flows from operating leases	\$(4,332)
Right-of-use assets obtained in exchange for new operating lease liabilities	\$13,835

As of March 31, 2019, the weighted-average remaining lease term of operating leases was 8.0 years, and the weighted-average discount rate of operating leases was 3.3%.

The maturity schedule of the operating lease liabilities as of March 31, 2019 is as follows:

(in thousands)

Remainder of 2019	\$15,081
2020	18,043
2021	15,756
2022	13,415
2023	9,676
Thereafter	46,749
Total future lease payments	118,720
Less: Present value adjustment	(16,195)
Present value of future lease payments ⁽¹⁾	\$102,525

⁽¹⁾Includes the current portion of operating lease liabilities of \$15.3 million, which is reflected in other accrued expenses and liabilities in the condensed consolidated balance sheets.

There were no material leases that have been signed but not yet commenced as of March 31, 2019.

The future minimum lease payments under ASC 840, including termination fees, under noncancellable operating leases for office space in effect at December 31, 2018 were as follows:

(in thousands)

2019	\$16,354
2020	12,469
2021	10,177
2022	8,523
2023	6,809
Thereafter	14,267
Total	\$68,599

Table of Contents**10. Debt**

In February 2019, the Company entered into a credit agreement for a \$500 million unsecured revolving credit facility, which includes a \$50 million sublimit for the issuance of letters of credit, with Bank of America, N.A. as the Administrative Agent. The revolving credit facility is available for general corporate purposes, including, among others, to finance acquisitions and capital expenditures and becomes payable in full on February 22, 2024.

Borrowings under the revolving credit facility will accrue interest at the Eurodollar rate plus an applicable margin or at the base rate. The base rate is the applicable margin plus the highest of (i) the federal funds rate plus 0.500%, (ii) the Bank of America prime rate and (iii) the Eurodollar rate plus 1.000%. The applicable margin for these borrowings is a percentage per annum based on the lower of (1) a pricing level determined by the Company's then-current consolidated leverage ratio and (2) a pricing level determined by the Company's debt ratings (if such debt ratings exist). This results in a margin ranging from 1.125% to 1.750% and 0.125% to 0.750% for the Eurodollar rate and base rate, respectively.

The credit agreement contains customary representations and warranties, affirmative and negative covenants and events of default. The credit agreement also contains a financial covenant requiring the Company and its subsidiaries to maintain a consolidated leverage ratio of indebtedness to earnings before interest, taxes, depreciation and amortization of 3.50 to 1.00 as of the end of any fiscal quarter (for the four-quarter period ending on such date) with an opportunity for a temporary increase in such consolidated leverage ratio to 4.00 to 1.00 upon the consummation of certain qualified acquisitions for which the aggregate consideration is at least \$250 million.

The credit agreement will terminate and all amounts owing thereunder will be due and payable on February 22, 2024 unless (i) the commitments are terminated earlier upon the occurrence of certain events, including an event of default, or (ii) the maturity date is further extended upon the Company's request, subject to the agreement of the lenders.

As of March 31, 2019, there were no outstanding borrowings under the credit agreement, and the Company was in compliance with all covenants.

11. Stock Repurchase Program

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

<i>(in thousands, except per share data)</i>	Three Months Ended	
	March 31, 2019	March 31, 2018
Number of shares repurchased	250	750
Average price paid per share	\$179.42	\$157.11
Total cost	\$44,856	\$117,831

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 March 31, 2019, 3.6 million shares remained available for repurchase under the program.

Table of Contents**12. Stock-Based Compensation**

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

<i>(in thousands, except per share data)</i>	Three Months Ended	
	March 31, 2019	March 31, 2018
Cost of sales:		
Maintenance and service	\$ 1,228	\$ 1,010
Operating expenses:		
Selling, general and administrative	13,131	8,278
Research and development	9,441	5,981
Stock-based compensation expense before taxes	23,800	15,269
Related income tax benefits	(11,076)	(11,304)
Stock-based compensation expense, net of taxes	\$ 12,724	\$ 3,965
Net impact on earnings per share:		
Basic earnings per share	\$(0.15)	\$(0.05)
Diluted earnings per share	\$(0.15)	\$(0.05)

13. 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:

<i>(in thousands)</i>	Three Months Ended	
	March 31, 2019	March 31, 2018
United States	\$ 140,662	\$ 98,765
Japan	33,573	30,601
Germany	30,427	45,538
France	15,609	16,552
South Korea	15,078	15,054
Other Europe, Middle East and Africa (EMEA)	44,255	43,018
Other international	37,526	33,345
Total revenue	\$ 317,130	\$ 282,873

Property and equipment by geographic area is as follows:

<i>(in thousands)</i>	March 31,	December 31,
	2019	2018
United States	\$ 47,219	\$ 46,605
India	4,217	4,176
EMEA	8,148	7,120
Other international	3,717	3,754
Total property and equipment, net	\$ 63,301	\$ 61,655

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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 \$7.2 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 Company can provide no assurances on whether the Microsoft case's favorable ruling will be challenged in higher courts or 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 March 31, 2019. 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.

15. Subsequent Event

In May 2019, the Company acquired certain assets and liabilities of DfR Solutions for approximately \$41.0 million. The acquisition of DfR Solutions' electronics reliability technology, combined with the Company's existing comprehensive multiphysics portfolio, will give customers a complete designer-level solution to analyze for electronics failure earlier in the design cycle.

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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 March 31, 2019, the related condensed consolidated statements of income, comprehensive income, cash flows, and stockholders' equity for the three-month periods ended March 31, 2019 and 2018, 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, 2018, 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 28, 2019, 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, 2018, 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
May 2, 2019

Table of Contents**Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations**Overview:*Overall GAAP and Non-GAAP Results*

The Company's growth rates of GAAP and non-GAAP results for the three months ended March 31, 2019 as compared to the three months ended March 31, 2018 were as follows:

	GAAP	Non-GAAP
Revenue	12.1 %	12.9 %
Operating income	0.6 %	7.7 %
Diluted earnings per share	3.1 %	7.5 %

The Company experienced higher revenue during the three months ended March 31, 2019 from growth in lease licenses, maintenance and service, while revenue from perpetual licenses decreased. The Company also experienced increased operating expenses primarily due to increased personnel costs, higher stock-based compensation and additional operating expenses related to the OPTIS acquisition, partially offset by a reduction in expenses due to a stronger U.S. Dollar.

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, transaction costs related to business combinations, and adjustments related to the transition tax associated with 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 Foreign Currency

The Company's comparative financial results were impacted by fluctuations in the U.S. Dollar during the three months ended March 31, 2019 as compared to the three months ended March 31, 2018. The impacts on the Company's revenue and operating income due to currency fluctuations are reflected in the table below. Amounts in brackets indicate a net adverse impact from currency fluctuations.

	Three Months Ended March 31, 2019	
(in thousands)	GAAP	Non-GAAP
Revenue	\$(9,158)	\$(9,281)
Operating income	\$(3,143)	\$(3,504)

In constant currency⁽¹⁾, the Company's growth rates⁽²⁾ were as follows:

	Three Months Ended March 31, 2019	
	GAAP	Non-GAAP
Revenue	15.3 %	16.2 %
Operating income	3.9 %	10.4 %

⁽¹⁾ Constant currency amounts exclude the effect of foreign currency fluctuations on the reported results. To present this information, the 2019 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 the 2018 comparable period, rather than the actual exchange rates in effect for 2019.

⁽²⁾ The constant currency growth rates are calculated by adjusting the 2019 reported revenue and operating income amounts by the 2019 currency fluctuation impacts in the table above and comparing to the 2018 comparable period reported revenue and operating income amounts.

Other Financial Information

The Company's financial position includes \$607.6 million in cash and short-term investments, and working capital of \$559.4 million as of March 31, 2019.

During the three months ended March 31, 2019, the Company repurchased 0.3 million shares for \$44.9 million at an average price of \$179.42 per share.

Table of ContentsBusiness:

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 3,700 people as of March 31, 2019. 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 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:

The following table presents the Company's geographic constant currency revenue growth during the three months ended March 31, 2019 as compared to the three months ended March 31, 2018:

	Three Months Ended March 31, 2019
Americas	41.1 %
EMEA	(7.8)%
Asia-Pacific	12.2 %
Total	15.3 %

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:

The Company experienced industry trends consistent with those from the second half of 2018. The high-tech industry remained strong as companies continue to innovate and invest in smart connected products, 5G and artificial intelligence. The growing importance of data centers also bolstered the industry as companies gear up to address the coming data deluge from pervasive connectivity. The automotive industry continued its momentum due to continued investments in autonomous vehicles and electrification. Aerospace and defense was strengthened by an increase in defense spending on next-generation systems, particularly in the United States.

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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 three months ended March 31, 2019, and with the Company's audited consolidated financial statements and notes thereto for the year ended December 31, 2018 included in the 2018 Form 10-K filed 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, operating lease assets and liabilities, 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:

- The Company's expectations regarding the impacts of new accounting guidance.
- The Company's estimates regarding the expected impact on reported revenue related to the acquisition accounting treatment of deferred revenue.
- The Company's expectations regarding the outcome of its service tax audit cases.
- The Company's assessment of the ultimate liabilities arising from various investigations, claims and legal proceedings.
- The Company's expectations regarding future claims related to indemnification obligations.
- 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 increased lease license volatility due to an increased customer preference for time-based licenses.
- The Company's expectation that it will continue to make targeted investments in its global sales and marketing organizations 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 in excess of working capital needs 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.
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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 acquisitions and integrating such acquired companies to realize the benefits of cost reductions and other synergies relating thereto.

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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 2018 Form 10-K, Part I, Item 1A. "Risk Factors." Information regarding any new risk factors or material changes to these risk factors has been included within Part II, Item 1A of this Quarterly Report on Form 10-Q.

Table of Contents**Results of Operations****Three Months Ended March 31, 2019 Compared to Three Months Ended March 31, 2018**Revenue:

<i>(in thousands, except percentages)</i>	Three Months Ended March 31,		Change		Constant Currency %
	2019	2018	Amount	%	
Revenue:					
Lease licenses	\$69,256	\$48,772	\$20,484	42.0	44.9
Perpetual licenses	53,788	61,274	(7,486)	(12.2)	(9.3)
Software licenses	123,044	110,046	12,998	11.8	14.7
Maintenance	181,461	163,896	17,565	10.7	14.1
Service	12,625	8,931	3,694	41.4	46.0
Maintenance and service	194,086	172,827	21,259	12.3	15.8
Total revenue	\$317,130	\$282,873	\$34,257	12.1	15.3

The Company's revenue in the quarter ended March 31, 2019 increased 12.1% as compared to the quarter ended March 31, 2018, while revenue grew 15.3% 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 acquisitions. Lease license revenue increased 42.0%, or 44.9% in constant currency, as compared to the prior-year quarter, driven primarily by an increase in multi-year lease contracts. Annual maintenance contracts that were sold with new perpetual licenses, maintenance contracts for new perpetual licenses sold in previous quarters and the maintenance portion of lease license contracts each contributed to maintenance revenue growth of 10.7%, or 14.1% 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 41.4%, or 46.0% in constant currency, as compared to the prior-year quarter. Perpetual license revenue, which is derived primarily from new sales during the quarter, decreased 12.2%, or 9.3% in constant currency, as compared to the prior-year quarter.

With respect to revenue, on average for the quarter ended March 31, 2019, the U.S. Dollar was approximately 6.0% stronger, when measured against the Company's primary foreign currencies, than for the quarter ended March 31, 2018. The table below presents the impacts of currency fluctuations on revenue for the quarter ended March 31, 2019. Amounts in brackets indicate an adverse impact from currency fluctuations.

<i>(in thousands)</i>	Three Months Ended March 31, 2019
Euro	\$(5,986)
Japanese Yen	(799)
South Korean Won	(644)
British Pound	(637)
Indian Rupee	(581)
Other	(511)
Total	\$(9,158)

The net overall stronger U.S. Dollar also resulted in decreased operating income of \$3.1 million for the quarter ended March 31, 2019 as compared to the quarter ended March 31, 2018.

The Company continues to experience 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 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.

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

	Three Months Ended March 31,	
	2019	2018
International	55.6 %	65.1 %
Domestic	44.4 %	34.9 %
Direct	70.5 %	76.5 %
Indirect	29.5 %	23.5 %

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. The impacts on reported revenue were \$2.8 million and \$0.4 million for the quarters ended March 31, 2019 and 2018, respectively. The expected impacts on reported revenue are \$1.9 million and \$7.3 million for the quarter ending June 30, 2019 and for the year ending December 31, 2019, respectively. The expected impacts on reported revenue include only the impacts for acquisitions that closed on or before March 31, 2019.

Deferred Revenue and Backlog:

er orders received but not processed. The Company's deferred revenue and backlog as of March 31, 2019 and December 31, 2018 consisted of the following:

	Balance at March 31, 2019		
(in thousands)	Total	Current	Long-Term
Deferred revenue	\$344,276	\$330,890	\$13,386
Backlog	328,372	146,202	182,170
Total	\$672,648	\$477,092	\$195,556

	Balance at December 31, 2018		
(in thousands)	Total	Current	Long-Term
Deferred revenue	\$343,174	\$328,584	\$14,590
Backlog	315,998	147,299	168,699
Total	\$659,172	\$475,883	\$183,289

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

Table of ContentsCost of Sales and Operating Expenses:

The tables below reflect the Company's operating results as presented on the condensed consolidated statements of income, which are inclusive of foreign currency translation impacts and the OPTIS acquisition. Amounts included in the discussions that follow each table are provided in constant currency. The constant currency impact of the OPTIS acquisition and the impact of foreign exchange translation are discussed separately, where material.

(in thousands, except percentages)	Three Months Ended March 31,					
	2019		2018		Change	
	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Cost of sales:						
Software licenses	\$4,708	1.5	\$3,911	1.4	\$797	20.4
Amortization	4,547	1.4	8,786	3.1	(4,239)	(48.2)
Maintenance and service	25,560	8.1	26,341	9.3	(781)	(3.0)
Total cost of sales	34,815	11.0	39,038	13.8	(4,223)	(10.8)
Gross profit	\$282,315	89.0	\$243,835	86.2	\$38,480	15.8

Software Licenses: The increase in the cost of software licenses was primarily due to increased third-party royalties of \$0.6 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 became fully amortized.

Maintenance and Service: The decrease in maintenance and service costs was primarily due to the cost decrease related to foreign exchange translation of \$0.9 million due to a stronger U.S. Dollar.

The improvement in gross profit was a result of the increase in revenue and decrease in the related cost of sales.

(in thousands, except percentages)	Three Months Ended March 31,					
	2019		2018		Change	
	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Operating expenses:						
Selling, general and administrative	\$112,169	35.4	\$87,809	31.0	\$24,360	27.7
Research and development	70,738	22.3	57,530	20.3	13,208	23.0
Amortization	3,759	1.2	3,435	1.2	324	9.4
Total operating expenses	\$186,666	58.9	\$148,774	52.6	\$37,892	25.5

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 \$12.7 million.

• Increased stock-based compensation of \$4.6 million.

• OPTIS-related selling, general and administrative expenses of \$4.6 million.

• Increased professional fees of \$1.6 million.

• Increased business travel of \$1.5 million.

• Cost decrease related to foreign exchange translation of \$3.1 million due to a stronger U.S. Dollar.

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

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

• Increased salaries and other headcount-related costs of \$5.9 million.

• OPTIS-related research and development expenses of \$3.7 million.

• Increased stock-based compensation of \$3.1 million.

• Cost decrease related to foreign exchange translation of \$1.7 million due to a stronger U.S. Dollar.

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 March 31, 2019 was \$3.4 million as compared to \$2.3 million for the quarter ended March 31, 2018. 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 consisted of the following:

<i>(in thousands)</i>	Three Months Ended	
	March 31, 2019	March 31, 2018
Foreign currency losses, net	\$ (513)	\$ (264)
Other	88	(44)
Total other expense, net	\$ (425)	\$ (308)

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

<i>(in thousands, except percentages)</i>	Three Months Ended	
	March 31, 2019	March 31, 2018
Income before income tax provision	\$98,666	\$97,038
Income tax provision	\$12,436	\$12,758
Effective tax rate	12.6	% 13.1 %

In February 2019, the U.S. government published final regulations relating to the transition tax, enacted as part of the Tax Cuts and Jobs Act of 2017. In accordance with the final regulations, the Company adjusted its provisional transition tax calculations and recorded an additional tax benefit of \$1.3 million for the quarter ended March 31, 2019. The decrease in the effective tax rate from the prior year is primarily due to the additional transition tax benefit, offset by increased tax related to global intangible low-taxed income.

When compared to the federal and state combined statutory rate for each respective period, the effective tax rates for the quarters ended March 31, 2019 and 2018 were favorably impacted by tax benefits from stock-based compensation, the foreign-derived intangible income deduction 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:

<i>(in thousands, except per share data)</i>	Three Months Ended	
	March 31, 2019	March 31, 2018
Net income	\$86,230	\$84,280
Diluted earnings per share	\$1.01	\$0.98
Weighted average shares outstanding - diluted	85,493	86,152

Table of Contents**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.

	Three Months Ended			March 31, 2018				
	March 31, 2019							
<i>(in thousands, except percentages and per share data)</i>	GAAP Results	Adjustments	Non-GAAP Results	GAAP Results	Adjustments	Non-GAAP Results		
Total revenue	\$317,130	\$ 2,780	(1)\$319,910	\$282,873	\$ 401	(4)\$283,274		
Operating income	95,649	41,537	(2)137,186	95,061	32,351	(5)127,412		
Operating profit margin	30.2	%	42.9	%	33.6	%	45.0	%
Net income	\$86,230	\$ 24,440	(3)\$110,670	\$84,280	\$ 18,784	(6)\$103,064		
Earnings per share – diluted:								
Earnings per share	\$1.01		\$1.29	\$0.98		\$1.20		
Weighted average shares	85,493		85,493	86,152		86,152		

(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 \$23.8 million of stock-based compensation expense, \$4.0 million of excess payroll taxes related to stock-based awards, \$8.3 million of amortization expense associated with intangible assets acquired in business combinations, \$2.7 million of transaction expenses related to business combinations and the \$2.8 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 \$15.6 million, adjustments related to the transition tax associated with the Tax Cuts and Jobs Act of \$1.3 million, and rabbi trust income of \$0.2 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 \$15.3 million of stock-based compensation expense, \$3.1 million of excess payroll taxes related to stock-based awards, \$12.2 million of amortization expense associated with intangible assets acquired in business combinations, \$1.4 million of transaction expenses related to business combinations and the \$0.4 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, decreased for the related income tax impact of \$15.0 million and increased for adjustments related to the transition tax associated with the Tax Cuts and Jobs Act of \$1.4 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 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

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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.

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 can 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

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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 impacts to its income tax provision related to the enactment of the Tax Cuts and Jobs Act, specifically for the transition tax related to unrepatriated cash and the impacts of the tax rate change on net deferred tax assets. Management excludes these impacts 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.

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

<u>GAAP Reporting Measure</u>	<u>Non-GAAP Reporting Measure</u>
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

Table of Contents**Liquidity and Capital Resources**

<i>(in thousands)</i>	March 31, 2019	December 31, 2018	Change
Cash, cash equivalents and short-term investments	\$607,628	\$ 777,364	\$(169,736)
Working capital	\$559,401	\$ 786,410	\$(227,009)

Cash, cash equivalents and short-term investments decreased during the current fiscal year primarily due to cash utilized in the February 2019 acquisitions of Granta Design and Helic, partially offset by the excess of cash provided by operating activities over cash used in financing activities.

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 March 31, 2019 and December 31, 2018:

<i>(in thousands, except percentages)</i>	March 31, 2019	% of Total	December 31, 2018	% of Total
Domestic	\$401,542	66.1	\$ 616,249	79.3
Foreign	206,086	33.9	161,115	20.7
Total	\$607,628		\$ 777,364	

In general, it is the practice and intention of the Company to repatriate previously taxed earnings in excess of working capital needs and to reinvest all other earnings of its non-U.S. subsidiaries. As part of the Tax Cuts and Jobs Act, 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.

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

<i>(in thousands)</i>	Three Months Ended March 31,		
	2019	2018	Change
Net cash provided by operating activities	\$151,578	\$ 132,421	\$ 19,157

Net cash provided by operating activities increased during the current fiscal year due to increased net income (net of non-cash operating adjustments) of \$14.8 million and increased net cash flows from operating assets and liabilities of \$4.4 million.

Cash Flows from Investing Activities

<i>(in thousands)</i>	Three Months Ended March 31,		
	2019	2018	Change
Net cash used in investing activities	\$(251,683)	\$(7,236)	\$(244,447)

Net cash used in investing activities increased during the current fiscal year due primarily to acquisition-related net cash outlays of \$244.3 million. The Company currently plans capital spending of \$35 million to \$40 million for the 2019 fiscal year as compared to the \$21.8 million that was spent in 2018. The level of spending will depend on various factors, including the growth of the business and general economic conditions.

Table of Contents**Cash Flows from Financing Activities**

<i>(in thousands)</i>	Three Months Ended March		
	31, 2019	2018	Change
Net cash used in financing activities	\$(69,091)	\$(129,405)	\$60,314

Net cash used in financing activities decreased during the current fiscal year due primarily to decreased stock repurchases of \$73.0 million, partially offset by increased restricted stock withholding taxes paid in lieu of issued shares of \$8.7 million.

Other Cash Flow Information

The Company believes that existing cash and cash equivalent balances of \$607.4 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 three months ended March 31, 2019 and 2018, as follows:

<i>(in thousands, except per share data)</i>	Three Months Ended	
	March 31, 2019	March 31, 2018
Number of shares repurchased	250	750
Average price paid per share	\$179.42	\$157.11
Total cost	\$44,856	\$117,831

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 March 31, 2019, 3.6 million shares remained available for repurchase under the program.

The Company's authorized repurchase program 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 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. Additionally, the Company has in the past, and expects in the future, 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.

On February 22, 2019, the Company entered into a \$500 million unsecured revolving credit facility. The revolving credit facility is available for general corporate purposes, including, among others, to finance acquisitions, share repurchases and capital expenditures, and becomes payable in full on February 22, 2024. As of March 31, 2019, the Company had not drawn on the revolving credit facility and was in compliance with all covenants.

In May 2019, the Company acquired certain assets and liabilities of DfR Solutions for approximately \$41.0 million. The acquisition of DfR Solutions' electronics reliability technology, combined with the Company's existing comprehensive multiphysics portfolio, will give customers a complete designer-level solution to analyze for electronics failure earlier in the design cycle.

Off-Balance-Sheet Arrangements

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

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Contractual Obligations

During the three months ended March 31, 2019, the Company entered into an office lease amendment that resulted in an additional \$12.6 million obligation and expires in December 2028. The Company's base rent escalates over the lease term and will range from approximately \$1.2 million - \$1.6 million per annum.

There were no other material changes to the Company's significant contractual obligations during the three months ended March 31, 2019 as compared to those previously reported in "Management's Discussion and Analysis of Financial Condition and Results of Operations" within the Company's 2018 Form 10-K.

Critical Accounting Policies and Estimates

During the first quarter of 2019, 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, 2019. No other events or circumstances changed during the three months ended March 31, 2019 that would indicate that the fair values of the Company's reporting unit and indefinite-lived intangible asset are below their carrying amounts.

No significant changes have occurred to the Company's critical accounting policies and estimates as previously reported within "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the Company's 2018 Form 10-K.

Table of Contents**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 months ended March 31, 2019, total interest income was \$3.4 million. 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 March 31, 2019, the U.S. Dollar was approximately 6.0% stronger, when measured against the Company's primary foreign currencies, than for the quarter ended March 31, 2018. The table below presents the impacts of currency fluctuations on revenue for the quarter ended March 31, 2019. Amounts in brackets indicate a net adverse impact from currency fluctuations.

<i>(in thousands)</i>	Three Months Ended March 31, 2019
Euro	\$(5,986)
Japanese Yen	(799)
South Korean Won	(644)
British Pound	(637)
Indian Rupee	(581)
Other	(511)
Total	\$(9,158)

The net overall stronger U.S. Dollar also resulted in decreased operating income of \$3.1 million for the quarter ended March 31, 2019 as compared to the quarter ended March 31, 2018.

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:

As of	Period-End Exchange Rates			
	GBP/USD	EUR/USD	USD/JPY	USD/KRW
March 31, 2018	1.402	1.232	106.293	1,062.248
December 31, 2018	1.276	1.147	109.589	1,115.325
March 31, 2019	1.303	1.122	110.865	1,138.693
Three Months Ended	Average Exchange Rates			
	GBP/USD	EUR/USD	USD/JPY	USD/KRW
March 31, 2018	1.392	1.229	108.275	1,073.499
March 31, 2019	1.303	1.135	110.199	1,126.253

No other material change has occurred in the Company's market risk subsequent to December 31, 2018.

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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 implemented internal controls associated with the implementation of ASU 2016-02, *Leases (Topic 842)*. Otherwise, there were no changes in the Company's internal control over financial reporting that occurred during the three months ended March 31, 2019 that materially affected, or were reasonably likely to materially affect, the Company's internal control over financial reporting.

Table of Contents**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 2018 Form 10-K, Part I, Item 1A. "Risk Factors." No material changes have occurred regarding the Company's risk factors subsequent to December 31, 2018.

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⁾
January 1 - January 31, 2019	—	\$—	—	3,825,505
February 1 - February 28, 2019	—	\$—	—	3,825,505
March 1 - March 31, 2019	250,000	\$179.42	250,000	3,575,505
Total	250,000	\$179.42	250,000	3,575,505

⁽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 5.0 million shares, was approved by the Company's Board of Directors in February 2018. There is no expiration date for the stock repurchase program.

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

10.1	<u>Credit Agreement, dated as of February 22, 2019, among ANSYS, Inc. as borrower, Bank of America, N.A. as Administrative Agent and the banks listed therein, attached hereto as Exhibit 10.1.</u>
15	<u>Independent Registered Public Accountant’s Letter Regarding Unaudited Financial Information.</u>
31.1	<u>Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u>
31.2	<u>Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u>
32.1	<u>Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u>
32.2	<u>Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u>
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL 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

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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: May 2, 2019 By: */s/ Ajei S. Gopal*
Ajei S. Gopal
President and Chief Executive Officer

Date: May 2, 2019 By: */s/ Maria T. Shields*
Maria T. Shields
Chief Financial Officer