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, 2020

OR

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

For the transition period from _________ to _________

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)

N/A

(Former name, former address and former fiscal year, if changed since last report)

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

Title of each class	Trading Symbol(s)	Name of exchange on which registered
Common Stock, $0.01 par value per share	**ANSS**	**Nasdaq Stock Market LLC (Nasdaq Global Select Market)**

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 ☒

The number of shares of the Registrant’s Common Stock, $0.01 par value per share, outstanding as of April 30, 2020 was 85,595,438 shares.

ANSYS, INC. AND SUBSIDIARIES

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PART I – FINANCIAL INFORMATION

Item 1. Financial Statements:

ANSYS, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited)

(in thousands, except share and per share data)	March 31, 2020	December 31, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	**$ 717,748**	$ 872,094
Short-term investments	**282**	288
Accounts receivable, less allowance for doubtful accounts of $11,000 and $8,700, respectively	**337,105**	433,479
Other receivables and current assets	**235,565**	249,619
Total current assets	**1,290,700**	1,555,480
Long-term assets:		
Property and equipment, net	**82,471**	83,636
Operating lease right-of-use assets	**120,831**	105,671
Goodwill	**2,398,684**	2,413,280
Other intangible assets, net	**458,136**	476,711
Other long-term assets	**152,521**	180,032
Deferred income taxes	**22,742**	24,077
Total long-term assets	**3,235,385**	3,283,407
Total assets	**$ 4,526,085**	$ 4,838,887
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	**$ 12,571**	$ 14,298
Accrued bonuses and commissions	**22,421**	101,546
Accrued income taxes	**9,689**	9,996
Current portion of long-term debt	**—**	75,000
Other accrued expenses and liabilities	**139,497**	142,947
Deferred revenue	**352,964**	351,353
Total current liabilities	**537,142**	695,140
Long-term liabilities:		
Deferred income taxes	**69,778**	78,643
Long-term operating lease liabilities	**107,035**	91,768
Long-term debt	**423,607**	423,531
Other long-term liabilities	**96,173**	96,426
Total long-term liabilities	**696,593**	690,368
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.01 par value; 2,000,000 shares authorized; zero shares issued or outstanding	**—**	—
Common stock, $0.01 par value; 300,000,000 shares authorized; 94,627,585 shares issued	**946**	946
Additional paid-in capital	**1,118,170**	1,188,939
Retained earnings	**3,416,770**	3,370,706
Treasury stock, at cost: 9,041,521 and 8,893,177 shares, respectively	**(1,153,863)**	(1,041,831)
Accumulated other comprehensive loss	**(89,673)**	(65,381)
Total stockholders' equity	**3,292,350**	3,453,379
Total liabilities and stockholders' equity	**$ 4,526,085**	$ 4,838,887

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

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

	Three Months Ended	
(in thousands, except per share data)	**March 31, 2020**	**March 31, 2019**
Revenue:		
Software licenses	**$ 87,830**	$ 123,044
Maintenance and service	**217,155**	194,086
Total revenue	**304,985**	317,130
Cost of sales:		
Software licenses	**4,926**	4,708
Amortization	**9,552**	4,547
Maintenance and service	**35,638**	25,560
Total cost of sales	**50,116**	34,815
Gross profit	**254,869**	282,315
Operating expenses:		
Selling, general and administrative	**130,522**	112,169
Research and development	**86,112**	70,738
Amortization	**4,162**	3,759
Total operating expenses	**220,796**	186,666
Operating income	**34,073**	95,649
Interest income	**2,775**	3,442
Interest expense	**(3,651)**	(91)
Other income (expense), net	**127**	(334)
Income before income tax provision	**33,324**	98,666
Income tax (benefit) provision	**(12,740)**	12,436
Net income	**$ 46,064**	$ 86,230
Earnings per share – basic:		
Earnings per share	**$ 0.54**	$ 1.03
Weighted average shares	**85,798**	83,764
Earnings per share – diluted:		
Earnings per share	**$ 0.53**	$ 1.01
Weighted average shares	**87,369**	85,493

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

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

(in thousands)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Net income	**$ 46,064**	$ 86,230
Other comprehensive loss:		
Foreign currency translation adjustments	**(24,292)**	(7,558)
Comprehensive income	**$ 21,772**	$ 78,672

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

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

	Three Months Ended	
(in thousands)	**March 31, 2020**	**March 31, 2019**
Cash flows from operating activities:		
Net income	**$ 46,064**	$ 86,230
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and intangible assets amortization	**20,702**	13,415
Operating lease right-of-use assets expense	**5,075**	4,483
Deferred income tax benefit	**(5,442)**	(1,387)
Provision for bad debts	**3,116**	390
Stock-based compensation expense	**30,941**	23,800
Other	**1,553**	1,093
Changes in operating assets and liabilities:		
Accounts receivable	**117,830**	43,983
Other receivables and current assets	**12,013**	28,363
Other long-term assets	**(3,426)**	(2,516)
Accounts payable, accrued expenses and current liabilities	**(99,112)**	(54,050)
Accrued income taxes	**1,006**	5,999
Deferred revenue	**4,784**	2,235
Other long-term liabilities	**12,308**	(460)
Net cash provided by operating activities	**147,412**	151,578
Cash flows from investing activities:		
Acquisitions, net of cash acquired	**(2,348)**	(244,323)
Capital expenditures	**(6,987)**	(6,900)
Other investing activities	**(264)**	(460)
Net cash used in investing activities	**(9,599)**	(251,683)
Cash flows from financing activities:		
Principal payments on long-term debt	**(75,000)**	—
Purchase of treasury stock	**(161,029)**	(44,856)
Restricted stock withholding taxes paid in lieu of issued shares	**(62,425)**	(32,994)
Proceeds from shares issued for stock-based compensation	**9,716**	10,376
Other financing activities	**—**	(1,617)
Net cash used in financing activities	**(288,738)**	(69,091)
Effect of exchange rate fluctuations on cash and cash equivalents	**(3,421)**	(552)
Net decrease in cash and cash equivalents	**(154,346)**	(169,748)
Cash and cash equivalents, beginning of period	**872,094**	777,139
Cash and cash equivalents, end of period	**$ 717,748**	$ 607,391
Supplemental disclosure of cash flow information:		
Income taxes paid	**$ 6,757**	$ 4,832
Interest paid	**$ 5,628**	$ 6

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

ANSYS, INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Unaudited)

	Common Stock		Additional Paid-In Capital	Retained Earnings	Treasury Stock		Accumulated Other Comprehensive Loss	Total Stockholders' Equity
(in thousands)	Shares	Amount			Shares	Amount		
Balance, January 1, 2020	**94,628**	**$ 946**	**$ 1,188,939**	**$ 3,370,706**	**8,893**	**$ (1,041,831)**	**$ (65,381)**	**$ 3,453,379**
Treasury shares acquired					**690**	**(161,029)**		**(161,029)**
Stock-based compensation activity			**(70,769)**		**(541)**	**48,997**		**(21,772)**
Other comprehensive loss							**(24,292)**	**(24,292)**
Net income				**46,064**				**46,064**
Balance, March 31, 2020	**94,628**	**$ 946**	**$ 1,118,170**	**$ 3,416,770**	**9,042**	**$ (1,153,863)**	**$ (89,673)**	**$ 3,292,350**

	Common Stock		Additional Paid-In Capital	Retained Earnings	Treasury Stock		Accumulated Other Comprehensive Loss	Total Stockholders' Equity
(in thousands)	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

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

ANSYS, INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
March 31, 2020
(Unaudited)

1. Organization

ANSYS, Inc. (Ansys, we, us, our) 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, we operate as one segment.

Given the integrated approach to the multi-discipline problem-solving needs of our customers, a single sale of software may contain components from multiple product areas and include combined technologies. We also have 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 us to provide accurate historical or current reporting among our various product lines.

In March 2020, the World Health Organization declared the outbreak of COVID-19 a pandemic, which continues to spread throughout the U.S. and the world. While the full impact of this outbreak is not yet known, we are closely monitoring the spread of COVID-19 and continually assessing its potential effects on our business. The COVID-19 pandemic has had, and is expected to continue to have, an adverse impact on our business, employees, liquidity, financial condition, results of operations and cash flows.

2. Accounting Policies

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared 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 our audited consolidated financial statements (and notes thereto) included in our Annual Report on Form 10-K for the year ended December 31, 2019 (2019 Form 10-K). The condensed consolidated December 31, 2019 balance sheet presented is derived from the audited December 31, 2019 balance sheet included in the 2019 Form 10-K. In our opinion, all adjustments considered necessary for a fair presentation of the financial statements have been included, and all adjustments are of a normal and recurring nature. Certain items in the condensed consolidated financial statements of prior years have been reclassified to conform to the current year's presentation. These reclassifications had no effect on reported net income, comprehensive income, cash flows, total assets or total liabilities and stockholders' equity. Operating results for the three months ended March 31, 2020 are not necessarily indicative of the results that may be expected for any future period.

Changes in Accounting Policies

Our accounting policies are described in Note 2, “Accounting Policies,” in the 2019 Form 10-K. Summarized below is the accounting guidance adopted subsequent to December 31, 2019.

Credit losses: In June 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* (ASU 2016-13), which modifies the measurement of expected credit losses of certain financial instruments. We adopted ASU 2016-13 on January 1, 2020 with no material impact to our condensed consolidated financial statements. Previous guidance required the allowance for doubtful accounts to be estimated based on an incurred loss model, which considered past and current conditions. ASU 2016-13 requires us to use an expected loss model that also considers reasonable and supportable forecasts of future conditions, referred to as the current expected credit loss (CECL) methodology.

Under ASU 2016-13, we make judgments as to our ability to collect outstanding receivables and provide allowances for a portion of receivables over the lifetime of the receivables. Provisions are made based upon a specific review of all significant outstanding invoices from both value and delinquency perspectives. For those invoices not specifically reviewed, provisions are estimated at differing rates based upon the age of the receivable. In determining these percentages, we considered our historical loss experience, current economic trends and future conditions.

The changes in the allowance for doubtful accounts during the three months ended March 31, 2020 were as follows:

(in thousands)	Three Months Ended March 31, 2020
Beginning balance – January 1	**$ 8,700**
Additions: Charges to costs and expenses	**3,116**
Deductions: Returns and write-offs	**(816)**
Ending balance – March 31	**$ 11,000**

The increase in the allowance for doubtful accounts was driven by expected losses related to COVID-19.

Accounting Guidance Issued and Not Yet Adopted

Income taxes: In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* (ASU 2019-12), as part of its initiative to reduce complexity in the accounting standards. The amendments in ASU 2019-12 eliminate certain exceptions related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. ASU 2019-12 also clarifies and simplifies other aspects of the accounting for income taxes. ASU 2019-12 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020. Early adoption is permitted, including adoption in any interim period. We do not expect the adoption of this guidance to have a material impact on our financial position or results of operations.

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. Our cash and cash equivalents balances comprise the following:

	March 31, 2020		December 31, 2019	
(in thousands, except percentages)	Amount	% of Total	Amount	% of Total
Cash accounts	**$ 599,137**	**83.5**	$ 549,639	63.0
Money market funds	**118,611**	**16.5**	322,455	37.0
Total	**$ 717,748**		$ 872,094	

Our money market fund balances are held in various funds of two issuers. The decrease in money market funds during the three months ended March 31, 2020 was a result of redemptions for share repurchases and the Lumerical Inc. (Lumerical) acquisition. See Note 16, Subsequent Event, for additional disclosures regarding the Lumerical acquisition.

3. Revenue from Contracts with Customers

Disaggregation of Revenue

The following table summarizes revenue:

	Three Months Ended	
(in thousands, except percentages)	**March 31, 2020**	**March 31, 2019**
Revenue:		
Lease licenses	**$ 44,874**	$ 69,256
Perpetual licenses	**42,956**	53,788
Software licenses	**87,830**	123,044
Maintenance	**200,488**	181,461
Service	**16,667**	12,625
Maintenance and service	**217,155**	194,086
Total revenue	**$ 304,985**	$ 317,130
Direct revenue, as a percentage of total revenue	**73.6%**	70.5%
Indirect revenue, as a percentage of total revenue	**26.4%**	29.5%

Our software licenses revenue is recognized up front, while maintenance and service revenue is generally recognized over the term of the contract.

Deferred Revenue

Deferred revenue consists of billings made or payments received in advance of revenue recognition from customer 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, 2020 and 2019 were as follows:

(in thousands)	**2020**	**2019**
Beginning balance – January 1	**$ 365,274**	$ 343,174
Acquired deferred revenue	**—**	2,349
Deferral of revenue	**308,817**	318,279
Recognition of revenue	**(304,985)**	(317,130)
Currency translation	**(3,355)**	(2,396)
Ending balance – March 31	**$ 365,751**	$ 344,276

Revenue allocated to remaining performance obligations represents contracted revenue that has not yet been recognized, which includes both deferred revenue and backlog. Our backlog represents installment billings for periods beyond the current quarterly billing cycle. Revenue recognized during the three months ended March 31, 2020 and 2019 included amounts in deferred revenue and backlog at the beginning of the period of $191.3 million and $172.6 million, respectively.

Total revenue allocated to remaining performance obligations as of March 31, 2020 will be recognized as revenue as follows:

(in thousands)	
Next 12 months	**$ 564,806**
Months 13-24	**169,488**
Months 25-36	**72,872**
Thereafter	**27,860**
Total revenue allocated to remaining performance obligations	**$ 835,026**

4. Acquisitions

On November 1, 2019, we completed the acquisition of 100% of the shares of Livermore Software Technology (LST), the premier provider of explicit dynamics and other advanced finite element analysis technology. The acquisition empowers our customers to solve a new class of engineering challenges, including developing safer automobiles, aircraft and trains while reducing or even eliminating the need for costly physical testing. The transaction closed with a purchase price of $777.8 million, which included $470.6 million in cash and the issuance of 1.4 million shares of our common stock in an unregistered offering to the prior owners of LST. The fair value of the common stock issued as consideration was based on the volume-weighted average price per share of our common stock on November 1, 2019 of $220.74, resulting in a fair value of $307.2 million.

On February 1, 2019, we completed the acquisition of 100% of the shares of Granta Design Limited (Granta Design) for a purchase price of $208.7 million, paid in cash and inclusive of final net working capital adjustments. The acquisition of Granta Design, the premier provider of materials information technology, expands our portfolio into this important area, giving customers access to materials intelligence, including data that is critical to successful simulations.

Additionally, during the year ended December 31, 2019, we acquired Dynardo, Helic, Inc. (Helic) and DfR Solutions to combine the acquired technologies with our existing comprehensive multiphysics portfolio. These acquisitions were not individually significant. The combined purchase price of these other acquisitions was $138.6 million, paid in cash.

The operating results of each acquisition have been included in our condensed consolidated financial statements since each respective date of acquisition.

See Note 16, Subsequent Event, for more information on the Lumerical acquisition.

5. Other Receivables and Current Assets, Other Accrued Expenses and Liabilities, and Other Long-Term Liabilities

Our other receivables and current assets, other accrued expenses and liabilities, and other long-term liabilities comprise the following balances:

(in thousands)	**March 31, 2020**	**December 31, 2019**
Receivables related to unrecognized revenue	**$ 141,012**	$ 177,679
Income taxes receivable, including overpayments and refunds	**46,656**	26,672
Prepaid expenses and other current assets	**47,897**	45,268
Total other receivables and current assets	**$ 235,565**	$ 249,619
Payroll-related accruals	**$ 32,802**	$ 15,603
Accrued vacation	**27,905**	24,336
Consumption, VAT and sales tax liabilities	**17,536**	36,398
Accrued expenses and other current liabilities	**61,254**	66,610
Total other accrued expenses and liabilities	**$ 139,497**	$ 142,947
Uncertain tax positions	**$ 66,188**	$ 64,375
Other long-term liabilities	**29,985**	32,051
Total other long-term liabilities	**$ 96,173**	$ 96,426

Receivables related to 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. To the extent stock awards are anti-dilutive, they are excluded from the calculation of diluted EPS.

The details of basic and diluted EPS are as follows:

	Three Months Ended	
(in thousands, except per share data)	**March 31, 2020**	**March 31, 2019**
Net income	**$ 46,064**	$ 86,230
Weighted average shares outstanding – basic	**85,798**	83,764
Dilutive effect of stock plans	**1,571**	1,729
Weighted average shares outstanding – diluted	**87,369**	85,493
Basic earnings per share	**$ 0.54**	$ 1.03
Diluted earnings per share	**$ 0.53**	$ 1.01
Anti-dilutive shares	**28**	—

7. Goodwill and Intangible Assets

Intangible assets are classified as follows:

	March 31, 2020		December 31, 2019	
(in thousands)	**Gross Carrying Amount**	**Accumulated Amortization**	**Gross Carrying Amount**	**Accumulated Amortization**
Finite-lived intangible assets:				
Developed software and core technologies	**$ 632,413**	**$ (340,790)**	$ 635,063	$ (332,622)
Customer lists and contract backlog	**266,931**	**(136,109)**	269,629	(132,596)
Trade names	**153,690**	**(118,356)**	154,259	(117,379)
Total	**$ 1,053,034**	**$ (595,255)**	$ 1,058,951	$ (582,597)
Indefinite-lived intangible asset:				
Trade name	**$ 357**		$ 357	

Finite-lived intangible assets are amortized over their estimated useful lives of two years to seventeen years. Amortization expense for the intangible assets reflected above was $13.7 million and $8.3 million for the three months ended March 31, 2020 and 2019, respectively.

As of March 31, 2020, estimated future amortization expense for the intangible assets reflected above was as follows:

(in thousands)	
Remainder of 2020	**$ 40,713**
2021	**52,884**
2022	**53,099**
2023	**52,009**
2024	**50,046**
2025	**45,846**
Thereafter	**163,182**
Total intangible assets subject to amortization	**457,779**
Indefinite-lived trade name	**357**
Other intangible assets, net	**$ 458,136**

The changes in goodwill during the three months ended March 31, 2020 and 2019 were as follows:

(in thousands)	2020	2019
Beginning balance – January 1	**$ 2,413,280**	$ 1,572,455
Acquisitions and adjustments[1]	**(336)**	181,201
Currency translation	**(14,260)**	(5,428)
Ending balance – March 31	**$ 2,398,684**	$ 1,748,228

[1] In accordance with the accounting for business combinations, we 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 we 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 2020, we 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, 2020. Given the adverse economic and market conditions caused by the COVID-19 pandemic, we considered a variety of qualitative factors to determine if an additional quantitative impairment test was required subsequent to our annual impairment test. Based on a variety of factors, including the excess of the fair value over the carrying amount in the most recent impairment test, we determined it was not more likely than not that an impairment exists. No other events or circumstances changed during the three months ended March 31, 2020 that would indicate that the fair values of our reporting unit and indefinite-lived intangible asset are below their carrying amounts.

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 our own assumptions used to measure assets and liabilities at fair value.

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

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

		Fair Value Measurements at Reporting Date Using:		
(in thousands)	**March 31, 2020**	**Quoted Prices in Active Markets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Assets				
Cash equivalents	**$ 118,611**	**$ 118,611**	**$ —**	**$ —**
Short-term investments	**$ 282**	**$ —**	**$ 282**	**$ —**
Deferred compensation plan investments	**$ 1,113**	**$ 1,113**	**$ —**	**$ —**

		Fair Value Measurements at Reporting Date Using:		
(in thousands)	**December 31, 2019**	**Quoted Prices in Active Markets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Assets				
Cash equivalents	$ 322,455	$ 322,455	$ —	$ —
Short-term investments	$ 288	$ —	$ 288	$ —
Deferred compensation plan investments	$ 1,110	$ 1,110	$ —	$ —

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. 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 non-employee directors who elected to diversify their vested deferred stock awards. 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 our condensed consolidated balance sheets.

9. Leases

We primarily have operating leases for office space and leased cars included in our right-of-use (ROU) assets and lease liabilities. Our 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, we are reasonably certain we will not terminate the lease agreement. Absent the exercise of options in the lease, our base rent (inclusive of property taxes and certain operating costs) was $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 our global lease cost reflected in the condensed consolidated statements of income are as follows:

	Three Months Ended	
(in thousands)	**March 31, 2020**	**March 31, 2019**
Lease liability cost	**$ 6,218**	$ 5,285
Variable lease cost not included in the lease liability[1]	**1,097**	797
Total lease cost	**$ 7,315**	$ 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.

Other information related to operating leases is as follows:

	Three Months Ended	
(in thousands)	**March 31, 2020**	**March 31, 2019**
Cash paid for amounts included in the measurement of the lease liability:		
Operating cash flows from operating leases	**$ (5,733)**	$ (4,332)
Right-of-use assets obtained in exchange for new operating lease liabilities	**$ 19,601**	$ 13,835

As of March 31, 2020, the weighted-average remaining lease term of operating leases was 8.0 years, and the weighted-average discount rate of operating leases was 3.4%. 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, 2020 is as follows:

(in thousands)	
Remainder of 2020	**$ 16,872**
2021	**22,072**
2022	**19,119**
2023	**14,861**
2024	**14,159**
Thereafter	**57,512**
Total future lease payments	**144,595**
Less: Present value adjustment	**(18,866)**
Present value of future lease payments[1]	**$ 125,729**

[1] Includes the current portion of operating lease liabilities of $18.7 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, 2020.

10. Debt

In February 2019, we 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 becomes payable in full on February 22, 2024 and is available for general corporate purposes, including, among others, to finance acquisitions and capital expenditures.

In connection with the acquisition of LST, we amended our existing credit agreement (amended credit agreement). The amendment provided for a new $500.0 million unsecured term loan facility to finance the acquisition. The term loan was funded on November 1, 2019 and matures on November 1, 2024. Principal on the term loan will be payable on the last business day of each fiscal quarter commencing with the ninth full fiscal quarter after the funding date at a rate of 1.25% per quarter, increasing to 2.50% per quarter after the next four fiscal quarters. We repaid $75.0 million of the unsecured term loan balance in January 2020 prior to the scheduled maturity dates in 2022 ($25.0 million) and 2023 ($50.0 million).

Borrowings under the amended credit agreement will accrue interest at the Eurodollar rate plus an applicable margin or at the base rate, at our election. For the quarter ended March 31, 2020, we elected to apply the Eurodollar 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 our then-current consolidated leverage ratio and (2) a pricing level determined by our 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 weighted-average interest rate in effect during the three months ended March 31, 2020 was 3.025%. As of March 31, 2020, the rate in effect was 2.575%.

The amended credit agreement contains language in the event the Eurodollar rate is not available due to LIBOR changes. If this occurs, the base rate will be used for borrowings. However, we may work with the Administrative Agent to amend the agreement to replace the Eurodollar rate with (i) one or more rates based on the Secured Overnight Financing Rate (SOFR); or (ii) another alternative benchmark rate, subject to the lenders' approval.

The amended credit agreement contains customary representations and warranties, affirmative and negative covenants and events of default. The amended credit agreement also contains a financial covenant requiring us to maintain a consolidated leverage ratio of indebtedness to earnings before interest, taxes, depreciation and amortization not exceeding 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.

As of March 31, 2020 and December 31, 2019, there were no outstanding borrowings under the unsecured revolving credit agreement, and the carrying value of the term loan was $423.6 million, which is net of $1.4 million of unamortized debt issuance costs, and $498.5 million, which is net of $1.5 million of unamortized debt issuance costs, respectively. The $425.0 million balance of the term loan becomes payable in full on November 1, 2024. We were in compliance with all covenants as of March 31, 2020 and December 31, 2019, respectively.

11. Income Taxes

Our income before income tax provision, income tax (benefit) provision and effective tax rates were as follows:

	Three Months Ended	
(in thousands, except percentages)	**March 31, 2020**	**March 31, 2019**
Income before income tax provision	**$ 33,324**	$ 98,666
Income tax (benefit) provision	**$ (12,740)**	$ 12,436
Effective tax rate	**(38.2)%**	12.6%

Tax expense for the first quarter of 2020 benefited due to increased stock compensation benefits, many of which were recognized discretely in the first quarter. Although our expected annualized effective tax rate remains positive for the year, these tax benefits were in excess of tax expense at the annualized rate for the quarter, causing a net tax benefit.

12. Stock Repurchase Program

Under our stock repurchase program, we repurchased shares as follows:

(in thousands, except per share data)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Number of shares repurchased	**690**	250
Average price paid per share	**$ 233.48**	$ 179.42
Total cost	**$ 161,029**	$ 44,856

As of March 31, 2020, 2.8 million shares remained available for repurchase under the program.

13. Stock-Based Compensation

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

(in thousands, except per share data)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Cost of sales:		
Maintenance and service	**$ 2,866**	$ 1,228
Operating expenses:		
Selling, general and administrative	**15,144**	13,131
Research and development	**12,931**	9,441
Stock-based compensation expense before taxes	**30,941**	23,800
Related income tax benefits	**(25,906)**	(11,076)
Stock-based compensation expense, net of taxes	**$ 5,035**	$ 12,724
Net impact on earnings per share:		
Basic earnings per share	**$ (0.06)**	$ (0.15)
Diluted earnings per share	**$ (0.06)**	$ (0.15)

14. 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:

(in thousands)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
United States	**$ 125,113**	$ 140,662
Japan	**37,359**	33,573
Germany	**30,097**	30,427
South Korea	**15,561**	15,078
France	**15,469**	15,609
Other Europe, Middle East and Africa (EMEA)	**43,841**	44,255
Other international	**37,545**	37,526
Total revenue	**$ 304,985**	$ 317,130

Property and equipment by geographic area is as follows:

(in thousands)		March 31, 2020		December 31, 2019
United States	**$**	**57,954**	$	59,473
France		**5,469**		3,657
India		**4,998**		5,660
Germany		**4,025**		4,237
United Kingdom		**3,842**		4,194
Other EMEA		**2,000**		1,875
Other international		**4,183**		4,540
Total property and equipment, net	**$**	**82,471**	$	83,636

15. Contingencies and Commitments

We are 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 our opinion, the resolution of pending matters is not expected to have a material adverse effect on our condensed 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 our results of operations, cash flows or financial position.

Our Indian subsidiary has several service tax audits pending that have resulted in formal inquiries being received on transactions through mid-2012. We could incur tax charges and related liabilities of approximately $6.9 million. As such charges are not probable, a reserve has not been recorded on the condensed consolidated balance sheet as of March 31, 2020. The service tax issues raised in our 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) issued a favorable ruling to Microsoft. The Microsoft ruling was subsequently challenged in the Supreme Court by the Indian tax authority. We can provide no assurances on the impact that the present Microsoft case’s decision will have on our cases. We are uncertain as to when these service tax matters will be concluded.

We sell software licenses and services to our customers under contractual agreements. Such agreements generally include certain provisions indemnifying the customer against claims of intellectual property infringement by third parties arising from such customer’s usage of our products or services. To date, payments related to these indemnification provisions have been immaterial. For several reasons, including the lack of prior material indemnification claims, we cannot determine the maximum amount of potential future payments, if any, related to such indemnification provisions.

16. Subsequent Event

On April 1, 2020, we acquired 100% of the shares of Lumerical Inc. (Lumerical), a leading developer of photonic design and simulation tools, for a purchase price of approximately $107.5 million, paid in cash. The acquisition will add best-in-class photonic products to our multiphysics portfolio, providing customers with a full set of solutions to solve their next-generation product challenges. Due to the limited time since the acquisition date, the initial accounting for the business combination is incomplete. As a result, we are unable to provide the amounts recognized as of the acquisition date for the major classes of assets acquired and liabilities assumed.

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, 2020, the related condensed consolidated statements of income, comprehensive income, cash flows, and stockholders’ equity for the three-month periods ended March 31, 2020 and 2019, 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, 2019, 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 27, 2020, 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, 2019, 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 reviews 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 6, 2020

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

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, 2020, and with our audited consolidated financial statements and notes thereto for the year ended December 31, 2019 included in the 2019 Form 10-K filed with the Securities and Exchange Commission. The discussion and analysis of our financial condition and results of operations are based upon our condensed consolidated financial statements, which have been prepared in accordance with generally accepted accounting principles (GAAP).

Overview:

Impact of COVID-19

In March 2020, the World Health Organization declared the outbreak of COVID-19 a pandemic, which continues to spread throughout the U.S. and the world. While the full impact of this outbreak is not yet known, we are closely monitoring the spread of COVID-19 and continually assessing its potential effects on our business. The COVID-19 pandemic has had, and is expected to continue to have, an adverse impact on our business, employees, liquidity, financial condition, results of operations and cash flows.

At the onset of the crisis, we took action to enable our employees to work from home. We have temporarily closed our global Ansys offices in North America, Asia and Europe, including our corporate headquarters in the United States, and implemented certain travel restrictions, both of which have disrupted how we operate our business. We have subsequently reopened all of our offices in China and South Korea using a phased approach, as the situation has improved. Remote work arrangements have not adversely affected our ability to maintain effective financial operations, including our financial reporting systems, internal controls over financial reporting and disclosure controls and procedures. We expect to continue to maintain these effective controls as we continue to work remotely during the COVID-19 pandemic.

The impact from the rapidly changing market and economic conditions due to the recent COVID-19 outbreak is uncertain, disrupting the business of our customers and partners, and will impact our business and consolidated results of operations. Our current expectations are subject to significant uncertainty and dependent upon how widespread the virus becomes, the duration and severity of its impact, the geographic markets affected, the actions taken by governmental authorities, including the shelter-in-place orders, and other factors. Further spreading of the virus or economic deterioration caused by the virus could have a material adverse impact on our business, as well as on our ability to achieve the financial guidance. We are monitoring our discretionary spending and making adjustments to help mitigate the negative impacts of COVID-19 on our business in the short-term. At the same time, we continue to invest in projects that are critical to our long-term growth such as our customer relationship management (CRM) and human resource management system (HRMS) projects.

Please see "Note About Forward-Looking Statements" and "Risk Factors" in Part I, Item IIA of our 2019 Form 10-K and Part II, Item 1A of this Quarterly Report on Form 10-Q for discussion on additional business risks associated with the COVID-19 pandemic.

Overall GAAP and Non-GAAP Results

Our growth rates of GAAP and non-GAAP results for the three months ended March 31, 2020 as compared to the three months ended March 31, 2019 were as follows:

	GAAP	Non-GAAP
Revenue	**(3.8)%**	(3.4)%
Operating income	**(64.4)%**	(34.0)%
Diluted earnings per share	**(47.5)%**	(35.7)%

We experienced a decline in revenue during the three months ended March 31, 2020 from reductions in software license revenue, partially offset by growth in maintenance and service revenue and by contributions from our recent acquisitions. The outbreak of COVID-19 also adversely impacted our revenue during the three months ended March 31, 2020. Due to our diverse customer base, both from a vertical and geographic perspective, as well as the close relationships with customers that enabled us to close a large amount of business remotely, we were successful at partially mitigating the impacts of the COVID-19 outbreak.

We also experienced increased operating expenses primarily due to increased personnel costs, higher stock-based compensation and additional operating expenses related to acquisitions. The COVID-19 outbreak did not have a material impact on our operating expenses during the three months ended March 31, 2020. A significant portion of our operating costs are fixed. As a result, when our revenue fluctuates due to timing of multi-year contracts or macro-economic factors such as COVID-19, there is a corresponding and direct impact on our operating income and diluted earnings per share. Given the reduction in our revenue for the three months ended March 31, 2020, we experienced a decline in both operating income and diluted earnings per share, as shown above.

The non-GAAP results exclude the income statement effects of the acquisition accounting adjustments 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."

Impact of Foreign Currency

Our comparative financial results were impacted by fluctuations in the U.S. Dollar during the three months ended March 31, 2020 as compared to the three months ended March 31, 2019. The impacts on our revenue and operating income due to currency fluctuations are reflected in the table below. Amounts in brackets indicate an adverse impact from currency fluctuations.

	Three Months Ended March 31, 2020	
(in thousands)	GAAP	Non-GAAP
Revenue	**$ (2,590)**	$ (2,596)
Operating income	**$ (261)**	$ (371)

In constant currency, our growth rates were as follows:

	Three Months Ended March 31, 2020	
	GAAP	Non-GAAP
Revenue	**(3.0)%**	(2.6)%
Operating income	**(64.1)%**	(33.7)%

Constant currency amounts exclude the effects of foreign currency fluctuations on the reported results. To present this information, the 2020 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 2019 comparable period, rather than the actual exchange rates in effect for 2020. Constant currency growth rates are calculated by adjusting the 2020 reported revenue and operating income amounts by the 2020 currency fluctuation impacts and comparing to the 2019 comparable period reported revenue and operating income amounts.

Other Key Business Metric

Annual Contract Value (ACV) is one of our key performance metrics and is useful to investors in assessing the strength and trajectory of our business. It is used by management in financial and operational decision-making and in setting sales targets used for compensation. ACV should be viewed independently of revenue and deferred revenue as ACV is a performance metric and is not intended to be combined with any of these items. There is no GAAP measure comparable to ACV. ACV is composed of the following:

- the annualized value of maintenance and lease contracts with start dates or anniversary dates during the period, plus
- the value of perpetual license contracts with start dates during the period, plus
- the annualized value of fixed-term services contracts with start dates or anniversary dates during the period, plus
- the value of work performed during the period on fixed-deliverable services contracts.

Our ACV was as follows:

	Three Months Ended March 31,		Change		
(in thousands, except percentages)	2020	2019	Amount	%	Constant Currency %
ACV	**$ 301,050**	$ 303,490	$ (2,440)	(0.8)	0.4

Other Financial Information

Our financial position includes $718.0 million in cash and short-term investments, and working capital of $753.6 million as of March 31, 2020.

During the three months ended March 31, 2020, we repurchased 0.7 million shares for $161.0 million at an average price of $233.48 per share.

Business:

Ansys, a Delaware corporation formed in 1994, 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, we employed approximately 4,200 people as of March 31, 2020. We focus 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. We distribute our suite of simulation technologies through a global network of independent resellers and distributors (collectively, channel partners) and direct sales offices in strategic, global locations. It is our intention to continue to maintain this hybrid sales and distribution model.

We license our technology to businesses, educational institutions and governmental agencies. Growth in our revenue is affected by the strength of global economies, general business conditions, currency exchange rate fluctuations, customer budgetary constraints and the competitive position of our products. We believe that the features, functionality and integrated multiphysics capabilities of our 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. We make 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, including the impact of the current COVID-19 outbreak. As a result, we believe that our overall performance is best measured by fiscal year results rather than by quarterly results.

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 our software products as compared to our competitors; investing in research and development to develop new and innovative products and increase the capabilities of our existing products; supplying new products and services; focusing on customer needs, training, consulting and support; and enhancing our distribution channels. We also consider acquisitions to supplement our global engineering talent, product offerings and distribution channels.

Geographic Trends:

The following table presents our geographic constant currency revenue growth during the three months ended March 31, 2020 as compared to the three months ended March 31, 2019:

	Three Months Ended March 31, 2020
Americas	**(10.2)%**
EMEA	**1.3 %**
Asia-Pacific	**5.2 %**
Total	**(3.0)%**

The negative growth experienced in the Americas is primarily due to an expected and significant reduction in multi-year lease contracts.

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

Continued trade tensions between the U.S. and China, together with the uncertainty around the COVID-19 outbreak, may further restrict our ability to sell and distribute our products to certain customers and our ability to collect against existing trade receivables and could have an adverse effect on our business, results of operations or financial condition. Refer to additional details in Part I, Item 1A of our 2019 Form 10-K as supplemented by Part II, Item 1A of this Quarterly Report on Form 10-Q.

Industry Commentary:

The strong high-tech and automotive industry trends from 2019 continued into the first quarter of 2020. In these industries, our solutions that support key initiatives of autonomy, electrification and 5G continue to resonate with our customers. The complexity and cost associated with developing and certifying 5G technology continues to drive investments in simulation from the high-tech and semiconductor technology providers. In addition, the energy industry, particularly oil and gas, suffered from the combined effects of a substantial oil price contraction and the impact of COVID-19. Already in a low growth cycle, this is a significant challenge for the industry overall. Despite the challenges in this industry, we have continued to focus on strategic initiatives and work with our energy customers on their digital transformation journeys, additive manufacturing and design optimization.

Use of Estimates:

The preparation of these financial statements requires us 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, we evaluate our estimates, including those related to fair values of stock awards, bad debts, contract revenue, acquired deferred revenue, the standalone selling prices of our 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. We base our estimates on historical experience, market experience, estimated future cash flows and various other assumptions that management believes are 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 apparent from other sources. Actual results may differ from these estimates.

Note About Forward-Looking Statements

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:

- Our expectations regarding the impacts of the COVID-19 pandemic.
- Our expectations regarding the impacts of new accounting guidance.
- Our expectations regarding the outcome of our service tax audit cases.
- Our assessment of the ultimate liabilities arising from various investigations, claims and legal proceedings.
- Our expectations regarding future claims related to indemnification obligations.
- Our intentions regarding our hybrid sales and distribution model.
- Our statement regarding the strength of the features, functionality and integrated multiphysics capabilities of our software products.
- Our belief that our overall performance is best measured by fiscal-year results rather than by quarterly results.
- Our expectations regarding increased lease license volatility due to an increased customer preference for time-based licenses.
- Our estimates regarding the expected impact on reported revenue related to the acquisition accounting treatment of deferred revenue.
- Our expectation that we will continue to make targeted investments in our global sales and marketing organizations and our global business infrastructure to enhance and support our revenue-generating activities.
- Our intentions related to investments in research and development, particularly as it relates to expanding the ease of use and capabilities of our broad portfolio of simulation software products.
- Our expectations regarding the accelerated development of new and innovative products to the marketplace while lowering design and engineering costs for customers as a result of our acquisitions.
- Our statements regarding the impact of global economic conditions.
- Our intention to repatriate previously taxed earnings in excess of working capital needs and to reinvest all other earnings of our non-U.S. subsidiaries.
- Our plans related to future capital spending.
- The sufficiency of existing cash and cash equivalent balances to meet future working capital and capital expenditure requirements.
- Our belief that the best uses of our 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 our requirements, with the goal of increasing stockholder value.
- Our intentions related to investments in complementary companies, products, services and technologies.
- Our expectation that changes in currency exchange rates will affect our financial position, results of operations and cash flows.

- Our expectations regarding acquisitions and integrating such acquired companies to realize the benefits of cost reductions and other synergies relating thereto.

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 our control. Our 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 our 2019 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.

Results of Operations

Three Months Ended March 31, 2020 Compared to Three Months Ended March 31, 2019

Revenue:

	Three Months Ended March 31,		Change		
(in thousands, except percentages)	**2020**	**2019**	**Amount**	**%**	**Constant Currency %**
Revenue:					
Lease licenses	**$ 44,874**	$ 69,256	$ (24,382)	(35.2)	(35.0)
Perpetual licenses	**42,956**	53,788	(10,832)	(20.1)	(19.5)
Software licenses	**87,830**	123,044	(35,214)	(28.6)	(28.2)
Maintenance	**200,488**	181,461	19,027	10.5	11.6
Service	**16,667**	12,625	4,042	32.0	33.0
Maintenance and service	**217,155**	194,086	23,069	11.9	12.9
Total revenue	**$ 304,985**	$ 317,130	$ (12,145)	(3.8)	(3.0)

Our revenue in the quarter ended March 31, 2020 decreased 3.8% as compared to the quarter ended March 31, 2019, while revenue decreased 3.0% in constant currency. The volume of multi-year lease contracts, the shifting preference of customers toward time-based licensing, the trade restrictions between the United States and China and the impact of COVID-19, specifically within Asia, each contributed to the first quarter adverse revenue variance reflected in the results above. The overall decrease was partially offset by our continued investments in our global sales, support and marketing organizations, as well as our 2019 acquisitions. Lease license revenue decreased 35.2%, or 35.0% in constant currency, as compared to the prior-year quarter, driven primarily by a decrease in multi-year lease contracts. Perpetual license revenue, which is derived primarily from new sales during the quarter, decreased 20.1%, or 19.5% in constant currency, as compared to the prior-year quarter. 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 collectively contributed to maintenance revenue growth of 10.5%, or 11.6% in constant currency. Service revenue, driven primarily by a focus on service offerings that provide mentorship on simulation best practices, training and expanding simulation adoption, increased 32.0%, or 33.0% in constant currency, as compared to the prior-year quarter.

We continue to experience increased interest by some of our larger customers in enterprise agreements that often include longer-term, time-based licenses involving a larger number of our 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 and corresponding revenue growth 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, we are also experiencing a shifting preference from perpetual licenses to time-based licenses across a broader spectrum of our customers. This shifting preference was elevated in the first quarter as a result of the economic impacts of COVID-19. We expect that shifting preference to continue through at least the second and third quarters of 2020.

In relation to COVID-19 and our revenue, we currently expect the most significant business disruption to occur in the second quarter. During much of the quarter, our teams and those of our customers will likely continue working remotely. As a result of social distancing, our demand generation events and those of our channel partners have been canceled. While we have adjusted to have a stronger digital focus for demand generation, we expect the absence of certain events to have an adverse impact on our results, especially for certain channel partners. In addition, we expect there to be a significant delay in the timing of closing certain transactions, and closing the larger enterprise-type deals may be especially difficult. These deals are often multi-year leases which have a significant impact on our operating results due to up-front revenue recognition of the license. We anticipate that customers will delay certain purchases to later in the year. We also anticipate some deterioration in renewal rates among our smaller customers, particularly small- and medium-sized businesses, with the largest adverse impact to occur during the second quarter. We expect a modest recovery in the business environment during the third quarter as people return to work and businesses begin to resume their operations. The third quarter business environment is expected to be stronger than that of the second quarter, but will remain adversely impacted by the continuing effects of COVID-19, with a disproportionate impact on certain customers and industries. We expect a stronger recovery in the fourth quarter with business resuming to near-normal activity, perhaps buoyed by sales transactions that may have been deferred from earlier quarters.

With respect to revenue, on average for the quarter ended March 31, 2020, the U.S. Dollar was approximately 1.8% stronger, when measured against our primary foreign currencies, than for the quarter ended March 31, 2019. The table below presents the impacts of currency fluctuations on revenue for the quarter ended March 31, 2020. Amounts in brackets indicate an adverse impact from currency fluctuations.

(in thousands)	Three Months Ended March 31, 2020
Euro	**$ (2,003)**
South Korean Won	**(910)**
Indian Rupee	**(228)**
British Pound	**(182)**
Japanese Yen	**532**
Taiwan Dollar	**168**
Other	**33**
Total	**$ (2,590)**

The net overall stronger U.S. Dollar also resulted in decreased operating income of $0.3 million for the quarter ended March 31, 2020 as compared to the quarter ended March 31, 2019.

As a percentage of revenue, our international and domestic revenues, and our direct and indirect revenues, were as follows:

	Three Months Ended March 31,	
	2020	**2019**
International	**59.0%**	55.6%
Domestic	**41.0%**	44.4%
Direct	**73.6%**	70.5%
Indirect	**26.4%**	29.5%

In valuing deferred revenue on the balance sheets of our recent acquisitions as of their respective acquisition dates, we applied the fair value provisions applicable to the accounting for business combinations, resulting in a reduction of deferred revenue as compared to the historical carrying amount. As a result, our post-acquisition revenue will be less than the sum of what would have otherwise been reported by us and each acquiree absent the acquisitions. The impacts on reported revenue were $3.9 million and $2.8 million for the quarters ended March 31, 2020 and 2019, respectively. The expected impacts on reported revenue, including an estimate for the Lumerical acquisition, are $4.1 million and $11.4 million for the quarter ending June 30, 2020 and the year ending December 31, 2020, respectively. We have not yet performed a valuation of the Lumerical acquired deferred revenue. Until such valuation is completed, the expected impacts on revenue will remain preliminary estimates that are likely to change.

Deferred Revenue and Backlog:

Deferred revenue consists of billings made or payments received in advance of revenue recognition from customer agreements. The deferred revenue on our condensed consolidated balance sheets does not represent the total value of annual or multi-year, noncancellable agreements. Our backlog represents installment billings for periods beyond the current quarterly billing cycle. Our deferred revenue and backlog as of March 31, 2020 and December 31, 2019 consisted of the following:

	Balance at March 31, 2020		
(in thousands)	**Total**	**Current**	**Long-Term**
Deferred revenue	**$ 365,751**	**$ 352,964**	**$ 12,787**
Backlog	**469,275**	**211,842**	**257,433**
Total	**$ 835,026**	**$ 564,806**	**$ 270,220**

(in thousands)	Balance at December 31, 2019 Total	Current	Long-Term
Deferred revenue	$ 365,274	$ 351,353	$ 13,921
Backlog	505,469	218,398	287,071
Total	$ 870,743	$ 569,751	$ 300,992

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

Cost of Sales and Operating Expenses:

The tables below reflect our operating results as presented on the condensed consolidated statements of income, which are inclusive of foreign currency translation impacts. Amounts included in the discussions that follow each table are provided in constant currency and are inclusive of costs related to our acquisitions. The impact of foreign exchange translation is discussed separately, where material. The fourth quarter 2019 acquisitions of LST and Dynardo contributed $13.0 million to the overall increase in cost of sales and operating expenses, inclusive of intangible asset amortization. The acquisitions that occurred in the first half of 2019 did not materially contribute to the variances below.

	Three Months Ended March 31,					
	2020		2019		Change	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Cost of sales:						
Software licenses	**$ 4,926**	**1.6**	$ 4,708	1.5	$ 218	4.6
Amortization	**9,552**	**3.1**	4,547	1.4	5,005	110.1
Maintenance and service	**35,638**	**11.7**	25,560	8.1	10,078	39.4
Total cost of sales	**50,116**	**16.4**	34,815	11.0	15,301	43.9
Gross profit	**$ 254,869**	**83.6**	$ 282,315	89.0	$ (27,446)	(9.7)

Software Licenses: The increase in the cost of software licenses was primarily due to increased third-party royalties of $0.3 million.

Amortization: The increase in amortization expense was due to the amortization of newly acquired intangible assets.

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

- Increased salaries and other headcount-related costs of $4.8 million.
- Increased third-party technical support of $2.1 million.
- Increased stock-based compensation of $1.6 million.

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

	Three Months Ended March 31,					
	2020		2019		Change	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Operating expenses:						
Selling, general and administrative	**$ 130,522**	**42.8**	$ 112,169	35.4	$ 18,353	16.4
Research and development	**86,112**	**28.2**	70,738	22.3	15,374	21.7
Amortization	**4,162**	**1.4**	3,759	1.2	403	10.7
Total operating expenses	**$ 220,796**	**72.4**	$ 186,666	58.9	$ 34,130	18.3

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

- Increased salaries and other headcount-related costs of $10.0 million.
- Increased bad debt expense of $2.7 million due to expected losses related to COVID-19.
- Increased stock-based compensation of $2.0 million.
- Increased marketing expenses of $1.8 million.
- Increased IT maintenance and software hosting costs of $1.7 million.

Currently, we continue to pay all of our salaried and hourly workers.

We anticipate that we will continue to make targeted investments in our global sales and marketing organizations and our global business infrastructure to enhance and support our revenue-generating activities.

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

- Increased salaries and other headcount-related costs of $11.6 million.
- Increased stock-based compensation of $3.5 million.
- Increased IT maintenance and software hosting costs of $1.0 million.

We have traditionally invested significant resources in research and development activities and intend to continue to make investments in expanding the ease of use and capabilities of our broad portfolio of simulation software products, even through the COVID-19 pandemic. We do not anticipate the impact of COVID-19 to significantly delay our 2020 product releases.

Interest Income: Interest income for the quarter ended March 31, 2020 was $2.8 million as compared to $3.4 million for the quarter ended March 31, 2019. Interest income decreased as a result of a decrease in the average rate of return on invested cash balances.

Interest Expense: Interest expense for the quarter ended March 31, 2020 was $3.7 million as compared to $0.1 million for the quarter ended March 31, 2019. Interest expense increased as a result of the interest incurred on debt financing obtained in connection with the acquisition of LST in the fourth quarter of 2019.

Other Income (Expense), net: Our other income (expense) consisted of the following:

	Three Months Ended	
(in thousands)	**March 31, 2020**	**March 31, 2019**
Foreign currency gains (losses), net	**$ 146**	$ (513)
Other	**(19)**	179
Total other income (expense), net	**$ 127**	$ (334)

Income Tax (Benefit) Provision: Our income before income tax provision, income tax (benefit) provision and effective tax rates were as follows:

	Three Months Ended	
(in thousands, except percentages)	**March 31, 2020**	**March 31, 2019**
Income before income tax provision	**$ 33,324**	$ 98,666
Income tax (benefit) provision	**$ (12,740)**	$ 12,436
Effective tax rate	**(38.2)%**	12.6%

The decrease in the effective tax rate from the prior year was primarily due to increased benefits related to stock-based compensation. The effective tax rate also benefited from the release of a valuation allowance in a foreign jurisdiction.

When compared to the federal and state combined statutory rate for each respective period, the effective tax rates for the quarters ended March 31, 2020 and 2019 were favorably impacted by tax benefits from stock-based compensation, the foreign-derived intangible income (FDII) deduction, and research and development credits.

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

(in thousands, except per share data)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Net income	**$ 46,064**	$ 86,230
Diluted earnings per share	**$ 0.53**	$ 1.01
Weighted average shares outstanding - diluted	**87,369**	85,493

Non-GAAP Results

We provide 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 our 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, 2020							March 31, 2019							
(in thousands, except percentages and per share data)	GAAP Results		Adjustments			Non-GAAP Results		GAAP Results		Adjustments			Non-GAAP Results		
Total revenue	**$**	**304,985**	**$**	**3,912**	(1)	**$**	**308,897**	$	317,130	$	2,780	(4)	$	319,910	
Operating income		**34,073**		**56,500**	(2)		**90,573**		95,649		41,537	(5)		137,186	
Operating profit margin		**11.2%**					**29.3%**		30.2%					42.9%	
Net income	**$**	**46,064**	**$**	**26,241**	(3)	**$**	**72,305**	$	86,230	$	24,440	(6)	$	110,670	
Earnings per share – diluted:															
Earnings per share	**$**	**0.53**				**$**	**0.83**	$	1.01				$	1.29	
Weighted average shares		**87,369**					**87,369**		85,493					85,493	

(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 $30.9 million of stock-based compensation expense, $7.0 million of excess payroll taxes related to stock-based awards, $13.7 million of amortization expense associated with intangible assets acquired in business combinations, $1.0 million of transaction expenses related to business combinations and the $3.9 million adjustment to revenue as reflected in (1) above.

(3) Amount represents the impact of the adjustments to operating income referred to in (2) above, decreased for the related GAAP to non-GAAP tax provision impact of $30.3 million based on a normalized non-GAAP annual effective tax rate of 19.5%.

(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 $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 (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 $15.6 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.

Non-GAAP Measures

We use non-GAAP financial measures (a) to evaluate our historical and prospective financial performance as well as our performance relative to our 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 employees. In addition, many financial analysts that follow us focus on and publish both historical results and future projections based on non-GAAP financial measures. We believe that it is in the best interest of our investors to provide this information to analysts so that they accurately report the non-GAAP financial information. Moreover, investors have historically requested, and we have historically reported, these non-GAAP financial measures as a means of providing consistent and comparable information with past reports of financial results.

While we believe 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 our competitors and may not be directly comparable to similarly titled measures of our competitors due to potential differences in the exact method of calculation. We compensate for these limitations by using these non-GAAP financial measures as supplements to GAAP financial measures and by reviewing the reconciliations of the non-GAAP financial measures to their most comparable GAAP financial measures.

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

Acquisition accounting for deferred revenue. Historically, we have consummated acquisitions in order to support our 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 our business or cash flow, it adversely impacts our 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, we provide non-GAAP financial measures which exclude the impact of the acquisition accounting adjustment. We believe 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 us in our financial and operational decision-making, and (b) compare our past and future reports of financial results 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. We incur amortization of intangible assets, included in our GAAP presentation of amortization expense, related to various acquisitions we have made. We exclude 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 we evaluate our continuing operational performance 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 us after the acquisition. Accordingly, we do not consider these expenses for purposes of evaluating our performance during the applicable time period after the acquisition, and we exclude such expenses when making decisions to allocate resources. We believe 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 us in our financial and operational decision-making, and (b) compare our past reports of financial results as we have historically reported these non-GAAP financial measures.

Stock-based compensation expense. We incur expense related to stock-based compensation included in our GAAP presentation of 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 our 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 and viewed as a form of compensation, we exclude 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 we evaluate our continuing operational performance. We similarly exclude income (expense) related to assets held in a rabbi trust in connection with our deferred compensation plan. Specifically, we exclude stock-based compensation and income (expense) related to assets held in the deferred compensation plan rabbi trust during our annual budgeting process and our quarterly and annual assessments of our performance. The annual budgeting process is the primary mechanism whereby we allocate resources to various initiatives and operational requirements. Additionally, the annual review by our board of directors during which it compares our 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 our senior management and department managers, charges related to stock-based compensation are excluded from expenditure and profitability results. In fact, we record stock-based compensation expense into a stand-alone cost center for which no single operational manager is responsible or accountable. In this way, we 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. We believe that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate our operating results and the effectiveness of the methodology used by us to review our operating results, and (b) review historical comparability in our financial reporting as well as comparability with competitors' operating results.

Transaction costs related to business combinations. We incur expenses for professional services rendered in connection with business combinations, which are included in our GAAP presentation of selling, general and administrative expense. These expenses are generally not tax-deductible. We exclude 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 we evaluate our continuing operational performance, as we generally would not have otherwise incurred these expenses in the periods presented as a part of our operations. We believe that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate our operating results and the effectiveness of the methodology used by us to review our operating results, and (b) review historical comparability in our financial reporting as well as comparability with competitors' operating results.

Tax Cuts and Jobs Act. We recorded impacts to our income tax provision related to the enactment of the Tax Cuts and Jobs Act of 2017, specifically for the transition tax related to unrepatriated cash and the impacts of the tax rate change on net deferred tax assets. We exclude these impacts for the purpose of calculating non-GAAP net income and non-GAAP diluted earnings per share when we evaluate our continuing operational performance, as (i) the charges are not expected to recur as part of our 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. We believe that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate our operating results and the effectiveness of the methodology used by us to review our operating results, and (b) review historical comparability in our financial reporting.

Non-GAAP tax provision. We utilize a normalized non-GAAP annual effective tax rate (AETR) to calculate non-GAAP measures. This methodology provides better consistency across interim reporting periods by eliminating the effects of non-recurring items and aligning the non-GAAP tax rate with our expected geographic earnings mix. To project this rate, we analyzed our historic and projected non-GAAP earnings mix by geography along with other factors such as our current tax structure, recurring tax credits and incentives, and expected tax positions. On an annual basis we will re-evaluate this rate for significant items that may materially affect our projections.

Non-GAAP financial measures are not in accordance with, or an alternative for, GAAP. Our 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 our consolidated financial statements prepared in accordance with GAAP.

We have provided a reconciliation of the non-GAAP financial measures to the most directly comparable GAAP financial measures as listed below:

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

Liquidity and Capital Resources

(in thousands)	March 31, 2020	December 31, 2019	Change
Cash, cash equivalents and short-term investments	**$ 718,030**	$ 872,382	$ (154,352)
Working capital	**$ 753,558**	$ 860,340	$ (106,782)

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 of our foreign subsidiaries with original maturities of three months to one year. The following table presents our foreign and domestic holdings of cash, cash equivalents and short-term investments as of March 31, 2020 and December 31, 2019:

(in thousands, except percentages)	March 31, 2020	% of Total	December 31, 2019	% of Total
Domestic	**$ 427,709**	**59.6**	$ 626,433	71.8
Foreign	**290,321**	**40.4**	245,949	28.2
Total	**$ 718,030**		$ 872,382	

In general, it is our intention to permanently reinvest all earnings in excess of previously taxed amounts. As part of U.S. tax reform, substantially all of the previous earnings of our non-U.S. subsidiaries were taxed through the transition tax and current earnings are taxed as part of global intangible low-taxed income tax expense. These taxes increased our previously taxed earnings and allow for the repatriation of the majority of our foreign earnings without any residual U.S. federal tax. While we believe that the financial reporting bases may be greater than the tax bases of investments in foreign subsidiaries for any earnings in excess of previously taxed amounts, such amounts are considered permanently reinvested. The cumulative temporary difference related to such permanently reinvested earnings is approximately $33.9 million and we would anticipate the tax effect on those earnings to be immaterial as a result of U.S. tax reform.

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 our condensed consolidated balance sheet.

Cash Flows from Operating Activities

	Three Months Ended March 31,		
(in thousands)	2020	2019	Change
Net cash provided by operating activities	**$ 147,412**	$ 151,578	$ (4,166)

Net cash provided by operating activities decreased during the current fiscal year due to decreased net income (net of non-cash operating adjustments) of $26.0 million, partially offset by increased net cash flows from operating assets and liabilities of $21.8 million. Our net cash provided by operating activities was only minimally impacted by COVID-19 during the three months ended March 31, 2020, primarily because of requests for payment delays from China.

Cash Flows from Investing Activities

	Three Months Ended March 31,		
(in thousands)	2020	2019	Change
Net cash used in investing activities	**$ (9,599)**	$ (251,683)	$ 242,084

Net cash used in investing activities decreased during the current fiscal year due to decreased acquisition-related net cash outlays of $242.0 million. We currently plan capital spending of $40.0 million to $50.0 million during fiscal year 2020 as compared to the $44.9 million that was spent in fiscal year 2019. The level of spending will depend on various factors, including the growth of the business and general economic conditions as well as the impact of the COVID-19 pandemic on our operations.

Cash Flows from Financing Activities

	Three Months Ended March 31,		
(in thousands)	2020	2019	Change
Net cash used in financing activities	**$ (288,738)**	$ (69,091)	$ (219,647)

Net cash used in financing activities increased during the current fiscal year due to increased stock repurchases of $116.2 million, increased principal payments on long-term debt of $75.0 million, and increased restricted stock withholding taxes paid in lieu of issued shares of $29.4 million.

Other Cash Flow Information

We believe that existing cash and cash equivalent balances of $717.7 million, together with cash generated from operations and access to the $500.0 million revolving credit facility, will be sufficient to meet our working capital and capital expenditure requirements through the next twelve months. Our cash requirements in the future may also be financed through additional equity or debt financings. However, the disruption in the capital markets caused by the COVID-19 outbreak could make any financing more challenging, and there can be no assurance that such financings can be obtained on commercially reasonable terms, or at all.

We also believe that our liquidity will allow us to manage the anticipated impact of COVID-19 on our business operations for the foreseeable future. However, we have seen an increase in customer and channel partner requests for extended payment terms on new contracts and delayed payments on existing contracts. Thus far, those requests outside of China have been disproportionately related to the automotive industry.

On April 1, 2020, we acquired Lumerical, a leading developer of photonic design and simulation tools, for a purchase price of approximately $107.5 million. The acquisition will add best-in-class photonic products to our multiphysics portfolio, providing customers with a full set of solutions to solve their next-generation product challenges.

Under our stock repurchase program, we repurchased shares as follows:

	Three Months Ended	
(in thousands, except per share data)	March 31, 2020	March 31, 2019
Number of shares repurchased	**690**	250
Average price paid per share	**$ 233.48**	$ 179.42
Total cost	**$ 161,029**	$ 44,856

As of March 31, 2020, 2.8 million shares remained available for repurchase under the program.

The 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, our stock price, and economic and market conditions. Our stock repurchases may be effected from time to time through open market purchases or pursuant to a Rule 10b5-1 plan.

We continue to generate positive cash flows from operating activities and believe that the best uses of our excess cash are to invest in the business; acquire or make investments in complementary companies, products, services and technologies; and make payments on our outstanding debt balances. Any future acquisitions may be funded by available cash and investments, cash generated from operations, debt financing, or the issuance of additional securities. Additionally, we have in the past, and expect in the future, to repurchase stock in order to both offset dilution and return capital, in excess of our requirements, to stockholders with the goal of increasing stockholder value.

Off-Balance-Sheet Arrangements

We do not have any special-purpose entities or off-balance-sheet financing.

Contractual Obligations

There were no material changes to our significant contractual obligations during the three months ended March 31, 2020 as compared to those previously reported within “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our 2019 Form 10-K.

Critical Accounting Policies and Estimates

During the first quarter of 2020, we 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, 2020. Given the adverse economic and market conditions caused by the COVID-19 pandemic, we considered a variety of qualitative factors to determine if an additional quantitative impairment test was required subsequent to our annual impairment test. Based on a variety of factors, including the excess of the fair values over the carrying amounts in the most recent impairment test, we determined it was not more likely than not that an impairment exists. No other events or circumstances changed during the three months ended March 31, 2020 that would indicate that the fair values of our 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 2019 Form 10-K.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Interest Rate Risk. Changes in the overall level of interest rates affect the interest income that is generated from our cash, cash equivalents and short-term investments and the interest expense that is generated from our outstanding borrowings. For the three months ended March 31, 2020, interest income was $2.8 million and interest expense was $3.7 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 with original maturities of three months to one year.

Foreign Currency Transaction Risk. As we operate in international regions, a portion of our revenue, expenses, cash, accounts receivable and payment obligations are denominated in foreign currencies. As a result, changes in currency exchange rates will affect our financial position, results of operations and cash flows. While all of the economic effects of COVID-19 are not known, it may expose us to additional foreign currency transaction risk. We are 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, 2020, the U.S. Dollar was approximately 1.8% stronger, when measured against our primary foreign currencies, than for the quarter ended March 31, 2019. The table below presents the impacts of currency fluctuations on revenue for the three months ended March 31, 2020. Amounts in brackets indicate a net adverse impact from currency fluctuations.

(in thousands)	**Three Months Ended March 31, 2020**
Euro	**$ (2,003)**
South Korean Won	**(910)**
Indian Rupee	**(228)**
British Pound	**(182)**
Japanese Yen	**532**
Taiwan Dollar	**168**
Other	**33**
Total	**$ (2,590)**

The net overall stronger U.S. Dollar also resulted in decreased operating income of $0.3 million for the quarter ended March 31, 2020 as compared to the quarter ended March 31, 2019.

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. Historical exchange rates for these currency pairs are reflected in the charts below:

	Period-End Exchange Rates			
As of	**GBP/USD**	**EUR/USD**	**USD/JPY**	**USD/KRW**
March 31, 2019	1.303	1.122	110.865	1,138.693
December 31, 2019	1.326	1.121	108.637	1,156.069
March 31, 2020	**1.242**	**1.103**	**107.562**	**1,219.363**

	Average Exchange Rates			
Three Months Ended	**GBP/USD**	**EUR/USD**	**USD/JPY**	**USD/KRW**
March 31, 2019	1.303	1.135	110.199	1,126.253
March 31, 2020	**1.280**	**1.102**	**108.989**	**1,193.270**

No other material change has occurred in our market risk subsequent to December 31, 2019.

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, we have evaluated, with the participation of management, including the Chief Executive Officer and the Chief Financial Officer, the effectiveness of the design and operation of our 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.

We believe, based on our knowledge, that the financial statements and other financial information included in this report fairly present, in all material respects, our financial condition, results of operations and cash flows as of and for the periods presented in this report. We are 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, we review the disclosure controls and procedures, and may periodically make changes to enhance their effectiveness and to ensure that our systems evolve with our business.

Changes in Internal Control. There were no changes in our internal control over financial reporting that occurred during the three months ended March 31, 2020 that materially affected, or were reasonably likely to materially affect, our internal control over financial reporting. Although the majority of our employee base worked remotely, the remote work arrangements did not adversely affect our ability to maintain financial operations, including our financial reporting systems, internal controls over financial reporting and disclosure controls and procedures.

PART II – OTHER INFORMATION

Item 1. Legal Proceedings

We are 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 our opinion, the resolution of pending matters is not expected to have a material adverse effect on our condensed 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 our results of operations, cash flows or financial position.

Item 1A. Risk Factors

We face a number of risks that could materially and adversely affect our business, financial position, results of operations and cash flows. A discussion of our risk factors can be found in "Item 1A. Risk Factors," in our 2019 Form 10-K. The risk factors set forth below include additional information relating to the COVID-19 pandemic, and update, and should be read together with, the risk factors disclosed in our 2019 Form 10-K. The impact of COVID-19 may also exacerbate other risks discussed in Item 1A. "Risk Factors" in our 2019 Form 10-K, any of which could have a material effect on us. This situation is changing rapidly and additional impacts may arise that we are not aware of currently.

The COVID-19 pandemic has had, and is expected to continue to have, an adverse impact on our business, employees, liquidity, financial condition, results of operations and cash flows.

In December 2019, there was an outbreak of a novel strain of coronavirus (COVID-19) in China that has since spread to nearly all regions of the world. On March 11, 2020, the World Health Organization declared COVID-19 a pandemic. To date, the COVID-19 outbreak and preventative measures taken to contain or mitigate the outbreak have caused, and are continuing to cause, business slowdowns or shutdowns in affected areas and significant disruption in the financial markets both globally and in the United States.

While the full impact of this outbreak is not yet known, we are closely monitoring the spread of COVID-19 and continually assessing its potential effects on our business. Our operations have begun to be adversely affected, and are expected to continue to be adversely affected, by a range of external factors related to the COVID-19 pandemic that are not within our control and cannot be reasonably predicted. In response to the pandemic and related mitigation measures, we began implementing changes in our business in an effort to protect our employees and customers, and to support appropriate health and safety protocols. For example, we closed our offices (including our corporate headquarters) and transitioned to a remote work environment in North America, Asia and Europe and implemented certain travel restrictions, both of which have disrupted how we operate our business. While our offices in China and South Korea have since re-opened, our remaining offices remain closed. In addition, we announced the cancellation of most in-person customer events scheduled for the second quarter of 2020. We have shifted a majority of our customer events to virtual-only experiences and we may deem it advisable to similarly alter, postpone or cancel entirely additional customer, employee or industry events in the future. While all of these measures have been necessary and appropriate, they have adversely impacted our business and financial performance. These impacts could continue for the foreseeable future. In addition, an extended period of remote work arrangements may expose us to increased risk of cyber incidents, may delay or disrupt recruitment efforts, delay or alter product roadmaps or research and development due to reduced or limited access to technologies, equipment, or services, and negatively impact the sales pipeline due to reduced, delayed, or altered sales and marketing interactions with customers and potential customers. Limitations on availability, ease of use or increased cost related to the use of our products in our customers' remote work environments could also result in a decline in demand for our products. Furthermore, if the COVID-19 pandemic has a substantial impact on our employees, partners or customers' attendance or productivity, our results of operations and overall financial performance may be harmed.

We are anticipating incremental adverse revenue and net income impacts from COVID-19 as a result of the economic slowdown and the decrease in customer spending. We anticipate that customers will delay transactions with us due to the uncertainty resulting from COVID-19 and that there will be a decrease in the number of multi-year leases and the number of large enterprise agreements. Furthermore, we continue to see a reduction in the number of perpetual licenses in favor of time-based licenses and expect that trend to continue. There may also be lower activity levels in the end markets we service or declining financial performance of our customers, which could result in lower rates of renewal, which have historically been stable and high, and cancellations, reductions, or delays for our products and services. Recessionary macroeconomic conditions could suppress customer demand broadly and could negatively affect stock prices, including the price of our common stock.

The situation surrounding COVID-19 remains fluid, and given its inherent uncertainty, we expect the pandemic will continue to have an adverse impact on our business in the near term. The duration and extent of the impact from the COVID-19 pandemic depends on future developments that cannot be accurately predicted at this time, such as the severity and transmission rate of the virus, the extent and effectiveness of containment actions and the impact of these and other factors on our employees, customers, partners and vendors. Should these conditions persist for a prolonged period, the COVID-19 pandemic, including any of the above factors and others that are currently unknown, could have a material adverse effect on our business, employees, liquidity, financial condition, results of operations and cash flows.

Our operating results and revenue could be adversely affected by customer and partner payment delays or bankruptcies, and defaults or modifications of licenses.

We typically enter into non-cancelable arrangements with our customers and partners and have a high rate of recurring revenue. If our customers or partners experience adversity in their business, they may delay or default on their payment obligations to us, request to modify contract terms, or modify or cancel plans to license our products. For example, if our customers and partners are not successful in generating sufficient cash or are precluded from securing financing, they may not be able to pay, or may delay payment of, accounts receivable that are owed to us. If customers and partners delay the payment or fail to pay us under the terms of our agreements, our operating expenses and cash flows may be adversely affected due to our inability to collect amounts due and the cost of enforcing the terms of our contracts, including litigation. Furthermore, some of our customers and partners may seek bankruptcy protection or other similar relief and fail to pay amounts due to us, or pay those amounts more slowly, either of which could adversely affect our operating results, financial position and cash flow. The recent and ongoing global COVID-19 pandemic may also increase the likelihood of these risks.

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, 2020	—	$ —	—	3,495,995
February 1 - February 29, 2020	—	$ —	—	3,495,995
March 1 - March 31, 2020	689,700	$ 233.48	689,700	2,806,295
Total	689,700	$ 233.48	689,700	2,806,295

[1] We initially announced our 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 our 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.

Item 6. Exhibits

Exhibit No.	Exhibit
10.24	2020 Form of Award Notice (Total Shareholder Return) under the Fifth Amended and Restated ANSYS, Inc. 1996 Stock Option and Grant Plan; filed herewith.*
15	Independent Registered Public Accountant's Letter Regarding Unaudited Financial Information.
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	Inline 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	Inline XBRL Taxonomy Extension Schema
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

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

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 6, 2020	By:	/s/ *Ajei S. Gopal*
			Ajei S. Gopal
			President and Chief Executive Officer
			(Principal Executive Officer)
Date:	May 6, 2020	By:	/s/ *Maria T. Shields*
			Maria T. Shields
			Chief Financial Officer
			(Principal Financial Officer and Principal Accounting Officer)

AWARD NOTICE
UNDER THE ANSYS, INC.
FIFTH AMENDED AND RESTATED LONG-TERM INCENTIVE PLAN

Name of Participant:
Target Award:
Grant Date of Target Award:
Performance Measurement Period: January 1, 2020 to December 31, 2022

Pursuant to the ANSYS, Inc. Fifth Amended and Restated Long-Term Incentive Plan (the "Plan"), ANSYS, Inc. (the "Company") has selected the Participant named above to be awarded the Target Award specified above, subject to the terms and conditions of the Plan and this Award Notice. Capitalized terms used but not defined in this Award Notice shall have the meaning given such terms in the Plan. A copy of the Plan is attached hereto as Exhibit A.

1. Acceptance of Award. The total number of Restricted Stock Units that may be credited to the Participant (if any) shall be determined by the Company's performance during the Performance Measurement Period specified above and as set forth in Section 4(b) of the Plan. The Measurement Period Target for the Performance Measurement Period shall be equal to the Target Award. The actual number of Restricted Stock Units that may be credited could be up to 200% of such Target Award and could also be lower than the Target Award and could be zero.

2. Termination of Employment. Subject to Section 3 below, if at any time prior to the conclusion of the Performance Measurement Period, the Participant's employment with the Company terminates for any reason, the Participant shall automatically forfeit the right to receive any portion of the Award.

Notwithstanding the foregoing, if the Participant's employment with the Company is terminated on account of the Participant's death or Disability (as defined below), any Restricted Stock Units that are not vested will remain eligible to vest in accordance with their terms based upon achievement of the applicable performance condition and subject to the Company's certification of the performance metric attainment but on a prorated basis based upon the number of months that the Participant provided services as a Participant to the Company prior to the Participant's death or Disability during the applicable performance period. For purposes hereof, "Disability" shall mean the Participant's termination of employment with the Company: (i) after becoming eligible to receive benefits under the Company's then current long-term disability plan that is applicable to the Participant; (ii) where the Participant is not eligible under a Company long-term disability plan, after being officially declared permanently disabled under the mandatorily applicable health or welfare regulations of the applicable jurisdiction; or, (iii) in the absence of such a determination under said regulations, after being officially declared permanently disabled by a physician appointed by the Company in its sole discretion.

3. Change in Control. Upon a Change in Control, the Award shall be treated as specified in Section 6 of the Plan.

4. Issuance of Shares.

(a) Each Restricted Stock Unit relates to one share of the Company's Stock. Shares of Stock (if any) shall be issued and delivered to the Participant in accordance with the terms of this Award Notice and of the Plan upon compliance to the satisfaction of the Committee with all requirements under applicable laws or regulations in connection with such issuance and with the requirements hereof and of the Plan. The determination of the Committee as to such compliance shall be final and binding on the Participant.

(b) Until such time as shares of Stock are issued to the Participant pursuant to the terms hereof and of the Plan, the Participant shall have no rights as a stockholder with respect to any shares of Stock underlying the Restricted Stock Units, including but not limited to any voting rights.

5. Non-Competition and Non-Solicitation. As additional consideration for the grant of this Award to the Participant, the Participant hereby agrees that he or she shall not, at any time during his or her employment with the Company, and for a period of one year immediately after the termination of such employment (no matter if terminated by the Participant or the Company and no matter what the reason for that termination),**]** engage for any reason, directly or indirectly, whether as owner, part-owner, shareholder, member, partner, director, officer, trustee, employee, agent or consultant, or in any other capacity, on behalf of himself or herself or any firm, corporation or other business organization other than the Company and its subsidiaries, in any one or more of the following activities:

(a) the development, marketing, solicitation, or selling of any product or service that is competitive with the products or services of the Company, or products or services that the Company has under development or that are subject to active planning at any time during Participant's employment;

(b) the use of any of the Company's confidential or proprietary information, copyrights, patents or trade secrets which was acquired by the Participant as an employee of the Company and its subsidiaries; or

(c) any activity for the purpose of inducing, encouraging, or arranging for the employment or engagement by anyone other than the Company and its subsidiaries of any employee, officer, director, agent, consultant, or sales representative of the Company and its subsidiaries or attempt to engage any of them in a manner which would deprive the Company and its subsidiaries of their services or place them in a conflict of interest with the Company and its subsidiaries.

The Participant acknowledges and agrees that the activities set forth in (a)-(c) (above) are adverse to the Company's interests, and that it would be inequitable for Participant to benefit from this Award should Participant engage in any such activities during or within one year after termination of his or her employment with the Company. The Participant may be released from his or her obligations as stated above only if the Committee (or its duly appointed agent) determines in its sole discretion that such action is in the best interests of the Company and its subsidiaries. The one year post-employment non-compete provision set forth in this Agreement does not apply to residents of California.

6. Claw-Back of Award Proceeds. The Committee shall have the authority to unilaterally terminate this Award and/or cause some or all of the proceeds relating to this Award that have been received by the Participant to become immediately due and payable by the Participant to the Company upon the occurrence of any of the following events:

(a) the Participant's violation of Section 5 of this Agreement (entitled Non-Competition and Non-Solicitation);

(b) the material restatement of the Company's financial statements due to misconduct by the Participant;

(c) the material restatement of the Company's financial statements that results in the Participant receiving more compensation under the Award than the Participant would have received absent the incorrect financial statements.

The determination of whether any of the foregoing events has occurred and the extent of the application of this Section to the Participant and this Award shall be determined by the Committee in its sole discretion.

7. Incorporation of Plan. Notwithstanding anything herein to the contrary, this Award Notice shall be subject to and governed by all the terms and conditions of the Plan, including the powers of the Committee set forth in Section 3 of the Plan.

8. Transferability. This Award is personal to the Participant, is non-assignable and is not transferable by Participant in any manner, by operation of law or otherwise, other than by will or the laws of descent and distribution. The Stock to be issued upon the settlement of this Award to the Participant shall be issued, during the Participant's lifetime, only to the Participant, and thereafter, only to the Participant's beneficiary. The Participant may designate a beneficiary by providing written notice of the name of such beneficiary to the Company, and may revoke or change such designation at any time by filing written notice of revocation or change with the Company.

9. No Contract for Continuing Services. Neither the Plan nor this Award Notice shall be construed as creating any contract for continued services between the Company or any of its subsidiaries and the Participant and nothing herein contained shall give the Participant the right to be retained as an employee or consultant of the Company or any of its subsidiaries.

10. Integration. This Agreement constitutes the entire agreement between the parties with respect to this Award and supersedes all prior agreements and discussions between the parties concerning such subject matter.

11. Mandatory Arbitration. The Participant and the Company agree that any dispute or claim arising out of or in any way related to (i) the Participant's employment with the Company, and/or (ii) this Agreement or any breach hereof, this Award, the Plan and/or any actions taken under the Plan, to the fullest extent permitted by law, shall be submitted to and resolved by confidential, binding arbitration by a single, neutral arbitrator. The arbitration shall be held in the county where the Company has an office at which the Participant provides services (for remote Participants, the nearest county where the Company has an office) or any other locale to which the parties jointly agree. The arbitration shall be administered by and under the auspices of JAMS in accordance with the then-current Employment Arbitration Rules & Procedures of JAMS (which are available at www.jamsadr.com/rules-employment). Arbitrator selection and discovery shall be conducted pursuant to the JAMS Rules. The arbitrator shall issue a written award setting forth the essential findings and conclusions on which the award is based, which shall be final and binding and judgment thereon may be entered in any court of competent jurisdiction. Other than an amount equal to the fee for filing such an action in the local state court, which amount the Participant shall pay toward the costs of the arbitration, the Company shall bear the

administrative, filing and forum costs of the arbitration, including the JAMS administrative fees and the arbitrator's fees. Except as otherwise provided by law or in the arbitrator's ruling, each party shall otherwise bear its own respective attorneys' fees and costs of the arbitration. The Participant and the Company agree that each may bring claims against the other only in an individual capacity, and not as a plaintiff, claimant or class member in any purported class action, collective action or other representative proceeding, or otherwise seeking to represent the interests of any other person. This agreement to arbitrate shall survive any separation of the Participant's employment. Notwithstanding the foregoing, nothing herein or otherwise shall preclude the Company from pursuing a court action for the purpose of obtaining a temporary restraining order or other injunctive relief to enforce any restrictive covenants the Participant has with or for the benefit of the Company.

12. General Release of Claims by the Participant.

(a) As a condition of and in consideration for the promises made by the Company herein, including without limitation to provide the Award hereunder, the Participant hereby knowingly and voluntarily releases and discharges to the fullest extent permitted by law the Company and its past, present and future parents, subsidiaries, affiliates, and related entities, any and all of its or their past, present or future directors, shareholders, officers, executives, employees, and/or agents, and/or its and their respective predecessors, successors, and assigns (individually and collectively, the "Company Releasees"), from and with respect to any and all claims and causes of action whatsoever, in law or in equity, known or unknown, which the Participant ever had, has or may have against the Company and/or any or all of the other Company Releasees for, upon, or by reason of any matter whatsoever up to the date on which the Participant accepts this Agreement (individually and collectively, "Claims"). The parties intend the foregoing to be a general release of any and all Claims to the fullest extent permissible by law. Notwithstanding the foregoing, nothing herein is a release by the Participant of (A) any rights or Claims with respect to accrued and vested benefits and/or previously awarded equity interests, subject in each instance to the terms and conditions of any applicable plan, grant, and/or agreement pertaining to such benefits, awards or interests and applicable law, (B) any rights or Claims arising under or to enforce this Agreement, or (C) any rights or Claims that, under applicable law, cannot lawfully be released by private agreement or otherwise.

(b) **FOR CALIFORNIA RESIDENTS ONLY:** In granting the foregoing release, the Participant acknowledges that he/she has been advised to consult with legal counsel and is familiar with the provision of California Civil Code Section 1542, a statute that otherwise prohibits the release of unknown claims, which provides as follows:

> "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR."

Being aware of said Code section, the Participant hereby expressly waives any rights the Participant may have thereunder, as well as under any other state or federal statutes or common law principles of similar effect.

(c) Nothing contained in this Agreement (including the foregoing general release) limits the Participant's ability to file a charge or complaint with any federal, state or local governmental agency, commission or regulatory entity (a "Government Agency"). If the Participant files any charge or complaint with any Government Agency, if any Government Agency pursues any charge or claim on the Participant's behalf, or if any other third party pursues any claim or charge on the Participant's behalf, the Participant waives any right to monetary or other individualized relief (either individually, or as part of any collective or class action); provided, however, that nothing in this Agreement limits any right the Participant may have to receive a whistleblower award or bounty for information provided to the Securities and Exchange Commission. The Participant represents that he/she is not aware of any unlawful conduct or violations of any federal, state or local law, rule or regulation by the Company and/or any other Company Releasees or any basis to bring a charge or complaint to any Government Agency.

13. Notices. Notices hereunder shall be mailed or delivered to the Company at its principal place of business and shall be mailed or delivered to the Participant at the address on file with the Company or, in either case, at such other address as one party may subsequently furnish to the other party in writing.

14. Severability. If any provision(s) hereof shall be determined to be illegal or unenforceable, such determination shall in no manner affect the legality or enforceability of any other provision hereof.

15. Counterparts. For the convenience of the parties and to facilitate execution, this document may be executed in two or more counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same document.

16. Time to Review and Accept; Right to Revoke; Effective Date. The Participant is advised by the Company to consult with an attorney in connection with this Agreement. The Participant understands that as part of his/her agreement to release Claims against the Company and the other Company Releasees, the Participant is releasing Claims for age discrimination under the federal

Age Discrimination in Employment Act (the "ADEA"). **ACCORDINGLY, THE PARTICIPANT HAS THE RIGHT, AND ACKNOWLEDGES THAT HE/SHE HAS BEEN GIVEN THE OPPORTUNITY, TO REVIEW AND CONSIDER THIS AGREEMENT FOR A PERIOD OF TWENTY-ONE (21) DAYS FROM THE PARTICIPANT'S RECEIPT OF THIS AGREEMENT BEFORE SIGNING IT (THE "REVIEW PERIOD").** To accept this Agreement and the Award granted hereunder, the Participant must ccept the agreement online via his/her E*TRADE employee stock plan account at any time before the end of the Review Period. If the Participant accepts this Agreement before the end of the Review Period, the Participant acknowledges that such decision was voluntary and that he/she had the opportunity to consider this Agreement for the full Review Period. For the period of seven (7) days from the date when the Participant accepts this Agreement, the Participant has the right to revoke this Agreement by written notice via email to human-resources@ansys.com and addressing stock administration, provided such notice is delivered so that it is received at or before the expiration of the 7-day revocation period. This Agreement shall not become effective or enforceable during the revocation period. If timely accepted and not revoked by the Participant prior to the end of the revocation period, this Agreement shall become effective on the first business day following the expiration of the revocation period (the "Effective Date"). If not timely accepted or if (after timely acceptance) the Participant revokes prior to the expiration of the revocation period, this Agreement shall not become effective and the Participant will not be entitled to or receive the Award granted hereunder and/or such Award shall be rescinded.

17. Knowing and Voluntary Agreement. By accepting this Agreement, the Participant acknowledges and represents that the Participant (a) has carefully read this Agreement in its entirety; (b) is hereby advised by the Company in writing to consult with an attorney of the Participant's choice before accepting this Agreement; (c) has been afforded and has had a full and reasonable opportunity and period of time of at least 21 days to consider the terms and conditions of this Agreement; (d) fully understands the meaning and significance, and consequences, of all of the terms and conditions of this Agreement (including without limitation the general release given by the Participant in this Agreement); and (e) is accepting this Agreement knowingly, voluntarily and of the Participant's own free will and with the intent to be fully bound hereby.

ANSYS, Inc.

By: ________

Name: Ajei S. Gopal

Title: President and CEO

The foregoing Award is hereby accepted and the terms and conditions of this Agreement are hereby agreed to by the Participant. Electronic acceptance of this Award pursuant to the Company's instructions to the Participant (including through an online acceptance process) is acceptable and the Participant agrees that documentation from E*TRADE showing online acceptance is valid evidence of acceptance.

Dated: _______ __________

Participant's signature

Participant's name and address:

Exhibit A

ANSYS, INC.
FIFTH AMENDED AND RESTATED LONG-TERM INCENTIVE PLAN

1. Purpose

This Fifth Amended and Restated Long-Term Incentive Plan (the "Plan") is intended to provide an incentive for superior work and to motivate executives and employees of ANSYS, Inc. (the "Company") toward even higher achievement and business results, to tie their goals and interests to those of the Company and its stockholders and to enable the Company to attract and retain highly qualified executives and employees. The Plan is for the benefit of Participants (as defined below). Awards made under this Plan constitute Restricted Stock Unit Awards under Section 11 of the Company's Fifth Amended and Restated 1996 Stock Option and Grant Plan (the "1996 Option Plan") and shall be granted under, and subject to, the terms of the 1996 Option Plan.

2. Definitions

For purposes of this Plan:

(a) "Award" means a grant to a Participant hereunder. From and after a Change in Control, any references to an Award shall mean the fixed number of Restricted Stock Units eligible to be earned by a Participant, as determined by the Committee pursuant to Section 6 hereof.

(b) "Award Notice" means a notice or agreement provided to a Participant that sets forth the terms, conditions and limitations of the Participant's participation in this Plan, including, without limitation, the Participant's Target Award.

(c) "Board" means the Board of Directors of the Company.

(d) "Cause" means, and shall be limited to a determination by the Company that the Participant's employment shall be terminated as a result of any one or more of the following events:

(i) any material breach by the Participant of any agreement between the Participant and the Company; or

(ii) the conviction of, indictment for or plea of nolo contendere by the Participant to a felony or a crime involving moral turpitude; or

(iii) any material misconduct or willful and deliberate non-performance (other than by reason of disability) by the Participant of the Participant's duties to the Company; or

(iv) willful failure to cooperate with a bona fide internal investigation or an investigation by regulatory or law enforcement authorities, after being instructed by the Company to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation or the willful inducement of others to fail to cooperate or to produce documents or other materials in connection with such investigation.

(e) "Change in Control" means any of the following:

(i) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing 50 percent or more of the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Board ("Voting Securities") (in such case other than as a result of an acquisition of securities directly from the Company); or

(ii) the consummation of (A) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than 50 percent of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), or (B) any sale or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company.

Notwithstanding the foregoing, a "Change in Control" shall not be deemed to have occurred for purposes of the foregoing clause (i) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Voting Securities outstanding, increases the proportionate number of Voting Securities beneficially owned by any person to 50 percent or more of the combined voting power of all of the then outstanding Voting Securities; provided, however, that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of Voting Securities (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns 50 percent or more of the combined voting power of all of the then outstanding Voting Securities, then a "Change in Control" shall be deemed to have occurred for purposes of the foregoing clause (i).

(f) "Change in Control Date" means with respect to each Change in Control Performance Measurement Period, the last day of the month immediately preceding the effective date of the Change in Control.

(g) "Change in Control Performance Measurement Period" means the Performance Measurement Period that is shortened by the Committee such that such period shall be deemed to have concluded as of the Change in Control Date.

(h) "Change in Control Terminating Event" means during the 18-month period following the occurrence of a Change in Control, any of the following events: (i) termination by the Company of the Participant's employment for any reason other than for Cause, death or disability; or (ii) the termination by the Participant of his or her employment with the Company for Good Reason. Notwithstanding the foregoing, a Change in Control Terminating Event shall not be deemed to have occurred herein solely as a result of the Participant being an employee of any direct or indirect successor to the business or assets of the Company.

(i) "Closing Index Value" means the Performance Measurement Index Value as of the last day of the Performance Measurement Period.

(j) "Closing Stock Price" means the Stock Price as of the last day of the Performance Measurement Period.

(k) "Code" means Internal Revenue Code of 1986, as amended.

(l) "Committee" means the Compensation Committee of the Board.

(m) "Effective Date" means as of January 1, 2019.

(n) "Good Reason" means that the Participant has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events:

(i) a material diminution in the Participant's responsibilities, authority or duties; or

(ii) a material reduction in the Participant's Base Salary and Target Bonus except for across-the-board salary reductions similarly affecting all or substantially all management employees; or

(iii) a material change in the geographic location at which the Participant is principally employed.

For purposes of this Section 2(n)(i), a change in the reporting relationship, or a change in a title will not, by itself, be sufficient to constitute a material diminution of responsibilities, authority or duty.

(o) "Good Reason Process" means:

(i) the Participant reasonably determines in good faith that a "Good Reason" condition has occurred;

(ii) the Participant notifies the Company in writing of the occurrence of the Good Reason condition within 60 days of the first occurrence of such condition;

(iii) the Participant cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period"), to remedy the condition;

(iv) notwithstanding such efforts, the Good Reason condition continues to exist following the Cure Period; and

(v) the Participant terminates his or her employment within 30 days after the end of the Cure Period.

If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(p) "Initial Index Value" means, the Performance Measurement Index Value as of January 1 of the first calendar year in any Performance Measurement Period.

(q) "Initial Stock Price" means the Stock Price as of January 1 of the first calendar year in any Performance Measurement

Period.

(r) "Participant" means an executive or employee of the Company selected by the Committee to participate in the Plan.

(s) "Performance Measurement Index" means the NASDAQ Composite Index (^IXIC), or, in the event such index is discontinued or its methodology significantly changed, a comparable index selected by the Committee in good faith.

(t) "Performance Measurement Index Value" means, with respect to any date, the average value of the Performance Measurement Index for the ten consecutive trading days immediately preceding such date.

(u) "Performance Measurement Period" means a three-year period commencing on January 1 and ending on the third December 31 thereafter. There shall be overlapping Performance Measurement Periods. The first Performance Measurement Period under the Plan will commence on January 1, 2019 and subsequent Performance Measurement Periods will commence on each January 1 thereafter while the Plan is effective.

(v) "Performance Multiplier" means the percentage between 0% and 200% by which the applicable portion of the Target Award is multiplied to determine the number of credited Restricted Stock Units for the Performance Measurement Period.

(w) "Restricted Stock Units" means the stock units of the Company to be settled in shares of Stock.

(x) "Stock" means the Company's common stock, par value $0.01 per share.

(y) "Stock Price" means, as of a particular date, the average closing price of one share of Stock for the ten consecutive trading days ending on, and including, such date; provided however, that in the event of a Change in Control of the Company, the Stock Price shall equal the fair market value, as determined by the Committee in its discretion, of the total consideration paid or payable in the transaction resulting in the Change in Control for one share of Stock.

(z) "Target Award" means the target number of Restricted Stock Units that comprise a Participant's Award for each Performance Measurement Period, as set forth in the Participant's Award Notice.

(aa) "Total Shareholder Return" means, with respect to a Performance Measurement Period, the total percentage return per share, achieved by the Stock assuming contemporaneous reinvestment in the Stock of all dividends and other distributions (excluding dividends and distributions paid in the form of additional shares of Stock) at the closing price of one share of Stock on the date such dividend or other distribution was paid, based on the Initial Stock Price, and the Closing Stock Price for the last day of the applicable Performance Measurement Period.

3. Administration

(a) The Plan shall be administered by the Committee. The Committee shall have the discretionary authority to make all determinations (including, without limitation, the interpretation and construction of the Plan and the determination of relevant facts) regarding the entitlement to any Award hereunder and the amount of any Award to be paid under the Plan (including the number of shares of Stock issuable to any Participant), provided such determinations are made in good faith and are consistent with the purpose and intent of the Plan. In particular, but without limitation and subject to the foregoing, the Committee shall have the authority:

(i) to select Participants under the Plan;

(ii) to determine the number and length of each Performance Measurement Period;

(iii) to determine the Target Award and any formula or criteria for the determination of the Target Award for each Participant;

(iv) to determine the terms and conditions, not inconsistent with the terms of this Plan, which shall govern Award Notices and all other written instruments evidencing an Award hereunder, including the waiver or modification of any such conditions;

(v) to adopt, alter and repeal such administrative rules, guidelines and practices governing the Plan as it shall from time to time deem advisable; and

(vi) to interpret the terms and provisions of the Plan and any Award granted under the Plan (and any Award Notices or other agreements relating thereto) and to otherwise supervise the administration of the Plan.

(b) Notwithstanding anything herein to the contrary, the Committee may, in its discretion, make appropriate adjustments to any Award, any Target Award, any Initial Stock Price, any Closing Stock Price or the Total Shareholder Return for any period in connection with or as a result of any of the following events which occur or have occurred after the Effective Date: reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split or other similar change in the Company's capital stock, if the outstanding shares of Stock are increased or decreased or are exchanged for a different number or kind of shares or other securities of the Company, or additional shares or new or different shares or other securities of the Company or other non-cash assets are distributed with respect to such shares of Stock or other securities.

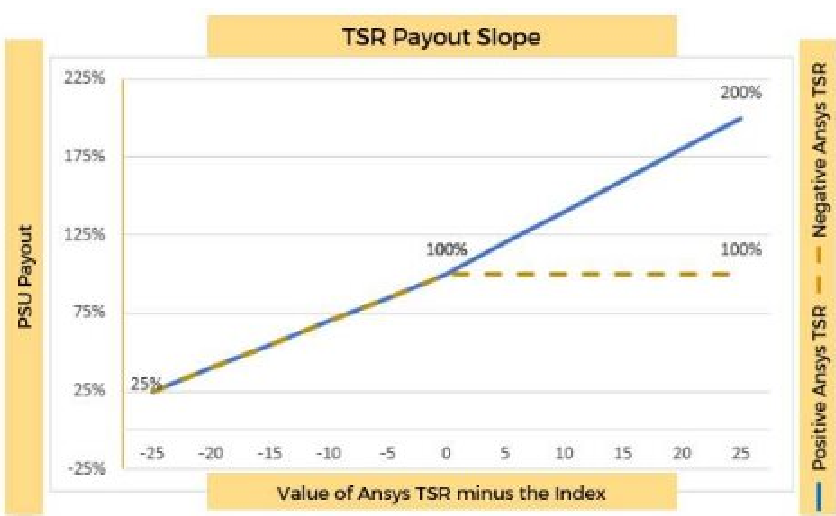
(c) Subject to the terms hereof, all decisions made by the Committee pursuant to the Plan shall be final, conclusive and binding on all persons, including the Company and the Participants. No member of the Board or the Committee, nor any officer or employee of the Company acting on behalf of the Board or the Committee shall be personally liable for any action, determination or interpretation taken or made in good faith with respect to the Plan, and all members of the Board or Committee and each and any officer or employee of the Company acting on their behalf shall, to the extent permitted by law, be fully indemnified and protected by the Company in respect of any such action, determination or interpretation.

4. Determination and Payment of Awards

(a) Measurement Period Target. Each Participant's Award Notice shall specify such Participant's Target Award, and the portion of which shall be eligible to be credited for the Performance Measurement Period (the "Measurement Period Target"). The Target Award shall be expressed as a number of Restricted Stock Units. The percentage of the Measurement Period Target that is eligible to be credited shall be determined by reference to the Company's performance for the Performance Measurement Period as measured by the Total Shareholder Return relative to the percentage appreciation of the Performance Measurement Index for such calendar year or years. The percentage appreciation of the Performance Measurement Index shall be established by comparing the Initial Index Value to the Closing Index Value.

(b) Performance Multiplier: If Total Shareholder Return for a Performance Measurement Period is less than the Performance Measurement Index, the Performance Multiplier shall be 100% minus A, where A is (the amount by which the Performance Measurement Index exceeds Total Shareholder Return) times three; provided however that the Performance Multiplier shall be zero if A results in a number greater than 75. If Total Shareholder Return for a Performance Measurement Period, is equal to the Performance Measurement Index, the Performance Multiplier shall be 100%. If Total Shareholder Return for a Performance Measurement Period is greater than the Performance Measurement Index, the Performance Multiplier is 100% plus B, where B is (the amount by which Total Shareholder Return exceeds the Performance Measurement Index) times four.

In no event will any portion of a Participant's Target Award be credited for a Performance Measurement Period in which the Performance Multiplier calculates to a number of less than 25% (i.e., in such event the Performance Multiplier shall be 0% for such Performance Measurement Period).



Notwithstanding the foregoing, in no event shall the Performance Multiplier be less than 0% or exceed 200%, regardless of a Total Shareholder Return that would result in a Performance Multiplier of less than 0% or in excess of 200%.

Notwithstanding the foregoing, if the Total Shareholder Return in a Performance Measurement Period is a negative percentage, then a maximum of 100% of the Measurement Period Target may be credited for such period, even if the Total Shareholder Return relative to the median percentage appreciation (depreciation) of the Performance Measurement Index would result in a greater Performance Multiplier.

(c) Committee Determination. The Committee, at its first meeting following the conclusion of a Performance Measurement Period, shall determine the actual number of Restricted Stock Units that will be deemed to have been credited as of the final day of such Performance Measurement Period. The number of Restricted Stock Units credited for such period shall equal the Measurement Period Target multiplied by the Performance Multiplier, subject to the terms and conditions hereof.

(d) Vesting and Settlement. Subject to Section 5, as soon as practicable (but in no event later than 74 days) following the conclusion of the Performance Measurement Period, the Restricted Stock Units that were credited, if any, for the Performance Measurement Period will be vested and settled in an equal number of shares of Stock.

5. Termination of Employment. Unless otherwise provided in any Award Notice or as provided in Section 6 below, if at any time prior to the conclusion of a Performance Measurement Period, a Participant's employment with the Company terminates for any reason, such Participant shall automatically forfeit the right to receive any Award credited as of the date of termination of employment.

6. Change in Control. Unless otherwise provided in any Award Notice, upon a Change in Control of the Company, the following shall occur:

(a) With respect to each Change In Control Performance Measurement Period, the Committee, in accordance with Section 4, shall determine the actual number of Restricted Stock Units that are eligible to be credited based on the Total Shareholder Return for the Change in Control Performance Measurement Period relative to the median percentage appreciation of the Performance Measurement Index for such Change in Control Performance Measurement Period and such Award shall not be deemed fully vested until the conclusion of the Performance Measurement Period, subject to the continued employment of the Participant through such date. For example, if a Change in Control occurs during the eleventh month of the Performance Measurement Period, the Committee shall determine the number of Restricted Stock Units that are eligible to be credited with respect to the applicable Change in Control Performance Measurement Period based on performance for such period, but the Award shall not be deemed vested and will not be settled until the end of the full 36 month Performance Measurement Period. For the avoidance of doubt, since the Plan contemplates overlapping Performance Measurement Periods, there may be up to three different Change In Control Performance Measurement Periods.

(b) In the event that subsequent to a Change in Control, a Participant's employment with the Company terminates for any reason other than a Change in Control Terminating Event, such Participant shall automatically forfeit the right to receive all outstanding Awards that have been credited as of the date of termination of employment.

(c) In the event a Change in Control Terminating Event occurs with respect to a Participant, all outstanding Awards held by such Participant shall immediately vest and become payable.

(d) If as a result of a Change in Control, no Stock remains outstanding and the surviving corporation (or its ultimate parent) does not agree to convert the Awards into a number of restricted stock units of equivalent value of the surviving corporation (or its ultimate parent), then the Awards shall be converted to a dollar value based on the Stock Price.

7. Miscellaneous

(a) Amendment and Termination. The Company reserves the right to amend or terminate the Plan at any time in its discretion without the consent of any Participants, but no such amendment shall adversely affect the rights of the Participants with regard to outstanding Awards. In the event the Plan is terminated, the Company shall determine the Awards payable to Participants based on the Total Shareholder Return relative to the Performance Measurement Index for each Performance Measurement Period ending on the date of Plan termination. The Awards for each Performance Measurement Period shall be further prorated to reflect the shortened Performance Measurement Period.

(b) No Contract for Continuing Services. This Plan shall not be construed as creating any contract for continued services between the Company or any of its subsidiaries and any Participant and nothing herein contained shall give any Participant the right to be retained as an employee or consultant of the Company or any of its subsidiaries.

(c) No Transfers. A Participant's rights in an interest under the Plan may not be assigned or transferred.

(d) Unfunded Plan. The Plan shall be unfunded and shall not create (or be construed to create) a trust or separate fund.

Likewise, the Plan shall not establish any fiduciary relationship between the Company or any of subsidiaries or affiliates and any Participant. To the extent that any Participant holds any rights by virtue of an Award under the Plan, such right shall be no greater than the right of an unsecured general creditor of the Company or any of its subsidiaries.

(e) Governing Law. The Plan and each Award Notice awarded under the Plan shall be construed in accordance with and governed the laws of the State of Delaware, without regard to principles of conflict of laws of such state.

(f) Tax Withholding. Any issuance of shares of Stock to a Participant shall be subject to tax withholding. The minimum tax withholding obligation shall be satisfied through a net issuance of shares. The Company shall withhold from shares of Stock to be issued to the Participant a number of shares of Stock with an aggregate fair market value that would satisfy the minimum withholding amount due.

(g) Construction. Wherever appropriate, the use of the masculine gender shall be extended to include the feminine and/or neuter or vice versa; and the singular form of words shall be extended to include the plural; and the plural shall be restricted to mean the singular.

(h) Headings. The Section headings and Section numbers are included solely for ease of reference. If there is any conflict between such headings or numbers and the text of this Plan, the text shall control.

(i) Effect on Other Plans. Nothing in this Plan shall be construed to limit the rights of Participants under the Company's or its subsidiaries' benefit plans, programs or policies.

(j) Effective Date. The Plan shall be effective as of the Effective Date.

8. Section 409A.

(a) All payments and benefits described in this Plan are intended to constitute a short term deferral for purposes of Section 409A of the Internal Revenue Code of 1986, as amended. To the extent that any payment or benefit described in this Plan constitutes "non-qualified deferred compensation" under Section 409A of the Code, and to the extent that such payment or benefit is payable upon the Participant's termination of employment, then such payments or benefits shall be payable only upon the Participant's "separation from service." The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A-1(h).

(b) The parties intend that this Plan will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Plan is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. The parties agree that this Plan may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(c) The Company makes no representation or warranty and shall have no liability to the Participant or any other person if any provisions of this Plan are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

INTERNATIONAL APPENDIX

Additional Terms and Conditions

Terms and Conditions

This International Appendix includes additional terms and conditions that govern the award granted to you under the Plan for your country. Certain capitalized terms used but not defined in this International Appendix have the meanings set forth in the Plan and the Agreement that relate to your award. By acceptance of the award you agree to be bound by the terms and conditions contained in the paragraphs below in addition to the terms of the Plan and the Agreement and the terms of any other document that may apply to you and your award.

Notifications

This International Appendix also includes information regarding issues of which you should be aware with respect to participation in the Plan. The information is based on the securities, exchange control, and other laws in effect in the respective countries as of the date set forth above. Such laws are often complex and change frequently. As a result, it is strongly recommended that you not rely on the information in this International Appendix as the only source of information relating to the consequences of your participation in the Plan because the information may be out of date at the time you vest in your award or sell shares acquired under the Plan.

The information contained herein is general in nature and may not apply to your particular situation, and the Company is not in a position to assure you of a particular result. In addition, please note that the requirements may differ for residents and non-residents. Accordingly, you are advised to seek appropriate professional advice as to how the relevant laws in your country may apply to your situation.

Finally, if you are a citizen or resident of a country other than the one in which you are currently working, transferred employment to another country after the award was granted to you, or are considered a resident of another country for local law purposes, the information contained herein may not apply.

Provisions Applicable to all International Awards

Data Privacy. The Participant explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of the Participant's personal data by and among, as applicable, the Company, its subsidiaries and affiliates, for the exclusive purpose of implementing, administering and managing the Participant's participation in the Plan. The Participant hereby understands that the Company, its subsidiaries and affiliates hold (but only process or transfer to the extent required or permitted by local law) certain personal information about the Participant, including, but not limited to, the Participant's name, home address and telephone number, date of birth, social insurance number or other identification number, salary, nationality, job title, any Shares or directorships held in the Company, details of all Restricted Stock Units or any other entitlement to Shares awarded, canceled, exercised, vested, unvested or outstanding in the Participant's favor, for the purpose of implementing, administering and managing the Plan ("Data"). The Participant hereby understands that Data may be transferred to any third parties assisting in the implementation, administration and management of the Plan, that these recipients may be located in the Participant's country or elsewhere (including countries outside of the European Economic Area such as the United States of America), and that the recipient's country may have different data privacy laws and protections than the Participant's country. The Participant hereby understands that the Participant may request a list with the names and addresses of any potential recipients of the Data by contacting the Participant's local human resources representative. The Participant authorizes the recipients to receive, possess, use, retain and transfer the Data, in electronic or other form, for the purposes of implementing, administering and managing the Participant's participation in the Plan, including any requisite transfer of such Data as may be required to a broker or other third party with whom the Participant may elect to deposit any Shares acquired upon exercise. The Participant hereby understands that Data will be held only as long as is necessary to implement, administer and manage the Participant's participation in the Plan and in accordance with local law. The Participant hereby understands that the Participant may, at any time, view Data, request additional information about the storage and processing of Data, require any necessary amendments to Data or refuse or withdraw the consents herein, in any case without cost, by contacting in writing the Participant's local human resources representative. The Participant hereby understands, however, that refusing or withdrawing the Participant's consent may affect the Participant's ability to participate in the Plan. For more information on the consequences of the Participant's refusal to consent or withdrawal of consent, the Participant hereby understands that the Participant may contact the Participant's local human resources representative.

Nature of Grant. In accepting the grant of Restricted Stock Units, the Participant acknowledges that:

(a) the Plan is established voluntarily by the Company, is discretionary in nature and may be modified, amended, suspended or terminated by the Company at any time, unless otherwise provided in the Plan and this Agreement;

(b) the grant of Restricted Stock Units is voluntary and occasional and does not create any contractual or other right to receive future grants of Restricted Stock Units, or benefits in lieu of Restricted Stock Units, even if Restricted Stock Units have been granted repeatedly in the past;

(c) all decisions with respect to future Restricted Stock Units, if any, will be at the sole discretion of the Company;

(d) the Participant's participation in the Plan will not create a right to further employment with the Participant's employer (the "Employer") and shall not interfere with the ability of the Employer to terminate the Participant's employment relationship;

(e) the Participant is voluntarily participating in the Plan;

(f) the Restricted Stock Units are an extraordinary item that does not constitute compensation of any kind for services of any kind rendered to the Company or the Employer, and which is outside the scope of the Participant's employment contract, if any;

(g) the Restricted Stock Units are not part of normal or expected compensation or salary for any purposes, including, but not limited to, calculating any severance, resignation, termination, redundancy, end of service payments, bonuses, long-service awards, pension or retirement benefits or similar payments and in no event should be considered as compensation for, or relating in any way to, past services for the Company or the Employer;

(h) in the event that the Participant is not an employee of the Company, the grant of Restricted Stock Units will not be interpreted to form an employment contract or relationship with the Company; and furthermore, the grant of Restricted Stock Units will not be interpreted to form an employment contract with the Employer or any subsidiary or affiliate of the Company;

(i) the future value of the underlying Shares is unknown and cannot be predicted with certainty;

(j) if the Participant vests in the Restricted Stock Units and obtains Shares, the value of those Shares may increase or decrease in value;

(k) in consideration of the grant of the Restricted Stock Units, no claim or entitlement to compensation or damages shall arise from termination of the Restricted Stock Units or diminution in value of the Restricted Stock Units or Shares acquired resulting from termination of the Participant's employment by the Company or the Employer, and the Participant irrevocably releases the Company and the Employer from any such claim that may arise; if, notwithstanding the foregoing, any such claim is found by a court of competent jurisdiction to have arisen, then, by signing this Agreement, the Participant will be deemed irrevocably to have waived his or her entitlement to pursue such claim; and

(l) in the event of termination of the Participant's employment, Participant's right to receive the Restricted Stock Units and vest in the Restricted Stock Units under the Plan, if any, will terminate effective as of the date that the Participant is no longer actively employed.

Country-Specific Language

Below please find country-specific language that applies to you if you are a citizen or resident of one of the following countries: Belgium, Canada, China, France, Germany, Greece, India, Ireland, Italy, Japan, Poland, Singapore, South Korea, Spain, Sweden, Switzerland, Taiwan and United Kingdom.

BELGIUM

Notifications

Tax Reporting Information. Participants are required to report any bank accounts opened and maintained outside Belgium on their annual tax return.

CANADA

Terms and Conditions

Restricted Stock Units Settled in Shares Only. Notwithstanding anything to the contrary in the Plan and/or the Agreement, you understand that any Restricted Stock Units granted to you shall be paid in shares only and do not provide any right for you to receive a cash payment.

The following provision will apply to residents of Quebec:

Language Consent. The parties to the Agreement have expressly required that the Agreement and all documents and notices relating to the Agreement be drafted in English.

Les parties aux présentes ont expressément exigé que la présente convention et tous les documents et avis qui y sont afférents soient rédigés en anglais.

Notifications

Additional Restrictions on Resale. In addition to the restrictions on resale and transfer noted in Plan materials, securities purchased under the Plan may be subject to certain restrictions on resale imposed by Canadian provincial securities laws. Participants are encouraged to seek legal advice prior to any resale of such securities. In general, Participants resident in Canada may resell their securities in transactions carried out on exchanges outside of Canada.

Tax Reporting. The Tax Act and the regulations thereunder require a Canadian resident individual (among others) to file an information return disclosing prescribed information where, at any time in a tax year, the total cost amount of such individual's "specified foreign property" (which includes shares) exceeds Cdn.$100,000. Participants should consult their own tax advisor regarding this reporting requirement.

CHINA

Due to Chinese legal requirements, Shares of ANSYS, Inc. acquired under any company equity plans must be maintained in the designated brokerage account until the Shares are sold through the designated brokerage account with the net sales proceeds being paid to you through your current or most recent PRC employer. As a condition of the grant of PSUs, to the extent that you hold any Shares on the date that is six (6) months after the date of your termination of active employment with ANSYS and its subsidiaries and affiliates, you authorize E*TRADE Financial Corporate Services, Inc. (or any successor broker designated by ANSYS) to sell such Shares on your behalf at that time or as soon as is administratively practical thereafter.

Under local law, Participant is required to repatriate to China the proceeds from your participation in any company equity Plans, including proceeds from the sale of Shares acquired through PSU lapses and any dividends or dividend equivalents paid to you through a special exchange control account established by ANSYS or one of its subsidiaries or affiliates in China. You hereby agree that any proceeds from your participation in the Plan may be transferred to such special account prior to being delivered to you through your current or most recent PRC employer. Further, if the proceeds from your participation in the Plan are converted to local currency, you acknowledge that the Company (including its subsidiaries and affiliates) are under no obligation to secure any currency conversion rate, and may face delays in converting the proceeds to local currency due to exchange control restrictions in China. You agree to bear the risk of any currency conversion rate fluctuation between the date that your proceeds are delivered to the special exchange control account and the date of conversion of the proceeds to local currency.

ANSYS reserves the right to impose such further restrictions or conditions as may be necessary to comply with changes in applicable local laws in China**.**

Please note that the above provisions will apply to all PSUs granted to you under a company equity plan.

If you are not a PRC national, the above provision will apply to you to the extent approved by SAFE or its local branch office in accordance with local laws.

FRANCE

Notifications

Exchange Control Information. If a Participant imports or exports cash (*e.g.,* sale proceeds received under the Plan) with a value equal to or exceeding €10,000 and does not use a financial institution to do so, Participant must submit a report to the customs and excise authorities. If Participant maintains a foreign bank account, Participant is required to report such account to the French tax authorities when filing his/her annual tax return.

GERMANY

Notifications

Exchange Control Information. Cross-border payments in excess of €12,500 must be reported monthly to the German Federal Bank. If a Participant uses a German bank to transfer a cross-border payment in excess of €12,500 in connection with the sale of Shares acquired under the Plan, the bank will file the report for the Participant.

INDIA

Terms and Conditions

Repatriation of Proceeds. You understand that you must repatriate any proceeds from the sale of Shares acquired upon vesting of the Restricted Stock Units to India and convert the proceeds into local currency within 90 days of receipt. You will receive a foreign inward remittance certificate ("FIRC") from the bank where you deposit the foreign currency. You should maintain the FIRC as evidence of the repatriation of funds in the event the Reserve Bank of India or your employer requests proof of repatriation.

Notifications

Tax Information. The amount subject to tax at vesting may partially be dependent upon a valuation of Shares from a Merchant Banker in India. The Company has no responsibility or obligation to obtain the most favorable valuation possible nor obtain valuations more frequently than required under Indian tax law.

IRELAND

Notifications

Director Notification Requirement. If you are a director or a shadow director or secretary of an Irish affiliate of Ansys, pursuant to Section 53 of the Irish Company Act of 1990, and you own more than a 1% interest in Ansys, you must notify the Irish affiliate of Ansys in writing within five business days of receiving or disposing of an interest in Ansys (*e.g.*, stock options, RSUs, shares, etc.) or within five business days of the event giving rise to the notification requirement, or within five days of becoming a director, shadow director or secretary if such an interest exists at that time. This notification requirement also applies with respect to the interests of a spouse or minor child, whose interests will be attributed to the director, shadow director or secretary.

ITALY

Notifications

Exchange Control Information. By September 30th of each year, the Participants are required to report on their annual tax return (Form RW) any foreign investments (including proceeds from the sale of Shares acquired upon vesting) held outside of Italy if the investment may give rise to income in Italy. However, deposits and bank accounts held outside of Italy only need to be disclosed if the value of the assets exceeds €10,000 during any part of the tax year.

With respect to Shares received upon vesting of the Restricted Stock Units, the Participants must report (i) the value of the Shares at the beginning of the year or on the day the Participant acquired the Shares, whichever is later; and (ii) the value of the Shares when sold, or if the Participant still owns the Shares at the end of the year, the value of the Shares at the end of the year. The value to be reported is the fair market value of the Shares on the applicable dates mentioned above.

JAPAN

Notifications

Exchange Control Information. If you acquire Shares valued at more than ¥100,000,000 in a single transaction, you must file a Securities Acquisition Report with the Ministry of Finance through the Bank of Japan within 20 days of the acquisition of the Shares.

POLAND

Notifications

Exchange Control Information. While you are responsible for any exchange control filings, no advance foreign exchange permit is required for the acquisition, holding or disposal of Shares. However, if the value of your Shares exceeds the equivalent of PLN 7,000,000, you will have to notify the National Bank of Poland of such holdings on a quarterly basis. If such reporting obligation applies to you and your shareholding exceeds 10% of the Company's total voting stock, you will also be required to notify the National Bank of Poland by the end of May of each subsequent year.

Exchange Control Information. If a Polish resident transfers funds in excess of €15,000 into Poland, the funds must be transferred via a Polish bank account or financial institution. Polish residents are required to retain the documents connected with a foreign exchange transaction for a period of five years, as measured from the end of the year in which such transaction occurred.

SINGAPORE

Notifications

Director Notification Requirement - If you are a director, associate director or shadow director of a Singapore affiliate of the Company, you are subject to certain notification requirements under the Singapore Companies Act. Among these requirements is an obligation to notify the Singaporean affiliate in writing when you receive an interest in shares (e.g., RSUs or Shares) in the Company or any related companies. In addition, you must notify the Singapore affiliate when you sell Shares or any related company (including when you sell Shares acquired through vesting of your RSU or pursuant to any other Award granted under the Plan). These notifications must be made within two business days of acquiring or disposing of any interest in shares of the Company or any related company. In addition, a notification must be made of your interests in shares of the Company or any related company within two business days of becoming a director.

Securities Law Information - The grant of the Awards is being made pursuant to the "Qualifying Person" exemption" under section 273(1)(f) of the Securities and Futures Act (Chapter 289, 2006 Ed.) ("SFA"). As a result, the grant is exempt from the prospectus and registration requirements under Singaporean law and is not made with a view to the underlying Shares being subsequently offered for sale to any other party. The Plan has not been, and will not be, lodged or registered as a prospectus with the Monetary Authority of Singapore.

SOUTH KOREA

Notifications

Exchange Control Information. If you receive US$500,000 or more from the sale of underlying Shares, Korean exchange control laws require you to repatriate the proceeds to South Korea within 18 months of sale.

SPAIN

Notifications

Exchange Control Information. All acquisitions of foreign shares by Spanish residents must comply with exchange control regulations in Spain. Because of foreign investment requirements, the acquisition of Shares upon vesting of the Restricted Stock Units must be declared for statistical purposes to the Spanish Direccion General de Politica Comercial y de Inversiones Extranjeras (the "DGPCIE"). If you acquire Shares through the use of a Spanish financial institution, that institution will automatically make the declaration to the DGPCIE for you. Otherwise, you must make the declaration by filing a form with the DGPCIE.

If you import the Shares acquired upon vesting of the Restricted Stock Units into Spain, you must declare the importation of the share certificates to the DGPCIE.

In addition, you must also file a declaration of the ownership of the Shares with the Directorate of Foreign Transactions each January while the shares are owned. These filings are made on standard forms furnished by the Directorate of Foreign Transactions.

When you receive any foreign currency payments (*i.e.,* as a result of the sale of the Shares), you must inform the institution receiving the payment of the basis upon which such payment is made and provide certain specific information (*e.g.,* name, address, and fiscal identification number; the name and corporate domicile of the company; the amount of the payment; the type of foreign currency received; the country of origin; and the reason for the payment).

Tax Reporting. If you hold assets (*e.g.,* cash or shares in a bank or brokerage account) or rights outside Spain that exceed €50,000 per type of asset, you must file a Form 720 with the Spanish Tax Authorities by April 30th of each year.

SWITZERLAND

Notifications

Securities Law Information. The offer of the Restricted Stock Units is considered a private offering in Switzerland and is not subject to registration in Switzerland.

TAIWAN

Notifications

Exchange Control Information. Taiwan's foreign exchange control regulations may have an impact on the grant and vesting of the Restricted Stock Units as well as the repatriation of capital gains realized from the holding or sale of the underlying Shares. Under current foreign exchange regulations, a Taiwanese resident can remit up to US $5 million (or an equivalent amount of other foreign currencies) per year into or out of Taiwan without prior approval from the Taiwan Central Bank.

If the transaction amount is TWD500,000 or more in a single transaction, you must submit a Foreign Exchange Transaction Form. If the transaction amount is US$500,000 or more in a single transaction, you must also provide supporting documentation to the satisfaction of the remitting bank.

UNITED KINGDOM

Terms and Conditions

(i) Purpose. This section is to modify those provisions of the Plan in order for awards made under the Plan, and communications concerning those awards, to be exempt from provisions of the United Kingdom Financial Services and Markets Act 2000 (the "FSMA").

(ii) Application. These provisions shall be used solely to grant awards to employees of the Company or any member of the same group as the Company resident and providing services in the United Kingdom. (The term "group" in relation to the Company shall bear the meaning given to such term in section 421 of the FSMA.)

(iii) Restricted Delivery of Awards. Payments of benefits under these provisions shall be made only in Shares or such other securities of the Company that may arise from such Shares under the adjustment provisions of the Plan. For the avoidance of doubt, and without limitation, no cash settlement of awards (including dividends or dividend equivalent payments in cash) shall be permissible.

(iv) Exercise of Restricted Stock Units/Vesting of Awards. The Administrator may specify, in its discretion, any other conditions of exercise and/or vesting of awards that will be specified in the award agreement.

(v) Restricted Transfer of Rights. The persons to whom rights under awards may be assigned or transferred, whether by will or the laws of descent and distribution or any transferability of awards shall be limited to a Participant's children and step-children under the age of eighteen, spouses and surviving spouses and civil partners and civil partners (within the meaning of the United Kingdom Civil Partnerships Act 2004) and surviving partners.

(vi) Tax. All awards will be subject to tax withholding and all references to "tax" shall be read and construed as including, without limitation, United Kingdom income tax and primary class 1 (employee's) national insurance contributions that the Participant's employer is liable to account for and, if so agreed between the Company and the Participant, secondary class 1 (employer's) national insurance contributions that the Participant's employer is liable to account for.

EXHIBIT 15

May 6, 2020

The Board of Directors and Stockholders of ANSYS, Inc.
2600 ANSYS Drive
Canonsburg, PA 15317

We are aware that our report dated May 6, 2020, on our review of the interim financial information of ANSYS, Inc. appearing in this Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, is incorporated by reference in Registration Statement Nos. 333-08613, 333-69506, 333-110728, 333-137274, 333-152765, 333-174670, 333-177030, 333-196393, 333-206111, and 333-212412 on Form S-8.

/s/ Deloitte & Touche LLP
Pittsburgh, Pennsylvania

EXHIBIT 31.1

CHIEF EXECUTIVE OFFICER CERTIFICATION

I, Ajei S. Gopal, certify that:

1. I have reviewed this quarterly report on Form 10-Q of ANSYS, Inc. (“Ansys”);

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of Ansys as of, and for, the periods presented in this report;

4. Ansys’ other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for Ansys and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to Ansys, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of Ansys’ disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in Ansys’ internal control over financial reporting that occurred during Ansys’ most recent fiscal quarter (Ansys’ fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, Ansys’ internal control over financial reporting; and

5. Ansys’ other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to Ansys’ auditors and the audit committee of Ansys’ board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect Ansys’ ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in Ansys’ internal control over financial reporting.

Date: May 6, 2020

/s/ Ajei S. Gopal

Ajei S. Gopal
President and Chief Executive Officer
(Principal Executive Officer)

EXHIBIT 31.2

CHIEF FINANCIAL OFFICER CERTIFICATION

I, Maria T. Shields, certify that:

1. I have reviewed this quarterly report on Form 10-Q of ANSYS, Inc. ("Ansys");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of Ansys as of, and for, the periods presented in this report;

4. Ansys' other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for Ansys and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to Ansys, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of Ansys' disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in Ansys' internal control over financial reporting that occurred during Ansys' most recent fiscal quarter (Ansys' fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, Ansys' internal control over financial reporting; and

5. Ansys' other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to Ansys' auditors and the audit committee of Ansys' board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect Ansys' ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in Ansys' internal control over financial reporting.

Date: May 6, 2020

/s/ Maria T. Shields

Maria T. Shields
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of ANSYS, Inc. (the "Company") on Form 10-Q for the quarter ended March 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Ajei S. Gopal, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

This certification is provided solely pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and shall not be deemed to be part of the Report or filed for any purpose whatsoever.

/s/ *Ajei S. Gopal*

Ajei S. Gopal
President and Chief Executive Officer
(Principal Executive Officer)
May 6, 2020

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of ANSYS, Inc. (the “Company”) on Form 10-Q for the quarter ended March 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Maria T. Shields, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

This certification is provided solely pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and shall not be deemed to be part of the Report or filed for any purpose whatsoever.

/s/ *Maria T. Shields*

Maria T. Shields
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)
May 6, 2020