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 September 30, 2023
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 each 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 October 27, 2023 was 86,872,803 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)	September 30, 2023	December 31, 2022
ASSETS		
Current assets:		
Cash and cash equivalents	**$ 639,342**	$ 614,391
Short-term investments	**171**	183
Accounts receivable, less allowance for doubtful accounts of $20,700 and $18,300, respectively	**673,973**	760,287
Other receivables and current assets	**229,013**	289,261
Total current assets	**1,542,499**	1,664,122
Long-term assets:		
Property and equipment, net	**75,431**	80,838
Operating lease right-of-use assets	**116,187**	129,140
Goodwill	**3,769,321**	3,658,267
Other intangible assets, net	**849,205**	809,183
Other long-term assets	**174,289**	261,880
Deferred income taxes	**146,588**	84,515
Total long-term assets	**5,131,021**	5,023,823
Total assets	**$ 6,673,520**	$ 6,687,945
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	**$ 14,801**	$ 14,021
Accrued bonuses and commissions	**89,327**	160,908
Accrued income taxes	**14,652**	7,698
Other accrued expenses and liabilities	**165,983**	198,220
Deferred revenue	**349,668**	413,989
Total current liabilities	**634,431**	794,836
Long-term liabilities:		
Deferred income taxes	**70,360**	58,126
Long-term operating lease liabilities	**100,071**	112,802
Long-term debt	**753,812**	753,574
Other long-term liabilities	**108,046**	102,756
Total long-term liabilities	**1,032,289**	1,027,258
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.01 par value; 2,000,000 shares authorized; zero shares issued or outstanding	**—**	—
Common stock, $0.01 par value; 300,000,000 shares authorized; 95,267,307 shares issued	**953**	953
Additional paid-in capital	**1,612,269**	1,540,317
Retained earnings	**5,008,580**	4,782,930
Treasury stock, at cost: 8,428,972 and 8,317,389 shares, respectively	**(1,480,733)**	(1,335,627)
Accumulated other comprehensive loss	**(134,269)**	(122,722)
Total stockholders' equity	**5,006,800**	4,865,851
Total liabilities and stockholders' equity	**$ 6,673,520**	$ 6,687,945

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

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

(in thousands, except per share data)	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022
Revenue:				
Software licenses	**$ 162,422**	$ 208,906	**$ 586,471**	$ 575,332
Maintenance and service	**296,373**	263,605	**878,370**	796,106
Total revenue	**458,795**	472,511	**1,464,841**	1,371,438
Cost of sales:				
Software licenses	**8,692**	8,425	**29,095**	25,370
Amortization	**20,707**	17,281	**60,404**	51,947
Maintenance and service	**35,858**	36,261	**111,750**	111,897
Total cost of sales	**65,257**	61,967	**201,249**	189,214
Gross profit	**393,538**	410,544	**1,263,592**	1,182,224
Operating expenses:				
Selling, general and administrative	**194,552**	175,283	**585,278**	515,421
Research and development	**123,223**	108,056	**368,581**	322,271
Amortization	**5,947**	3,821	**16,598**	11,975
Total operating expenses	**323,722**	287,160	**970,457**	849,667
Operating income	**69,816**	123,384	**293,135**	332,557
Interest income	**4,909**	1,345	**12,389**	2,141
Interest expense	**(12,276)**	(6,092)	**(34,594)**	(13,668)
Other income (expense), net	**96**	(656)	**(3,564)**	(2,126)
Income before income tax provision	**62,545**	117,981	**267,366**	318,904
Income tax provision	**7,043**	22,006	**41,716**	53,141
Net income	**$ 55,502**	$ 95,975	**$ 225,650**	$ 265,763
Earnings per share – basic:				
Earnings per share	**$ 0.64**	$ 1.10	**$ 2.60**	$ 3.05
Weighted average shares	**86,817**	87,063	**86,814**	87,062
Earnings per share – diluted:				
Earnings per share	**$ 0.64**	$ 1.10	**$ 2.58**	$ 3.04
Weighted average shares	**87,381**	87,418	**87,335**	87,496

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		Nine Months Ended	
	September 30, 2023	**September 30, 2022**	**September 30, 2023**	**September 30, 2022**
Net income	**$ 55,502**	$ 95,975	**$ 225,650**	$ 265,763
Other comprehensive loss:				
Foreign currency translation adjustments	**(32,834)**	(61,636)	**(11,547)**	(132,371)
Comprehensive income	**$ 22,668**	$ 34,339	**$ 214,103**	$ 133,392

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

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

	Nine Months Ended	
(in thousands)	**September 30, 2023**	**September 30, 2022**
Cash flows from operating activities:		
Net income	**$ 225,650**	$ 265,763
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and intangible assets amortization	**99,016**	86,239
Operating lease right-of-use assets expense	**17,625**	17,356
Deferred income tax benefit	**(74,426)**	(63,560)
Provision for bad debts	**2,442**	2,476
Stock-based compensation expense	**158,533**	122,119
Other	**1,252**	4,986
Changes in operating assets and liabilities:		
Accounts receivable	**168,958**	66,369
Other receivables and current assets	**61,203**	96,641
Other long-term assets	**(5,897)**	(3,121)
Accounts payable, accrued expenses and current liabilities	**(105,197)**	(111,039)
Accrued income taxes	**6,327**	9,751
Deferred revenue	**(65,242)**	(28,203)
Other long-term liabilities	**(5,844)**	(8,746)
Net cash provided by operating activities	**484,400**	457,031
Cash flows from investing activities:		
Acquisitions, net of cash acquired	**(197,786)**	(242,613)
Capital expenditures	**(16,541)**	(15,227)
Other investing activities	**(5,839)**	(782)
Net cash used in investing activities	**(220,166)**	(258,622)
Cash flows from financing activities:		
Purchase of treasury stock	**(196,494)**	(155,571)
Restricted stock withholding taxes paid in lieu of issued shares	**(60,827)**	(62,035)
Proceeds from shares issued for stock-based compensation	**26,015**	20,918
Other financing activities	**(1,294)**	(1,290)
Net cash used in financing activities	**(232,600)**	(197,978)
Effect of exchange rate fluctuations on cash and cash equivalents	**(6,683)**	(35,589)
Net increase (decrease) in cash and cash equivalents	**24,951**	(35,158)
Cash and cash equivalents, beginning of period	**614,391**	667,667
Cash and cash equivalents, end of period	**$ 639,342**	$ 632,509
Supplemental disclosure of cash flow information:		
Income taxes paid	**$ 100,135**	$ 42,055
Interest paid	**$ 33,795**	$ 12,192
Non-cash and unpaid consideration in connection with acquisitions	**$ 5,056**	$ 3,391

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

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

(in thousands)	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Retained Earnings	Treasury Stock Shares	Treasury Stock Amount	Accumulated Other Comprehensive (Loss) Income	Total Stockholders' Equity
Balance, January 1, 2023	**95,267**	**$ 953**	**$ 1,540,317**	**$ 4,782,930**	**8,317**	**$ (1,335,627)**	**$ (122,722)**	**$ 4,865,851**
Treasury shares acquired, including excise tax					**650**	**(197,416)**		**(197,416)**
Stock-based compensation activity			**(34,529)**		**(356)**	**34,350**		**(179)**
Other comprehensive income							**13,284**	**13,284**
Net income				**100,622**				**100,622**
Balance, March 31, 2023	**95,267**	**$ 953**	**$ 1,505,788**	**$ 4,883,552**	**8,611**	**$ (1,498,693)**	**$ (109,438)**	**$ 4,782,162**
Treasury shares acquired, including excise tax						**343**		**343**
Stock-based compensation activity			**44,365**		**(105)**	**10,013**		**54,378**
Other comprehensive income							**8,003**	**8,003**
Net income				**69,526**				**69,526**
Balance, June 30, 2023	**95,267**	**$ 953**	**$ 1,550,153**	**$ 4,953,078**	**8,506**	**$ (1,488,337)**	**$ (101,435)**	**$ 4,914,412**
Treasury shares acquired, including excise tax						**264**		**264**
Stock-based compensation activity			**62,116**		**(77)**	**7,340**		**69,456**
Other comprehensive loss							**(32,834)**	**(32,834)**
Net income				**55,502**				**55,502**
Balance, September 30, 2023	**95,267**	**$ 953**	**$ 1,612,269**	**$ 5,008,580**	**8,429**	**$ (1,480,733)**	**$ (134,269)**	**$ 5,006,800**

(in thousands)	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Retained Earnings	Treasury Stock Shares	Treasury Stock Amount	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
Balance, January 1, 2022	95,267	$ 953	$ 1,465,694	$ 4,259,220	8,188	$ (1,185,707)	$ (56,112)	$ 4,484,048
Treasury shares acquired					500	(155,571)		(155,571)
Stock-based compensation activity			(50,287)		(403)	36,865		(13,422)
Other comprehensive loss							(22,092)	(22,092)
Net income				70,988				70,988
Balance, March 31, 2022	95,267	$ 953	$ 1,415,407	$ 4,330,208	8,285	$ (1,304,413)	$ (78,204)	$ 4,363,951
Acquisition of Analytical Graphics, Inc.			511		(3)	300		811
Stock-based compensation activity			34,631		(33)	3,205		37,836
Other comprehensive loss							(48,643)	(48,643)
Net income				98,800				98,800
Balance, June 30, 2022	95,267	$ 953	$ 1,450,549	$ 4,429,008	8,249	$ (1,300,908)	$ (126,847)	$ 4,452,755
Stock-based compensation activity			49,781		(70)	6,810		56,591
Other comprehensive loss							(61,636)	(61,636)
Net income				95,975				95,975
Balance, September 30, 2022	95,267	$ 953	$ 1,500,330	$ 4,524,983	8,179	$ (1,294,098)	$ (188,483)	$ 4,543,685

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

ANSYS, INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
September 30, 2023
(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 high-tech, aerospace and defense, automotive, energy, industrial equipment, materials and chemicals, consumer products, healthcare and construction.

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 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.

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, 2022 (2022 Form 10-K). The condensed consolidated December 31, 2022 balance sheet presented is derived from the audited December 31, 2022 balance sheet included in the 2022 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. Operating results for the three and nine months ended September 30, 2023 are not necessarily indicative of the results that may be expected for any future period. Certain items in the notes to the condensed consolidated financial statements of prior years have been reclassified to conform to the current year's presentation. These reclassifications had no effect on reported net income, comprehensive income, cash flows, total assets or total liabilities and stockholders' equity.

Accounting Guidance Issued and Not Yet Adopted

Recently issued accounting pronouncements are not expected to have a material impact on our financial position, results of operations or cash flows upon adoption.

Cash and Cash Equivalents

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

	September 30, 2023		December 31, 2022	
(in thousands, except percentages)	Amount	% of Total	Amount	% of Total
Cash accounts	**$ 530,839**	**83.0**	$ 503,733	82.0
Money market funds	**108,503**	**17.0**	110,658	18.0
Total	**$ 639,342**		$ 614,391	

Our money market fund balances are held in various funds of a single issuer at September 30, 2023.

3. Revenue from Contracts with Customers

Disaggregation of Revenue

The following table summarizes revenue:

	Three Months Ended		Nine Months Ended	
(in thousands, except percentages)	September 30, 2023	September 30, 2022	September 30, 2023	September 30, 2022
Revenue:				
Subscription lease licenses	**$ 103,573**	$ 136,489	**$ 386,494**	$ 362,977
Perpetual licenses	**58,849**	72,417	**199,977**	212,355
Software licenses	**162,422**	208,906	**586,471**	575,332
Maintenance	**278,108**	247,678	**820,393**	742,554
Service	**18,265**	15,927	**57,977**	53,552
Maintenance and service	**296,373**	263,605	**878,370**	796,106
Total revenue	**$ 458,795**	$ 472,511	**$ 1,464,841**	$ 1,371,438
Direct revenue, as a percentage of total revenue	**73.5 %**	74.8 %	**73.7 %**	73.7 %
Indirect revenue, as a percentage of total revenue	**26.5 %**	25.2 %	**26.3 %**	26.3 %

Our software license revenue is recognized up front, while maintenance and service revenue is 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 nine months ended September 30, 2023 and 2022 were as follows:

(in thousands)	2023	2022
Beginning balance – January 1	**$ 435,758**	$ 412,781
Acquired deferred revenue	**7,910**	1,032
Deferral of revenue	**1,399,367**	1,343,122
Recognition of revenue	**(1,464,841)**	(1,371,438)
Currency translation	**(7,761)**	(30,779)
Ending balance – September 30	**$ 370,433**	$ 354,718

Total revenue allocated to remaining performance obligations as of September 30, 2023 will be recognized as revenue as follows:

(in thousands)	
Next 12 months	**$ 774,215**
Months 13-24	**306,571**
Months 25-36	**95,311**
Thereafter	**29,580**
Total revenue allocated to remaining performance obligations	**$ 1,205,677**

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 deferred revenue associated with installment billings for periods beyond the current quarterly billing cycle and committed contracts with start dates beyond the end of the current period. Revenue recognized during the nine months ended September 30, 2023 and 2022 included amounts in deferred revenue and backlog at the beginning of the period of $706.2 million and $608.7 million, respectively.

4. Acquisitions

During the quarter ended June 30, 2023, we completed the acquisition of Diakopto for a purchase price of $83.3 million, or $77.2 million net of cash acquired, to expand our multiphysics simulation portfolio for semiconductor designers. The effects of the business combination were not material to our condensed consolidated results of operations.

On January 3, 2023, we completed the acquisition of DYNAmore for a purchase price of $139.2 million, or $126.4 million net of cash acquired. The acquisition expands our position as a simulation solution provider within the automotive industry. The effects of the acquisition were not material to our condensed consolidated results of operations.

During the three and nine months ended September 30, 2023, we incurred acquisition-related expenses of $1.5 million and $5.8 million, respectively. Acquisition-related expenses are recognized as selling, general and administrative and research and development expenses on the condensed consolidated statements of income.

The assets acquired and liabilities assumed in connection with the acquisitions have been recorded based upon management's estimates of the fair market values as of each respective date of acquisition. The following tables summarize the fair value of consideration and the fair values of identified assets acquired and liabilities assumed for the combined acquisitions at each respective date of acquisition:

Fair Value of Consideration:

(in thousands)

Cash	**$**	**217,392**
Non-cash consideration		**5,056**
Total consideration	**$**	**222,448**

Recognized Amounts of Identifiable Assets Acquired and Liabilities Assumed:

(in thousands)

Cash	**$**	**18,866**
Accounts receivable and other tangible assets		**18,152**
Developed software and core technologies		**25,594**
Customer lists		**83,790**
Trade names		**2,910**
Accounts payable and other liabilities		**(8,742)**
Deferred revenue		**(7,910)**
Net deferred tax liabilities		**(31,272)**
Total identifiable net assets	**$**	**101,388**
Goodwill	**$**	**121,060**

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

The fair value of the assets acquired and liabilities assumed are based on preliminary calculations. The estimates and assumptions for these items are subject to change as additional information about what was known and knowable at each respective acquisition date is obtained during the measurement period (up to one year from the acquisition date).

We determined the fair value of our intangible assets using various valuation techniques, including the relief-from-royalty method and the multi-period excess earnings method. These models utilize certain unobservable inputs classified as Level 3 measurements as defined by ASC 820, *Fair Value Measurements and Disclosures*. The determination of fair value requires considerable judgment and is sensitive to changes in underlying assumptions, estimates and market factors. Estimating fair value requires us to make assumptions and estimates regarding our future plans, as well as industry and economic conditions. These assumptions and estimates include, but are not limited to: selection of a valuation methodology, royalty rate, discount rate, attrition rate and obsolescence rate.

The weighted-average useful life, valuation method and assumptions used to determine the fair value of the intangible assets acquired in 2023 are as follows:

Intangible Asset	Weighted-Average Useful Life	Valuation Method	Assumptions
Developed software and core technologies	5 years	Relief-from-royalty or multi-period excess earnings	Royalty rate: 20.0% Obsolescence rate: 20.0% Discount rate: 15.5% - 22.0%
Trade names	5 years	Relief-from-royalty	Royalty rate: 1.0% - 2.0% Discount rate: 15.5% - 22.0%
Customer lists	13 years	Multi-period excess earnings	Attrition rate: 5.0% Discount rate: 15.5% - 22.0%

2022 Acquisitions

During the year ended December 31, 2022, we completed several acquisitions to enhance our customers' experience. The combined purchase price of these acquisitions during the year ended December 31, 2022 was $401.7 million, or $390.8 million net of cash acquired.

The operating results of each acquisition have been included in our condensed consolidated financial statements since each respective date of acquisition. The effects of the acquisitions were not material to our condensed consolidated results of operations.

5. Other Receivables and Current Assets and Other Accrued Expenses and Liabilities

Our other receivables and current assets and other accrued expenses and liabilities comprise the following balances:

(in thousands)	September 30, 2023	December 31, 2022
Receivables related to unrecognized revenue	**$ 135,981**	$ 209,139
Income taxes receivable, including overpayments and refunds	**37,097**	28,963
Prepaid expenses and other current assets	**55,935**	51,159
Total other receivables and current assets	**$ 229,013**	$ 289,261
Accrued vacation	**44,369**	39,118
Consumption, VAT and sales tax liabilities	**16,298**	41,812
Accrued expenses and other current liabilities	**105,316**	117,290
Total other accrued expenses and liabilities	**$ 165,983**	$ 198,220

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		Nine Months Ended	
(in thousands, except per share data)	**September 30, 2023**	September 30, 2022	**September 30, 2023**	September 30, 2022
Net income	**$ 55,502**	$ 95,975	**$ 225,650**	$ 265,763
Weighted average shares outstanding – basic	**86,817**	87,063	**86,814**	87,062
Dilutive effect of stock plans	**564**	355	**521**	434
Weighted average shares outstanding – diluted	**87,381**	87,418	**87,335**	87,496
Basic earnings per share	**$ 0.64**	$ 1.10	**$ 2.60**	$ 3.05
Diluted earnings per share	**$ 0.64**	$ 1.10	**$ 2.58**	$ 3.04
Anti-dilutive shares	**73**	54	**257**	366

7. Goodwill and Intangible Assets

Intangible assets are classified as follows:

	September 30, 2023		December 31, 2022	
(in thousands)	**Gross Carrying Amount**	**Accumulated Amortization**	**Gross Carrying Amount**	**Accumulated Amortization**
Finite-lived intangible assets:				
Developed software and core technologies	**$ 1,136,728**	**$ (536,643)**	$ 1,106,789	$ (483,033)
Customer lists	**283,231**	**(82,267)**	205,484	(71,618)
Trade names	**189,203**	**(141,404)**	186,424	(135,220)
Total	**$ 1,609,162**	**$ (760,314)**	$ 1,498,697	$ (689,871)
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.

As of September 30, 2023, estimated future amortization expense for the intangible assets reflected above was as follows:

(in thousands)	
Remainder of 2023	**$ 26,383**
2024	**111,049**
2025	**113,657**
2026	**114,451**
2027	**117,260**
2028	**110,478**
Thereafter	**255,570**
Total intangible assets subject to amortization	**848,848**
Indefinite-lived trade name	**357**
Other intangible assets, net	**$ 849,205**

The changes in goodwill during the nine months ended September 30, 2023 and 2022 were as follows:

(in thousands)	2023	2022
Beginning balance – January 1	**$ 3,658,267**	$ 3,409,271
Acquisitions and adjustments[1]	**113,502**	197,173
Currency translation	**(2,448)**	(73,985)
Ending balance – September 30	**$ 3,769,321**	$ 3,532,459

[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 effected the measurement of the amounts recognized as of that date.

During the first quarter of 2023, 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, 2023. No events or circumstances changed during the nine months ended September 30, 2023 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.

Our debt is classified within Level 2 of the fair value hierarchy because these borrowings are not actively traded and have a variable interest rate structure based upon market rates. The carrying amount of our debt approximates the estimated fair value. See Note 10, "Debt", for additional information on our borrowings.

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)	**September 30, 2023**	**Quoted Prices in Active Markets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Assets				
Cash equivalents	**$ 108,503**	**$ 108,503**	**$ —**	**$ —**
Short-term investments	**$ 171**	**$ —**	**$ 171**	**$ —**
Deferred compensation plan investments	**$ 2,302**	**$ 2,302**	**$ —**	**$ —**
Equity securities	**$ 761**	**$ 761**	**$ —**	**$ —**

		Fair Value Measurements at Reporting Date Using:		
(in thousands)	**December 31, 2022**	**Quoted Prices in Active Markets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Assets				
Cash equivalents	$ 110,658	$ 110,658	$ —	$ —
Short-term investments	$ 183	$ —	$ 183	$ —
Deferred compensation plan investments	$ 1,618	$ 1,618	$ —	$ —
Equity securities	$ 892	$ 892	$ —	$ —

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. 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.

The equity securities represent our investment in a publicly traded company. These securities are traded in an active market with quoted prices. As a result, the securities are classified as Level 1 in the fair value hierarchy. The securities are recorded within other long-term assets on our condensed consolidated balance sheets.

9. Leases

Our right-of-use assets and lease liabilities primarily include operating leases for office space. 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. Absent the exercise of options in the lease, our remaining base rent (inclusive of property taxes and certain operating costs) is $4.5 million per annum through 2024 and $4.7 million per annum for 2025 - 2029.

The components of our global lease cost reflected in the condensed consolidated statements of income are as follows:

	Three Months Ended		Nine Months Ended	
(in thousands)	September 30, 2023	September 30, 2022	September 30, 2023	September 30, 2022
Lease liability cost	**$ 7,097**	$ 6,960	**$ 21,207**	$ 20,886
Variable lease cost not included in the lease liability[1]	**1,523**	1,015	**4,134**	3,202
Total lease cost	**$ 8,620**	$ 7,975	**$ 25,341**	$ 24,088

[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		Nine Months Ended	
(in thousands)	September 30, 2023	September 30, 2022	September 30, 2023	September 30, 2022
Cash paid for amounts included in the measurement of the lease liability:				
Operating cash flows from operating leases	**$ (7,288)**	$ (6,720)	**$ (20,993)**	$ (20,309)
Right-of-use assets obtained in exchange for new operating lease liabilities	**$ 2,192**	$ 8,131	**$ 7,508**	$ 28,806

	As of September 30,	
	2023	2022
Weighted-average remaining lease term of operating leases	**6.5 years**	7.3 years
Weighted-average discount rate of operating leases	**3.4 %**	3.2 %

The maturity schedule of the operating lease liabilities as of September 30, 2023 is as follows:

(in thousands)	
Remainder of 2023	**$ 7,097**
2024	**25,268**
2025	**21,558**
2026	**19,446**
2027	**18,038**
Thereafter	**45,236**
Total future lease payments	**136,643**
Less: Present value adjustment	**(13,930)**
Present value of future lease payments[1]	**$ 122,713**

[1] Includes the current portion of operating lease liabilities of $22.6 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 September 30, 2023.

10. Debt

On June 30, 2022, we entered into a credit agreement (as amended, the 2022 Credit Agreement) with PNC Bank, National Association, as administrative agent, swing line lender, and an L/C issuer, the lenders party thereto, and the other L/C issuers party thereto. The 2022 Credit Agreement refinanced our previous credit agreements in their entirety. Terms used in this description of the 2022 Credit Agreement with initial capital letters that are not otherwise defined herein are as defined in the 2022 Credit Agreement.

The 2022 Credit Agreement provides for a $755.0 million unsecured term loan facility and a $500.0 million unsecured revolving loan facility, which includes a $50.0 million sublimit for the issuance of letters of credit. The revolving loan facility is available for working capital and general corporate purposes. Each of the term loan facility and the revolving loan facility matures on June 30, 2027.

Borrowings under the term loan and revolving loan facilities accrue interest at a rate that is based on the Term SOFR plus an applicable margin or at the base rate plus an applicable margin, at our election. The base rate is the highest of (i) the Overnight Bank Funding Rate, plus 0.500%, (ii) the PNC Bank, National Association prime rate, and (iii) Daily Simple SOFR plus an adjustment for SOFR plus 1.00%. The applicable margin for the borrowings is a percentage per annum based on the lower of (1) a pricing level determined by our then-current consolidated net leverage ratio and (2) a pricing level determined by our public debt rating (if available).

On September 29, 2023, the 2022 Credit Agreement was amended to provide for an interest rate adjustment (Sustainability Rate Adjustment) based upon the achievement of certain environmental, social and governance key performance indicators (KPIs). The Sustainability Rate Adjustment range is +/- 0.05% and will go into effect in the first quarter of 2024 based on the 2023 KPIs and will be adjusted annually based on the KPIs of the preceding year.

The 2022 Credit Agreement also provides for the option to add certain foreign subsidiaries as borrowers and to borrow in Euros, Sterling, Yen and Swiss Francs under the revolving loan facility, up to a sublimit of $150.0 million. Borrowings under the revolving loan facility denominated in these currencies will accrue interest at a rate that is based on (a) for Euros, €STR, (b) for Sterling, SONIA, (c) for Yen, TONAR and (d) for Swiss Francs, SARON, plus an applicable margin calculated as described above.

Under the 2022 Credit Agreement, the weighted average interest rate in effect for the three and nine months ended September 30, 2023 was 6.22% and 5.89%, respectively. Under the prior credit agreements and the 2022 Credit Agreement, the weighted average interest rate in effect for the three and nine months ended September 30, 2022 was 3.05% and 2.11%, respectively. The rate in effect as of September 30, 2023 and for the fourth quarter of 2023 under the 2022 Credit Agreement is 6.37%.

The 2022 Credit Agreement contains customary representations and warranties, affirmative and negative covenants and events of default. The 2022 Credit Agreement also contains a financial covenant requiring us and our subsidiaries to maintain a consolidated net leverage ratio not in excess of 3.50 to 1.00 as of the end of any fiscal quarter (for the four-quarter period ending on such date) with an opportunity for a temporary increase in such consolidated net leverage ratio to 4.00 to 1.00 upon the consummation of certain qualified acquisitions for which the aggregate consideration is at least $250.0 million.

As of September 30, 2023, we had $755.0 million of borrowings outstanding under the term loan, with a carrying value of $753.8 million, which is net of $1.2 million of unamortized debt discounts and issuance costs. The total amount was included in long-term debt. As of September 30, 2023, no borrowings were outstanding under the revolving loan facility.

As of December 31, 2022, we had $755.0 million of borrowings outstanding under the term loan, with a carrying value of $753.6 million, which is net of $1.4 million of unamortized debt discounts and issuance costs. The total amount was included in long-term debt. As of December 31, 2022, no borrowings were outstanding under the revolving loan facility.

We were in compliance with all covenants under the 2022 Credit Agreement as of September 30, 2023 and December 31, 2022.

11. Income Taxes

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

(in thousands, except percentages)	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022
Income before income tax provision	**$ 62,545**	$ 117,981	**$ 267,366**	$ 318,904
Income tax provision	**$ 7,043**	$ 22,006	**$ 41,716**	$ 53,141
Effective tax rate	**11.3 %**	18.7 %	**15.6 %**	16.7 %

12. Stock Repurchase Program

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

(in thousands, except per share data)	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022
Number of shares repurchased	**650**	500
Average price paid per share	**$ 302.34**	$ 311.14
Total cost	**$ 196,494**	$ 155,571

All of the shares repurchased during the nine months ended September 30, 2023 were repurchased during the first quarter. As of September 30, 2023, 1.1 million shares remained available for repurchase under the program. Average price paid per share excludes excise tax. As of January 1, 2023, our share repurchases in excess of issuances are subject to a 1% excise tax enacted by the Inflation Reduction Act. Any excise tax incurred is recognized and reflected as part of the cost basis of the shares acquired in the Condensed Consolidated Statements of Stockholders' Equity.

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 September 30, 2023	Three Months Ended September 30, 2022	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022
Cost of sales:				
Maintenance and service	**$ 3,568**	$ 2,621	**$ 9,924**	$ 7,448
Operating expenses:				
Selling, general and administrative	**32,907**	27,077	**89,006**	67,117
Research and development	**21,586**	17,272	**59,603**	47,554
Stock-based compensation expense before taxes	**58,061**	46,970	**158,533**	122,119
Related income tax benefits	**(12,993)**	(9,984)	**(41,848)**	(42,037)
Stock-based compensation expense, net of taxes	**$ 45,068**	$ 36,986	**$ 116,685**	$ 80,082
Net impact on earnings per share:				
Basic earnings per share	**$ (0.52)**	$ (0.42)	**$ (1.34)**	$ (0.92)
Diluted earnings per share	**$ (0.52)**	$ (0.42)	**$ (1.34)**	$ (0.92)

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:

	Three Months Ended		Nine Months Ended	
(in thousands)	September 30, 2023	September 30, 2022	September 30, 2023	September 30, 2022
United States	**$ 204,824**	$ 201,263	**$ 661,953**	$ 586,063
Japan	**40,956**	38,586	**141,770**	133,562
Germany	**37,901**	48,115	**117,240**	111,888
China	**19,548**	28,265	**91,128**	83,924
South Korea	**27,928**	49,581	**75,868**	104,950
Other Europe, Middle East and Africa (EMEA)	**83,719**	72,058	**251,696**	236,250
Other international	**43,919**	34,643	**125,186**	114,801
Total revenue	**$ 458,795**	$ 472,511	**$ 1,464,841**	$ 1,371,438

Property and equipment by geographic area is as follows:

(in thousands)	September 30, 2023	December 31, 2022
United States	**$ 55,589**	$ 58,258
India	**5,244**	5,978
EMEA	**10,063**	11,043
Other international	**4,535**	5,559
Total property and equipment, net	**$ 75,431**	$ 80,838

15. Contingencies and Commitments

We are subject to various claims, investigations, and legal and regulatory proceedings that arise in the ordinary course of business, including, but not limited to, commercial disputes, labor and employment matters, tax audits, alleged infringement of third parties' 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 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 consolidated 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 $7.1 million. As such charges are not probable at this time, a reserve has not been recorded on the condensed consolidated balance sheet as of September 30, 2023. 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 and a decision is still pending. We can provide no assurances on the impact that the present Microsoft case's decision will have on our cases, however, an unfavorable ruling in the Microsoft case may impact our assessment of probability and result in the recording of a $7.1 million reserve. 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, by third parties, of infringement or misappropriation of their intellectual property rights 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.

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

The following discussion and analysis should be read in conjunction with the accompanying unaudited condensed consolidated financial statements and notes thereto for the nine months ended September 30, 2023, and with our audited consolidated financial statements and notes thereto for the year ended December 31, 2022 included in the 2022 Form 10-K filed with the Securities and Exchange Commission (SEC). 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).

Business

Ansys, a 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 high-tech, aerospace and defense, automotive, energy, industrial equipment, materials and chemicals, consumer products, healthcare and construction. Headquartered south of Pittsburgh, Pennsylvania, we employed 6,100 and 5,600 people as of September 30, 2023 and December 31, 2022, respectively. We focus on the development of open and flexible solutions that enable users to analyze designs on-premises and/or via the cloud, providing a common platform for fast, efficient and cost-conscious product development, from design concept to final-stage testing, validation and deployment. We distribute our suite of simulation technologies through direct sales offices in strategic, global locations and a global network of independent resellers and distributors (collectively, channel partners). It is our intention to continue to maintain this hybrid sales and distribution model. We operate and report as one segment.

When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality using Ansys simulation. For more than 50 years, Ansys software has enabled innovators across industries to push the boundaries of product design by using the predictive power of simulation. From sustainable transportation and advanced satellite systems to life-saving medical devices, Ansys powers innovation that drives human advancement.

Our strategy of Pervasive Insights seeks to deepen the use of simulation in our core market, to inject simulation throughout the product lifecycle and extend the accessibility to a broader set of users and use cases. Our business has three vectors of growth:

- More products. Our broad and deep multiphysics portfolio enables us to grow with customers as they use simulation to solve more complex problems across a broad set of industries.
- More users. Investments in simulation education and user experience simplification has made simulation more accessible to a broader user base.
- More computations. Larger and more complex simulations drive more computation, requiring customers to use more Ansys licenses to complete their simulations.

Through decades of investments in the academic community and enhanced user experiences, our solutions have become accessible and relevant beyond our core "engineering" end user, to reach more users upstream and downstream from our core, which is the product validation process. Our multiphysics solutions enable our customers to address increasingly complex research and development (R&D) challenges from the component through the system and mission level of analysis. Our products seamlessly enable access to high performance compute capacity to run simulations, on-premises or in the cloud, which means our customers' R&D teams are unencumbered by compute capacity limitations that can hinder R&D cycle times.

The engineering simulation software market is strong and growing. The market growth is driven by customers' need for rapid, quality innovation in a cost efficient manner, enabling faster time to market for new products and lower warranty costs. Increasing product complexity is driving sustained demand for simulations. Key industry trends fueling customers' increasing needs for simulation include:

- Electrification;
- Autonomy;
- Connectivity;
- The industrial internet of things; and
- Sustainability, including minimizing waste and physical prototyping, and improving circularity and development time.

We have been investing and intend to continue to invest in our portfolio to broaden the range of physics and enable customers to analyze the interactions among physics at the component, system and mission level. Our strategy of Pervasive Insights is aligned with the near-term market growth opportunities and is laying the foundation for a future where simulation can be further democratized to broader classes of end users and end-use cases.

To augment our organic development roadmaps, we intend to continue our strategic and disciplined acquisition strategy to grow our business. Our strategy is to partner with industry leaders to extend simulation into other ecosystems and customer R&D workflows. Our business is built on a culture of high ethical standards and commitment to diversity, equity, inclusion and belonging.

We license our technology to businesses in a diverse set of industries, educational institutions and governmental agencies. We believe that the features, functionality and integrated multiphysics capabilities of our software products are as strong as they have ever been. The software business is generally characterized by long sales cycles which 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. As a result, we believe that our overall performance is best measured by fiscal year results rather than by quarterly results.

We address the competition and price pressure that we face 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 increasing the capabilities of our existing products; maintaining a diverse industry footprint and focusing on customer needs, training, consulting and support; and enhancing our distribution channels. We also evaluate and execute strategic acquisitions to supplement our global engineering talent, product offerings and distribution channels.

Overview

Overall GAAP and Non-GAAP Results

This section includes a discussion of GAAP and non-GAAP results. For reconciliations of non-GAAP results to GAAP results, see the section titled "Non-GAAP Results" herein.

The 2023 period non-GAAP results exclude the income statement effects of stock-based compensation, excess payroll taxes related to stock-based compensation, amortization of acquired intangible assets, expenses related to business combinations and adjustments for the income tax effect of the excluded items. The 2022 period non-GAAP results also exclude the income statement effects of acquisition accounting adjustments to deferred revenue from business combinations closed prior to 2022. There is no adjustment in 2023 as the impact is not material.

Our GAAP and non-GAAP results for the three and nine months ended September 30, 2023 as compared to the three and nine months ended September 30, 2022 reflected the following variances:

	Three Months Ended September 30, 2023		Nine Months Ended September 30, 2023	
	GAAP	Non-GAAP	GAAP	Non-GAAP
Revenue	**(2.9)%**	**(3.1)%**	**6.8 %**	6.3 %
Operating income	**(43.4)%**	**(19.5)%**	**(11.9)%**	0.6 %
Diluted earnings per share	**(41.8)%**	**(20.3)%**	**(15.1)%**	(1.0)%

Our results reflect a decline in revenue during the three months ended September 30, 2023 due to reductions in subscription lease license and perpetual license revenue, partially offset by an increase in maintenance revenue. Our results reflect an increase in revenue during the nine months ended September 30, 2023 due to growth in maintenance and subscription lease license revenue, partially offset by a decline in perpetual license revenue. We also experienced increased operating expenses during the three and nine months ended September 30, 2023, primarily due to increased personnel costs.

In the context of broader U.S. foreign policy shifts, the U.S. Department of Commerce is continuing to apply controls to the export to China of certain technologies. Ansys maintains a robust global compliance program. Compliance and cooperation with the U.S. government's evolving requirements are paramount to Ansys. Ansys has and will continue to align our internal processes to comply with U.S. export laws and regulations and any changes to those laws and regulations. During the third quarter, the U.S. Department of Commerce informed Ansys of additional restrictions on sales to certain Chinese entities, and incremental approval processes and export restrictions on the sale of certain Ansys products and services to entities performing research & development and certain controlled activities in China. The incremental export restrictions and processes took effect during the third quarter and initially included a broad export license requirement for certain China sales, which was later replaced by an enhanced Ansys screening process that was approved by the U.S. Department of Commerce's Bureau of Industry and Security (BIS) on the final business day of the quarter. The new restrictions and processes have led to an elongated transaction cycle with certain prospects, which, in turn, is expected to lead to a delay in certain fourth quarter transactions and in some situations, could result in a loss of business. Ansys will continue to work collaboratively with the U.S. Department of Commerce to adhere to the new requirements, and we have internally aligned our business operations to adjust to these requirements. The requirements negatively impacted revenue and annual contract value (ACV) by $20.0 million in the current quarter and we expect a headwind for fiscal year 2023 of $25.0 million.

The third quarter's operating results also reflect a structural timing dynamic in the renewal base this quarter in which fewer lease contracts were up for renewal, resulting in comparatively lower up-front lease license revenue recognition. Quarterly dynamics may not be representative of the momentum in our business given the shifting mix of license types and renewal cycles that can be volatile quarter to quarter. While this timing dynamic leads to revenue volatility, it does not represent changes in customers' software usage or cash flows. This further highlights the importance of measuring our results based on our fiscal year rather than individual quarters.

This section also includes a discussion of constant currency results, which we use for financial and operational decision-making and as a means to evaluate period-to-period comparisons by excluding the effects of foreign currency fluctuations on the reported results. All constant currency results presented in this Item 2 exclude the effects of foreign currency fluctuations on the reported results. To present this information, the 2023 period 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 2022 comparable period, rather than the actual exchange rates in effect for the 2023 period. Constant currency growth rates are calculated by adjusting the 2023 period reported amounts by the 2023 period currency fluctuation impacts and comparing to the 2022 comparable period reported amounts.

Impact of Foreign Currency

Our comparative financial results were impacted by fluctuations in the U.S. Dollar during the three and nine months ended September 30, 2023 as compared to the three and nine months ended September 30, 2022. The impacts on our revenue and operating income as a result of the fluctuations of the U.S. Dollar when measured against our foreign currencies based on 2022 period exchange rates are reflected in the table below. Amounts in brackets indicate an adverse impact from currency fluctuations.

	Three Months Ended September 30, 2023		Nine Months Ended September 30, 2023	
(in thousands)	**GAAP**	**Non-GAAP**	**GAAP**	**Non-GAAP**
Revenue	**$ 6,163**	$ 6,163	**$ (11,180)**	$ (11,180)
Operating income	**$ 2,505**	$ 2,990	**$ (3,138)**	$ (3,041)

In constant currency, our variances were as follows:

	Three Months Ended September 30, 2023		Nine Months Ended September 30, 2023	
	GAAP	**Non-GAAP**	**GAAP**	**Non-GAAP**
Revenue	**(4.2)%**	(4.4)%	**7.6 %**	7.1 %
Operating income	**(45.4)%**	(21.0)%	**(10.9)%**	1.2 %

Other Key Business Metric

ACV is a key performance metric and is useful to investors in assessing the strength and trajectory of our business. ACV is a supplemental metric to help evaluate the annual performance of the business. Over the life of the contract, ACV equals the total value realized from a customer. ACV is not impacted by the timing of license revenue recognition. ACV is used by management in financial and operational decision-making and in setting sales targets used for compensation. ACV is not a replacement for, and should be viewed independently of, GAAP 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 subscription 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.

When we refer to the anniversary dates in the definition of ACV above, we are referencing the date of the beginning of the next twelve-month period in a contractually committed multi-year contract. If a contract is three years in duration, with a start date of July 1, 2023, the anniversary dates would be July 1, 2024 and July 1, 2025. We label these anniversary dates as they are contractually committed. While this contract would be up for renewal on July 1, 2026, our ACV performance metric does not assume any contract renewals.

Example 1: For purposes of calculating ACV, a $100,000 subscription lease contract or a $100,000 maintenance contract with a term of July 1, 2023 – June 30, 2024, would each contribute $100,000 to ACV for fiscal year 2023 with no contribution to ACV for fiscal year 2024.

Example 2: For purposes of calculating ACV, a $300,000 subscription lease contract or a $300,000 maintenance contract with a term of July 1, 2023 – June 30, 2026, would each contribute $100,000 to ACV in each of fiscal years 2023, 2024 and 2025. There would be no contribution to ACV for fiscal year 2026 as each period captures the full annual value upon the anniversary date.

Example 3: A perpetual license valued at $200,000 with a contract start date of March 1, 2023 would contribute $200,000 to ACV in fiscal year 2023.

During the three and nine months ended September 30, 2023 and 2022 our ACV was as follows:

	Three Months Ended September 30,						
(in thousands, except percentages)	2023		2022	Change			
	Actual	Constant Currency	Actual	Actual		Constant Currency	
		Amount		Amount	%	Amount	%
ACV	**$ 457,549**	$ 451,779	$ 409,317	$ 48,232	11.8	$ 42,462	10.4

	Nine Months Ended September 30,						
(in thousands, except percentages)	2023		2022	Change			
	Actual	Constant Currency	Actual	Actual		Constant Currency	
		Amount		Amount	%	Amount	%
ACV	**$ 1,345,305**	$ 1,355,529	$ 1,213,735	$ 131,570	10.8	$ 141,794	11.7

Our trailing twelve-month recurring ACV, converted from the functional currency to U.S. Dollars at the 2022 period monthly average exchange rates, was as follows:

	Twelve Months Ended September 30,		Change	
(in thousands, except percentages)	2023	2022	Amount	%
Recurring ACV at 2022 monthly average exchange rates	**$ 1,804,517**	$ 1,560,140	$ 244,377	15.7

Recurring ACV includes both subscription lease license and maintenance ACV and excludes perpetual license and service ACV.

Industry Commentary:

We continue to see our customers expand their digital engineering capabilities in support of digital transformation endeavors. Competitive pressures to reduce costs and shorten design cycles remain steady drivers of demand for our solutions. During the third quarter, our high-tech customers continued to invest in our simulation solutions to deliver more advanced chips, enhanced 5G and 6G technology, and next-generation automotive components. Within the aerospace and defense (A&D) industry, digital transformation remains a high-level priority for customers as they bolster defense and space programs. Our value proposition also remains attractive to automotive companies as major automotive companies seek to reduce product development costs, particularly for electric vehicles. Traditional original equipment manufacturers and suppliers continued to invest in simulation to drive electrification, advanced driver assistance systems, safety, and cybersecurity innovation. Additionally, electrification remains a key priority and investment driver among our industrial equipment customer base.

Geographic Trends:

The following table presents our geographic revenue variances using actual and constant currency rates during the three and nine months ended September 30, 2023 as compared to the three and nine months ended September 30, 2022:

	GAAP			
	Three Months Ended September 30, 2023		Nine Months Ended September 30, 2023	
	Actual	Constant Currency	Actual	Constant Currency
Americas	**4.2 %**	4.2 %	**14.0 %**	14.1 %
EMEA	**1.2 %**	(5.2) %	**6.0 %**	4.8 %
Asia-Pacific	**(16.8)%**	(15.6) %	**(3.1)%**	0.5 %
Total	**(2.9)%**	(4.2) %	**6.8 %**	7.6 %

	Non-GAAP			
	Three Months Ended September 30, 2023		Nine Months Ended September 30, 2023	
	Actual	Constant Currency	Actual	Constant Currency
Americas	4.0 %	3.9 %	13.4 %	13.5 %
EMEA	1.0 %	(5.4) %	5.5 %	4.2 %
Asia-Pacific	(17.0)%	(15.9) %	(3.6)%	— %
Total	(3.1)%	(4.4) %	6.3 %	7.1 %

The value and duration of multi-year subscription lease contracts executed during the period significantly impact the recognition of revenue. As a result, revenue may fluctuate, particularly on a quarterly basis, due to the timing of such contracts, relative differences in duration of long-term contracts from quarter to quarter and changes in the mix of license types sold compared to the prior year. Large swings in revenue growth rates are not necessarily indicative of customers' software usage changes or cash flows during the periods presented. To drive growth, we continue to focus on a number of sales improvement activities across our geographic regions, including sales hiring, pipeline building, productivity initiatives and customer engagement activities.

Use of Estimates:

The preparation of our 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 contract revenue, standalone selling prices of our products and services, allowance for doubtful accounts receivable, valuation of goodwill and other intangible assets, useful lives for depreciation and amortization, acquired deferred revenue, operating lease assets and liabilities, fair values of stock awards, deferred compensation, income taxes, uncertain tax positions, tax valuation reserves, 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.

Forward-Looking Information

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 (the Exchange Act). Forward-looking statements are statements that provide current expectations or forecasts of future events based on certain assumptions. Forward-looking statements are subject to risks, uncertainties, and factors relating to our business which could cause our actual results to differ materially from the expectations expressed in or implied by such forward-looking statements.

Forward-looking statements use words such as "anticipate," "believe," "could," "estimate," "expect," "forecast," "intend," "likely," "may," "outlook," "plan," "predict," "project," "should," "target," or other words of similar meaning. Forward-looking statements include those about market opportunity, including our total addressable market. We caution readers not to place undue reliance upon any such forward-looking statements, which speak only as of the date they are made. We undertake no obligation to update forward-looking statements, whether as a result of new information, future events or otherwise.

The risks associated with the following, among others, could cause actual results to differ materially from those described in any forward-looking statements:

- adverse conditions in the macroeconomic environment, including high inflation, recessionary conditions and volatility in equity and foreign exchange markets; political, economic and regulatory uncertainties in the countries and regions in which we operate;

- impacts from tariffs, trade sanctions, export controls or other trade barriers, including export control restrictions and licensing requirements for exports to China;

- impacts resulting from the conflict between Israel and Hamas, including impacts from changes to diplomatic relations and trade policy between the United States and other countries resulting from the conflict; impacts from changes to diplomatic relations and trade policy between the United States and Russia or the United States and other countries that may support Russia or take similar actions due to the conflict between Russia and Ukraine;

- constrained credit and liquidity due to disruptions in the global economy and financial markets, which may limit or delay availability of credit under our existing or new credit facilities, or which may limit our ability to obtain credit or financing on acceptable terms or at all;

- our ability to timely recruit and retain key personnel in a highly competitive labor market for skilled personnel, including potential financial impacts of wage inflation;

- declines in our customers' businesses resulting in adverse changes in procurement patterns; disruptions in accounts receivable and cash flow due to customers' liquidity challenges and commercial deterioration; uncertainties regarding demand for our products and services in the future and our customers' acceptance of new products; delays or declines in anticipated sales due to reduced or altered sales and marketing interactions with customers; and potential variations in our sales forecast compared to actual sales;

- increased volatility in our revenue due to the timing, duration and value of multi-year subscription lease contracts; and our reliance on high renewal rates for annual subscription lease and maintenance contracts;

- our ability to protect our proprietary technology; cybersecurity threats or other security breaches, including in relation to breaches occurring through our products and an increased level of our activity that is occurring from remote global off-site locations; and disclosure and misuse of employee or customer data whether as a result of a cybersecurity incident or otherwise;

- our ability and our channel partners' ability to comply with laws and regulations in relevant jurisdictions; and the outcome of contingencies, including legal proceedings, government or regulatory investigations and tax audit cases;
- uncertainty regarding income tax estimates in the jurisdictions in which we operate; and the effect of changes in tax laws and regulations in the jurisdictions in which we operate;
- the quality of our products, including the strength of features, functionality and integrated multiphysics capabilities; our ability to develop and market new products to address the industry's rapidly changing technology; failures or errors in our products and services; and increased pricing pressure as a result of the competitive environment in which we operate;
- investments in complementary companies, products, services and technologies; our ability to complete and successfully integrate our acquisitions and realize the financial and business benefits of the transactions; and the impact indebtedness incurred in connection with any acquisition could have on our operations;
- investments in global sales and marketing organizations and global business infrastructure; and dependence on our channel partners for the distribution of our products;
- current and potential future impacts of a global health crisis, natural disaster or catastrophe, and the actions taken to address these events by our customers, suppliers, regulatory authorities and our business, on the global economy and consolidated financial statements, and other public health and safety risks; and government actions or mandates;
- operational disruptions generally or specifically in connection with transitions to and from remote work environments; and the failure of our technological infrastructure or those of the service providers upon whom we rely including for infrastructure and cloud services;
- our intention to repatriate previously taxed earnings and to reinvest all other earnings of our non-U.S. subsidiaries;
- plans for future capital spending; the extent of corporate benefits from such spending including with respect to customer relationship management; and higher than anticipated costs for research and development or a slowdown in our research and development activities;
- our ability to execute on our strategies related to environmental, social, and governance matters, and meet evolving and varied expectations, including as a result of evolving regulatory and other standards, processes, and assumptions, the pace of scientific and technological developments, increased costs and the availability of requisite financing, and changes in carbon markets; and
- other risks and uncertainties described in our reports filed from time to time with the SEC.

Results of Operations

The results of operations discussed below are on a GAAP basis unless otherwise stated.

Three Months Ended September 30, 2023 Compared to Three Months Ended September 30, 2022

Revenue:

(in thousands, except percentages)	Three Months Ended September 30, 2023 GAAP	2023 Constant Currency Amount	2022 GAAP	Change GAAP Amount	Change GAAP %	Change Constant Currency Amount	Change Constant Currency %
Revenue:							
Subscription lease licenses	**$ 103,573**	$ 102,316	$ 136,489	$ (32,916)	(24.1)	$ (34,173)	(25.0)
Perpetual licenses	**58,849**	58,074	72,417	(13,568)	(18.7)	(14,343)	(19.8)
Software licenses	**162,422**	160,390	208,906	(46,484)	(22.3)	(48,516)	(23.2)
Maintenance	**278,108**	274,284	247,678	30,430	12.3	26,606	10.7
Service	**18,265**	17,958	15,927	2,338	14.7	2,031	12.8
Maintenance and service	**296,373**	292,242	263,605	32,768	12.4	28,637	10.9
Total revenue	**$ 458,795**	$ 452,632	$ 472,511	$ (13,716)	(2.9)	$ (19,879)	(4.2)

Revenue for the quarter ended September 30, 2023 decreased 2.9% compared to the quarter ended September 30, 2022, or 4.2% in constant currency. The reported $32.9 million decrease in lease license revenue was attributable to a $35.6 million decrease in value from multi-year licenses, partially offset by a $2.7 million increase in value from annual licenses. Perpetual license revenue, which is derived from new sales during the three months ended September 30, 2023, decreased 18.7%, or 19.8% in constant currency, as compared to the three months ended September 30, 2022. Driving the decrease in perpetual license revenue was a 17.6% decrease in average deal size and a 1.1% decrease in the volume of deals. Multi-year lease license revenue and perpetual license revenue were negatively impacted in the current quarter by $20.0 million related to incremental China export restrictions and enhanced approval processes. Maintenance revenue growth of 12.3%, or 10.7% in constant currency, is correlated with previous license sales and is driven substantially by our existing customer base. The reported $30.4 million growth in maintenance revenue was attributable to a $28.9 million increase in maintenance associated with lease licenses and a $1.5 million increase in maintenance associated with perpetual sales.

We continue to experience strong demand from our customers for contracts that often include longer-term, subscription leases involving a larger number of our software products. These arrangements typically involve a higher overall transaction price. The upfront recognition of license revenue related to these larger transactions can result in significant subscription lease revenue volatility. Software products, across a large variety of applications and industries, are increasingly distributed in software-as-a-service, cloud and other subscription environments in which the licensing approach is time-based rather than perpetual. This preference could result in a shift from perpetual licenses to time-based licenses, such as subscription leases, over the long term.

With respect to revenue, on average for the quarter ended September 30, 2023, the U.S. Dollar was 3.1% weaker, when measured against our foreign currencies, than for the quarter ended September 30, 2022. The table below presents the net impacts of currency fluctuations on revenue for the quarter ended September 30, 2023. Amounts in brackets indicate an adverse impact from currency fluctuations.

(in thousands)	Three Months Ended September 30, 2023
Euro	**$ 7,315**
South Korean Won	**765**
Taiwan Dollar	**(339)**
Indian Rupee	**(352)**
Japanese Yen	**(1,757)**
Other	**531**
Total	**$ 6,163**

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

	Three Months Ended September 30,	
	2023	2022
International	**55.4 %**	57.4 %
Domestic	**44.6 %**	42.6 %
Direct	**73.5 %**	74.8 %
Indirect	**26.5 %**	25.2 %

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 sheet does not represent the total value of annual or multi-year, noncancellable agreements. Our backlog represents deferred revenue associated with installment billings for periods beyond the current quarterly billing cycle and committed contracts with start dates beyond the end of the current period. Our deferred revenue and backlog as of September 30, 2023 and December 31, 2022 consisted of the following:

	Balance at September 30, 2023		
(in thousands)	Total	Current	Long-Term
Deferred revenue	**$ 370,433**	**$ 349,668**	**$ 20,765**
Backlog	**835,244**	**424,547**	**410,697**
Total	**$ 1,205,677**	**$ 774,215**	**$ 431,462**

	Balance at December 31, 2022		
(in thousands)	Total	Current	Long-Term
Deferred revenue	$ 435,758	$ 413,989	$ 21,769
Backlog	981,088	432,323	548,765
Total	$ 1,416,846	$ 846,312	$ 570,534

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 on both a GAAP and constant currency basis. 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.

	Three Months Ended September 30,						Change			
	2023				2022					
	GAAP		Constant Currency		GAAP		GAAP		Constant Currency	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	% of Revenue	Amount	%	Amount	%
Cost of sales:										
Software licenses	**$ 8,692**	**1.9**	$ 8,564	1.9	$ 8,425	1.8	$ 267	3.2	$ 139	1.6
Amortization	**20,707**	**4.5**	20,442	4.5	17,281	3.7	3,426	19.8	3,161	18.3
Maintenance and service	**35,858**	**7.8**	35,485	7.8	36,261	7.7	(403)	(1.1)	(776)	(2.1)
Total cost of sales	**65,257**	**14.2**	64,491	14.2	61,967	13.1	3,290	5.3	2,524	4.1
Gross profit	**$ 393,538**	**85.8**	$ 388,141	85.8	$ 410,544	86.9	$ (17,006)	(4.1)	$ (22,403)	(5.5)

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

Maintenance and Service: The net decrease in maintenance and service costs was driven by lower consulting and professional fees.

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

(in thousands, except percentages)	Three Months Ended September 30, 2023 GAAP Amount	% of Revenue	2023 Constant Currency Amount	% of Revenue	2022 GAAP Amount	% of Revenue	Change GAAP Amount	%	Change Constant Currency Amount	%
Operating expenses:										
Selling, general and administrative	**$ 194,552**	**42.4**	$ 193,092	42.7	$ 175,283	37.1	$ 19,269	11.0	$ 17,809	10.2
Research and development	**123,223**	**26.9**	122,003	27.0	108,056	22.9	15,167	14.0	13,947	12.9
Amortization	**5,947**	**1.3**	5,735	1.3	3,821	0.8	2,126	55.6	1,914	50.1
Total operating expenses	**323,722**	**70.6**	320,830	70.9	287,160	60.8	36,562	12.7	33,670	11.7
Operating income	**$ 69,816**	**15.2**	$ 67,311	14.9	$ 123,384	26.1	$ (53,568)	(43.4)	$ (56,073)	(45.4)

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

- Increased salaries, incentive compensation and other headcount-related costs of $11.7 million.
- Increased stock-based compensation of $5.8 million.

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 $10.1 million.
- Increased stock-based compensation of $4.3 million.

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

We have traditionally invested significant resources in research and development activities and expect to continue to make investments in expanding the ease of use and capabilities of our broad portfolio of simulation software products.

The impacts from currency fluctuations resulted in increased operating income of $2.5 million for the quarter ended September 30, 2023 as compared to the quarter ended September 30, 2022.

Interest Income: Interest income for the three months ended September 30, 2023 was $4.9 million as compared to $1.3 million for the three months ended September 30, 2022. Interest income increased as a result of a higher interest rate environment and the related increase in the average rate of return on invested cash balances.

Interest Expense: Interest expense for the quarter ended September 30, 2023 was $12.3 million as compared to $6.1 million for the quarter ended September 30, 2022 due to a higher interest rate environment.

Other Income (Expense), net: Other income (expense) consisted primarily of net foreign currency gains during the three months ended September 30, 2023 and losses on equity investments and net foreign currency losses during the three months ended September 30, 2022.

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

(in thousands, except percentages)	Three Months Ended September 30, 2023	2022
Income before income tax provision	**$ 62,545**	$ 117,981
Income tax provision	**$ 7,043**	$ 22,006
Effective tax rate	**11.3 %**	18.7 %

The decrease in the effective tax rate for the three months ended September 30, 2023 was a result of a decrease in U.S. federal tax expense on foreign earnings and increased benefits related to research and development credits.

When compared to the federal and state combined statutory rate for each respective period, the effective tax rates for the quarters ended September 30, 2023 and September 30, 2022 were favorably impacted by 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 September 30, 2023	2022
Net income	**$ 55,502**	$ 95,975
Diluted earnings per share	**$ 0.64**	$ 1.10
Weighted average shares outstanding - diluted	**87,381**	87,418

Nine Months Ended September 30, 2023 Compared to Nine Months Ended September 30, 2022

Revenue:

(in thousands, except percentages)	Nine Months Ended September 30, 2023 GAAP	2023 Constant Currency	2022 GAAP	Change GAAP Amount	Change GAAP %	Change Constant Currency Amount	Change Constant Currency %
		Amount					
Revenue:							
Subscription lease licenses	**$ 386,494**	$ 389,366	$ 362,977	$ 23,517	6.5	$ 26,389	7.3
Perpetual licenses	**199,977**	201,299	212,355	(12,378)	(5.8)	(11,056)	(5.2)
Software licenses	**586,471**	590,665	575,332	11,139	1.9	15,333	2.7
Maintenance	**820,393**	827,158	742,554	77,839	10.5	84,604	11.4
Service	**57,977**	58,198	53,552	4,425	8.3	4,646	8.7
Maintenance and service	**878,370**	885,356	796,106	82,264	10.3	89,250	11.2
Total revenue	**$ 1,464,841**	$ 1,476,021	$ 1,371,438	$ 93,403	6.8	$ 104,583	7.6

Revenue for the nine months ended September 30, 2023 increased 6.8% compared to the nine months ended September 30, 2022, or 7.6% in constant currency. Maintenance revenue growth of 10.5%, or 11.4% in constant currency, is correlated with previous license sales and is driven substantially by our existing customer base. The reported $77.8 million growth in maintenance revenue was attributable to a $68.1 million increase in maintenance associated with lease licenses and a $9.7 million increase in maintenance associated with perpetual sales. Subscription lease license revenue increased 6.5%, or 7.3% in constant currency, as compared to the nine months ended September 30, 2022, with substantially all of the increase attributable to incremental sales to our existing customers. The reported $23.5 million increase in lease license revenue was attributable to a $13.7 million increase in value from annual licenses and a $9.8 million increase in value from multi-year licenses. Perpetual license revenue, which is derived from new sales during the nine months ended September 30, 2023, decreased 5.8%, or 5.2% in constant currency, as compared to the nine months ended September 30, 2022. Driving the decrease in perpetual license revenue was a 4.6% decrease in average deal size and a 1.2% decrease in the volume of deals.

With respect to revenue, on average for the nine months ended September 30, 2023, the U.S. Dollar was 1.8% stronger, when measured against our foreign currencies, than for the nine months ended September 30, 2022. The table below presents the net impacts of currency fluctuations on revenue for the nine months ended September 30, 2023. Amounts in brackets indicate an adverse impact from currency fluctuations.

(in thousands)	Nine Months Ended September 30, 2023
Japanese Yen	**$ (10,256)**
Indian Rupee	**(1,828)**
South Korean Won	**(1,500)**
Taiwan Dollar	**(1,413)**
Euro	**5,611**
Other	**(1,794)**
Total	**$ (11,180)**

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

	Nine Months Ended September 30, 2023	2022
International	**54.8 %**	57.3 %
Domestic	**45.2 %**	42.7 %
Direct	**73.7 %**	73.7 %
Indirect	**26.3 %**	26.3 %

Cost of Sales and Operating Expenses:

The tables below reflect our operating results on both a GAAP and constant currency basis. 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.

	Nine Months Ended September 30, 2023				2022		Change			
	GAAP		Constant Currency		GAAP		GAAP		Constant Currency	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	% of Revenue	Amount	%	Amount	%
Cost of sales:										
Software licenses	**$ 29,095**	**2.0**	$ 29,206	2.0	$ 25,370	1.8	$ 3,725	14.7	$ 3,836	15.1
Amortization	**60,404**	**4.1**	60,331	4.1	51,947	3.8	8,457	16.3	8,384	16.1
Maintenance and service	**111,750**	**7.6**	113,044	7.7	111,897	8.2	(147)	(0.1)	1,147	1.0
Total cost of sales	**201,249**	**13.7**	202,581	13.7	189,214	13.8	12,035	6.4	13,367	7.1
Gross profit	**$ 1,263,592**	**86.3**	$ 1,273,440	86.3	$ 1,182,224	86.2	$ 81,368	6.9	$ 91,216	7.7

Software Licenses: The increase in the cost of software licenses was primarily due to increased third-party royalties of $3.8 million.

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

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

- Decreased salaries of $1.6 million.
- Decreased costs related to foreign exchange translation of $1.3 million due to a stronger U.S. Dollar.
- Increased stock-based compensation of $2.5 million.

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

(in thousands, except percentages)	Nine Months Ended September 30, 2023 GAAP Amount	2023 GAAP % of Revenue	2023 Constant Currency Amount	2023 Constant Currency % of Revenue	2022 GAAP Amount	2022 GAAP % of Revenue	Change GAAP Amount	Change GAAP %	Change Constant Currency Amount	Change Constant Currency %
Operating expenses:										
Selling, general and administrative	**$ 585,278**	**40.0**	$ 590,565	40.0	$ 515,421	37.6	$ 69,857	13.6	$ 75,144	14.6
Research and development	**368,581**	**25.2**	370,128	25.1	322,271	23.5	46,310	14.4	47,857	14.8
Amortization	**16,598**	**1.1**	16,474	1.1	11,975	0.9	4,623	38.6	4,499	37.6
Total operating expenses	**970,457**	**66.2**	977,167	66.2	849,667	62.0	120,790	14.2	127,500	15.0
Operating income	**$ 293,135**	**20.0**	$ 296,273	20.1	$ 332,557	24.2	$ (39,422)	(11.9)	$ (36,284)	(10.9)

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

- Increased salaries, incentive compensation and other headcount-related costs of $41.2 million.
- Increased stock-based compensation of $21.9 million.
- Increased business travel of $8.0 million as in-person meetings and live attendance at trade events have continued to expand.
- Increased marketing expenses of $3.1 million.
- Increased information technology (IT) maintenance and software hosting costs of $2.4 million.
- Increased facilities costs of $1.9 million.
- Decreased costs related to foreign exchange translation of $5.3 million due to a stronger U.S. Dollar.
- Decreased third-party commissions of $2.7 million.

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

- Increased salaries, incentive compensation and other headcount-related costs of $31.6 million.
- Increased stock-based compensation of $12.0 million.
- Increased IT maintenance and software hosting costs of $2.4 million.

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

The impacts from currency fluctuations resulted in decreased operating income of $3.1 million for the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022.

Interest Income: Interest income for the nine months ended September 30, 2023 was $12.4 million as compared to $2.1 million for the nine months ended September 30, 2022. The higher interest rate environment and the related increase in the average rate of return on invested cash balances was partially offset by a lower invested cash balance as a result of investments in acquisitions and share repurchases.

Interest Expense: Interest expense for the nine months ended September 30, 2023 was $34.6 million as compared to $13.7 million for the nine months ended September 30, 2022. Interest expense increased as a result of a higher interest rate environment.

Other Expense, net: Other expense for the nine months ended September 30, 2023 was $3.6 million as compared to other expense of $2.1 million for the nine months ended September 30, 2022. Other expense consisted primarily of losses on equity investments and net foreign currency losses.

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

	Nine Months Ended September 30,	
(in thousands, except percentages)	**2023**	**2022**
Income before income tax provision	**$ 267,366**	$ 318,904
Income tax provision	**$ 41,716**	$ 53,141
Effective tax rate	**15.6 %**	16.7 %

The decrease in the effective tax rate for the nine months ended September 30, 2023 was primarily due to increased benefits related to research and development credits and an increase in benefits related to tax planning in a foreign jurisdiction, partially offset by a decrease in benefits related to stock-based compensation.

When compared to the federal and state combined statutory rate for each respective period, the effective tax rates for the nine months ended September 30, 2023 and September 30, 2022 were favorably impacted by tax benefits from stock-based compensation, the FDII deduction and research and development credits, partially offset by the impact of non-deductible compensation.

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

	Nine Months Ended September 30,	
(in thousands, except per share data)	**2023**	**2022**
Net income	**$ 225,650**	$ 265,763
Diluted earnings per share	**$ 2.58**	$ 3.04
Weighted average shares outstanding - diluted	**87,335**	87,496

Non-GAAP Results

We provide non-GAAP revenue, non-GAAP gross profit, non-GAAP gross profit margin, 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 included below, as applicable.

ANSYS, INC. AND SUBSIDIARIES
Reconciliations of GAAP to Non-GAAP Measures
(Unaudited)

	Three Months Ended September 30, 2023						
(in thousands, except percentages and per share data)	**Revenue**	**Gross Profit**	**%**	**Operating Income**	**%**	**Net Income**	**EPS - Diluted[1]**
Total GAAP	**$ 458,795**	**$ 393,538**	**85.8 %**	**$ 69,816**	**15.2 %**	**$ 55,502**	**$ 0.64**
Stock-based compensation expense	**—**	**3,568**	**0.8 %**	**58,061**	**12.7 %**	**58,061**	**0.66**
Excess payroll taxes related to stock-based awards	**—**	**3**	**— %**	**241**	**0.1 %**	**241**	**—**
Amortization of intangible assets from acquisitions	**—**	**20,707**	**4.5 %**	**26,654**	**5.8 %**	**26,654**	**0.31**
Expenses related to business combinations	**—**	**—**	**— %**	**1,465**	**0.3 %**	**1,465**	**0.02**
Adjustment for income tax effect	**—**	**—**	**— %**	**—**	**— %**	**(19,026)**	**(0.22)**
Total non-GAAP	**$ 458,795**	**$ 417,816**	**91.1 %**	**$ 156,237**	**34.1 %**	**$ 122,897**	**$ 1.41**

[1] Diluted weighted average shares were 87,381.

	Three Months Ended September 30, 2022						
(in thousands, except percentages and per share data)	**Revenue**	**Gross Profit**	**%**	**Operating Income**	**%**	**Net Income**	**EPS - Diluted[1]**
Total GAAP	$ 472,511	$ 410,544	86.9 %	$ 123,384	26.1 %	$ 95,975	$ 1.10
Acquisition accounting for deferred revenue	1,162	1,162	— %	1,162	0.2 %	1,162	0.01
Stock-based compensation expense	—	2,621	0.5 %	46,970	9.9 %	46,970	0.55
Excess payroll taxes related to stock-based awards	—	37	— %	260	0.1 %	260	—
Amortization of intangible assets from acquisitions	—	17,281	3.7 %	21,102	4.4 %	21,102	0.24
Expenses related to business combinations	—	—	— %	1,210	0.3 %	1,210	0.01
Adjustment for income tax effect	—	—	— %	—	— %	(11,958)	(0.14)
Total non-GAAP	$ 473,673	$ 431,645	91.1 %	$ 194,088	41.0 %	$ 154,721	$ 1.77

[1] Diluted weighted average shares were 87,418.

ANSYS, INC. AND SUBSIDIARIES
Reconciliations of GAAP to Non-GAAP Measures
(Unaudited)

	Nine Months Ended September 30, 2023						
(in thousands, except percentages and per share data)	**Revenue**	**Gross Profit**	**%**	**Operating Income**	**%**	**Net Income**	**EPS - Diluted[1]**
Total GAAP	**$ 1,464,841**	**$ 1,263,592**	**86.3 %**	**$ 293,135**	**20.0 %**	**$ 225,650**	**$ 2.58**
Stock-based compensation expense	**—**	**9,924**	**0.6 %**	**158,533**	**10.7 %**	**158,533**	**1.81**
Excess payroll taxes related to stock-based awards	**—**	**303**	**— %**	**5,270**	**0.4 %**	**5,270**	**0.06**
Amortization of intangible assets from acquisitions	**—**	**60,404**	**4.2 %**	**77,002**	**5.3 %**	**77,002**	**0.88**
Expenses related to business combinations	**—**	**—**	**— %**	**5,758**	**0.4 %**	**5,758**	**0.07**
Adjustment for income tax effect	**—**	**—**	**— %**	**—**	**— %**	**(48,222)**	**(0.55)**
Total non-GAAP	**$ 1,464,841**	**$ 1,334,223**	**91.1 %**	**$ 539,698**	**36.8 %**	**$ 423,991**	**$ 4.85**

[1] Diluted weighted average shares were 87,335.

	Nine Months Ended September 30, 2022						
(in thousands, except percentages and per share data)	**Revenue**	**Gross Profit**	**%**	**Operating Income**	**%**	**Net Income**	**EPS - Diluted[1]**
Total GAAP	$ 1,371,438	$ 1,182,224	86.2 %	$ 332,557	24.2 %	$ 265,763	$ 3.04
Acquisition accounting for deferred revenue	6,758	6,758	0.1 %	6,758	0.3 %	6,758	0.08
Stock-based compensation expense	—	7,448	0.5 %	122,119	8.9 %	122,119	1.40
Excess payroll taxes related to stock-based awards	—	481	— %	5,530	0.5 %	5,530	0.06
Amortization of intangible assets from acquisitions	—	51,947	3.8 %	63,922	4.6 %	63,922	0.73
Expenses related to business combinations	—	—	— %	5,376	0.4 %	5,376	0.06
Adjustment for income tax effect	—	—	— %	—	— %	(40,929)	(0.47)
Total non-GAAP	$ 1,378,196	$ 1,248,858	90.6 %	$ 536,262	38.9 %	$ 428,539	$ 4.90

[1] Diluted weighted average shares were 87,496.

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. Under prior accounting guidance, a fair value provision resulted in acquired deferred revenue that was often recorded on the opening balance sheet at an amount that was lower than the historical carrying value. Although this fair value provision has no impact on our business or cash flow, it adversely impacts our reported GAAP revenue in the reporting periods following an acquisition. In 2022, we adopted accounting guidance which eliminates the fair value provision that resulted in the deferred revenue adjustment on a prospective basis. In order to provide investors with financial information that facilitates comparison of both historical and future results, we have historically provided non-GAAP financial measures which exclude the impact of the acquisition accounting adjustment for acquisitions prior to the adoption of the new guidance in 2022. The 2022 non-GAAP financial measures presented in this document include the adjustment to exclude the income statement effects of acquisition accounting adjustments to deferred revenue from business combinations closed prior to 2022. There is no adjustment included for 2023 as the impact is not material.

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 gross profit, non-GAAP gross profit margin, 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. 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 gross profit, non-GAAP gross profit margin, 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. Specifically, we exclude stock-based compensation 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.

Expenses 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. We also incur other expenses directly related to business combinations, including compensation expenses and concurrent restructuring activities, such as employee severances and other exit costs. These costs are included in our GAAP presentation of selling, general and administrative and research and development expenses. We exclude these acquisition-related 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, 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.

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 re-evaluate and update 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
Gross Profit	Non-GAAP Gross Profit
Gross Profit Margin	Non-GAAP Gross Profit Margin
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

Constant currency. In addition to the non-GAAP financial measures detailed above, we use constant currency results for financial and operational decision-making and as a means to evaluate period-to-period comparisons by excluding the effects of foreign currency fluctuations on the reported results. To present this information, the 2023 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 2022 comparable period, rather than the actual exchange rates in effect for the 2023 period. Constant currency growth rates are calculated by adjusting the 2023 reported amounts by the 2023 currency fluctuation impacts and comparing the adjusted amounts to the 2022 comparable period reported amounts. 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 reported results to our past reports of financial results without the effects of foreign currency fluctuations.

Liquidity and Capital Resources

(in thousands, except percentages)	September 30, 2023	December 31, 2022	Change Amount	Change %
Cash, cash equivalents and short-term investments	**$ 639,513**	$ 614,574	$ 24,939	4.1
Working capital	**$ 908,068**	$ 869,286	$ 38,782	4.5

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 September 30, 2023 and December 31, 2022:

(in thousands, except percentages)	September 30, 2023	% of Total	December 31, 2022	% of Total
Domestic	**$ 326,877**	**51.1**	$ 326,784	53.2
Foreign	**312,636**	**48.9**	287,790	46.8
Total	**$ 639,513**		$ 614,574	

In general, it is our intention to permanently reinvest all earnings in excess of previously taxed amounts. Substantially all of the pre-2018 earnings of our non-U.S. subsidiaries were taxed through the transition tax and post-2018 current earnings are taxed as part of global intangible low-taxed income tax expense. These taxes increase our previously taxed earnings and allow for the repatriation of the majority of our foreign earnings without any residual U.S. federal tax. Unrecognized provisions for taxes on indefinitely reinvested undistributed earnings of foreign subsidiaries would not be significant.

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

(in thousands, except percentages)	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Change Amount	Change %
Net cash provided by operating activities	**$ 484,400**	$ 457,031	$ 27,369	6.0

Net cash provided by operating activities increased during the nine months ended September 30, 2023 compared to the nine months ended September 30, 2022. The increase in net cash provided by operating activities was a result of increased customer receipts driven primarily by ACV growth, partially offset by increased payments related to higher operating expenses, income tax payments, and interest payments due to the higher interest rate environment as compared to the nine months ended September 30, 2022.

Cash Flows from Investing Activities

(in thousands, except percentages)	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Change Amount	Change %
Net cash used in investing activities	**$ (220,166)**	$ (258,622)	$ 38,456	14.9

Net cash used in investing activities decreased by $38.5 million during the nine months ended September 30, 2023 compared to the nine months ended September 30, 2022 due to decreased acquisition-related net cash outlays of $44.8 million. We currently plan capital spending of $25.0 million to $30.0 million during fiscal year 2023 as compared to the $24.4 million that was spent in fiscal year 2022. The level of spending will depend on various factors, including the growth of the business and general economic conditions.

Cash Flows from Financing Activities

	Nine Months Ended September 30,		Change	
(in thousands, except percentages)	**2023**	**2022**	**Amount**	**%**
Net cash used in financing activities	**$ (232,600)**	$ (197,978)	$ (34,622)	(17.5)

Net cash used in financing activities increased during the nine months ended September 30, 2023 compared to the nine months ended September 30, 2022 due to increased stock repurchases of $40.9 million.

Other Cash Flow Information

On June 30, 2022, we entered into a credit agreement (as amended, the 2022 Credit Agreement) with PNC Bank, National Association as administrative agent, swing line lender, and an L/C issuer, the lenders party thereto, and the other L/C issuers party thereto. The 2022 Credit Agreement refinanced our previous credit agreements in their entirety. The 2022 Credit Agreement provides for a $755.0 million unsecured term loan facility and a $500.0 million unsecured revolving loan facility, which includes a $50.0 million sublimit for the issuance of letters of credit. Terms used in this description of the 2022 Credit Agreement with initial capital letters that are not otherwise defined herein are as defined in the 2022 Credit Agreement.

As of September 30, 2023, the carrying value of our term loan was $753.8 million, with no principal payments due in the next twelve months. Borrowings under the term loan and revolving loan facilities accrue interest at a rate that is based on the Term SOFR plus an applicable margin or at the base rate plus an applicable margin, at our election. The base rate is the highest of (i) the Overnight Bank Funding Rate, plus 0.500%, (ii) the PNC Bank, National Association prime rate, and (iii) Daily Simple SOFR plus an adjustment for SOFR plus 1.00%. The applicable margin for the borrowings is a percentage per annum based on the lower of (1) a pricing level determined by our then-current consolidated net leverage ratio and (2) a pricing level determined by our public debt rating (if available).

On September 29, 2023, the 2022 Credit Agreement was amended to provide for an interest rate adjustment (Sustainability Rate Adjustment) based upon the achievement of certain environmental, social and governance key performance indicators (KPIs). The Sustainability Rate Adjustment range is +/- 0.05% and will go into effect in the first quarter of 2024 based on the 2023 KPIs and will be adjusted annually based on the KPIs of the preceding year.

The rate in effect for the fourth quarter under the 2022 Credit Agreement is 6.37%.

We previously entered into operating lease commitments, primarily for our domestic and international offices. The commitments related to these operating leases is $136.6 million, of which $26.2 million is due in the next twelve months.

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

	Nine Months Ended	
(in thousands, except per share data)	**September 30, 2023**	**September 30, 2022**
Number of shares repurchased	**650**	500
Average price paid per share	**$ 302.34**	$ 311.14
Total cost	**$ 196,494**	$ 155,571

As of September 30, 2023, 1.1 million shares remained available for repurchase under the program. Average price paid per share excludes excise tax. As of January 1, 2023, our share repurchases in excess of issuances are subject to a 1% excise tax enacted by the Inflation Reduction Act. Any excise tax incurred is recognized and reflected as part of the cost basis of the shares acquired in the Condensed Consolidated Statements of Stockholders' Equity.

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 including 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.

We believe that existing cash and cash equivalent balances, together with cash generated from operations and access to our $500.0 million revolving loan facility, will be sufficient to meet our working capital and capital expenditure requirements and contractual obligations through at least the next twelve months and the foreseeable future thereafter. Our cash requirements in the future may also be financed through additional equity or debt financings. However, future disruptions in the capital markets could make financing more challenging, and there can be no assurance that such financing can be obtained on commercially reasonable terms, or at all.

Contractual and Other Obligations

There were no material changes to our significant contractual and other obligations during the nine months ended September 30, 2023 as compared to those previously reported within "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our 2022 Form 10-K.

Critical Accounting Estimates

During the first quarter of 2023, 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, 2023. No events or circumstances changed during the nine months ended September 30, 2023 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 our critical accounting estimates as previously reported within "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our 2022 Form 10-K.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Foreign Currency Exchange 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. We seek to reduce our currency exchange transaction risks primarily through our normal operating and treasury activities, including the use of derivative instruments.

With respect to revenue, on average for the quarter ended September 30, 2023, the U.S. Dollar was 3.1% weaker, when measured against our foreign currencies, than for the quarter ended September 30, 2022. With respect to revenue, on average for the nine months ended September 30, 2023, the U.S. Dollar was 1.8% stronger, when measured against our foreign currencies, than for the nine months ended September 30, 2022. The table below presents the net impacts of currency fluctuations on revenue for the three and nine months ended September 30, 2023. Amounts in brackets indicate a net adverse impact from currency fluctuations.

(in thousands)	Three Months Ended September 30, 2023	Nine Months Ended September 30, 2023
Japanese Yen	$ (1,757)	$ (10,256)
Indian Rupee	(352)	(1,828)
South Korean Won	765	(1,500)
Taiwan Dollar	(339)	(1,413)
Euro	7,315	5,611
Other	531	(1,794)
Total	$ 6,163	$ (11,180)

The impacts from currency fluctuations resulted in increased operating income of $2.5 million and decreased operating income of $3.1 million for the three and nine months ended September 30, 2023, respectively, as compared to the three and nine months ended September 30, 2022, respectively.

A hypothetical 10% strengthening in the U.S. Dollar against other currencies would have decreased our revenue by $19.8 million and $63.6 million for the three and nine months ended September 30, 2023, respectively, and decreased our operating income by $7.4 million and $22.6 million for the three and nine months ended September 30, 2023, respectively.

The most meaningful currency impacts on revenue and operating income are typically attributable to U.S. Dollar exchange rate changes against the Euro and Japanese Yen. Historical exchange rates for these currency pairs are reflected in the charts below:

	Period-End Exchange Rates	
As of	**EUR/USD**	**USD/JPY**
September 30, 2023	**1.06**	**149**
December 31, 2022	1.07	131
September 30, 2022	0.98	145

	Average Exchange Rates	
Three Months Ended	**EUR/USD**	**USD/JPY**
September 30, 2023	**1.09**	**145**
September 30, 2022	1.01	138

	Average Exchange Rates	
Nine Months Ended	**EUR/USD**	**USD/JPY**
September 30, 2023	**1.08**	**138**
September 30, 2022	1.06	127

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 and nine months ended September 30, 2023, interest income was $4.9 million and $12.4 million, respectively, and interest expense was $12.3 million and $34.6 million, respectively.

Cash and cash equivalents consist primarily of highly liquid investments such as money market funds and deposits held at major banks. Short-term investments consist primarily of deposits held by certain foreign subsidiaries with original maturities of three months to one year. A hypothetical 100 basis point change in interest rates on these holdings would have an immaterial impact on our financial results.

Our outstanding term loan borrowings of $755.0 million as of September 30, 2023 accrue interest at a rate that is based on the Term SOFR plus an applicable margin or at the base rate plus an applicable margin, at our election. The base rate is the highest of (i) the Overnight Bank Funding Rate, plus 0.500%, (ii) the PNC Bank, National Association prime rate, and (iii) Daily Simple SOFR plus an adjustment for SOFR plus 1.00%. The applicable margin for the borrowings is a percentage per annum based on the lower of (1) a pricing level determined by our then-current consolidated net leverage ratio and (2) a pricing level determined by our public debt rating (if available).

On September 29, 2023, the 2022 Credit Agreement was amended to provide for an interest rate adjustment (Sustainability Rate Adjustment) based upon the achievement of certain environmental, social and governance key performance indicators (KPIs). The Sustainability Rate Adjustment range is +/- 0.05% and will go into effect in the first quarter of 2024 based on the 2023 KPIs and will be adjusted annually based on the KPIs of the preceding year.

Because interest rates applicable to the outstanding borrowings are variable, we are exposed to interest rate risk from changes in the underlying index rates, which affects our interest expense. A hypothetical increase of 100 basis points in interest rates would result in an increase in interest expense and a corresponding decrease in cash flows of $7.7 million over the next twelve months, based on outstanding borrowings at September 30, 2023.

No other material change has occurred in our market risk subsequent to December 31, 2022.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures. As required by Rules 13a-15 and 15d-15 of 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) and Rule 15d-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 September 30, 2023 that materially affected, or that are reasonably likely to materially affect, our internal control over financial reporting.

PART II – OTHER INFORMATION

Item 1. Legal Proceedings

We are subject to various claims, investigations and legal and regulatory proceedings that arise in the ordinary course of business, including, but not limited to, commercial disputes, labor and employment matters, tax audits, alleged infringement of third parties' intellectual property rights and other matters. Use or distribution of our products could generate product liability, regulatory infraction, or claims by our customers, end users, channel partners, government entities or third parties. Sales and marketing activities that impact processing of personal data, as well as measures taken to promote license compliance against pirated or unauthorized usage of our commercial products, may also result in claims by customers and individual employees of customers or by non-customers using pirated versions of our products. Each of these matters is subject to various uncertainties, and it is possible that an unfavorable resolution of one or more of these matters could have a significant adverse effect on our condensed consolidated financial statements as well as cause reputational damage. In our opinion, the resolution of pending matters is not expected to have a material adverse effect on our financial position, results of operations or cash flows.

Item 1A. Risk Factors

We face a number of risks that could materially and adversely affect our business, prospects, financial condition, results of operations and cash flows. A discussion of our risk factors can be found in Part I, Item 1A "Risk Factors" in our 2022 Form 10-K. The risk factor set forth below includes additional information relating to trade restrictions and should be read together with the risk factors disclosed in our 2022 Form 10-K.

We are subject to trade restrictions that have impacted, and may continue to impact, our ability to sell to customers and could result in liabilities for violations.

Due to the global nature of our business, we are subject to domestic and international trade protection laws, policies, sanctions and other regulatory requirements affecting trade and investment. For example, we are subject to import and export restrictions and regulations that prohibit the shipment or provision of certain products and services to certain countries, regions and persons targeted by the U.S. and certain end uses identified by the U.S., including the Export Administration Regulations administered by the U.S. Department of Commerce's Bureau of Industry and Security (BIS), economic and trade sanctions administered by the U.S. Department of Treasury's Office of Foreign Assets Control (OFAC) and International Traffic in Arms Regulations (ITAR) administered by the Department of State's Directorate of Defense Trade Controls (DDTC).

BIS continues to expand its export control restrictions, including with respect to the export to China of certain technologies, impose new export licensing requirements, and require enhanced denied party screening processes. These additional restrictions have limited and could continue to limit our ability to sell and deliver products and services to certain customers, including to entities performing research and development and certain controlled activities in China. Export control restrictions have led to, and, in the future may continue to lead to, elongated transaction cycles with certain customers. In addition, export control restrictions have resulted, and may continue to result, in reduced sales and/or delays in our ability to deliver products and services to certain prospects, adversely affecting our business and consolidated financial statements. In certain cases, when an export license may be required to deliver products and services to certain customers, the receipt of licenses to export to certain countries, including China, is not guaranteed and, in the absence of a license or applicable license exception, our ability to sell and deliver products and services to certain customers may be negatively impacted. Additionally, BIS continues to add more companies, including existing customers, to its Entity List, and OFAC continues to increase the number of companies subject to its sanctions, which continues to limit the companies with which we can do business.

Adding companies as restricted parties and subjecting companies to heightened export control restrictions may additionally encourage those companies to seek substitute products from competitors whose products are not subject to these restrictions or to develop their own products.

Additionally, existing and prospective customers have been and may continue to be added as restricted parties and/or be subjected to trade restrictions and additional end uses, products or services have been and may continue to be identified for further restrictions. Such actions have resulted in, and may continue to result in, increases to our cost of sales and time to market. Additional trade restrictions on our business by the U.S., China or other countries may also result in other indirect impacts that cannot be quantified. Restrictions on our ability to sell and ship to customers could have a significant adverse effect on our business and consolidated financial statements.

Our products could also be delivered to restricted parties by third parties, including our channel partners. We take measures to confirm that our channel partners comply with all applicable trade restrictions, but any failure by channel partners to comply with such restrictions could have negative consequences for us.

Violators of trade restrictions or restricted end uses may be subject to significant penalties, which may include considerable monetary fines, criminal proceedings against them and their officers and employees, a denial of export privileges and suspension or debarment from selling products or services to the federal government. Any such penalties could have a significant adverse effect on our business and consolidated financial statements. In addition, the political and media scrutiny surrounding any governmental investigation could cause significant expense and reputational harm and distract senior executives from managing normal day-to-day operations.

Item 2. Unregistered Sales of Equity Securities, Use of Proceeds, and Issuer Purchases of Equity Securities

None.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Trading Arrangements

None of the directors or "officers" of ANSYS, Inc. (as defined in Rule 16a-1(f) promulgated under the Securities Exchange Act of 1934, as amended) adopted, modified, or terminated a “Rule 10b5-1 trading arrangement” or a “non-Rule 10b5-1 trading arrangement,” as each term is defined in Item 408 of Regulation S-K, during the fiscal quarter ended September 30, 2023.

Item 6. Exhibits

Exhibit No.	Exhibit
10.1*	Amendment No. 1 to Credit Agreement, dated as of September 29, 2023, among ANSYS, Inc., as Borrower, PNC Bank, National Association, as Administrative Agent, and the lenders party thereto.
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)

*Certain schedules, exhibits, and appendices have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The Company hereby undertakes to furnish copies of any omitted schedule, exhibit, or appendix to the SEC upon request.

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SIGNATURES

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

ANSYS, Inc.

Date:	November 1, 2023	By:	/s/ *Ajei S. Gopal*
			Ajei S. Gopal President and Chief Executive Officer (Principal Executive Officer)
Date:	November 1, 2023	By:	/s/ *Nicole Anasenes*
			Nicole Anasenes Chief Financial Officer and Senior Vice President, Finance (Principal Financial Officer and Principal Accounting Officer)