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 July 3, 2021

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 000-15867

CADENCE DESIGN SYSTEMS, INC.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**00-0000000**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
2655 Seely Avenue, Building 5, San Jose, California	**95134**
(Address of Principal Executive Offices)	**(Zip Code)**

(408) 943-1234
Registrant's Telephone Number, including Area Code

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	**CDNS**	**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	☐	Smaller Reporting Company	☐
Non-accelerated Filer	☐			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 ☒

On July 3, 2021, approximately 276,780,000 shares of the registrant's common stock, $0.01 par value, were outstanding.

CADENCE DESIGN SYSTEMS, INC.
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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

CADENCE DESIGN SYSTEMS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(In thousands)
(Unaudited)

	As of	
	July 3, 2021	January 2, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 847,160	$ 928,432
Receivables, net	389,986	338,487
Inventories	90,479	75,956
Prepaid expenses and other	129,442	135,712
Total current assets	1,457,067	1,478,587
Property, plant and equipment, net	301,979	311,125
Goodwill	929,525	782,087
Acquired intangibles, net	264,789	210,590
Deferred taxes	729,790	732,290
Other assets	439,398	436,106
Total assets	$ 4,122,548	$ 3,950,785
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued liabilities	$ 340,607	$ 349,951
Current portion of deferred revenue	586,109	446,857
Total current liabilities	926,716	796,808
Long-term liabilities:		
Long-term portion of deferred revenue	98,408	107,064
Long-term debt	347,186	346,793
Other long-term liabilities	233,495	207,102
Total long-term liabilities	679,089	660,959
Commitments and contingencies (Note 12)		
Stockholders' equity:		
Common stock and capital in excess of par value	2,354,801	2,217,939
Treasury stock, at cost	(2,509,668)	(2,057,829)
Retained earnings	2,693,402	2,350,333
Accumulated other comprehensive loss	(21,792)	(17,425)
Total stockholders' equity	2,516,743	2,493,018
Total liabilities and stockholders' equity	$ 4,122,548	$ 3,950,785

See notes to condensed consolidated financial statements.

CADENCE DESIGN SYSTEMS, INC.
CONDENSED CONSOLIDATED INCOME STATEMENTS
(In thousands, except per share amounts)
(Unaudited)

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
Revenue:				
Product and maintenance	$ 687,884	$ 601,356	$ 1,386,938	$ 1,183,055
Services	40,401	37,062	77,375	73,320
Total revenue	728,285	638,418	1,464,313	1,256,375
Costs and expenses:				
Cost of product and maintenance	55,842	55,669	120,748	111,115
Cost of services	20,917	19,546	39,978	38,563
Marketing and sales	135,967	120,476	268,793	246,220
Research and development	285,227	250,821	556,219	492,489
General and administrative	40,333	35,641	80,285	69,233
Amortization of acquired intangibles	5,030	4,590	9,661	8,796
Restructuring and other credits	(469)	(275)	(746)	(1,342)
Total costs and expenses	542,847	486,468	1,074,938	965,074
Income from operations	185,438	151,950	389,375	291,301
Interest expense	(4,316)	(5,914)	(8,533)	(10,551)
Other income, net	2,143	4,630	4,844	96
Income before provision for income taxes	183,265	150,666	385,686	280,846
Provision for income taxes	27,365	19,378	42,617	25,570
Net income	$ 155,900	$ 131,288	$ 343,069	$ 255,276
Net income per share – basic	$ 0.57	$ 0.48	$ 1.25	$ 0.93
Net income per share – diluted	$ 0.56	$ 0.47	$ 1.23	$ 0.91
Weighted average common shares outstanding – basic	273,565	273,432	273,843	273,488
Weighted average common shares outstanding – diluted	278,558	279,080	279,399	279,207

See notes to condensed consolidated financial statements.

CADENCE DESIGN SYSTEMS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)
(Unaudited)

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
Net income	$ 155,900	$ 131,288	$ 343,069	$ 255,276
Other comprehensive income (loss), net of tax effects:				
Foreign currency translation adjustments	5,788	1,108	(4,136)	(8,510)
Changes in defined benefit plan liabilities	(543)	450	(231)	419
Total other comprehensive income (loss), net of tax effects	5,245	1,558	(4,367)	(8,091)
Comprehensive income	$ 161,145	$ 132,846	$ 338,702	$ 247,185

See notes to condensed consolidated financial statements.

CADENCE DESIGN SYSTEMS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands)
(Unaudited)

	Three Months Ended July 3, 2021					
	Common Stock					
	Shares	Par Value and Capital in Excess of Par	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Loss	Total
Balance, April 3, 2021	278,265	$ 2,307,965	$ (2,275,998)	$ 2,537,502	$ (27,037)	$ 2,542,432
Net income	—	—	—	155,900	—	$ 155,900
Other comprehensive income, net of taxes	—	—	—	—	5,245	$ 5,245
Purchase of treasury stock	(1,720)	—	(220,023)	—	—	$ (220,023)
Issuance of common stock and reissuance of treasury stock under equity incentive plans, net of forfeitures	367	791	3,548	—	—	$ 4,339
Stock received for payment of employee taxes on vesting of restricted stock	(132)	(4,473)	(17,195)	—	—	$ (21,668)
Stock-based compensation expense	—	50,518	—	—	—	$ 50,518
Balance, July 3, 2021	276,780	$ 2,354,801	$ (2,509,668)	$ 2,693,402	$ (21,792)	$ 2,516,743

	Three Months Ended June 27, 2020					
	Common Stock					
	Shares	Par Value and Capital in Excess of Par	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Loss	Total
Balance, March 28, 2020	279,187	$ 2,099,425	$ (1,778,533)	$ 1,883,677	$ (46,575)	$ 2,157,994
Net income	—	—	—	131,288	—	$ 131,288
Other comprehensive income, net of taxes	—	—	—	—	1,558	$ 1,558
Purchase of treasury stock	(920)	—	(75,014)	—	—	$ (75,014)
Issuance of common stock and reissuance of treasury stock under equity incentive plans, net of forfeitures	673	(119)	10,146	—	—	$ 10,027
Stock received for payment of employee taxes on vesting of restricted stock	(146)	(3,197)	(12,932)	—	—	$ (16,129)
Stock-based compensation expense	—	46,907	—	—	—	$ 46,907
Balance, June 27, 2020	278,794	$ 2,143,016	$ (1,856,333)	$ 2,014,965	$ (45,017)	$ 2,256,631

	Six Months Ended July 3, 2021					
	Common Stock					
	Shares	Par Value and Capital in Excess of Par	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Loss	Total
Balance, January 2, 2021	278,941	$ 2,217,939	$ (2,057,829)	$ 2,350,333	$ (17,425)	$ 2,493,018
Net income	—	—	—	343,069	—	$ 343,069
Other comprehensive loss, net of taxes	—	—	—	—	(4,367)	$ (4,367)
Purchase of treasury stock	(3,043)	—	(392,290)	—	—	$ (392,290)
Issuance of common stock and reissuance of treasury stock under equity incentive plans, net of forfeitures	1,391	42,917	9,335	—	—	$ 52,252
Stock received for payment of employee taxes on vesting of restricted stock	(509)	(9,169)	(68,884)	—	—	$ (78,053)
Stock-based compensation expense	—	103,114	—	—	—	$ 103,114
Balance, July 3, 2021	276,780	$ 2,354,801	$ (2,509,668)	$ 2,693,402	$ (21,792)	$ 2,516,743

	Six Months Ended June 27, 2020					
	Common Stock					
	Shares	Par Value and Capital in Excess of Par	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Loss	Total
Balance, December 28, 2019	279,855	$ 2,046,237	$ (1,668,105)	$ 1,761,688	$ (36,926)	$ 2,102,894
Cumulative effect adjustment	—	—	—	(1,999)	—	$ (1,999)
Net income	—	—	—	255,276	—	$ 255,276
Other comprehensive loss, net of taxes	—	—	—	—	(8,091)	$ (8,091)
Purchase of treasury stock	(2,408)	—	(175,036)	—	—	$ (175,036)
Issuance of common stock and reissuance of treasury stock under equity incentive plans, net of forfeitures	1,957	10,758	33,097	—	—	$ 43,855
Stock received for payment of employee taxes on vesting of restricted stock	(610)	(7,368)	(46,289)	—	—	$ (53,657)
Stock-based compensation expense	—	93,389	—	—	—	$ 93,389
Balance, June 27, 2020	278,794	$ 2,143,016	$ (1,856,333)	$ 2,014,965	$ (45,017)	$ 2,256,631

See notes to condensed consolidated financial statements.

CADENCE DESIGN SYSTEMS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Six Months Ended	
	July 3, 2021	June 27, 2020
Cash and cash equivalents at beginning of period	$ 928,432	$ 705,210
Cash flows from operating activities:		
Net income	343,069	255,276
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	71,799	69,902
Amortization of debt discount and fees	687	512
Stock-based compensation	103,114	93,389
(Gain) loss on investments, net	(795)	4,036
Deferred income taxes	1,710	(1,609)
Provisions for losses on receivables	242	922
ROU asset amortization and change in operating lease liabilities	(2,483)	1,502
Other non-cash items	183	296
Changes in operating assets and liabilities, net of effect of acquired businesses:		
Receivables	(48,016)	(2,497)
Inventories	(14,527)	11,020
Prepaid expenses and other	7,690	9,910
Other assets	6,991	(17,687)
Accounts payable and accrued liabilities	(14,771)	(11,141)
Deferred revenue	127,286	148,508
Other long-term liabilities	6,639	504
Net cash provided by operating activities	588,818	562,843
Cash flows from investing activities:		
Purchases of property, plant and equipment	(31,139)	(43,535)
Cash paid in business combinations, net of cash acquired	(220,660)	(195,118)
Net cash used for investing activities	(251,799)	(238,653)
Cash flows from financing activities:		
Proceeds from revolving credit facility	—	350,000
Payment of debt issuance costs	(1,285)	—
Proceeds from issuance of common stock	52,252	43,667
Stock received for payment of employee taxes on vesting of restricted stock	(78,053)	(53,657)
Payments for repurchases of common stock	(392,290)	(175,036)
Net cash provided by (used for) financing activities	(419,376)	164,974
Effect of exchange rate changes on cash and cash equivalents	1,085	(5,188)
Increase (decrease) in cash and cash equivalents	(81,272)	483,976
Cash and cash equivalents at end of period	$ 847,160	$ 1,189,186
Supplemental cash flow information:		
Cash paid for interest	$ 7,920	$ 10,076
Cash paid for taxes, net	28,619	20,897

See notes to condensed consolidated financial statements.

NOTE 1. BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The condensed consolidated financial statements included in this Quarterly Report on Form 10-Q have been prepared by Cadence Design Systems, Inc. ("Cadence") without audit, pursuant to the rules and regulations of the United States Securities and Exchange Commission (the "SEC"). Certain information and footnote disclosures normally included in consolidated financial statements prepared in accordance with United States generally accepted accounting principles ("U.S. GAAP") have been condensed or omitted pursuant to such rules and regulations. However, Cadence believes that the disclosures contained in this Quarterly Report on Form 10-Q comply with the requirements of Section 13(a) of the Securities Exchange Act of 1934, as amended, (the "Exchange Act") for a Quarterly Report on Form 10-Q and are adequate to make the information presented not misleading. These condensed consolidated financial statements are meant to be, and should be, read in conjunction with the consolidated financial statements and the Notes thereto included in Cadence's Annual Report on Form 10-K for the fiscal year ended January 2, 2021.

The unaudited condensed consolidated financial statements included in this Quarterly Report on Form 10-Q reflect all adjustments (which include only normal, recurring adjustments and those items discussed in these Notes) that are, in the opinion of management, necessary to state fairly the results of operations, cash flows and financial position for the periods and dates presented. The results for such periods are not necessarily indicative of the results to be expected for the full fiscal year. Certain prior period balances have been reclassified to conform to the current period presentation. Management has evaluated subsequent events through the issuance date of the unaudited condensed consolidated financial statements.

Use of Estimates

Preparation of the condensed consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements and the reported amounts of revenue and expenses during the reporting period.

Due to the ongoing COVID-19 pandemic, there has been uncertainty and disruption in the global economy and financial markets. Cadence is not aware of any specific event or circumstance that would require an update to its estimates or judgments or a revision of the carrying value of its assets or liabilities as of July 26, 2021, the date of issuance of this Quarterly Report on Form 10-Q. These estimates may change, as new events occur and additional information is obtained. Actual results could differ materially from these estimates under different assumptions or conditions.

Recently Adopted Accounting Standards

Accounting for Income Taxes

In December 2019, the Financial Accounting Standards Board issued Accounting Standards Update 2019-12, "Simplifying the Accounting for Income Taxes," which simplifies the accounting for income taxes, eliminates certain exceptions within Accounting Standards Codification 740, Income Taxes, and clarifies certain aspects of the current guidance to promote consistency among reporting entities. Cadence adopted the new standard on January 3, 2021, the first day of fiscal 2021. The adoption of this standard did not impact Cadence's condensed consolidated financial statements for the period ended July 3, 2021.

NOTE 2. DEBT

Cadence's outstanding debt as of July 3, 2021 and January 2, 2021 was as follows:

	July 3, 2021			January 2, 2021		
	(In thousands)					
	Principal	Unamortized Discount	Carrying Value	Principal	Unamortized Discount	Carrying Value
Revolving Credit Facility	$ —	$ —	$ —	$ —	$ —	$ —
2024 Notes	350,000	(2,814)	347,186	350,000	(3,207)	346,793
Total outstanding debt	$ 350,000	$ (2,814)	$ 347,186	$ 350,000	$ (3,207)	$ 346,793

Revolving Credit Facility

In June 2021, Cadence terminated its existing revolving credit facility, dated January 30, 2017, and entered into a five-year senior unsecured revolving credit facility with a group of lenders led by Bank of America, N.A., as administrative agent (the “2021 Credit Facility”). The 2021 Credit Facility provides for borrowings up to $700.0 million, with the right to request increased capacity up to an additional $350.0 million upon the receipt of lender commitments, for total maximum borrowings of $1.05 billion. The 2021 Credit Facility expires on June 30, 2026. Any outstanding loans drawn under such credit facility are due at maturity on June 30, 2026, subject to an option to extend the maturity date. Outstanding borrowings may be repaid at any time prior to maturity. Debt issuance costs of $1.3 million were recorded to other assets in Cadence’s condensed consolidated balance sheet at the inception of the agreement and are being amortized to interest expense over the term of the 2021 Credit Facility.

Interest accrues on borrowings under the 2021 Credit Facility at a rate equal to, at Cadence’s option, either (1) LIBOR plus a margin between 0.750% and 1.250% per annum, determined by reference to the credit rating of Cadence’s unsecured debt, or (2) the base rate plus a margin between 0.000% and 0.250% per annum, determined by reference to the credit rating of Cadence’s unsecured debt. Interest is payable quarterly. A commitment fee ranging from 0.070% to 0.175% is assessed on the daily average undrawn portion of revolving commitments. The 2021 Credit Facility also includes provisions addressing the potential transition from LIBOR to a new replacement benchmark.

The 2021 Credit Facility contains customary negative covenants that, among other things, restrict Cadence’s ability to incur additional indebtedness and grant liens. In addition, the 2021 Credit Facility contains financial covenants that require Cadence to maintain a funded debt to EBITDA ratio not greater than 3.25 to 1, with a step up to 3.75 to 1 for one year following an acquisition by Cadence of at least $250.0 million that results in a pro forma leverage ratio between 3.00 to 1 and 3.50 to 1. As of July 3, 2021, Cadence was in compliance with all financial covenants associated with the 2021 Credit Facility.

2024 Notes

In October 2014, Cadence issued $350.0 million aggregate principal amount of 4.375% Senior Notes due October 15, 2024 (the “2024 Notes”). Cadence received net proceeds of $342.4 million from the issuance of the 2024 Notes, net of a discount of $1.4 million and issuance costs of $6.2 million. Both the discount and issuance costs are being amortized to interest expense over the term of the 2024 Notes using the effective interest method. Interest is payable in cash semi-annually in April and October. The 2024 Notes are unsecured and rank equal in right of payment to all of Cadence’s existing and future senior indebtedness. The fair value of the 2024 Notes was approximately $385.2 million as of July 3, 2021.

Cadence may redeem the 2024 Notes, in whole or in part, at a redemption price equal to the greater of (a) 100% of the principal amount of the notes to be redeemed and (b) the sum of the present values of the remaining scheduled payments of principal and interest, plus any accrued and unpaid interest, as more particularly described in the indenture governing the 2024 Notes.

The indenture governing the 2024 Notes includes customary representations, warranties and restrictive covenants, including, but not limited to, restrictions on Cadence’s ability to grant liens on assets, enter into sale and lease-back transactions, or merge, consolidate or sell assets, and also includes customary events of default.

NOTE 3. RECEIVABLES, NET

Cadence’s current and long-term receivables balances as of July 3, 2021 and January 2, 2021 were as follows:

	As of	
	July 3, 2021	January 2, 2021
	(In thousands)	
Accounts receivable	$ 250,812	$ 196,990
Unbilled accounts receivable	142,846	144,364
Long-term receivables	4,879	3,655
Total receivables	398,537	345,009
Less allowance for doubtful accounts	(3,672)	(2,867)
Total receivables, net	$ 394,865	$ 342,142

Cadence’s customers are primarily concentrated within the semiconductor and electronics systems industries. As of July 3, 2021, one customer accounted for 11% of Cadence’s total receivables. As of January 2, 2021, no customer accounted for 10% or more of Cadence’s total receivables.

NOTE 4. REVENUE

Cadence groups its products into five categories related to major design activities. The following table shows the percentage of product and related maintenance revenue contributed by each of Cadence's five product categories and services for the three and six months ended July 3, 2021 and June 27, 2020:

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
Custom Integrated Circuit ("IC") Design and Simulation	23 %	24 %	23 %	25 %
Digital IC Design and Signoff	28 %	28 %	28 %	28 %
Functional Verification, including Emulation and Prototyping Hardware*	25 %	24 %	26 %	23 %
Intellectual Property ("IP")	13 %	14 %	13 %	14 %
System Design and Analysis	11 %	10 %	10 %	10 %
Total	100 %	100 %	100 %	100 %

* Includes immaterial amount of revenue accounted for under leasing arrangements.

Cadence generates revenue from contracts with customers and applies judgment in identifying and evaluating any terms and conditions in contracts which may impact revenue recognition. Certain of Cadence's licensing arrangements allow customers the ability to remix among software products. Cadence also has arrangements with customers that include a combination of products, with the actual product selection and number of licensed users to be determined at a later date. For these arrangements, Cadence estimates the allocation of the revenue to product categories based upon the expected usage of products. Revenue by product category fluctuates from period to period based on demand for products and services, and Cadence's available resources to deliver them.

Significant Judgments

Cadence's contracts with customers often include promises to transfer to a customer multiple software and/or IP licenses and services, including professional services, technical support services, and rights to unspecified updates. Determining whether licenses and services are distinct performance obligations that should be accounted for separately, or not distinct and thus accounted for together, requires significant judgment. In some arrangements, such as most of Cadence's IP license arrangements, Cadence has concluded that the licenses and associated services are distinct from each other. In others, like Cadence's time-based software arrangements, the licenses and certain services are not distinct from each other. Cadence's time-based software arrangements include multiple software licenses and updates to the licensed software products, as well as technical support, and Cadence has concluded that these promised goods and services are a single, combined performance obligation.

The accounting for contracts with multiple performance obligations requires the contract's transaction price to be allocated to each distinct performance obligation based on relative standalone selling price ("SSP"). Judgment is required to determine the SSP for each distinct performance obligation because Cadence rarely licenses or sells products on a standalone basis. In instances where the SSP is not directly observable because Cadence does not sell the license, product or service separately, Cadence determines the SSP using information that maximizes the use of observable inputs and may include market conditions. Cadence typically has more than one SSP for individual performance obligations due to the stratification of those items by classes of customers and circumstances. In these instances, Cadence may use information such as the size of the customer and geographic region of the customer in determining the SSP.

Revenue is recognized over time for Cadence's combined performance obligations that include software licenses, updates, technical support and maintenance that are separate performance obligations with the same term. For Cadence's professional services, revenue is recognized over time, generally using costs incurred or hours expended to measure progress. Judgment is required in estimating project status and the costs necessary to complete projects. A number of internal and external factors can affect these estimates, including labor rates, utilization and efficiency variances and specification and testing requirement changes. For Cadence's other performance obligations recognized over time, revenue is generally recognized using a time-based measure of progress reflecting generally consistent efforts to satisfy those performance obligations throughout the arrangement term.

If a group of agreements are so closely related that they are, in effect, part of a single arrangement, such agreements are deemed to be one arrangement for revenue recognition purposes. Cadence exercises significant judgment to evaluate the relevant facts and circumstances in determining whether the separate agreements should be accounted for separately or as, in substance, a single arrangement. Cadence's judgments about whether a group of contracts comprise a single arrangement can affect the allocation of consideration to the distinct performance obligations, which could have an effect on results of operations for the periods involved.

Cadence is required to estimate the total consideration expected to be received from contracts with customers. In limited circumstances, the consideration expected to be received is variable based on the specific terms of the contract or based on Cadence's expectations of the term of the contract. Generally, Cadence has not experienced significant returns or refunds to customers. These estimates require significant judgment and the change in these estimates could have an effect on its results of operations during the periods involved.

Contract Balances

The timing of revenue recognition may differ from the timing of invoicing to customers, and these timing differences result in receivables, contract assets, or contract liabilities (deferred revenue) on Cadence's condensed consolidated balance sheets. For certain software, hardware and IP agreements with payment plans, Cadence records an unbilled receivable related to revenue recognized upon transfer of control because it has an unconditional right to invoice and receive payment in the future related to those transferred products or services. Cadence records a contract asset when revenue is recognized prior to invoicing and Cadence does not have the unconditional right to invoice or retains performance risk with respect to that performance obligation. Cadence records deferred revenue when revenue is recognized subsequent to invoicing. For Cadence's time-based software agreements, customers are generally invoiced in equal, quarterly amounts, although some customers prefer to be invoiced in single or annual amounts.

The contract assets indicated below are included in prepaid expenses and other in the condensed consolidated balance sheet and primarily relate to Cadence's rights to consideration for work completed but not billed as of the balance sheet date on services and customized IP contracts. The contract assets are transferred to receivables when the rights become unconditional, usually upon completion of a milestone.

Cadence's contract balances as of July 3, 2021 and January 2, 2021 were as follows:

	As of	
	July 3, 2021	January 2, 2021
	(In thousands)	
Contract assets	$ 6,057	$ 9,709
Deferred revenue	684,517	553,921

Cadence recognized revenue of $103.4 million and $330.0 million during the three and six months ended July 3, 2021, and $88.1 million and $241.6 million during the three and six months ended June 27, 2020, respectively, that was included in the deferred revenue balance at the beginning of each fiscal year. All other activity in deferred revenue is due to the timing of invoices in relation to the timing of revenue as described above.

Payment terms and conditions vary by contract type, although terms generally include a requirement of payment within 30 to 60 days. In instances where the timing of revenue recognition differs from the timing of invoicing, Cadence has determined that its contracts generally do not include a significant financing component. The primary purpose of invoicing terms is to provide customers with simplified and predictable ways of purchasing Cadence's products and services, and not to facilitate financing arrangements.

Some customers enter into a non-cancellable IP Access Agreement ("IPAA") whereby the customer commits to a fixed dollar amount over a specified period of time that can be used to purchase from a list of IP products or services. These arrangements do not meet the definition of a revenue contract until the customer executes a separate selection form to identify the products and services that they are purchasing. Each separate selection form under the IPAA is treated as an individual contract and accounted for based on the respective performance obligations.

Remaining Performance Obligations

Revenue allocated to remaining performance obligations represents the transaction price allocated to the performance obligations that are unsatisfied, or partially unsatisfied, which includes unearned revenue and amounts that will be invoiced and recognized as revenue in future periods. Cadence has elected to exclude the potential future royalty receipts from the remaining performance obligations. Contracted but unsatisfied performance obligations were approximately $3.9 billion as of July 3, 2021, which included $110.0 million of non-cancellable IPAA commitments from customers where actual product selection and quantities of specific products or services are to be determined by customers at a later date. As of July 3, 2021, Cadence expected to recognize approximately 55% of the contracted but unsatisfied performance obligations, excluding non-cancellable IPAA commitments, as revenue over the next 12 months and the remainder thereafter.

Cadence recognized revenue of $11.5 million and $21.7 million during the three and six months ended July 3, 2021, and $11.3 million and $20.8 million during the three and six months ended June 27, 2020, respectively, from performance obligations satisfied in previous periods. These amounts represent royalties earned during the period and exclude contracts with nonrefundable prepaid royalties. Nonrefundable prepaid royalties are recognized upon delivery of the IP because Cadence's right to the consideration is not contingent upon customers' future shipments.

NOTE 5. ACQUISITIONS

On February 23, 2021, Cadence acquired all of the outstanding equity of Belgium-based Numerical Mechanics Applications International SA (“NUMECA”). The addition of NUMECA’s technologies and talent supports Cadence’s Intelligent System Design™ strategy, servicing the computational fluid dynamics (“CFD”) market segment as part of System Design and Analysis. The aggregate cash consideration for Cadence’s acquisition of NUMECA, net of cash acquired of $9.5 million, was $189.3 million. Cadence expects to recognize expense for consideration paid to certain former NUMECA shareholders that is subject to service and other conditions, through the first quarter of fiscal 2023.

The total purchase consideration was allocated to the assets acquired and liabilities assumed based on their respective estimated fair values on the acquisition dates as follows:

	Acquisition Date Fair Value	
	(In thousands)	
Current assets	$	16,423
Goodwill		133,326
Acquired intangibles		72,200
Other long-term assets		6,928
Total assets acquired		228,877
Current liabilities		9,951
Long-term liabilities		20,091
Total liabilities assumed		30,042
Total purchase consideration	$	198,835

The allocation of purchase consideration to certain assets acquired and liabilities assumed from NUMECA has not been finalized. Cadence will continue to evaluate certain estimates and assumptions, primarily related to taxes and assumed liabilities, during the measurement period (up to one year from the acquisition date). The recorded goodwill is attributed to intangible assets that do not qualify for separate recognition, including the acquired assembled workforce and expected synergies from combining operations of NUMECA with Cadence. Cadence has not completed its assessment to determine whether the goodwill will be deductible for tax purposes.

On April 14, 2021, Cadence acquired all of the outstanding equity of Pointwise, Inc. (“Pointwise”), a leader in mesh generation for CFD for cash consideration of approximately $31.4 million, net of cash acquired. The addition of Pointwise’s technologies and experienced team supports Cadence’s Intelligent System Design™ strategy and further broadens its System Design and Analysis portfolio, complementing its acquisition of NUMECA. The total purchase consideration was allocated to the assets acquired and liabilities assumed based on their respective estimated fair values on the acquisition dates. Cadence recorded $16.7 million of definite-lived intangible assets and $16.7 million of goodwill with its acquisition of Pointwise. All of the goodwill related to Cadence’s acquisition of Pointwise will be deductible for tax purposes.

Definite-lived intangible assets acquired with Cadence’s fiscal 2021 acquisitions were as follows:

	Acquisition Date Fair Value		Weighted-Average Amortization Period
	(In thousands)		(in years)
Existing technology	$	55,400	14.2 years
Agreements and relationships		28,900	13.7 years
Tradenames, trademarks and patents		4,600	14.3 years
Total acquired intangibles with definite lives	$	88,900	14.1 years

Cadence has not presented pro forma financial information for its fiscal 2021 acquisitions because the results of operations for the acquired businesses are not material to Cadence’s condensed consolidated financial statements. During the three and six months ended July 3, 2021, and the three and six months ended June 27, 2020, transaction costs associated with acquisitions were not material and were expensed as incurred.

NOTE 6. GOODWILL AND ACQUIRED INTANGIBLES

Goodwill

The changes in the carrying amount of goodwill during the six months ended July 3, 2021 were as follows:

		Gross Carrying Amount
		(In thousands)
Balance as of January 2, 2021	$	782,087
Goodwill resulting from acquisitions		150,021
Effect of foreign currency translation		(2,583)
Balance as of July 3, 2021	$	929,525

Acquired Intangibles, Net

Acquired intangibles as of July 3, 2021 were as follows, excluding intangibles that were fully amortized as of January 2, 2021:

		Gross Carrying Amount		Accumulated Amortization		Acquired Intangibles, Net
				(In thousands)		
Existing technology	$	402,440	$	(231,006)	$	171,434
Agreements and relationships		205,928		(120,674)		85,254
Tradenames, trademarks and patents		10,830		(2,729)		8,101
Total acquired intangibles	$	619,198	$	(354,409)	$	264,789

Acquired intangibles as of January 2, 2021 were as follows, excluding intangibles that were fully amortized as of December 28, 2019:

		Gross Carrying Amount		Accumulated Amortization		Acquired Intangibles, Net
				(In thousands)		
Existing technology	$	370,838	$	(230,654)	$	140,184
Agreements and relationships		180,023		(113,629)		66,394
Tradenames, trademarks and patents		10,590		(6,578)		4,012
Total acquired intangibles with definite lives	$	561,451	$	(350,861)	$	210,590

Amortization expense from existing technology and maintenance agreements is included in cost of product and maintenance. Amortization expense for the three and six months ended July 3, 2021 and June 27, 2020 by condensed consolidated income statement caption was as follows:

	Three Months Ended				Six Months Ended			
		July 3, 2021		June 27, 2020		July 3, 2021		June 27, 2020
					(In thousands)			
Cost of product and maintenance	$	12,232	$	11,484	$	24,000	$	22,344
Amortization of acquired intangibles		5,030		4,590		9,661		8,796
Total amortization of acquired intangibles	$	17,262	$	16,074	$	33,661	$	31,140

As of July 3, 2021, the estimated amortization expense for acquired intangible assets with definite lives was as follows for the following five fiscal years and thereafter:

	(In thousands)
2021 - remaining period	$ 33,316
2022	49,716
2023	34,186
2024	32,723
2025	22,204
Thereafter	92,644
Total estimated amortization expense	$ 264,789

NOTE 7. STOCK-BASED COMPENSATION

Stock-based compensation expense is reflected in Cadence's condensed consolidated income statements for the three and six months ended July 3, 2021 and June 27, 2020 as follows:

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
	(In thousands)			
Cost of product and maintenance	$ 909	$ 683	$ 1,716	$ 1,374
Cost of services	992	869	2,019	1,749
Marketing and sales	10,294	10,116	21,500	20,127
Research and development	31,286	29,690	64,144	59,036
General and administrative	7,037	5,549	13,735	11,103
Total stock-based compensation expense	$ 50,518	$ 46,907	$ 103,114	$ 93,389

Cadence had total unrecognized compensation expense related to stock option and restricted stock grants of $283.2 million as of July 3, 2021, which will be recognized over the remaining vesting period. The remaining weighted-average vesting period of unvested awards is 2.1 years.

NOTE 8. STOCK REPURCHASE PROGRAM

In July 2020, Cadence's Board of Directors authorized $750 million for the repurchase of shares of Cadence common stock. The actual timing and amount of repurchases are subject to business and market conditions, corporate and regulatory requirements, stock price, acquisition opportunities and other factors. As of July 3, 2021, approximately $346 million remained available to repurchase shares of Cadence common stock.

The shares repurchased under Cadence's repurchase authorizations and the total cost of repurchased shares, including commissions, during the three and six months ended July 3, 2021 and June 27, 2020 were as follows:

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
	(In thousands)			
Shares repurchased	1,720	920	3,043	2,408
Total cost of repurchased shares	$ 220,023	$ 75,014	$ 392,290	$ 175,036

NOTE 9. RESTRUCTURING AND OTHER TERMINATION BENEFITS

Restructuring

Cadence has initiated restructuring plans in an effort to better align its resources with its business strategy. The charges associated with these restructuring plans have primarily been comprised of severance payments and termination benefits related to headcount reductions and charges related to impacted facilities and are included in restructuring and other charges on Cadence's condensed consolidated income statements.

The following table presents activity for Cadence's restructuring plans during the six months ended July 3, 2021:

	Severance and Benefits	Facilities	Total
		(In thousands)	
Balance, January 2, 2021	$ 7,321	$ 1,372	$ 8,693
Restructuring and other credits	(1,135)	389	(746)
Cash payments	(5,340)	(1,314)	(6,654)
Effect of foreign currency translation	(67)	(1)	(68)
Balance, July 3, 2021	$ 779	$ 446	$ 1,225

The remaining liability for Cadence's restructuring plans is recorded in the condensed consolidated balance sheet as follows:

	As of July 3, 2021
	(In thousands)
Accounts payable and accrued liabilities	$ 1,207
Other long-term liabilities	18
Total restructuring liabilities	$ 1,225

All liabilities for severance and related benefits under Cadence's restructuring plans are included in accounts payable and accrued liabilities on Cadence's condensed consolidated balance sheets as of July 3, 2021. Restructuring liabilities included in other long-term liabilities represent liabilities from impacted facilities, and Cadence expects to make cash payments to settle these liabilities through fiscal 2022.

Other Termination Benefits

During the second quarter of fiscal 2021, Cadence offered a voluntary retirement program to eligible employees in the United States. This program resulted in a one-time charge of $26.8 million for voluntary termination and post-employment benefits. These charges are included in each category of costs and expenses on Cadence's condensed consolidated income statements. As of July 3, 2021, liabilities related to the voluntary retirement program were $26.6 million and were included in accounts payable and accrued liabilities and other long-term liabilities on Cadence's condensed consolidated balance sheet. Cadence expects to make cash payments to settle these liabilities through fiscal 2023, including $22.3 million that is expected to be paid within the next twelve months.

NOTE 10. NET INCOME PER SHARE

Basic net income per share is computed by dividing net income during the period by the weighted-average number of shares of common stock outstanding during that period, less unvested restricted stock awards. Diluted net income per share is impacted by equity instruments considered to be potential common shares, if dilutive, computed using the treasury stock method of accounting.

The calculations for basic and diluted net income per share for the three and six months ended July 3, 2021 and June 27, 2020 are as follows:

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
	(In thousands, except per share amounts)			
Net income	$ 155,900	$ 131,288	$ 343,069	$ 255,276
Weighted average common shares used to calculate basic net income per share	273,565	273,432	273,843	273,488
Stock-based awards	4,993	5,648	5,556	5,719
Weighted average common shares used to calculate diluted net income per share	278,558	279,080	279,399	279,207
Net income per share - basic	$ 0.57	$ 0.48	$ 1.25	$ 0.93
Net income per share - diluted	$ 0.56	$ 0.47	$ 1.23	$ 0.91

The following table presents shares of Cadence's common stock outstanding for the three and six months ended July 3, 2021 and June 27, 2020 that were excluded from the computation of diluted net income per share because the effect of including these shares in the computation of diluted net income per share would have been anti-dilutive:

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
	(In thousands)			
Long-term market-based awards	—	40	—	713
Options to purchase shares of common stock	331	506	235	376
Non-vested shares of restricted stock	75	4	67	102
Total potential common shares excluded	406	550	302	1,191

NOTE 11. FAIR VALUE

Inputs to valuation techniques are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect Cadence's market assumptions. These two types of inputs have created the following fair value hierarchy:

- Level 1 – Quoted prices for identical instruments in active markets;
- Level 2 – Quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-derived valuations in which all significant inputs and significant value drivers are observable in active markets; and
- Level 3 – Valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are unobservable.

This hierarchy requires Cadence to minimize the use of unobservable inputs and to use observable market data, if available, when determining fair value. Cadence recognizes transfers between levels of the hierarchy based on the fair values of the respective financial instruments at the end of the reporting period in which the transfer occurred. There were no transfers between levels of the fair value hierarchy during the six months ended July 3, 2021.

On a quarterly basis, Cadence measures at fair value certain financial assets and liabilities. The fair value of financial assets and liabilities was determined using the following levels of inputs as of July 3, 2021 and January 2, 2021:

	Fair Value Measurements as of July 3, 2021			
	Total	Level 1	Level 2	Level 3
	(In thousands)			
Assets				
Cash equivalents:				
Money market funds	$ 396,096	$ 396,096	$ —	$ —
Marketable equity securities	5,576	5,576	—	—
Securities held in Non-Qualified Deferred Compensation (“NQDC”) trust	48,341	48,341	—	—
Total Assets	$ 450,013	$ 450,013	$ —	$ —

	Total	Level 1	Level 2	Level 3
	(In thousands)			
Liabilities				
Foreign currency exchange contracts	$ 7,099	$ —	$ 7,099	$ —
Total Liabilities	$ 7,099	$ —	$ 7,099	$ —

	Fair Value Measurements as of January 2, 2021			
	Total	Level 1	Level 2	Level 3
	(In thousands)			
Assets				
Cash equivalents:				
Money market funds	$ 541,386	$ 541,386	$ —	$ —
Marketable equity securities	4,452	4,452	—	—
Securities held in NQDC trust	42,769	42,769	—	—
Foreign currency exchange contracts	8,868	—	8,868	—
Total Assets	$ 597,475	$ 588,607	$ 8,868	$ —

As of January 2, 2021, Cadence did not have any financial liabilities requiring a recurring fair value measurement.

Level 1 Measurements

Cadence’s cash equivalents held in money market funds, marketable equity securities and the trading securities held in Cadence’s NQDC trust are measured at fair value using level 1 inputs.

Level 2 Measurements

The valuation techniques used to determine the fair value of Cadence’s foreign currency forward exchange contracts and 2024 Notes are classified within Level 2 of the fair value hierarchy. For additional information relating to Cadence’s debt arrangements, see Note 2 in the notes to condensed consolidated financial statements.

Level 3 Measurements

Cadence acquired intangible assets of $88.9 million with its acquisition of NUMECA and Pointwise during the first half of fiscal 2021. The fair value of the definite-lived intangible assets acquired with these acquisitions was determined using variations of the income approach and level 3 inputs.

For acquired existing technology, the fair value was determined by applying the relief-from-royalty method. This method is based on the application of a royalty rate to forecasted revenue to quantify the benefit of owning the intangible asset rather than paying a royalty for use of the asset. To estimate royalty savings over time, Cadence projected revenue from the acquired existing technology over the estimated remaining life of the technology, including the effect of assumed technological obsolescence, before applying an assumed royalty rate. For NUMECA, Cadence assumed technological obsolescence at a rate of 6.7% annually, before applying an assumed royalty rate of 22%. For Pointwise, Cadence assumed technological obsolescence at a rate of 10.0% annually, before applying an assumed royalty rate of 25%.

The fair value for acquired agreements and relationships was determined by using the multi-period excess earnings method. This method reflects the present value of the projected cash flows that are expected to be generated from existing customers, less charges representing the contribution of other assets to those cash flows. Projected income from existing customer relationships considered a customer retention rate of 95% for both NUMECA and Pointwise. The present value of operating cash flows from existing customers was determined using discount rates ranging from 10.5% to 12.0%.

Cadence believes that its estimates and assumptions related to the fair value of its acquired intangible assets are reasonable, but significant judgment is involved.

NOTE 12. COMMITMENTS AND CONTINGENCIES

Legal Proceedings

From time to time, Cadence is involved in various disputes and litigation that arise in the ordinary course of business. These include disputes and lawsuits related to intellectual property, indemnification obligations, mergers and acquisitions, licensing, contracts, distribution arrangements and employee relations matters. At least quarterly, Cadence reviews the status of each significant matter and assesses its potential financial exposure. If the potential loss from any claim or legal proceeding is considered probable and the amount or the range of loss can be estimated, Cadence accrues a liability for the estimated loss. Legal proceedings are subject to uncertainties, and the outcomes are difficult to predict. Because of such uncertainties, accruals are based on Cadence's judgments using the best information available at the time. As additional information becomes available, Cadence reassesses the potential liability related to pending claims and litigation matters and may revise estimates.

Other Contingencies

Cadence provides its customers with a warranty on sales of hardware products, generally for a 90-day period. Cadence did not incur any significant costs related to warranty obligations during the three and six months ended July 3, 2021 and June 27, 2020.

Cadence's product license and services agreements typically include a limited indemnification provision for claims from third parties relating to Cadence's intellectual property. If the potential loss from any indemnification claim is considered probable and the amount or the range of loss can be estimated, Cadence accrues a liability for the estimated loss. The indemnification is generally limited to the amount paid by the customer. Cadence did not incur any significant losses from indemnification claims during the three and six months ended July 3, 2021 and June 27, 2020.

NOTE 13. ACCUMULATED OTHER COMPREHENSIVE LOSS

Cadence's accumulated other comprehensive loss is comprised of the aggregate impact of foreign currency translation gains and losses and changes in defined benefit plan liabilities and is presented in Cadence's condensed consolidated statements of comprehensive income.

Accumulated other comprehensive loss was comprised of the following as of July 3, 2021 and January 2, 2021:

	As of	
	July 3, 2021	January 2, 2021
	(In thousands)	
Foreign currency translation loss	$ (15,266)	$ (11,130)
Changes in defined benefit plan liabilities	(6,526)	(6,295)
Total accumulated other comprehensive loss	$ (21,792)	$ (17,425)

For the three and six months ended July 3, 2021 and June 27, 2020 there were no significant amounts related to foreign currency translation loss or changes in defined benefit plan liabilities reclassified from accumulated other comprehensive loss to net income.

NOTE 14. SEGMENT REPORTING

Segment reporting is based on the "management approach," following the method that management organizes the company's reportable segments for which separate financial information is made available to, and evaluated regularly by, the chief operating decision maker in allocating resources and in assessing performance. Cadence's chief operating decision maker is its CEO, who reviews Cadence's consolidated results as one operating segment. In making operating decisions, the CEO primarily considers consolidated financial information, accompanied by disaggregated information about revenues by geographic region.

Outside the United States, Cadence markets and supports its products and services primarily through its subsidiaries. Revenue is attributed to geography based upon the country in which the product is used, or services are delivered. Long-lived assets are attributed to geography based on the country where the assets are located.

The following table presents a summary of revenue by geography for the three and six months ended July 3, 2021 and June 27, 2020:

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
	(In thousands)			
Americas:				
United States	$ 313,138	$ 267,000	$ 639,462	$ 525,489
Other Americas	10,190	10,120	19,866	18,957
Total Americas	323,328	277,120	659,328	544,446
Asia:				
China	99,591	77,232	189,032	161,031
Other Asia	134,389	121,276	268,237	230,875
Total Asia	233,980	198,508	457,269	391,906
Europe, Middle East and Africa	124,502	116,540	254,735	232,259
Japan	46,475	46,250	92,981	87,764
Total	$ 728,285	$ 638,418	$ 1,464,313	$ 1,256,375

The following table presents a summary of long-lived assets by geography as of July 3, 2021 and January 2, 2021:

	As of	
	July 3, 2021	January 2, 2021
	(In thousands)	
Americas:		
United States	$ 239,207	$ 248,292
Other Americas	652	753
Total Americas	239,859	249,045
Asia:		
China	15,962	16,416
Other Asia	4,985	28,668
Total Asia	20,947	45,084
Europe, Middle East and Africa	40,631	16,304
Japan	542	692
Total	$ 301,979	$ 311,125

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

The following discussion should be read in conjunction with the condensed consolidated financial statements and notes thereto included in this Quarterly Report on Form 10-Q (this "Quarterly Report") and in conjunction with our Annual Report on Form 10-K for the fiscal year ended January 2, 2021. This Quarterly Report contains statements that are not historical in nature, are predictive, or that depend upon or refer to future events or conditions or contain other forward-looking statements. Statements including, but not limited to, statements regarding the extent and timing of future revenues and expenses and customer demand, statements regarding the deployment of our products and services, statements regarding our reliance on third parties, statements regarding the impact on our business of the COVID-19 pandemic and related public health measures, and other statements using words such as "anticipates," "believes," "could," "estimates," "expects," "forecasts," "intends," "may," "plans," "projects," "should," "targets," "will" and "would," and words of similar import and the negatives thereof, constitute forward-looking statements. These statements are predictions based upon our current expectations about future events. Actual results could vary materially as a result of certain factors, including, but not limited to, those expressed in these statements. We refer you to the "Risk Factors," "Results of Operations," "Quantitative and Qualitative Disclosures About Market Risk," and "Liquidity and Capital Resources" sections contained in this Quarterly Report, and the risks discussed in our other Securities and Exchange Commission ("SEC") filings, which identify important risks and uncertainties that could cause actual results to differ materially from those contained in the forward-looking statements.

We urge you to consider these factors carefully in evaluating the forward-looking statements contained in this Quarterly Report. All subsequent written or oral forward-looking statements attributable to our company or persons acting on our behalf are expressly qualified in their entirety by these cautionary statements. The forward-looking statements included in this Quarterly Report are made only as of the date of this Quarterly Report. We do not intend, and undertake no obligation, to update these forward-looking statements.

Business Overview

We enable our customers to develop electronic products. Our products and services are designed to give our customers a competitive edge in their development of integrated circuits ("ICs"), systems-on-chip ("SoCs"), and increasingly sophisticated electronic devices and systems. Our products and services do this by optimizing performance, minimizing power consumption, shortening the time to bring our customers' products to market, improving engineering productivity and reducing their design, development and manufacturing costs. We offer software, hardware, services and reusable IC design blocks, which are commonly referred to as intellectual property ("IP").

Our strategy, which we call Intelligent System Design™, is to provide the technology necessary for our customers to develop electronic products across a variety of vertical markets including consumer, hyperscale computing, mobile, 5G communications, automotive, aerospace and defense, industrial and healthcare. Our products and services enable our customers to develop complex and innovative electronic products, so demand for our technology is driven by our customers' investment in new designs and products. Historically, the industry that provided the tools used by IC engineers was referred to as Electronic Design Automation ("EDA"). Today, our offerings include and extend beyond EDA.

We group our products into categories related to major design activities:

- Custom IC Design and Simulation;
- Digital IC Design and Signoff;
- Functional Verification;
- IP; and
- System Design and Analysis.

During the first half of fiscal 2021, we continued to execute our Intelligent System Design™ strategy with our announcement of the next generation of hardware-software products in our Functional Verification product category, which consists of the integrated Palladium Z2 emulation and Protium X2 prototyping systems, to accelerate hardware debug and software validation. We also completed our acquisitions of Belgium-based NUMECA, a leader in computational fluid dynamics ("CFD"), and Pointwise Inc, a leading provider of CFD Meshing technology. The addition of these technologies and talent broadens our System Design and Analysis portfolio and expertise. We expect these acquisitions will increase expenses, including amortization of acquired intangible assets, more than revenue during fiscal 2021.

For additional information about our products, see the discussion in Item 1, "Business," under the heading "Products and Product Strategy," in our Annual Report on Form 10-K for the fiscal year ended January 2, 2021.

Management uses certain performance indicators to manage our business, including revenue, certain elements of operating expenses and cash flow from operations, and we describe these items further below under the headings "Results of Operations" and "Liquidity and Capital Resources."

During the second quarter of fiscal 2021, we offered a voluntary retirement program to eligible employees in the United States. This program resulted in a one-time charge for voluntary termination and post-employment benefits of $26.8 million, which increased costs and expenses during the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020. As of July 3, 2021, liabilities related to the voluntary retirement program were $26.6 million and were included in accounts payable and accrued liabilities and other long-term liabilities on our condensed consolidated balance sheet. We expect to make cash payments to settle these liabilities through fiscal 2023, including $22.3 million that is expected to be paid in the next twelve months.

COVID-19 Impact

In March 2020, the World Health Organization declared the outbreak of COVID-19 a pandemic. The effects of the ongoing global pandemic have been widespread and have resulted in authorities implementing numerous measures to contain the virus, including travel bans and restrictions, quarantines, shelter-in-place orders, and business limitations and shutdowns. We are unable to accurately predict the full impact that COVID-19 will have on our results of operations, financial condition, liquidity and cash flows due to numerous uncertainties, including the duration and severity of the pandemic and containment measures and the distribution and effectiveness of vaccines. Our efforts to comply with these containment measures have impacted our day-to-day operations and could disrupt our business and operations, as well as that of our key customers, suppliers (including contract manufacturers) and other counterparties, for an indefinite period of time. To support the health and well-being of our employees, customers, partners and communities, a vast majority of our employees are still working remotely as of July 26, 2021. However, we have begun a limited pilot program for employees to begin voluntarily returning to work in certain jurisdictions with lower rates of new COVID-19 cases.

Since its inception, the COVID-19 pandemic has caused some volatility in our usual delivery timing for our hardware and IP products to certain customers. Many of our customers' employees are working remotely, and, in some cases, we have experienced delivery lead times that are longer than normal because of delays in getting access to customer sites to complete our deliveries. In other cases, the amount of our hardware and IP products that we have been able to deliver has been greater than we originally anticipated at the beginning of the respective period. We have also received numerous COVID-19 pandemic-related requests from our customers to allow them to delay their payments to us, while we continue to provide services to these customers. Despite the challenges the COVID-19 pandemic has posed to our operations, it did not have material adverse impact on our results of operations, financial condition, liquidity or cash flows during the first half of fiscal 2021. We will continue to evaluate the nature and extent of the impact of COVID-19 on our business. See Part II, Item 1A, "Risk Factors" for additional information on the impact of COVID-19 on our business.

Critical Accounting Estimates

In preparing our condensed consolidated financial statements, we make assumptions, judgments and estimates that can have a significant impact on our revenue, operating income and net income, as well as on the value of certain assets and liabilities on our consolidated balance sheets. We base our assumptions, judgments and estimates on historical experience and various other factors that we believe to be reasonable under the circumstances. Actual results could differ materially from these estimates under different assumptions or conditions. At least quarterly, we evaluate our assumptions, judgments and estimates, and make changes as deemed necessary.

For further information about our critical accounting estimates, see the discussion in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," under the heading "Critical Accounting Estimates" in our Annual Report on Form 10-K for the fiscal year ended January 2, 2021.

New Accounting Standards Not Yet Adopted

For additional information about the adoption of new accounting standards, see Note 1 in the notes to condensed consolidated financial statements.

Results of Operations

Financial results for the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, reflect the following:

- revenue growth that exceeded the growth of our costs and expenses;
- increased product and maintenance revenue, primarily from growth in software and hardware product offerings;
- continued investment in research and development activities focused on expanding and enhancing our product portfolio;
- higher selling costs, including additional investment in technical sales support in response to our customers' increasing technological requirements; and
- an increase in costs associated with the voluntary retirement program we offered to certain of our employees during the second quarter of fiscal 2021.

Revenue

We primarily generate revenue from licensing our software and IP, selling or leasing our emulation and prototyping hardware technology, providing maintenance for our software, hardware and IP, providing engineering services and earning royalties generated from the use of our IP. The timing of our revenue is significantly affected by the mix of software, hardware and IP products generating revenue in any given period and whether the revenue is recognized over time or at a point in time, upon completion of delivery.

In any fiscal year, we expect that between 85% and 90% of our annual revenue will be characterized as recurring revenue. Revenue characterized as recurring includes revenue recognized over time from our software arrangements, services, royalties, maintenance on IP licenses and hardware, and operating leases of hardware and revenue recognized at varying points in time over the term of our IP Access Agreements.

The remainder of our revenue is characterized as up-front revenue. Up-front revenue is primarily generated by our sales of emulation and prototyping hardware and individual IP licenses. The percentage of our recurring and up-front revenue may be impacted by delivery of hardware and IP products to our customers in any single fiscal period.

Revenue by Period

The following table shows our revenue for the three months ended July 3, 2021 and June 27, 2020 and the change in revenue between periods:

	Three Months Ended		Change	
	July 3, 2021	June 27, 2020	Amount	Percentage
	(In millions, except percentages)			
Product and maintenance	$ 687.9	$ 601.3	$ 86.6	14 %
Services	40.4	37.1	3.3	9 %
Total revenue	$ 728.3	$ 638.4	$ 89.9	14 %

The following table shows our revenue for the six months ended July 3, 2021 and June 27, 2020 and the change in revenue between periods:

	Six Months Ended		Change	
	July 3, 2021	June 27, 2020	Amount	Percentage
	(In millions, except percentages)			
Product and maintenance	$ 1,386.9	$ 1,183.1	$ 203.8	17 %
Services	77.4	73.3	4.1	6 %
Total revenue	$ 1,464.3	$ 1,256.4	$ 207.9	17 %

Product and maintenance revenue increased during the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, primarily because of increased investments by our customers in new, complex designs for their products that include the design of electronic systems for consumer, hyperscale computing, mobile, 5G communications, automotive, aerospace and defense, industrial and healthcare. Services revenue may fluctuate from period to period based on the timing of fulfillment of our services and IP performance obligations.

No one customer accounted for 10% or more of total revenue during the three and six months ended July 3, 2021 or June 27, 2020.

Revenue by Product Category

The following table shows the percentage of revenue contributed by each of our five product categories and services for the past five consecutive quarters:

	Three Months Ended				
	July 3, 2021	April 3, 2021	January 2, 2021*	September 26, 2020	June 27, 2020
Custom IC Design and Simulation	23 %	23 %	26 %	24 %	24 %
Digital IC Design and Signoff	28 %	27 %	31 %	27 %	28 %
Functional Verification, including Emulation and Prototyping Hardware	25 %	26 %	19 %	23 %	24 %
IP	13 %	14 %	13 %	15 %	14 %
System Design and Analysis	11 %	10 %	11 %	11 %	10 %
Total	100 %	100 %	100 %	100 %	100 %

* Our fiscal years are 52- or 53-week periods ending on the Saturday closest to December 31. Fiscal 2020 was a 53-week fiscal year, with an additional week in our fourth quarter of 2020.

Revenue by product category fluctuates from period to period depending on demand for our products and services, our available resources and our ability to deliver and support them. Certain of our licensing arrangements allow customers the ability to remix among software products. Additionally, we have arrangements with customers that include a combination of our products, with the actual product selection and number of licensed users to be determined at a later date. For these arrangements, we estimate the allocation of the revenue to product categories based upon the expected usage of our products. The actual usage of our products by these customers may differ and, if that proves to be the case, the revenue allocation in the table above would differ.

Revenue by Geography

	Three Months Ended		Change	
	July 3, 2021	June 27, 2020	Amount	Percentage
	(In millions, except percentages)			
United States	$ 313.1	$ 267.0	$ 46.1	17 %
Other Americas	10.2	10.1	0.1	1 %
China	99.6	77.2	22.4	29 %
Other Asia	134.4	121.3	13.1	11 %
Europe, Middle East and Africa	124.5	116.5	8.0	7 %
Japan	46.5	46.3	0.2	— %
Total revenue	$ 728.3	$ 638.4	$ 89.9	14 %

During the three months ended July 3, 2021, as compared to the three months ended June 27, 2020, revenue from our software offerings increased in nearly all geographies. Revenue from hardware product offerings also increased during the three months ended July 3, 2021, as compared to the three months ended June 27, 2020, primarily in the United States and Other Asia.

	Six Months Ended		Change	
	July 3, 2021	June 27, 2020	Amount	Percentage
	(In millions, except percentages)			
United States	$ 639.5	$ 525.5	$ 114.0	22 %
Other Americas	19.9	19.0	0.9	5 %
China	189.0	161.0	28.0	17 %
Other Asia	268.2	230.9	37.3	16 %
Europe, Middle East and Africa	254.7	232.2	22.5	10 %
Japan	93.0	87.8	5.2	6 %
Total revenue	$ 1,464.3	$ 1,256.4	$ 207.9	17 %

During the six months ended July 3, 2021, as compared to the six months ended June 27, 2020, revenue from our software offerings increased in nearly each geography. Revenue from hardware and IP product offerings also increased during the six months ended July 3, 2021, as compared to the six months ended June 27, 2020, primarily in the United States and Other Asia.

Since the second quarter of fiscal 2019, we have not been able to deliver maintenance or support for certain customers in China due to the U.S. Department of Commerce's designation of these customers to the "Entity List." We expect these restrictions and new or expanded trade restrictions to continue to impact revenue from certain customers in China.

Revenue by Geography as a Percent of Total Revenue

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
United States	43 %	42 %	44 %	42 %
Other Americas	1 %	2 %	1 %	2 %
China	14 %	12 %	13 %	13 %
Other Asia	19 %	19 %	18 %	18 %
Europe, Middle East and Africa	17 %	18 %	18 %	18 %
Japan	6 %	7 %	6 %	7 %
Total	100 %	100 %	100 %	100 %

Most of our revenue is transacted in the United States dollar. However, certain revenue transactions are denominated in foreign currencies. For an additional description of how changes in foreign exchange rates affect our condensed consolidated financial statements, see the discussion under Item 3, "Quantitative and Qualitative Disclosures About Market Risk – Foreign Currency Risk."

Cost of Revenue

	Three Months Ended		Change	
	July 3, 2021	June 27, 2020	Amount	Percentage
	(In millions, except percentages)			
Cost of product and maintenance	$ 55.8	$ 55.7	$ 0.1	— %
Cost of services	20.9	19.5	1.4	7 %

	Six Months Ended		Change	
	July 3, 2021	June 27, 2020	Amount	Percentage
	(In millions, except percentages)			
Cost of product and maintenance	$ 120.7	$ 111.1	$ 9.6	9 %
Cost of services	40.0	38.6	1.4	4 %

Cost of Product and Maintenance

Cost of product and maintenance includes costs associated with the sale and lease of our emulation and prototyping hardware and licensing of our software and IP products, certain employee salary and benefits and other employee-related costs, cost of our customer support services, amortization of technology-related and maintenance-related acquired intangibles, costs of technical documentation and royalties payable to third-party vendors. Cost of product and maintenance depends primarily on our hardware product sales in any given period, but is also affected by employee salary and benefits and other employee-related costs, reserves for inventory, and the timing and extent to which we acquire intangible assets, license third-party technology or IP, and sell our products that include such acquired or licensed technology or IP.

A summary of cost of product and maintenance is as follows:

	Three Months Ended		Change	
	July 3, 2021	June 27, 2020	Amount	Percentage
	(In millions, except percentages)			
Product and maintenance-related costs	$ 43.6	$ 44.2	$ (0.6)	(1) %
Amortization of acquired intangibles	12.2	11.5	0.7	6 %
Total cost of product and maintenance	$ 55.8	$ 55.7	$ 0.1	— %

	Six Months Ended		Change	
	July 3, 2021	June 27, 2020	Amount	Percentage
	(In millions, except percentages)			
Product and maintenance-related costs	$ 96.7	$ 88.8	$ 7.9	9 %
Amortization of acquired intangibles	24.0	22.3	1.7	8 %
Total cost of product and maintenance	$ 120.7	$ 111.1	$ 9.6	9 %

The changes in product and maintenance-related costs for the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, were due to the following:

	Change	
	Three Months Ended	Six Months Ended
	(In millions)	
Emulation and prototyping hardware costs	$ (1.8)	$ 6.7
Other items	1.2	1.2
Total change in product and maintenance-related costs	$ (0.6)	$ 7.9

Costs associated with our emulation and prototyping hardware products include components, assembly, testing, applicable reserves and overhead. These costs make our cost of emulation and prototyping hardware products higher, as a percentage of revenue, than our cost of software and IP products. The decrease in emulation and prototyping hardware costs during the three months ended July 3, 2021, as compared to the three months ended June 27, 2020, was primarily due to decreased reserves on inventory resulting from the transition to the next generation of our hardware products. The increase in emulation and prototyping hardware costs during the six months ended July 3, 2021, as compared to the six months ended June 27, 2020, was primarily due to overall increased demand for our emulation and prototyping hardware and the mix of products generating revenue.

Amortization of acquired intangibles included in cost of product and maintenance increased during the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, primarily due to technology-related intangible assets acquired with our acquisitions of NUMECA and Pointwise during the first half of fiscal 2021 and in-process technology being placed into service during the second quarter of fiscal 2020. This increase was partially offset by certain technology-related intangible assets becoming fully amortized during the three and six months ended July 3, 2021 and during fiscal 2020.

Cost of Services

Cost of services primarily includes employee salary, benefits and other employee-related costs to perform work on revenue-generating projects and costs to maintain the infrastructure necessary to manage a services organization. Cost of services may fluctuate from period to period based on our utilization of design services engineers on revenue-generating projects rather than internal development projects. During the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, cost of services increased primarily as the result of costs associated with our voluntary retirement program.

Operating Expenses

Our operating expenses include marketing and sales, research and development, and general and administrative expenses. Factors that tend to cause our operating expenses to fluctuate include changes in the number of employees due to hiring and acquisitions, stock-based compensation, restructuring and other employment separation activities (such as the voluntary retirement program), foreign exchange rate movements, and the impact of our variable compensation programs that are driven by operating results.

Many of our operating expenses are transacted in various foreign currencies. We recognize lower expenses in periods when the United States dollar strengthens in value against other currencies and we recognize higher expenses when the United States dollar weakens against other currencies. For an additional description of how changes in foreign exchange rates affect our condensed consolidated financial statements, see the discussion in Item 3, "Quantitative and Qualitative Disclosures About Market Risk – Foreign Currency Risk."

Our operating expenses for the three and six months ended July 3, 2021 and June 27, 2020 were as follows:

	Three Months Ended		Change	
	July 3, 2021	June 27, 2020	Amount	Percentage
	(In millions, except percentages)			
Marketing and sales	$ 136.0	$ 120.5	$ 15.5	13 %
Research and development	285.2	250.8	34.4	14 %
General and administrative	40.3	35.6	4.7	13 %
Total operating expenses	$ 461.5	$ 406.9	$ 54.6	13 %

	Six Months Ended		Change	
	July 3, 2021	June 27, 2020	Amount	Percentage
	(In millions, except percentages)			
Marketing and sales	$ 268.8	$ 246.2	$ 22.6	9 %
Research and development	556.2	492.5	63.7	13 %
General and administrative	80.3	69.2	11.1	16 %
Total operating expenses	$ 905.3	$ 807.9	$ 97.4	12 %

Our operating expenses, as a percentage of total revenue, for the three and six months ended July 3, 2021 and June 27, 2020 were as follows:

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
Marketing and sales	19 %	19 %	18 %	20 %
Research and development	39 %	39 %	38 %	39 %
General and administrative	6 %	6 %	5 %	6 %
Total operating expenses	64 %	64 %	61 %	65 %

Marketing and Sales

The increase in marketing and sales expense for the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, was due to the following:

	Change	
	Three Months Ended	Six Months Ended
	(In millions)	
Salary, benefits and other employee-related costs	$ 8.5	$ 18.4
Voluntary retirement program	6.7	6.7
Stock-based compensation	0.2	1.4
Professional services	0.2	1.1
Travel and sales meetings	0.6	(1.9)
Home office-related expenses	(2.0)	(2.0)
Marketing programs and events	0.5	(2.1)
Other items	0.8	1.0
Total change in marketing and sales expense	$ 15.5	$ 22.6

During the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, salary, benefits and other employee-related costs included in marketing and sales expense increased due primarily to additional headcount from hiring and acquisitions. This increase was partially offset by reduced costs for home office-related expenses associated with the COVID-19 pandemic. We expect marketing and sales expense to increase during the remainder of fiscal 2021, as compared to fiscal 2020, due to increased employee-related costs related to additional headcount from hiring and acquisitions.

Research and Development

The increase in research and development expense for the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, was due to the following:

	Change	
	Three Months Ended	Six Months Ended
	(In millions)	
Salary, benefits and other employee-related costs	$ 22.5	$ 48.2
Voluntary retirement program	14.7	14.7
Stock-based compensation	1.6	5.1
Facilities and other infrastructure costs	3.0	4.1
Product development costs	(3.2)	(3.4)
Home office-related expenses	(5.3)	(5.3)
Other items	1.1	0.3
Total change in research and development expense	$ 34.4	$ 63.7

During the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, salary, benefits and other employee-related costs included in research and development expense increased due primarily to additional headcount from hiring and acquisitions. We expect research and development expense to increase during the remainder of fiscal 2021, as compared to fiscal 2020, due to increased employee-related costs related to additional headcount from hiring and acquisitions.

General and Administrative

The increase in general and administrative expense for the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, was due to the following:

	Change	
	Three Months Ended	Six Months Ended
	(In millions)	
Salary, benefits and other employee-related costs	$ 0.3	$ 3.7
Stock-based compensation	1.5	2.6
Voluntary retirement program	2.3	2.2
Customs and other import-related costs	0.4	1.8
Other items	0.2	0.8
Total change in general and administrative expense	$ 4.7	$ 11.1

During the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, salary, benefits and other employee-related costs included in general and administrative expense increased due to increased headcount.

Restructuring and Other Charges

We have initiated restructuring plans in recent years to better align our resources with our business strategy. Because the restructuring charges and related benefits are derived from management's estimates made during the formulation of the restructuring plans, based on then-currently available information, our restructuring plans may not achieve the benefits anticipated on the timetable or at the level contemplated. Additional actions, including further restructuring of our operations, may be required in the future. For additional information about our restructuring plans, see Note 9 in the notes to condensed consolidated financial statements.

Operating Margin

Operating margin represents income from operations as a percentage of total revenue. Our operating margin for the three and six months ended July 3, 2021, and the three and six months ended June 27, 2020 was as follows:

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
Operating margin	25 %	24 %	27 %	23 %

Operating margin increased during the three and six months ended July 3, 2021, and the three and six months ended June 27, 2020, because revenue growth exceeded the growth of our costs and expenses. During the remainder of fiscal 2021, we do not expect operating margin to grow at the same level it has during the first half of fiscal 2021 due to our recent acquisitions having a greater impact on expenses than revenue, and due to incremental costs associated with new and existing employees. We also expect an increase in expenses related to travel, meetings and events if measures implemented to contain COVID-19 are lifted.

Interest Expense

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
	(In millions)			
Contractual interest expense:				
2024 Notes	3.8	3.8	7.6	7.6
Revolving credit facility	0.1	1.9	0.3	2.5
Amortization of debt discount:				
2024 Notes	0.2	0.2	0.4	0.4
Other	0.2	—	0.2	0.1
Total interest expense	$ 4.3	$ 5.9	$ 8.5	$ 10.6

Interest expense decreased during the three and six months ended July 3, 2021, as compared to the three and six months ended June 27, 2020, due to borrowings of $350 million under our previous revolving credit facility during the first quarter of fiscal 2020. All outstanding borrowings under the revolving credit facility were repaid in the fourth quarter of fiscal 2020. For an additional description of our debt arrangements, see Note 2 in the notes to condensed consolidated financial statements.

Income Taxes

The following table presents the provision for income taxes and the effective tax rate for the three and six months ended July 3, 2021 and June 27, 2020:

	Three Months Ended		Six Months Ended	
	July 3, 2021	June 27, 2020	July 3, 2021	June 27, 2020
	(In millions, except percentages)			
Provision for income taxes	$ 27.4	$ 19.4	$ 42.6	$ 25.6
Effective tax rate	14.9 %	12.9 %	11.0 %	9.1 %

Our provision for income taxes for the three and six months ended July 3, 2021 was primarily attributable to federal, state and foreign income taxes on our anticipated fiscal 2021 income, partially offset by the tax benefits of $15.9 million and $44.8 million, respectively, related to stock-based compensation that vested or was exercised during the period.

Our provision for income taxes for the three and six months ended June 27, 2020 was primarily attributable to federal, state and foreign income taxes on our then-anticipated fiscal 2020 income, partially offset by tax benefits of $11.3 million and $29.7 million, respectively, related to stock-based compensation that vested or was exercised during the period.

Our future effective tax rates may be materially impacted by changes in tax laws, tax amounts associated with our foreign earnings at rates different from the United States federal statutory rate, research credits, the tax impact of stock-based compensation, accounting for uncertain tax positions, business combinations, closure of statutes of limitations or settlement of tax audits, and changes in valuation allowance. A significant amount of our foreign earnings is generated by our subsidiaries organized in Ireland and Hungary. Our future effective tax rates may be adversely affected if our earnings were to be lower in countries where we have lower statutory tax rates. We currently expect that our fiscal 2021 effective tax rate will be approximately 16%. We expect that our quarterly effective tax rates will vary from our fiscal 2021 effective tax rate as a result of recognizing the income tax effects of stock-based awards in the quarterly periods that the awards vest or are settled and other items that we cannot anticipate. For additional discussion about how our effective tax rate could be affected by various risks, see Part II, Item 1A, "Risk Factors."

Liquidity and Capital Resources

	As of		
	July 3, 2021	January 2, 2021	Change
	(In millions)		
Cash and cash equivalents	$ 847.2	$ 928.4	$ (81.2)
Net working capital	530.4	681.8	(151.4)

Cash and Cash Equivalents

As of July 3, 2021, our principal sources of liquidity consisted of $847.2 million of cash and cash equivalents as compared to $928.4 million as of January 2, 2021.

Our primary sources of cash and cash equivalents during the six months ended July 3, 2021 were cash generated from operations and proceeds from the issuance of common stock resulting from stock purchases under our employee stock purchase plan and stock options exercised during the period.

Our primary uses of cash and cash equivalents during the six months ended July 3, 2021 were payments related to employee salaries and benefits, operating expenses, repurchases of our common stock, cash paid in business combinations, payment of taxes on vesting of restricted stock held by employees, and purchases of property, plant and equipment.

Approximately 61% of our cash and cash equivalents were held by our foreign subsidiaries as of July 3, 2021. Our cash and cash equivalents held by our foreign subsidiaries may vary from period to period due to the timing of collections and repatriation of foreign earnings. We expect that current cash and cash equivalent balances and cash flows that are generated from operations will be sufficient to meet our domestic and international working capital needs and other capital and liquidity requirements for at least the next 12 months.

Net Working Capital

Net working capital is comprised of current assets less current liabilities, as shown on our condensed consolidated balance sheets. The decrease in our net working capital as of July 3, 2021, as compared to January 2, 2021, is primarily due to the timing of cash receipts from customers and disbursements made to vendors.

Cash Flows from Operating Activities

	Six Months Ended		
	July 3, 2021	June 27, 2020	Change
	(In millions)		
Cash provided by operating activities	$ 588.8	$ 562.8	$ 26.0

Cash flows from operating activities include net income, adjusted for certain non-cash items, as well as changes in the balances of certain assets and liabilities. Our cash flows from operating activities are significantly influenced by business levels and the payment terms set forth in our customer agreements. The increase in cash flows from operating activities for the six months ended July 3, 2021, as compared to the six months ended June 27, 2020, was primarily due to the timing of cash receipts from customers and disbursements made to vendors.

Cash Flows from Investing Activities

	Six Months Ended		
	July 3, 2021	June 27, 2020	Change
	(In millions)		
Cash used for investing activities	$ (251.8)	$ (238.7)	$ (13.1)

Cash used for investing activities increased during the six months ended July 3, 2021, as compared to the six months ended June 27, 2020, primarily due to an increase in payments for business combinations. We expect to continue our investing activities, including purchasing property, plant and equipment, purchasing intangible assets, business combinations, purchasing software licenses, and making strategic investments.

Cash Flows from Financing Activities

	Six Months Ended		
	July 3, 2021	June 27, 2020	Change
	(In millions)		
Cash provided by (used for) financing activities	$ (419.4)	$ 165.0	$ (584.4)

Cash flows from financing activities decreased during the six months ended July 3, 2021, as compared to the six months ended June 27, 2020, primarily due to decreased net borrowings under our revolving credit facility and increased payments for repurchases of our common stock, partially offset by an increase in proceeds from the issuance of common stock.

Other Factors Affecting Liquidity and Capital Resources

Stock Repurchase Program

In July 2020, our Board of Directors authorized $750 million for the repurchase of shares of our common stock. The actual timing and amount of repurchases are subject to business and market conditions, corporate and regulatory requirements, stock price, acquisition opportunities and other factors. As of July 3, 2021, approximately $346 million remained available under this authorization. See Part II, Item 2, “Unregistered Sales of Equity Securities and Use of Proceeds” for additional information on share repurchases.

Revolving Credit Facility

On June 30, 2021, we terminated our existing revolving credit facility, dated January 30, 2017, and entered into a five-year senior unsecured revolving credit facility with a group of lenders led by Bank of America, N.A., as administrative agent (the "2021 Credit Facility"). The 2021 Credit Facility provides for borrowings up to $700.0 million, with the right to request increased capacity up to an additional $350.0 million upon receipt of lender commitments, for total maximum borrowings of $1.05 billion. The 2021 Credit Facility expires on June 30, 2026. Any outstanding loans drawn under the 2021 Credit Facility are due at maturity on June 30, 2026, subject to an option to extend the maturity date. Outstanding borrowings may be repaid at any time prior to maturity. As of July 3, 2021, there were no borrowings outstanding under the 2021 Credit Facility, and we were in compliance with all financial covenants associated with such credit facility.

2024 Notes

In October 2014, we issued $350.0 million aggregate principal amount of 4.375% Senior Notes due October 15, 2024 (the "2024 Notes"). We received net proceeds of $342.4 million from the issuance of the 2024 Notes, net of a discount of $1.4 million and issuance costs of $6.2 million. Interest is payable in cash semi-annually. The 2024 Notes are unsecured and rank equal in right of payment to all of our existing and future senior indebtedness. As of July 3, 2021, we were in compliance with all covenants associated with the 2024 Notes.

For additional information relating to our debt arrangements, see Note 2 in the notes to condensed consolidated financial statements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Foreign Currency Risk

A material portion of our revenue, expenses and business activities are transacted in the United States dollar ("U.S. dollar"). In certain foreign countries where we price our products and services in U.S. dollars, a decrease in value of the local currency relative to the U.S. dollar results in an increase in the prices for our products and services compared to those products of our competitors that are priced in local currency. This could result in our prices being uncompetitive in certain markets.

In certain countries where we may invoice customers in the local currency our revenues benefit from a weaker dollar and are adversely affected by a stronger dollar. The opposite impact occurs in countries where we record expenses in local currencies. In those cases, our costs and expenses benefit from a stronger dollar and are adversely affected by a weaker dollar. The fluctuations in our operating expenses outside the United States resulting from volatility in foreign exchange rates are not generally moderated by corresponding fluctuations in revenues from existing contracts.

We enter into foreign currency forward exchange contracts to protect against currency exchange risks associated with existing assets and liabilities. A foreign currency forward exchange contract acts as a hedge by increasing in value when underlying assets decrease in value or underlying liabilities increase in value due to changes in foreign exchange rates. Conversely, a foreign currency forward exchange contract decreases in value when underlying assets increase in value or underlying liabilities decrease in value due to changes in foreign exchange rates. These forward contracts are not designated as accounting hedges, so the unrealized gains and losses are recognized in other income, net, in advance of the actual foreign currency cash flows with the fair value of these forward contracts being recorded as accrued liabilities or other current assets.

We do not use forward contracts for trading purposes. Our forward contracts generally have maturities of 90 days or less. We enter into foreign currency forward exchange contracts based on estimated future asset and liability exposures, and the effectiveness of our hedging program depends on our ability to estimate these future asset and liability exposures. Recognized gains and losses with respect to our current hedging activities will ultimately depend on how accurately we are able to match the amount of foreign currency forward exchange contracts with actual underlying asset and liability exposures.

The following table provides information about our foreign currency forward exchange contracts as of July 3, 2021. The information is provided in U.S. dollar equivalent amounts. The table presents the notional amounts, at contract exchange rates, and the weighted average contractual foreign currency exchange rates expressed as units of the foreign currency per U.S. dollar, which in some cases may not be the market convention for quoting a particular currency. All of these forward contracts mature before or during August 2021.

		Notional Principal	Weighted-Average Contract Rate
		(In millions)	
Forward Contracts:			
European Union euro	$	160.5	0.82
British pound		133.6	0.71
Israeli shekel		71.7	3.26
Japanese yen		56.7	109.87
Indian rupee		17.8	74.13
Swedish krona		13.6	8.51
Taiwan dollar		10.7	27.62
Canadian dollar		9.5	1.21
Chinese renminbi		6.0	6.47
Other		4.8	N/A
Total	$	484.9	
Estimated fair value	$	(7.1)	

We actively monitor our foreign currency risks, but our foreign currency hedging activities may not substantially offset the impact of fluctuations in currency exchange rates on our results of operations, cash flows and financial position.

Interest Rate Risk

Our exposure to market risk for changes in interest rates relates primarily to our portfolio of cash and cash equivalents and balances outstanding on our revolving credit facility, if any. We are exposed to interest rate fluctuations in many of the world's leading industrialized countries, but our interest income and expense is most sensitive to fluctuations in the general level of United States interest rates. In this regard, changes in United States interest rates affect the interest earned on our cash and cash equivalents and the costs associated with foreign currency hedges.

All highly liquid securities with a maturity of three months or less at the date of purchase are considered to be cash equivalents. The carrying value of our interest-bearing instruments approximated fair value as of July 3, 2021.

Interest rates under our revolving credit facility are variable, so interest expense could be adversely affected by changes in interest rates, particularly for periods when we maintain a balance outstanding under the revolving credit facility. Interest rates for our revolving credit facility can fluctuate based on changes in market interest rates and in an interest rate margin that varies based on our consolidated leverage ratio. As of July 3, 2021, there were no borrowings outstanding under our revolving credit facility. For an additional description of the revolving credit facility, see Note 2 in the notes to condensed consolidated financial statements.

Equity Price Risk

Equity Investments

We have a portfolio of equity investments that includes marketable equity securities and non-marketable investments. Our equity investments are made primarily in connection with our strategic investment program. Under our strategic investment program, from time to time, we make cash investments in companies with technologies that are potentially of strategic importance to us.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), under the supervision and with the participation of our management, including our Chief Executive Officer ("CEO") and our Chief Financial Officer ("CFO"), we evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of July 3, 2021.

The evaluation of our disclosure controls and procedures included a review of our processes and the effect on the information generated for use in this Quarterly Report on Form 10-Q. In the course of this evaluation, we sought to identify any material weaknesses in our disclosure controls and procedures, to determine whether we had identified any acts of fraud involving personnel who have a significant role in our disclosure controls and procedures, and to confirm that any necessary corrective action, including process improvements, was taken. This type of evaluation is done every fiscal quarter so that our conclusions concerning the effectiveness of these controls can be reported in our periodic reports filed with the SEC. The overall goals of these evaluation activities are to monitor our disclosure controls and procedures and to make modifications as necessary. We intend to maintain these disclosure controls and procedures, modifying them as circumstances warrant.

Based on their evaluation as of July 3, 2021, our CEO and CFO have concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report to provide reasonable assurance that the information required to be disclosed by us in our reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and is accumulated and communicated to our management, including the CEO and CFO, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the fiscal quarter ended July 3, 2021 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our CEO and CFO, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. Internal control over financial reporting, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of internal control are met. Further, the design of internal control must reflect the fact that there are resource constraints, and the benefits of the control must be considered relative to their costs. While our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of their effectiveness, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within Cadence, have been detected.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

From time to time, we are involved in various disputes and litigation that arise in the ordinary course of business. These include disputes and lawsuits related to intellectual property, indemnification obligations, mergers and acquisitions, licensing, contracts, distribution arrangements and employee relations matters. At least quarterly, we review the status of each significant matter and assess its potential financial exposure. If the potential loss from any claim or legal proceeding is considered probable and the amount or the range of loss can be estimated, we accrue a liability for the estimated loss. Legal proceedings are subject to uncertainties, and the outcomes are difficult to predict. Because of such uncertainties, accruals are based on our judgments using the best information available at the time. As additional information becomes available, we reassess the potential liability related to pending claims and litigation matters and may revise estimates.

Item 1A. Risk Factors

Our operations and financial results are subject to various material risks and uncertainties, including those described in the sections below, that could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock, and make an investment in our Company speculative or risky.

Business and Operational Risks

The ongoing COVID-19 pandemic could continue to adversely affect our business, results of operations and financial condition.

We are unable to accurately predict the full impact that the COVID-19 pandemic will have on our results of operations, financial condition, liquidity and cash flows due to numerous uncertainties, including the duration and severity of the pandemic, the efficacy and distribution of vaccines and containment measures. Our compliance with these measures has impacted our day-to-day operations and could disrupt our business and operations, as well as that of our key customers, suppliers (including contract manufacturers) and other counterparties, for an indefinite period of time. To support the health and well-being of our employees, customers, partners and communities, a vast majority of our employees are still working remotely as of July 26, 2021. However, we have begun a limited pilot program for employees to begin voluntarily returning to work in certain jurisdictions with lower rates of new COVID-19 cases.

The disruptions to our operations caused by COVID-19 may result in inefficiencies, delays and additional costs in our product development, sales, marketing, and customer service efforts that we cannot fully mitigate through remote or other alternative work arrangements. In addition, we have experienced, and may continue to experience, some volatility in our hardware product delivery times due to delays in obtaining access to customer sites. Moreover, access by our employees to our laboratory facilities that are necessary for the development of certain IP products has been and may in the future be disrupted due to local conditions.

More generally, the impact of the pandemic may increase the possibility of an extended global economic downturn, high inflation and has caused volatility in financial markets, which could affect demand for our products and services and impact our results and financial condition even after the pandemic is contained, shelter-in-place orders are lifted and local conditions improve. For example, we may be unable to collect receivables from those customers significantly impacted by COVID-19 and, in fact, have received numerous requests from our customers to delay their payments to us, while we continue to provide services to these customers. Also, a decrease in orders in a given period could negatively affect our revenues in future periods, particularly if experienced on a sustained basis, because a substantial proportion of our software licenses yield revenue recognized over time. The pandemic may also have the effect of heightening many of the other risks described in this "Risk Factors" section, including risks associated with our customers and supply chain. We will continue to evaluate the nature and extent of the impact of COVID-19 to our business.

We have experienced varied operating results, and our operating results for any particular fiscal period are affected by the timing of revenue recognition, particularly for our emulation and prototyping hardware and IP products.

Various factors affect our operating results, and some of them are not within our control. Our operating results for any period are affected by the mix of products and services sold in a given period and the timing of revenue recognition, particularly for our emulation and prototyping hardware and IP products. In addition, we have recorded net losses in the past and may record net losses in the future. Also, our cash flows from operating activities have and will continue to fluctuate due to a number of factors, including the timing of our billings, collections, disbursements and tax payments.

A substantial portion of the product revenue related to our hardware business and our IP offerings is recognized upon delivery, and our forecasted revenue results are based, in part, on our expectations of hardware and IP to be delivered in a particular quarter. Therefore, changes in hardware and IP bookings or deliveries (including disruptions caused by COVID-19) relative to expectations will have a more immediate impact on our revenue than changes in software or services bookings, for which revenue is generally recognized over time.

In recent years, we made significant investments to expand our IP offerings through, among other things, research and development and acquisitions. As we continue to expand our IP offerings, a portion of the revenue related to our IP bookings will be deferred until we complete and deliver the licensed IP to our customers. As a result, costs related to the research and development of the IP may be incurred prior to the recognition of the related revenue.

Revenue related to our hardware and IP products is inherently difficult to predict because sales of our hardware and IP products depend on the commencement of new projects for the design and development of complex ICs and systems by our customers, our customers' willingness to expend capital to deploy our new and existing hardware or IP products in those projects and the availability of our new and existing hardware or IP products for delivery. Therefore, our hardware or IP sales may be delayed or may decrease if our customers delay or cancel projects because their spending is constrained or if there are problems or delays with the supply, delivery or installation of our hardware or IP products or our hardware suppliers. Moreover, the hardware and IP markets are highly competitive, and our customers may choose to purchase a competitor's hardware or IP product based on cost, performance or other factors. These factors may result in lower revenue, which would have an adverse effect on our business, results of operations or cash flows.

A substantial proportion of our software licenses yield revenue recognized over time, which may make it difficult for us to rapidly increase our revenue in future fiscal periods, and means that a decrease in orders in a given period would negatively affect our revenues in future periods.

We plan our operating expenses based on forecasted revenue, expected business needs and other factors. These expenses and the effect of long-term commitments are relatively fixed in the short term. Bookings and the related revenue are harder to forecast in a difficult economic environment. If we experience a shortfall in bookings, our operating results could differ from our expectations because we may not be able to quickly reduce our expenses in response to short-term business changes.

The methods, estimates and judgments that we use in applying our accounting policies have a significant impact on our results of operations (see "Critical Accounting Estimates" under Part I, Item 2, "Management's Discussion and Analysis of Financial Condition and Results of Operations"). Such methods, estimates and judgments are, by their nature, subject to substantial risks, uncertainties and assumptions, and factors may arise over time that may lead us to change our methods, estimates and judgments. Changes in those methods, estimates and judgments could significantly affect our results of operations.

Historical results of operations should not be viewed as reliable indicators of our future performance. If our revenue, operating results or business outlook for future periods fall short of the levels expected by us, securities analysts or investors, the trading price of our common stock could decline.

Any periods of uncertainty in the global economy and international trade relations, changes in governmental policies relating to technology, and any potential downturn in the semiconductor and electronics industries, may negatively impact our business and reduce our bookings levels and revenue.

Purchases of our products and services are dependent upon the commencement of new design projects by IC manufacturers and electronics systems companies. The IC and electronics systems industries are cyclical and are characterized by constant and rapid technological change, rapid product obsolescence and price erosion, evolving standards, short product life cycles and wide fluctuations in product supply and demand.

The IC and electronics systems industries have also experienced significant downturns in connection with, or in anticipation of, maturing product cycles of both these industries' and their customers' products. Spending on our products and services has grown in recent years, but the current outlook for the global economy is uncertain and may result in a decrease in spending on our products and services.

Uncertainty about future political and economic conditions, adverse changes to international trade relationships between countries in which we do business or future decline in corporate or consumer spending could negatively impact our customers' businesses, reducing the number of new chip designs and their overall research and development spending, including their spending on our products and services, and as a result decrease demand for our products and services. Decreased bookings for our products and services, customer bankruptcies, consolidation among our customers, or problems or delays with our hardware suppliers or with the supply or delivery of our hardware products could also adversely affect our ability to grow our business or adversely affect our future revenues and financial results. Our future business and financial results, including demand for our products and services, are subject to considerable uncertainty that could impact our stock price. If economic conditions or international trade relationships between countries in which we do business deteriorate in the future, or, in particular, if semiconductor or electronics systems industry revenues do not grow, including as a result of a sustained global semiconductor shortage, the ability to export or import products or services by the semiconductor or electronics systems industry is adversely restricted, or our supplies of hardware components and products are subject to problems or delays, our future revenues and financial results could be adversely affected.

We are subject to governmental export and import controls that could subject us to liability or impair our ability to compete in global markets as well as a variety of other laws and regulations.

We must comply with regulations of the United States and of certain other countries in selling or shipping our products and transferring our technology outside the United States, to foreign nationals or across borders. Changes in these regulations or restrictions due to changes in trade relationships with the United States, including new tariffs, trade protection measures, import or export licensing requirements, sanctions, trade embargoes and other trade barriers, could harm our business, operating results or financial condition.

For example, beginning in fiscal 2019, the Bureau of Industry and Security ("BIS") of the U.S. Department of Commerce placed certain entities who are our customers on the "Entity List," limiting our ability to deliver products and services to these entities. When certain customers are on the Entity List or are subject to new or expanded trade restrictions, such as the expansion of the scope of military end-users and military end-use by BIS in April 2020 and the foreign-produced direct product rules in August 2020, and in the absence of a license from the BIS, it will have a negative effect on our ability to sell products and provide services to these customers. In addition, new or expanded trade restrictions, such as the expansion of the military end-user, military end-use rule and the foreign-produced direct product rules, will increase our costs or expenses. Entity List restrictions and other trade restrictions will also encourage customers to seek substitute products from our competitors that are not subject to these restrictions or to develop their own solutions, thereby decreasing our long-term competitiveness. In addition, although customers are not prohibited from paying (and we are not restricted from collecting) for products we previously delivered to them, the credit risks associated with outstanding receivables from customers on the Entity List and other trade restrictions could increase as a result of these limitations. In particular, China's stated national policy to be a global leader in all segments of the semiconductor industry by 2030 has resulted in and may continue to cause increased competitive capability in China.

We cannot predict whether or when any changes will be made that eliminate or decrease these limitations on our ability to sell products and provide services to these Entity List customers or other customers impacted by other trade restrictions. We are unable to predict the duration of the export restrictions imposed with respect to any particular customer or the long-term effects on our business or our customers' business. Additionally, other companies may be added to the Entity List and/or be subject to new or expanded trade restrictions. In addition, there may be indirect impacts to our business which we cannot reasonably quantify, including that our business may also be impacted by other trade restrictions that may be imposed by the U.S., China, or other countries. Restrictions on our ability to sell and ship our products to customers on the Entity List have had, and may continue to have, an adverse effect on our business, results of operations or financial condition.

Failure to obtain export licenses or restrictions on trade imposed by the United States or other countries could harm our business by rendering us unable to sell or ship products and transfer our technology outside of the United States or across borders. Although we have implemented policies and procedures to help us comply with all applicable trade restrictions, we and governmental authorities have had and may in the future have reason to inquire into particular sales. For example, in February 2021, we received an administrative subpoena from BIS requesting the production of records in connection with certain sales to China. We are cooperating with BIS and are in the process of responding to the subpoena as well as conducting an internal review. Such inquiries are subject to uncertainties and the outcomes of this and other proceedings that may occur are difficult to predict. The laws and policies of the United States and other countries in this area are evolving and changing, and we have experienced and may continue to experience challenges in complying with new rules as they become effective. Any failure or alleged failure to comply with these laws and policies could have negative consequences, including significant legal costs, government investigations, penalties, denial of export privileges and debarment from participation in U.S. government contracts, any of which could have a material adverse effect on our operations, reputational harm and financial condition.

In addition to export control laws, our global operations are subject to numerous U.S. and foreign laws and regulations, including those related to anti-corruption, tax, corporate governance, financial and other disclosures, competition, data privacy and employment. These laws and regulations are complex and may have differing or conflicting legal standards, making compliance difficult and costly, and changes to these laws may require us to make significant changes to our business operations that may adversely affect our business overall. Although we have implemented policies and procedures to assist our compliance with these laws and regulations, there can be no assurance that our employees, contractors, agents or partners will not violate such laws and regulations. Any violation individually or in the aggregate could have a material adverse effect on our operations, reputation and financial condition.

We have acquired and expect to acquire other companies and businesses and may not realize the expected benefits of these acquisitions.

We have acquired and expect to acquire other companies and businesses in order to expand our product offerings and enter into new markets. Our future revenue growth and expansion of our business is dependent on our successful integration of our acquisitions. We may incur significant costs in connection with potential transactions, including acquisitions that are not consummated. Potential and completed acquisitions involve a number of risks. If any of the following acquisition-related risks occur, our business, operating results or financial condition could be adversely impacted:

- the failure to realize, or a delay in realizing, anticipated benefits such as cost savings and revenue enhancements;
- overlapping customers and product sets that impact our ability to maintain revenue at historical rates;

- the failure to understand, compete and operate effectively in markets where we have limited experience;
- the failure to integrate and manage acquired products, technologies and businesses effectively;
- difficulties in integrating employees of an acquired company or business and the failure to retain key employees;
- difficulties in combining previously separate companies or businesses into a single unit;
- the substantial diversion of management's attention from day-to-day business when evaluating and negotiating these transactions and integrating an acquired company or business;
- the discovery of unanticipated liabilities assumed from an acquired company, business or assets, such that we cannot realize the anticipated value of the acquisition;
- difficulties related to integrating the products and infrastructure of an acquired company or business in, for example, distribution, engineering, licensing models or customer support areas;
- incurring costs to remediate issues of an acquired company discovered during due diligence or thereafter;
- unanticipated costs; or
- unwillingness of customers of an acquired business to continue licensing or buying products from us following the acquisition.

In a number of our completed acquisitions, we have agreed to make future payments, either in the form of employee retention bonuses or contingent purchase price payments, based on the achievement of specified milestones. The performance goals pursuant to which these future payments may be made generally relate to the achievement by the acquired company or business, or by the employees who joined us with the acquired company or business, of certain specified bookings, revenue, run rate, product proliferation, product development or employee retention goals during a specified period following completion of the applicable acquisition. The specific performance goal levels and amounts and timing of employee bonuses or contingent purchase price payments vary with each acquisition. We may continue to use contingent payments in connection with acquisitions in the future and while we expect to derive value from an acquisition in excess of such contingent payment obligations, we may be required to make certain contingent payments without deriving the anticipated value.

Future acquisitions may involve issuances of stock as full or partial payment of the purchase price for the acquired company or business, grants of restricted stock, restricted stock units or stock options to employees of the acquired companies or businesses (which may be dilutive to existing stockholders), expenditure of substantial cash resources or the incurrence of a material amount of debt. These arrangements may impact our liquidity, financial position and results of operations or increase dilution of our stockholders' equity interests in the company.

We make and expect to make strategic investments and may not realize the expected benefits of these investments.

We have made and expect to make strategic investments in which we have a minority equity interest and do not have operational control. These strategic investments may also involve collaboration agreements that further and complement our strategy and marketing efforts. We may not be able to realize the expected benefits of these investments, and the related collaborations may be difficult to manage without sole decision-making authority and the economic or business interests in these collaborations may become inconsistent with our interests. These challenges could have an adverse effect on our business, operating results or financial condition.

The accounting applied to strategic investments depends on a number of factors, including, but not limited to, our percentage of ownership and the level of our influence over the entity. Losses experienced by these strategic investment entities or associated impairment charges could adversely impact our operating results and the value of our investment. In addition, if these entities fail and cease operations, we may lose the value of our investment and shared profits.

The effect of foreign exchange rate fluctuations may adversely impact our revenue, expenses, cash flows and financial condition.

We have significant operations outside the United States. Our revenue from international operations as a percentage of total revenue was approximately 56% during the six months ended July 3, 2021 and 58% for the six months ended June 27, 2020. We expect that revenue from our international operations will continue to account for a significant portion of our total revenue. We also transact business in various foreign currencies, although the majority of our revenue contracts worldwide are denominated in U.S. dollars. Volatility of currencies in countries where we conduct business, most notably the U.S. dollar, Chinese renminbi, Japanese yen, European Union euro, British pound and Indian rupee have had and may in the future have an effect on our revenue or operating results.

Fluctuations in the rate of exchange between the U.S. dollar and the currencies of other countries where we conduct business could seriously affect our business, operating results or financial condition. For example, if we price our products and services in a foreign currency, we receive fewer U.S. dollars when this currency declines in value relative to the U.S. dollar. If we price our products and services in U.S. dollars, the decrease in value of a local currency results in an increase in the price for our products and services compared to those products of our competitors that are priced in this currency. This could result in our prices being uncompetitive in markets where business is transacted in the local currency. On the other hand, when a foreign currency increases in value relative to the U.S. dollar, it takes more U.S. dollars to purchase the same amount of the foreign currency. As we use the foreign currency to fund payroll costs and other operating expenses in our international operations, this results in an increase in operating expenses. Approximately 32% of our total costs and expenses are transacted in foreign currencies. Our attempts to reduce the effect of foreign currency fluctuations may be unsuccessful, and significant exchange rate movements may adversely impact our results of operations as expressed in U.S. dollars.

We could suffer serious harm to our business because of the infringement of our intellectual property rights by third parties or because of our infringement of the intellectual property rights of third parties, as well as any associated efforts to enforce such rights, including through intellectual property litigation.

There are numerous patents relating to our business and ecosystem. New patents are being issued at a rapid rate and are owned by computational software companies as well as entities and individuals outside the computational software field, including parties whose income is primarily derived from infringement-related licensing and litigation. It is not always practicable or possible to determine in advance whether a product or any of its components infringes the patent rights of others. As a result, from time to time, we may be compelled to respond to or prosecute intellectual property infringement claims to protect our rights or defend a customer's rights.

Intellectual property infringement claims, including contractual defense reimbursement obligations related to third-party claims against our customers, regardless of merit, could consume valuable management time, result in costly litigation or cause product shipment delays, all of which could seriously harm our business, operating results or financial condition. The risk of infringement and related indemnification claims associated with design IP products that are incorporated into a customer product broadly used by consumers may be higher than the risk associated with our software products. In settling these claims, we may be required to enter into royalty or licensing agreements with the third parties claiming infringement. These royalty or licensing agreements, if available, may not have terms favorable to us. Being compelled to enter into a license agreement with unfavorable terms could seriously harm our business, operating results or financial condition.

Any potential intellectual property litigation could compel us to do one or more of the following:

- pay damages (including the potential for treble damages), license fees or royalties (including royalties for past periods);
- stop licensing products or providing services that use the challenged intellectual property;
- obtain a license to sell or use the relevant technology, which license may not be available on reasonable terms, or at all; or
- redesign the challenged technology, which could be time consuming and costly, or impossible.

If we were compelled to take any of these actions, our business, reputation or operating results might suffer.

If our security measures are breached or vulnerabilities are discovered in our products and services, and an unauthorized party obtains access to customer data, financial data or assets or our proprietary business information, our information systems and products and services may be perceived as being unsecure, we could experience business or financial harm, and our business and reputation could be harmed.

Our products and services involve storage, including cloud-based storage, and transmission of our proprietary information and that of our customers. Our operations are dependent upon the connectivity of our operations throughout the world. Despite our security measures, our information technology and infrastructure, as well as our products and services, may be vulnerable to cyber attacks by unauthorized third parties (which may include nation-states and individuals sponsored by them) or breaches due to employee error, malfeasance or other vulnerabilities or disruptions, which could result in unauthorized disclosure of sensitive information and could significantly interfere with our business operations or those of our customers. Third parties attempt to gain unauthorized access through a variety of methods (such as the use of viruses, malware, ransomware, phishing, denial of service attacks and other cyber attacks) and corrupt the processes of the products and services that we provide. We may also be a target of malicious attacks in an attempt to gain access to our network, including our Cadence Cloud portfolio, which includes both our managed and customer-managed environments, or data centers or those of our customers or end users; steal proprietary information related to our business, products, services or infrastructure; steal financial data or assets or interrupt our systems and services or those of our customers or others. Breaches of our security measures or vulnerabilities in our products or services could expose us to a risk of loss or misuse of this information, loss of financial assets, business interruption, litigation and potential liability. Because techniques used to obtain unauthorized access or to sabotage information systems change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventive measures. Furthermore, we have and may continue to acquire companies with less sophisticated security measures and that have had or may experience in the future cybersecurity incidents causing business or financial harm. In addition, if we select a vendor that uses cloud storage of information as part of their service or product offerings or are selected as a vendor for our Cadence Cloud portfolio, despite our attempts to validate the security of such services, our proprietary information may be misappropriated by third parties. In the event of an actual or perceived breach of our security, or the security of one of our vendors, the market perception of the effectiveness of our security measures could be harmed, legal or regulatory actions could be initiated against us and we could suffer damage to our reputation or our business, or lose existing customers and our ability to obtain new customers (including government customers), or suffer harm to our financial condition.

Risks associated with our international operations could adversely impact our financial condition.

A significant amount of our revenue is derived from our international operations, and we have offices throughout the world, including key research and development facilities outside of the United States. Our international operations may be subject to a number of risks, including:

- government trade restrictions, including tariffs, export or import regulations, sanctions or other trade barriers, including licensing requirements for exports, which may lengthen the sales cycle or restrict or prohibit the sale or licensing of certain products;
- limitations on repatriation of earnings and on the conversion of foreign currencies;
- reduced protection of intellectual property rights and heightened exposure to intellectual property theft;
- longer collection periods for receivables and greater difficulty in collecting accounts receivable;
- difficulties in managing foreign operations;
- political and economic instability;
- unexpected changes in regulatory requirements;
- inability to continue to offer competitive compensation in certain growing regions;
- differing employment practices and labor issues;
- United States' and other governments' licensing requirements for exports, which may lengthen the sales cycle or restrict or prohibit the sale or licensing of certain products;
- variations in costs or expenses associated with our international operations, including as a result of changes in foreign tax laws or devaluation of the U.S. dollar relative to other foreign currencies; and
- public health emergencies, such as the recent COVID-19 pandemic and the subsequent public health measures, including restrictions on travel between jurisdictions in which we and our customers and suppliers operate.

Some of our international research and development and other facilities are in parts of the world where there may be a greater risk of business interruption as a result of political instability, terrorist acts or military conflicts than businesses located domestically. Furthermore, this potential harm is exacerbated because damage to or disruptions at our international research and development facilities could have a more significant adverse effect on our ability to develop new or improve existing products than other businesses that may only have sales offices or other less critical operations abroad. We are not insured for losses or interruptions caused by acts of war. Furthermore, our operations are dependent upon the connectivity of our operations throughout the world. Activities that interfere with our international connectivity or operations, such as cyber hacking, the introduction of a virus into our computer systems, natural disasters, public health emergencies, civil unrest or terrorism, could significantly interfere with our business operations.

In addition, internal controls, policies and procedures and employee training and compliance programs that we have implemented to deter prohibited practices may not prevent our employees, contractors or agents from violating or circumventing our policies and the laws and regulations applicable to our worldwide operations.

We depend upon our management team and key employees, and our failure to attract, train, motivate and retain management and key employees may make us less competitive and therefore harm our results of operations.

Our business depends upon the continued services, efforts and abilities of our senior management and other key employees. Competition for highly skilled executive officers and employees can be intense, particularly in geographic areas recognized as high technology centers where we maintain facilities. In addition, competition for qualified personnel, including software engineers, in the EDA, commercial electronics engineering services and IP industries has intensified. Further, increased uncertainty regarding social, political and immigration policies in the United States and abroad may make it difficult to recruit employees with adequate experience; and governmental policies resulting in increased funding of domestic technology companies, such as China's stated national policy to be a global leader in all segments of the semiconductor industry by 2030, has caused and may continue to cause difficulty in retaining and attracting local talent. We may also experience increased compensation costs that are not offset by either improved productivity or higher sales. We may not be successful in recruiting new personnel and in training, retaining and motivating existing personnel. Our ability to do so also depends on how well we maintain a strong workplace culture that is attractive to employees, particularly as we transition employees back to the office, and hiring and training of new employees may be adversely impacted by global economic uncertainty and office closures. From time to time, there may be changes in our management team resulting from the hiring and departure of executive officers, and as a result, we may experience disruption to our business that may harm our operating results and our relationships with our employees, customers and suppliers may be adversely affected.

To attract, retain and motivate individuals with the requisite expertise, we may be required to grant large numbers of stock options or other stock-based incentive awards, which may be dilutive to existing stockholders and increase compensation expense, and pay significant base salaries and cash bonuses, which could harm our operating results. The high cost of training new employees, not fully utilizing these employees, or losing trained employees to competing employers could also reduce our operating margins and harm our business or operating results.

We rely on our proprietary technology, as well as software and other intellectual property rights licensed to us by third parties, and we cannot assure that the precautions taken to protect our rights will be adequate or that we will continue to be able to adequately secure such intellectual property rights from third parties.

Our success depends, in part, upon our proprietary technology. We generally rely on patents, copyrights, trademarks, trade secrets, licenses and restrictive agreements to establish and protect our proprietary rights in technology and products. Despite the precautions we may take to protect our intellectual property, third parties have tried in the past, and may try in the future, to challenge, invalidate or circumvent these safeguards. Our patents and other intellectual property rights may not provide us with sufficient competitive advantages. Patents may not be issued on any of our pending applications and our issued patents may not be sufficiently broad to protect our technology. Furthermore, the laws of foreign countries may not protect our proprietary rights in those countries to the same extent as applicable law protects these rights in the United States, and we may encounter difficulties in our attempts to protect our intellectual property in foreign jurisdictions, including as a result of impacts from changes in international trade relationships. The protection of our intellectual property may require the expenditure of significant financial and managerial resources. Moreover, the steps we take to protect our intellectual property may not adequately protect our rights, or deter or prevent third parties from infringing or misappropriating our proprietary rights.

Many of our products include software or other intellectual property licensed from third parties. We may have to seek new or renew existing licenses for such software and other intellectual property in the future. Our engineering services business holds licenses to certain software and other intellectual property owned by third parties, including that of our competitors. Our failure to obtain software, other intellectual property licenses or other intellectual property rights that are necessary or helpful for our business on favorable terms, or our need to engage in litigation over these licenses or rights, could seriously harm our business, operating results or financial condition.

We have substantial cash requirements in the United States, but a significant portion of our cash is held and generated outside of the United States, and if our cash available in the United States is insufficient to meet our operating expenses and debt repayment obligations in the United States, then we may be required to raise cash in ways that could negatively affect our financial condition, results of operations and the market price of our common stock.

We have significant operations outside the United States. As of July 3, 2021, approximately 61% of our cash and cash equivalents balance was held by subsidiaries outside the United States, with the remainder of the balance held by us or our subsidiaries in the United States. While we believe that the combination of our current U.S. cash and cash equivalents, future U.S. operating cash flows and other cash that may be accessible to us on attractive terms are sufficient to meet our ongoing U.S. operating expenses and debt repayment obligations, we cannot accurately predict the full impact that COVID-19 may have on our cash flows. In addition, although the U.S. Tax Cuts and Jobs Act (the "Tax Act") may have reduced the tax impact of repatriation of foreign earnings, there are still administrative processes associated with repatriation of foreign earnings that could affect the timing of returning cash to the U.S. from non-U.S. jurisdictions. Accordingly, if our U.S. cash were insufficient to meet our future funding obligations in the United States, we could be required to seek funding sources on less attractive terms, which could negatively impact our results of operations, financial position and the market price of our common stock.

The long sales cycle of our products and services may cause our operating results to fluctuate unexpectedly.

Generally, we have a long sales cycle that can extend up to six months or longer. The complexity and expense associated with our products and services generally require a lengthy customer education, evaluation and approval process. Consequently, we may incur substantial expenses and devote significant management effort and expense to develop potential relationships that do not result in agreements or revenue and may prevent us from pursuing other opportunities.

In addition, sales of our products and services have been and may in the future be delayed if customers delay approval or commencement of projects because of:

- the timing of customers' competitive evaluation processes; or
- customers' budgetary constraints and budget cycles.

Long sales cycles for hardware products subject us to a number of significant risks over which we have limited control, including insufficient, excess or obsolete inventory, variations in inventory valuation and fluctuations in quarterly operating results.

Our restructuring plans incur substantial costs and may not result in the benefits we have anticipated, possibly having a negative effect on our future operating results.

In recent fiscal years, we have initiated restructuring plans in an effort to better align our resources with our business strategy. We incur substantial costs to implement restructuring plans, and our restructuring activities may subject us to reputational risks and litigation risks and expenses. Our past restructuring plans do not provide any assurance that we will realize anticipated cost savings and other benefits or that additional restructuring plans will not be required or implemented in the future. In addition, our restructuring plans may have other consequences, such as attrition beyond our planned reduction in workforce, a negative effect on employee morale and productivity or our ability to attract highly skilled employees. Our competitors may also use our restructuring plans to seek to gain a competitive advantage over us. As a result, our restructuring plans may affect our revenue and other operating results in the future.

The investment of our cash is subject to risks that may cause losses and affect the liquidity of these investments.

Our marketable investments include various money market funds and may include other investments as well. Weakened financial markets have at times adversely impacted the general credit, liquidity, market prices and interest rates for these and other types of investments. Additionally, changes in monetary policy by the Federal Open Market Committee or other relevant regulators and concerns about the rising U.S. government debt level may cause a decrease in the purchasing power of the U.S. dollar and adversely affect our investment portfolio. The financial market and monetary risks associated with our investment portfolio may have a material adverse effect on our financial condition, liquidity, results of operations or cash flows.

Our business is subject to the risk of natural disasters.

Our corporate headquarters, including certain of our research and development operations and certain of our distribution facilities, is located in the Silicon Valley area of Northern California, a region known to experience seismic activity and wildfires. If significant seismic activity or wildfires were to occur or reoccur, our operations may be interrupted, which could adversely impact our business and results of operations.

Our offices in the United States and in other countries around the world may also be adversely impacted by natural disasters, including fires, earthquakes, extreme temperatures, droughts, flooding and other climate change-related risks, or actions by utility providers, as well as other catastrophic events such as an actual or threatened public health emergency. If a catastrophic event occurs at or near any of our offices, or utility providers or public health officials take certain actions (e.g., shut off power to our facilities or impose travel restrictions), our operations may be interrupted, which could adversely impact our business and results of operations. If a catastrophic event impacts a significant number of our customers, resulting in decreased demand for their and our products, or our ability to provide services and maintenance to our customers, our business and results of operations could be adversely impacted.

Risks Related to Customers, Suppliers and Industry Competition

Customer consolidation could affect our operating results.

There has been a trend toward customer consolidation in the semiconductor industry through business combinations, including mergers, asset acquisitions and strategic partnerships. If this trend continues, it could make us more dependent on fewer customers who may be able to exert increased pressure on our prices and other contract terms and could increase the portion of our total sales concentration for any single customer. Customer consolidation activity could also reduce the demand for our products and services if such customers streamline research and development or operations, reduce purchases or delay purchasing decisions. These outcomes could negatively impact our operating results and financial condition.

Our failure to respond quickly to technological developments or customers' increasing technological requirements and to continue to develop or acquire technological capabilities could make our products uncompetitive and obsolete and impede our ability to address the requirements in technology segments that are expected to contribute to our growth.

Our strategy is designed to increase our business among electronic systems companies, which are now developing their own ICs and other electronic subsystems. Our strategy is also intended to increase our business among semiconductor companies, which are increasing their contribution to the end products into which their ICs and other electronic subsystems are incorporated. Part of this strategy involves addressing the needs across a variety of vertical markets including consumer, hyperscale computing, mobile, 5G communications, automotive, aerospace and defense, industrial and healthcare, where increased investment is expected by our customers. Each of these markets require technologies, expertise, and marketing and operations infrastructure that are application-specific. Our inability to develop or acquire these application-specific capabilities, it could impede our ability to expand our business in these categories and ultimately affect our future growth. Currently, the industries we serve are experiencing the following trends:

- changes in the design and manufacturing of ICs, including migration to advanced-process nodes and three-dimensional transistors, such as FinFETs, present major challenges to the semiconductor industry, particularly in IC design, design automation, design of manufacturing equipment, and the manufacturing process itself. With migration to advanced-process nodes, the industry must adapt to more complex physics and manufacturing challenges, such as the need to draw features on silicon that are many times smaller than the wavelength of light used to draw the features via lithography. Models of each component's electrical properties and behavior also become more complex as do requisite analysis, design, verification and manufacturing capabilities. Novel design tools and methodologies must be invented and enhanced quickly to remain competitive in the design of electronics in the smallest nanometer ranges;
- the ability to design SoCs increases the complexity of managing a design that, at the lowest level, is represented by billions of shapes on fabrication masks. In addition, SoCs typically incorporate microprocessors and DSPs that are programmed with software, requiring simultaneous design of the IC and the related software embedded on the IC;
- with the availability of seemingly endless gate capacity, there is an increase in design reuse, or the combining of off-the-shelf design IP with custom logic to create ICs or SoCs. The unavailability of a broad range of high-quality design IP (including our own) that can be reliably incorporated into a customer's design with our software products and services could lead to reduced demand for our products and services;

- increased technological capability of the FPGA logic chip, which creates an alternative to IC implementation for some companies and could reduce demand for our IC implementation products and services;
- a growing number of low-cost engineering service businesses could reduce the need for some IC companies to invest in EDA products;
- adoption of cloud computing technologies with accompanying new engagement models for an increasing number of software categories may impact our business;
- integration and optimization of solutions for system design with core EDA technologies could result in reduced demand for our broad portfolio;
- with Moore's Law slowing, the trend towards on-chip integration could change the required product mix and impact the need for system-on-chip integration; and
- changing end-user dynamics in our eight target technology verticals - consumer, hyperscale computing, mobile, 5G communications, automotive, aerospace and defense, industrial and healthcare - could advance the need from simple ICs to full-system design and analysis capabilities that require increasingly complex computational software-based solutions.

If we are unable to respond quickly and successfully to these trends, we may lose our competitive position, and our products or technologies may become obsolete. To compete successfully, we must develop, acquire or license new products and improve our existing products and processes on a schedule that keeps pace with technological developments and the requirements for products addressing a broad spectrum of designers and designer expertise in our industries. We must provide frequent and relevant updates to our software products in order to provide substantial benefit to the customer throughout the license periods because of the rapid changes in our customers' industries. The market must also accept our new and improved products. Our hardware platforms must be enhanced periodically to reduce the likelihood that a competitor surpasses the capabilities we offer. Our introduction of new products could reduce the demand and revenue of our older products or affect their pricing. We must also be able to support a range of changing computer software, hardware platforms and customer preferences. A transition by our customers to different business models associated with cloud computing technologies could result in reduced revenue. We cannot guarantee that we will be successful in keeping pace with all, or any, of the customer trends.

We have invested and expect to continue to invest in research and development efforts for new and existing products and technologies and technical sales support. Such investments may affect our operating results, and, if the return on these investments is lower or develops more slowly than we expect, our revenue and operating results may suffer.

We have invested and expect to continue to invest in research and development for new and existing products, technologies and services in response to our customers' increasing technological requirements. Such investments may be in related areas, such as technical sales support, and may include increases in employee headcount. These investments may involve significant time, risks and uncertainties, including the risk that the expenses associated with these investments may affect our margins and operating results and that such investments may not generate sufficient revenues to offset liabilities assumed and expenses associated with these new investments. We believe that we must continue to invest a significant amount of time and resources in our research and development efforts and technical sales support to maintain and improve our competitive position. If we do not achieve the benefits anticipated from these investments, if the achievement of these benefits is delayed, or if customers reduce or slow the need to upgrade or enhance their computational software products and design flows, our revenue and operating results may be adversely affected.

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

Our customers have and may continue to face challenging financial or operating conditions, including due to macroeconomic conditions or catastrophic events such as the COVID-19 pandemic, and delay or default on their payment commitments to us, request to modify contract terms, or modify or cancel plans to license our products. Our customers' inability to fulfill payment commitments, in turn, could adversely affect our revenue, operating expenses and cash flow. Additionally, our customers have, in the past, sought, and may, in the future, seek, to renegotiate pre-existing contractual commitments. Payment defaults by our customers or significant reductions in existing contractual commitments could have a material adverse effect on our financial condition and operating results.

Competitive pressures may require us to reduce our pricing, which could have an adverse effect on our results of operations.

The highly competitive markets in which we do business can put pressure on us to reduce the prices of our software, emulation and prototyping hardware and IP. If our competitors offer significant discounts on certain products in an effort to recapture or gain market share or to sell other software or hardware products, we may then need to lower our prices or offer other favorable terms to compete successfully. Any such changes would be likely to reduce our profit margins and could adversely affect our operating results. Any substantial changes to our prices and pricing policies could cause revenues to decline or be delayed as our sales force implements and our customers adjust to the new pricing policies. Some of our competitors bundle products for promotional purposes or as a long-term pricing strategy or provide guarantees of prices and product implementations. These practices could, over time, significantly constrain the prices that we can charge for our products.

The competition in our industries is substantial, and we may not be able to continue to compete successfully in our industries.

The industries in which we do business, including software, hardware, IP and services for enabling the design of electronic products, are highly competitive and require us to identify and develop or acquire innovative and cost-competitive products, integrate them into platforms and market them in a timely manner. We may not be able to compete successfully in these industries, which could seriously harm our business, operating results or financial condition. Factors that could affect our ability to compete successfully include:

- the development by others of competitive products or platforms and engineering services, possibly resulting in a shift of customer preferences away from our products and services and significantly decreased revenue;
- aggressive pricing competition by some of our competitors may cause us to lose our competitive position, which could result in lower revenues or profitability and could adversely impact our ability to realize the revenue and profitability forecasts for our software or emulation and prototyping hardware systems products;
- the challenges of advanced-node design may lead some customers to work with more mature, less risky manufacturing processes that may reduce their need to upgrade or enhance their EDA products and design flows;
- the challenges of developing (or acquiring externally developed) technology solutions that are adequate and competitive in meeting the rapidly evolving requirements of next-generation design challenges;
- intense competition to attract acquisition targets, possibly making it more difficult for us to acquire companies or technologies at an acceptable price, or at all;
- new entrants, including larger electronic systems companies, in our industry;
- the combination of our competitors or collaboration among many companies to deliver more comprehensive offerings than they could individually;
- decisions by electronics manufacturers to perform engineering services or IP development internally, rather than purchase these services from outside vendors due to budget constraints or excess engineering capacity; and
- actions by regulators to limit the contractual terms that either we or our customers can apply to product and service offerings.

We compete most frequently with Synopsys, Inc., Siemens EDA, and ANSYS, Inc., and also with numerous other tools providers, electronics device manufacturers with their own EDA capabilities, technical or computational software companies, electronics design and consulting companies, and other IP companies. These include U.S. based companies such as Keysight Technologies, Inc. and CEVA, Inc., and foreign companies such as Altium Limited (Australia), Zuken Ltd. (Japan), and emerging competitors in China like Huada Empyrean, Xpeedic, X-EPIC, Primarius and Giga-DA.

Our future revenue is dependent in part upon our installed customer base continuing to license or buy products and purchase services.

Our installed customer base has traditionally generated additional new license, services and maintenance revenues. In future periods, customers may not necessarily license or buy additional products or contract for additional services or maintenance. Our customers, many of which are large semiconductor and systems companies, often have significant bargaining power in negotiations with us. Customer consolidation can reduce the total level of purchases of our software, hardware, IP and services, and in some cases, increase customers' bargaining power in negotiations with their suppliers, including us.

We depend on a single supplier or a limited number of suppliers for certain hardware components and contract manufacturers for production of our emulation and prototyping hardware products, making us vulnerable to supply disruption and price fluctuation.

Our reliance on single or a limited number of suppliers and contract manufacturers for certain hardware components and contract manufacturers for production of our emulation and prototyping hardware products could result in product delivery problems and delays and reduced control over product pricing and quality. Though we prefer to have multiple sources to procure certain key components, in some cases it is not practical or feasible to do so. We may suffer a disruption in the supply of certain hardware components if we are unable to purchase sufficient components on a timely basis or at all for any reason. Any supply or manufacturing disruption, including delay in delivery of components by our suppliers or products by our manufacturers, or the bankruptcy, shutdown or upstream supply chain issues of our suppliers or manufacturers, could delay our production process and prevent us from delivering completed hardware products to customers or from supplying new evaluation units to customers, which could have a negative impact on our revenue and operating results. For example, the global semiconductor shortage in 2021 has and may continue to negatively impact multiple segments of the semiconductor industry, including our customers.

Tax, Regulatory and Litigation Risks

Our results could be adversely affected by an increase in our effective tax rate as a result of U.S. and foreign tax law changes, outcomes of current or future tax examinations, or by material differences between our forecasted and actual effective tax rates.

Tax laws, regulations, and administrative practices in various jurisdictions are evolving and may be subject to significant changes due to economic, political and other conditions including the fiscal impacts caused by the COVID-19 pandemic. Governments, including the United States, are increasingly focused on ways to increase tax revenues, particularly from multinational corporations, which may lead to changes in tax laws, an increase in audit activity and harsher positions taken by tax authorities. We are currently subject to tax audits in various jurisdictions and these jurisdictions may assess additional tax liabilities against us.

Our operations are subject to income and transaction taxes in the United States and in multiple foreign jurisdictions, with a significant amount of our foreign earnings generated by our subsidiaries organized in Ireland and Hungary. Any significant change in our future effective tax rates could adversely impact our results of operations, cash flows and financial position. Our future effective tax rates could be adversely affected by factors that include, but are not limited to, mandatory capitalization of research and development expenses beginning in fiscal 2022, changes in tax laws or the interpretation of such tax laws in jurisdictions in which we have business activity, earnings being lower than anticipated in jurisdictions with low statutory tax rates, changes in tax benefits from stock-based compensation, changes in the valuation of our deferred tax assets and liabilities, changes in our recognition or measurement of a tax position taken in a prior period, increases to interest or penalty expenses, new accounting standards or interpretations of such standards, or results of examinations by the Internal Revenue Service (“IRS”), state, and foreign tax or other governmental authorities.

The IRS and other tax authorities regularly examine our income tax returns and other non-income tax returns, such as payroll, sales, use, value-added, net worth or franchise, property, goods and services, consumption, import, stamp, and excise taxes, in both the United States and foreign jurisdictions. The calculation of our provision for income taxes and our accruals for other taxes requires us to use significant judgment and involves dealing with uncertainties in the application of complex tax laws and regulations. In determining the adequacy of our provision for income taxes, we regularly assess the potential settlement outcomes resulting from income tax examinations. However, the final outcome of tax examinations cannot be estimated with certainty and could be materially different from the amount that is reflected in our historical income tax provisions and accruals for other taxes. Should the IRS or other tax authorities assess additional taxes, penalties or interest as a result of a current or a future examination, we may be required to record charges to operations in future periods that could have a material impact on our results of operations, financial position or cash flows in the applicable period or periods.

The current U.S. presidential administration has proposed several corporate tax increases, including raising the U.S. corporate income tax rate and greater taxation of international income, that, if enacted, would increase our tax liability. In addition, the Organisation for Economic Co-operation and Development (“OECD”) has been evaluating new rules to provide greater taxing rights to jurisdictions where customers or users are located and the introduction of a corporate global minimum tax. Furthermore, many countries have enacted or proposed new laws to tax digital transactions. These developments in tax laws and regulations, and compliance with these rules, could have a material adverse effect on our operating results, financial position and cash flows.

Forecasts of our annual effective tax rate are complex and subject to uncertainty because our income tax position for each year combines the effects of estimating the amount and composition of our annual income or loss in jurisdictions with varying income tax rates, as well as benefits from available deferred tax assets, the impact of various accounting rules, our interpretations of changes in tax laws and results of tax audits. Forecasts of our annual effective tax rate do not include the anticipation of future tax law changes. In addition, we account for certain tax benefits from stock-based compensation in the period the stock compensation vests or is settled, which may cause increased variability in our quarterly effective tax rates. If there were a material difference between forecasted and actual tax rates, it could have a material impact on our results of operations.

Litigation, government investigations or regulatory proceedings could adversely affect our financial condition or operations.

We currently are, and in the future may be, involved in various disputes and litigation that arise in the ordinary course of business. These include disputes and lawsuits related to intellectual property, including customer indemnification, mergers and acquisitions, licensing, contracts, distribution arrangements and employee relations matters. Governments and regulatory agencies in the jurisdictions in which we operate may also open or initiate investigations or regulatory proceedings. For information regarding the litigation matters in which we are currently engaged, please refer to the discussion under Item 1, “Legal Proceedings” and Note 12 in the notes to condensed consolidated financial statements. We cannot provide any assurances that the final outcome of these lawsuits or any other proceedings that may arise in the future will not have a material adverse effect on our business, reputation, operating results, financial condition or cash flows. Litigation and similar proceedings can be time consuming and expensive and could divert management’s time and attention from our business, which could have a material adverse effect on our revenues and operating results.

Errors or defects in our products and services could expose us to liability and harm our business.

Our customers use our products and services in designing and developing products that involve a high degree of technological complexity, each of which has its own specifications. Because of the complexity of the systems and products with which we work, some of our products and designs can be adequately tested only when put to full use in the marketplace. As a result, our customers or their end users may discover errors or defects in our software or the systems we design, or the products or systems incorporating our design and intellectual property may not operate as expected. Errors or defects could result in:

- damage to our reputation and loss of customers and market share;
- failure to attract new customers or achieve market acceptance;
- diversion of development resources to resolve the problem;
- loss of or delay in revenue or payments and increased service costs; and
- liability for damages.

Our reported financial results may be adversely affected by changes in United States generally accepted accounting principles, and we may incur significant costs to adjust our accounting systems and processes to comply with significant changes.

United States generally accepted accounting principles ("U.S. GAAP") are subject to interpretation by the Financial Accounting Standards Board ("FASB"), the SEC and various bodies formed to promulgate and interpret appropriate accounting principles. We are also subject to evolving rules and regulations of the countries in which we do business. Changes to accounting standards or interpretations thereof may result in different accounting principles under U.S. GAAP that could have a significant effect on our reported financial results.

In addition, we have in the past and may in the future need to significantly change our customer contracts, accounting systems and processes when we adopt future or proposed changes in accounting principles. The cost and effect of these changes may negatively impact our results of operations during the periods of transition.

If we become subject to unfair hiring claims, we could be prevented from hiring needed employees, incur liability for damages and incur substantial costs in defending ourselves.

When companies in our industry lose employees to competitors, they frequently claim that these competitors have engaged in unfair hiring practices or that the employment of these persons would involve the disclosure or use of trade secrets. These claims could prevent us from hiring employees or cause us to incur liability for damages. We could also incur substantial costs in defending ourselves or our employees against these claims, regardless of their merits. Defending ourselves from these claims could also divert the attention of our management away from our operations.

We are subject to evolving corporate governance and public disclosure expectations and regulations that impact compliance costs and risks of noncompliance.

We are subject to changing rules and regulations promulgated by a number of governmental and self-regulatory organizations, including the SEC, Nasdaq, and the FASB, as well as evolving investor expectations around corporate governance, executive compensation and environmental and social practices and disclosures. These rules and regulations continue to evolve in scope and complexity, and many new requirements have been created in response to laws enacted by the U.S. and foreign governments, making compliance more difficult and uncertain. The increase in costs to comply with such evolving expectations, rules and regulations, as well as any risk of noncompliance, could adversely impact us.

Risks Related to Our Securities and Indebtedness

Our stock price has been and may continue to be subject to fluctuations.

Our stock price is subject to changes in recommendations or earnings estimates by financial analysts, changes in investors' or analysts' valuation measures for our stock, our credit ratings and market trends unrelated to our performance. Furthermore, speculation in the press or investment community about our strategic position, financial condition, results of operations, business or security of our products, can cause changes in our stock price. In addition to these factors and industry and general economic and political conditions, our stock price may be adversely impacted by announcements related to financial results or forecasts that fail to meet or are inconsistent with earlier projections or the expectations of our securities analysts or investors, announcements of new products or acquisitions of new technologies by us, our competitors or our customers, or announcements by us of acquisitions, major transaction or litigation developments, or management changes. A significant drop in our stock price could expose us to the risk of securities class actions lawsuits, which may result in substantial costs and divert management's attention and resources, which may adversely affect our business.

Anti-takeover defenses in our certificate of incorporation and bylaws and certain provisions under Delaware law could prevent an acquisition of our company or limit the price that investors might be willing to pay for our common stock.

Our certificate of incorporation and bylaws and certain provisions of the Delaware General Corporation Law that apply to us could make it difficult for another company to acquire control of our company. For example, our certificate of incorporation allows our Board of Directors to designate and issue, at any time and without stockholder approval up to 400,000 shares of preferred stock in one or more series. All 400,000 shares of preferred stock are currently designated as Series A Preferred, but because no such shares are outstanding or reserved for issuance, our Board of Directors may reduce the number of shares of preferred stock designated as Series A Preferred to zero. Subject to the Delaware General Corporation Law, our Board of Directors may, as to any shares of preferred stock the terms of which have not then been designated, fix the rights, preferences, privileges and restrictions on these shares, fix the number of shares and designation of any series, and increase or decrease the number of shares of any series if not below the number of outstanding shares plus the number of shares reserved for issuance. Our Board of Directors has the power to issue shares of Series A Preferred with dividend, voting and liquidation rights superior to our common stock at a rate of 1,000-to-1 without further vote or action by the common stockholders.

In addition, Section 203 of the Delaware General Corporation Law generally prohibits a Delaware corporation from engaging in any business combination with a person owning 15% or more of its voting stock, or who is affiliated with the corporation and owned 15% or more of its voting stock at any time within three years prior to the proposed business combination, for a period of three years from the date the person became a 15% owner, unless specified conditions are met.

All or any one of these factors could limit the price that certain investors would be willing to pay for shares of our common stock and could allow our Board of Directors to resist, delay or prevent an acquisition of our company, even if a proposed transaction were favored by a majority of our independent stockholders.

Our debt obligations expose us to risks that could adversely affect our business, operating results or financial condition, and could prevent us from fulfilling our obligations under such indebtedness.

As of July 3, 2021, we had total outstanding indebtedness of $347.2 million. We also have the ability to borrow an additional $700.0 million under our revolving credit facility, with the right to request increased capacity up to an additional $350.0 million, subject to the receipt of lender commitments, for a total up to $1.05 billion. Subject to the limits contained in the credit agreement governing our revolving credit facility, the indenture that governs the 4.375% Senior Notes due October 15, 2024 (the "2024 Notes") and our other debt instruments, we may be able to incur substantial additional debt from time to time to finance working capital, capital expenditures, investments or acquisitions, share repurchases or for other purposes. If we do so, the risks related to our level of debt could intensify. Specifically, our level of debt could have important consequences, including the following:

- making it more difficult for us to satisfy our obligations to service our debt as described above;
- limiting our ability to obtain additional financing to fund future working capital, capital expenditures, acquisitions or other general corporate requirements;
- requiring a substantial portion of our cash flows to be dedicated to debt service payments instead of other purposes, thereby reducing the amount of cash flows available for working capital, capital expenditures, acquisitions and other general corporate purposes;
- utilizing large portions of our U.S. cash to service our debt obligations because those payments are made in the United States, which may require us to repatriate cash from outside the United States;
- increasing our vulnerability to adverse economic and industry conditions;
- exposing us to the risk of increased interest rates as certain of our borrowings, including borrowings under our revolving credit facility, are at variable rates of interest;
- limiting our flexibility in planning for and reacting to changes in the industry in which we compete;
- placing us at a disadvantage compared to other, less leveraged competitors and competitors that have greater access to capital resources;
- limiting our interest deductions for U.S. income tax purposes; and
- increasing our cost of borrowing.

At the option of the holders of our outstanding notes, we may, under certain circumstances, be required to repurchase such notes.

Under the terms of our 2024 Notes, we may be required to repurchase for cash such notes prior to their maturity in connection with the occurrence of certain significant corporate events. Specifically, we are required to offer to repurchase such notes upon a "change of control triggering event" (as defined in the indenture related to such notes), such as a change of control accompanied by certain downgrades in the credit ratings of such notes. The repayment obligations under such notes may have the effect of discouraging, delaying or preventing a takeover of our company. If we were required to pay the 2024 Notes prior to their scheduled maturity, it could have a significant negative impact on our cash and liquidity and could impact our ability to invest financial resources in other strategic initiatives.

The terms of the agreement governing our revolving credit facility and the indenture governing our 2024 Notes restrict our current and future operations, particularly our ability to respond to changes or to take certain actions.

The agreement governing our revolving credit facility contains a number of restrictive covenants that impose significant operating and financial restrictions on us and may limit our ability to engage in acts that may be in our long-term best interest, including restrictions on our ability to:

- incur liens or additional indebtedness and guarantee indebtedness;
- enter into transactions with affiliates;
- alter the businesses we conduct; and
- consolidate, merge or sell all or substantially all of our assets.

In addition, the restrictive covenants in the agreement governing our revolving credit facility require us to maintain specified financial ratios. Our ability to meet those financial ratios can be affected by events beyond our control, and we may be unable to meet them.

A breach of the covenants or restrictions under the agreement governing our revolving credit facility could result in an event of default under the applicable indebtedness. Such a default may allow the creditors to accelerate the related debt and may result in the acceleration of any other debt to which a cross-acceleration or cross-default provision applies. In addition, an event of default under the credit agreement governing our revolving credit facility would permit the lenders under our revolving credit facility to terminate all commitments to extend further credit under that facility. In the event our lenders or note holders accelerate the repayment of our borrowings, we and our subsidiaries may not have sufficient assets to repay that indebtedness. As a result of these restrictions, we may be:

- limited in how we conduct our business;
- unable to raise additional debt or equity financing to operate during general economic or business downturns; or
- unable to compete effectively or to take advantage of new business opportunities.

The indenture governing our 2024 Notes also contains certain restrictive covenants that impose operating and financial restrictions on us and may limit our ability to engage in acts that may be in our long-term best interest, including restrictions on our ability to incur liens and to enter into sale and leaseback transactions.

These restrictions may affect our ability to grow in accordance with our strategy. In addition, our financial results, our substantial indebtedness and our credit ratings could adversely affect the availability and terms of our financing.

We may not be able to generate sufficient cash to service all of our indebtedness and may be forced to take other actions to satisfy our obligations under our indebtedness, which may not be successful.

Our ability to make scheduled payments on or refinance our debt obligations depends on our financial condition and operating performance, which are subject to prevailing economic and competitive conditions and to certain financial, business, legislative, regulatory and other factors beyond our control. We may be unable to maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness. Our inability to generate sufficient cash flows to satisfy our debt obligations, or to refinance our indebtedness on commercially reasonable terms or at all, would materially and adversely affect our financial position and results of operations and our ability to satisfy our debt obligations.

If our cash flows and capital resources are insufficient to fund our debt service obligations, we could face substantial liquidity problems and could be forced to reduce or delay investments and capital expenditures or to dispose of material assets or operations, seek additional debt or equity capital or restructure or refinance our indebtedness. We may not be able to effect any such alternative measures, if necessary, on commercially reasonable terms or at all and, even if successful, those alternative actions may not allow us to meet our scheduled debt service obligations. The agreement governing our revolving credit facility restricts our ability to dispose of assets and use the proceeds from those dispositions and may also restrict our ability to raise debt or equity capital to be used to repay other indebtedness when it becomes due. We may not be able to consummate those dispositions or to obtain proceeds in an amount sufficient to meet any debt service obligations then due.

In addition, we conduct a substantial portion of our operations through our subsidiaries, none of which are currently guarantors of our indebtedness. Accordingly, repayment of our indebtedness is dependent on the generation of cash flow by our subsidiaries and their ability to make such cash available to us, by dividend, debt repayment or otherwise. Our subsidiaries do not have any obligation to pay amounts due on our indebtedness or to make funds available for that purpose. Our subsidiaries may not be able to, or may not be permitted to, make distributions to enable us to make payments in respect of our indebtedness. Each subsidiary is a distinct legal entity, and, under certain circumstances, legal and contractual restrictions may limit our ability to obtain cash from our subsidiaries. In the event that we do not receive distributions from our subsidiaries, we may be unable to make required principal and interest payments on our indebtedness.

If we cannot make scheduled payments on our debt, we will be in default and holders of our debt could declare all outstanding principal and interest to be due and payable, the lenders under our revolving credit facility could terminate their commitments to loan money and we could be forced into bankruptcy or liquidation. In addition, a material default on our indebtedness could suspend our eligibility to register securities using certain registration statement forms under SEC guidelines that permit incorporation by reference of substantial information regarding us, potentially hindering our ability to raise capital through the issuance of our securities and increasing our costs of registration.

Despite our current level of indebtedness, we and our subsidiaries may incur substantially more debt. This could further exacerbate the risks to our financial condition described above.

We and our subsidiaries may incur significant additional indebtedness in the future. Although the agreement governing our revolving credit facility contains restrictions on the incurrence of additional indebtedness, these restrictions are subject to a number of qualifications and exceptions, and the additional indebtedness incurred in compliance with these restrictions could be substantial. If we incur any additional indebtedness that ranks equally with the 2024 Notes, then subject to any collateral arrangements we may enter into, the holders of that debt will be entitled to share ratably in any proceeds distributed in connection with any insolvency, liquidation, reorganization, dissolution or other winding up of our company.

Our variable rate indebtedness subjects us to interest rate risk, which could cause our debt service obligations to increase significantly.

Borrowings under our revolving credit facility are at variable rates of interest and expose us to interest rate risk. If interest rates were to increase, our debt service obligations on our variable rate indebtedness would increase even though the amount borrowed remained the same, and our net income and cash flows, including cash available for servicing our indebtedness, would correspondingly decrease. Assuming all loans were fully drawn and we were to fully exercise our right to increase borrowing capacity under our revolving credit facility, each quarter point change in interest rates would result in a $2.6 million change in annual interest expense on our indebtedness under our revolving credit facility. In the future, we may enter into interest rate swaps that involve the exchange of floating for fixed rate interest payments in order to reduce interest rate volatility. However, we may not maintain interest rate swaps with respect to all of our variable rate indebtedness, and any swaps we enter into may not fully mitigate our interest rate risk.

Our revolving credit facility utilizes, at our option, either (1) LIBOR, plus a margin of between 0.750% and 1.250%, determined by reference to the credit rating of our unsecured debt, or (2) base rate plus a margin of 0.000% to 0.250%, determined by reference to the credit rating of our unsecured debt, to calculate the amount of accrued interest on any borrowings. Regulators in certain jurisdictions including the United Kingdom and the United States have announced the desire to phase out the use of LIBOR by the end of 2021, though the ICE Benchmark Administration, the administrator of LIBOR, announced plans to consult to extend the timeline for ceasing publication for certain tenors of U.S. dollar LIBOR to June 30, 2023. Our revolving credit facility contains provisions that contemplate the transition from LIBOR under specified events; however, the transition from LIBOR to a new replacement benchmark is uncertain at this time and the consequences of such developments cannot be entirely predicted, but could result in an increase in the cost of our borrowings under our existing credit facility and any future borrowings.

In addition, our revolving credit facility uses a pricing grid based on our credit ratings. If our credit ratings are downgraded or other negative action is taken, the interest rate payable by us under our revolving credit facility could increase. Downgrades in our credit ratings could also restrict our ability to obtain additional financing in the future and affect the terms of any such financing.

Various factors could increase our future borrowing costs or reduce our access to capital, including a lowering or withdrawal of the ratings assigned to us and our 2024 Notes by credit rating agencies.

We may in the future seek additional financing for a variety of reasons, and our future borrowing costs, terms and access to capital could be affected by factors including the condition of the debt and equity markets, the condition of the economy generally, prevailing interest rates, our level of indebtedness, our credit rating and our business and financial condition. In addition, the 2024 Notes currently have an investment grade credit rating, and any credit rating assigned could be lowered or withdrawn entirely by a credit rating agency if, in that credit rating agency's judgment, future circumstances relating to the basis of the credit rating, such as adverse changes, so warrant. Consequently, real or anticipated changes in our credit ratings will generally affect the market value of the 2024 Notes. Any future lowering of the credit ratings of the 2024 Notes likely would make it more difficult or more expensive for us to obtain additional debt financing.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

In July 2020, our Board of Directors authorized $750 million for the repurchase of shares of our common stock. The actual timing and amount of repurchases are subject to business and market conditions, corporate and regulatory requirements, stock price, acquisition opportunities and other factors. As of July 3, 2021, $346 million remained available to repurchase shares of our common stock under this authorization.

The following table presents repurchases made under our current authorization and shares surrendered by employees to satisfy income tax withholding obligations during the three months ended July 3, 2021:

Period	Total Number of Shares Purchased (1)		Average Price Paid Per Share (2)	Total Number of Shares Purchased as Part of Publicly Announced Plan or Program		Approximate Dollar Value of Shares that May Yet Be Purchased Under Publicly Announced Plan or Program (1) (In millions)
April 4, 2021 - May 8, 2021	440,398	$	128.78	423,726	$	512
May 9, 2021 - June 5, 2021	1,010,034	$	126.75	904,205	$	398
June 6, 2021 - July 3, 2021	401,058	$	131.08	391,756	$	346
Total	1,851,490	$	128.17	1,719,687		

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(1) Shares purchased that were not part of our publicly announced repurchase programs represent employee surrender of shares of restricted stock to satisfy employee income tax withholding obligations due upon vesting, and do not reduce the dollar value that may yet be purchased under our publicly announced repurchase programs.

(2) The weighted average price paid per share of common stock does not include the cost of commissions.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

Exhibit Number		Exhibit Title	Incorporated by Reference: Form	File No.	Exhibit No.	Filing Date	Provided Herewith
10.01		Credit Agreement, dated as of June 30, 2021, by and among Cadence Design Systems, Inc., Bank of America, N.A. and other lenders party thereto.	8-K	000-15867	10.01	07/01/2021	
31.01	*	Certification of the Registrant's Chief Executive Officer, Lip-Bu Tan, pursuant to Rule 13a-14 of the Securities Exchange Act of 1934.					X
31.02	*	Certification of the Registrant's Chief Financial Officer, John M. Wall, pursuant to Rule 13a-14 of the Securities Exchange Act of 1934.					X
32.01	†	Certification of the Registrant's Chief Executive Officer, Lip-Bu Tan, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
32.02	†	Certification of the Registrant's Chief Financial Officer, John M. Wall, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
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 Document.					X
101.CAL	*	Inline XBRL Taxonomy Extension Calculation Linkbase Document.					X
101.DEF	*	Inline XBRL Definition Linkbase Document.					X
101.LAB	*	Inline XBRL Taxonomy Extension Label Linkbase Document.					X
101.PRE	*	Inline XBRL Taxonomy Extension Presentation Linkbase Document.					X
104		Cover Page Interactive Data File - The cover page from this Quarterly Report on Form 10-Q is formatted in Inline XBRL (included as Exhibit 101).					X

* Filed herewith.
† Furnished herewith.

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.

			CADENCE DESIGN SYSTEMS, INC. **(Registrant)**
DATE:	July 26, 2021	By:	/s/ Lip-Bu Tan
			Lip-Bu Tan Chief Executive Officer and Director
DATE:	July 26, 2021	By:	/s/ John M. Wall
			John M. Wall Senior Vice President and Chief Financial Officer