

Medidata Solutions, Inc.
Form 10-Q
November 03, 2017
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

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

For the quarterly period ended September 30, 2017
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: 001-34387

Medidata Solutions, Inc.
(Exact name of registrant as specified in its charter)

Delaware 13-4066508
(State or other jurisdiction of (I.R.S. Employer
incorporation or organization) Identification No.)

350 Hudson Street, 9th Floor 10014
New York, New York
(Address of principal executive offices) (Zip Code)
(212) 918-1800
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post 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. (Check one)

Large accelerated filer Accelerated filer
Non-accelerated filer (Do not check if a smaller reporting company) Smaller reporting company
Emerging growth company

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

As of October 30, 2017, the registrant had 58,460,955 shares of common stock outstanding.

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 FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 30, 2017
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PART I - FINANCIAL INFORMATION

Item 1. Financial Statements (Unaudited)

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MEDIDATA SOLUTIONS, INC.
 CONDENSED CONSOLIDATED BALANCE SHEETS (Unaudited)

	September 30, 2017	December 31, 2016
	(Amounts in thousands, except per share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 128,435	\$ 93,519
Marketable securities	269,351	281,285
Accounts receivable, net of allowance for doubtful accounts of \$1,393 and \$1,041, respectively	105,961	115,216
Prepaid commission expense	4,115	1,842
Prepaid expenses and other current assets	34,997	20,382
Deferred income taxes	—	6,536
Total current assets	542,859	518,780
Restricted cash	5,515	5,760
Furniture, fixtures and equipment, net	81,619	58,461
Marketable securities, long-term	155,826	140,418
Goodwill	47,913	30,780
Intangible assets, net	18,801	5,090
Deferred income taxes, long-term	37,697	40,415
Other assets	23,484	18,181
Total assets	\$ 913,714	\$ 817,885
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 2,408	\$ 6,202
Accrued payroll and other compensation	29,455	29,260
Accrued expenses and other	35,438	20,958
Deferred revenue	80,319	75,911
1.00% convertible senior notes, net	274,345	—
Total current liabilities	421,965	132,331
Noncurrent liabilities:		
1.00% convertible senior notes, net	—	263,401
Deferred revenue, less current portion	2,926	1,703
Deferred tax liabilities	124	322
Other long-term liabilities	21,011	18,138
Total noncurrent liabilities	24,061	283,564
Total liabilities	446,026	415,895
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, par value \$0.01 per share; 5,000 shares authorized, none issued and outstanding	—	—
Common stock, par value \$0.01 per share; 200,000 shares authorized; 62,627 and 61,393 shares issued; 58,493 and 57,733 shares outstanding, respectively	626	614
Additional paid-in capital	467,645	418,497
Treasury stock, 4,134 and 3,660 shares, respectively	(130,499)	(114,204)
Accumulated other comprehensive loss	(3,055)	(5,276)
Retained earnings	132,971	102,359

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Total stockholders' equity	467,688	401,990
Total liabilities and stockholders' equity	\$913,714	\$ 817,885

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

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MEDIDATA SOLUTIONS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS (Unaudited)

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2017	2016	2017	2016
	(Amounts in thousands, except per share data)			
Revenues				
Subscription	\$118,411	\$101,560	\$339,772	\$288,288
Professional services	21,669	18,501	64,543	50,621
Total revenues	140,080	120,061	404,315	338,909
Cost of revenues (1)(2)				
Subscription	17,131	16,095	51,277	46,024
Professional services	14,423	13,133	42,811	36,929
Total cost of revenues	31,554	29,228	94,088	82,953
Gross profit	108,526	90,833	310,227	255,956
Operating costs and expenses				
Research and development (1)	36,207	28,028	102,028	84,523
Sales and marketing (1)(2)	31,428	27,789	94,321	80,856
General and administrative (1)	23,701	20,089	70,772	57,866
Wire transaction recovery (3)	(4,770)	—	(4,770)	—
Total operating costs and expenses	86,566	75,906	262,351	223,245
Operating income	21,960	14,927	47,876	32,711
Interest and other income (expense)				
Interest expense	(4,407)	(4,220)	(13,117)	(12,530)
Interest income	1,531	1,005	4,030	2,809
Other expense, net	(7)	(7)	(7)	(8)
Total interest and other expense, net	(2,883)	(3,222)	(9,094)	(9,729)
Income before income taxes	19,077	11,705	38,782	22,982
Provision for income taxes	6,233	4,347	8,170	4,839
Net income	\$12,844	\$7,358	\$30,612	\$18,143
Earnings per share				
Basic	\$0.23	\$0.13	\$0.54	\$0.33
Diluted	\$0.21	\$0.13	\$0.51	\$0.32
Weighted average common shares outstanding				
Basic	56,654	55,670	56,389	55,395
Diluted	60,614	57,738	59,664	57,272
(1) Stock-based compensation expense included in cost of revenues and operating costs and expenses is as follows:				
Cost of revenues	\$1,152	\$1,154	\$3,567	\$3,603
Research and development	3,472	2,292	9,734	6,809
Sales and marketing	1,864	1,633	4,875	5,349
General and administrative	5,521	5,379	16,846	15,394
Total stock-based compensation	\$12,009	\$10,458	\$35,022	\$31,155
(2) Amortization of intangible assets included in costs of revenues and operating costs and expenses is as follows:				
Cost of revenues	\$1,094	\$314	\$2,570	\$707
Sales and marketing	119	84	321	193
Total amortization of intangible assets	\$1,213	\$398	\$2,891	\$900

(3) Operating costs and expenses for the three and nine months ended September 30, 2017 reflect probable insurance recovery of amounts associated with the previously reported 2014 wire transaction loss. For additional details, see Note 2, "Wire Transaction Recovery." The accompanying notes are an integral part of the condensed consolidated financial statements.

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MEDIDATA SOLUTIONS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (Unaudited)

	Three Months		Nine Months	
	Ended		Ended	
	September 30,		September 30,	
	2017	2016	2017	2016
	(Amounts in thousands)			
Net income	\$12,844	\$7,358	\$30,612	\$18,143
Other comprehensive income (loss)				
Foreign currency translation adjustments	689	(376)	1,991	(1,028)
Unrealized gain (loss) on marketable securities	133	(548)	373	1,159
Other comprehensive income (loss)	822	(924)	2,364	131
Income tax related to unrealized gain or loss on marketable securities	(51)	139	(143)	(442)
Other comprehensive income (loss), net of tax	771	(785)	2,221	(311)
Comprehensive income, net of tax	\$13,615	\$6,573	\$32,833	\$17,832

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

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MEDIDATA SOLUTIONS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (Unaudited)

	Nine Months Ended September 30,	
	2017	2016
Cash flows from operating activities	(Amounts in thousands)	
Net income	\$ 30,612	\$ 18,143
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	16,918	10,901
Stock-based compensation	35,022	31,155
Amortization of discounts or premiums on marketable securities	1,131	2,268
Deferred income taxes	6,066	3,768
Amortization of debt issuance costs	958	959
Amortization of debt discount	9,986	9,405
Provision for doubtful accounts	806	863
(Gain) loss on fixed asset disposal	(8)	15
Changes in fair value of contingent consideration	160	—
Changes in operating assets and liabilities:		
Accounts receivable	9,050	(32,414)
Prepaid commission expense	(5,265)	(3,096)
Prepaid expenses and other current assets	(17,453)	(1,747)
Other assets	596	(5,443)
Accounts payable	(3,796)	(1,883)
Accrued payroll and other compensation	(3,155)	863
Accrued expenses and other	3,539	10,525
Deferred revenue	5,406	10,661
Other long-term liabilities	1,001	(6,577)
Net cash provided by operating activities	91,574	48,366
Cash flows from investing activities		

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Purchase of furniture, fixtures and equipment	(30,502))	(15,872))
Purchase of available-for-sale securities	(224,291))	(214,670))
Proceeds from sale of available-for-sale securities	220,059		223,664	
Acquisition of businesses, net of cash acquired	(22,941))	(17,186))
Purchase of cost method investment	—		(4,000))
Net cash used in investing activities	(57,675))	(28,064)) (1)
Cash flows from financing activities				
Proceeds from exercise of stock options	9,675		4,269	
Proceeds from employee stock purchase plan	6,799		5,190	
Acquisition of treasury stock	(16,293))	(14,437))
Repayment of notes payable	—		(100))
Net cash provided by (used in) financing activities	181		(5,078))
Effect of exchange rate changes on cash, cash equivalents and restricted cash	591		299	
Net increase in cash, cash equivalents and restricted cash	34,671		15,523	
Cash, cash equivalents and restricted cash – Beginning of period	99,279		55,472	(1)
Cash, cash equivalents and restricted cash – End of period	133,950		\$ 70,995	(1)

(1) As a result of the Company's early adoption of ASU No. 2016-18 during the first quarter of 2017, the consolidated statement of cash flows for the nine months ended September 30, 2016 has been adjusted to include restricted cash in beginning- and end-of-period cash, and to remove change in restricted cash as a reconciling item.

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

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MEDIDATA SOLUTIONS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS, CONTINUED (Unaudited)

	Nine Months Ended September 30, 2017 2016	
Supplemental disclosures of cash flow information:		
Cash paid during the period for:		
Interest	\$2,879	\$2,882
Income taxes	\$3,891	\$1,514
Noncash investing activities:		
Furniture, fixtures, and equipment acquired but not yet paid for at period-end	\$6,463	\$1,833
Contingent consideration associated with acquisition of business, at fair value	\$5,697	\$—

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

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MEDIDATA SOLUTIONS, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Unaudited)

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Medidata Solutions, Inc., together with its consolidated subsidiaries (collectively, the "Company"), is the leading global provider of cloud-based solutions for clinical research in life sciences, offering platform technology that transforms clinical development and increases the value of its customers' research investments. The Company was organized as a New York corporation in June 1999 and reincorporated as a Delaware corporation in May 2000. Except to the extent updated or described below, the Company's significant accounting policies as of September 30, 2017 are the same as those at December 31, 2016, which are included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the Securities and Exchange Commission ("SEC") on February 28, 2017.

Basis of Presentation — The accompanying interim condensed consolidated balance sheets as of September 30, 2017 and December 31, 2016, the condensed consolidated statements of operations for the three and nine months ended September 30, 2017 and 2016, the condensed consolidated statements of comprehensive income for the three and nine months ended September 30, 2017 and 2016, and the condensed consolidated statements of cash flows for the nine months ended September 30, 2017 and 2016 are unaudited and have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") and applicable rules and regulations of the SEC for interim financial reporting. Accordingly, certain information and footnote disclosures have been condensed or omitted pursuant to SEC rules that would ordinarily be required by U.S. GAAP for complete financial statements. These unaudited interim condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and accompanying notes thereto for the fiscal year ended December 31, 2016 included in the Company's Annual Report on Form 10-K filed with the SEC on February 28, 2017.

The unaudited interim condensed consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements and, in the opinion of management, reflect all adjustments consisting of normal recurring accruals considered necessary to present fairly the Company's financial position as of September 30, 2017, results of its operations for the three and nine months ended September 30, 2017 and 2016, comprehensive income for the three and nine months ended September 30, 2017 and 2016, and cash flows for the nine months ended September 30, 2017 and 2016. The results of operations for the three and nine months ended September 30, 2017 are not necessarily indicative of the results that may be expected for the year ending December 31, 2017.

Income Taxes — The Company's interim period provision for income taxes is computed by using an estimate of the annual effective tax rate, adjusted for discrete items taken into account in the relevant period, if any. Each quarter, the annual effective income tax rate is recomputed and if there are material changes in the estimate, a cumulative adjustment is made.

Accounts Receivable — Accounts receivable are recorded at original invoice amount less an allowance that management believes will be adequate to absorb estimated losses on uncollectible accounts. This allowance is based on an evaluation of the collectability of accounts receivable and prior bad debt experience. Accounts receivable are written off when deemed uncollectible. Unbilled receivables consist of revenue recognized in excess of billings, substantially all of which is expected to be billed and collected within one year. As of September 30, 2017 and December 31, 2016, unbilled accounts receivable of \$14.4 million and \$14.1 million, respectively, were included in accounts receivable on the Company's consolidated balance sheets. In general, there is a direct relationship between the Company's accounts receivable balance and its transaction volume.

Recently Adopted Accounting Pronouncements — In November 2015, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2015-17, Income Taxes: Balance Sheet Classification of Deferred Taxes, which simplifies the presentation of deferred income taxes by requiring that all deferred tax assets and liabilities be classified as noncurrent in the consolidated balance sheets. ASU No. 2015-17 is effective for annual reporting periods beginning after December 15, 2016 and interim periods within those annual periods, and may be applied either prospectively or retrospectively to all periods presented. The Company adopted ASU No. 2015-17 prospectively on January 1, 2017, and the adoption did not have a material impact on its consolidated financial

statements, aside from a balance sheet reclassification from short-term to long-term deferred income taxes.

In October 2016, the FASB issued ASU No. 2016-16, Income Taxes: Intra-Entity Transfers of Assets Other Than Inventory, which requires entities to recognize the income tax consequences of intra-entity transfers of assets other than inventory when those transfers occur. ASU No. 2016-16 is effective for annual reporting periods beginning after December 15, 2017, including interim periods within those annual periods. The Company early adopted ASU No. 2016-16 on January 1, 2017, and the adoption had no impact on its consolidated financial statements.

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows: Restricted Cash, which requires entities to include restricted cash in cash and cash equivalents when reconciling beginning-of-period and end-of-period cash in the statement of cash flows. ASU No. 2016-18 is effective for annual periods beginning after December 15, 2017, including interim periods within those annual periods. The Company early adopted ASU No. 2016-18 retrospectively on January 1, 2017 and the adoption did not have a material impact on its consolidated financial statements, aside from changes in presentation.

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MEDIDATA SOLUTIONS, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Unaudited)

Recently Issued Accounting Pronouncements — There have been no changes in the expected dates of adoption or estimated effects on the Company's consolidated financial statements of recently issued accounting pronouncements from those disclosed in the Company's Annual Report on Form 10-K, except as described below.

ASU No. 2014-09, Revenue from Contracts with Customers, which creates Accounting Standards Codification ("ASC") 606 and supersedes the existing accounting standards for revenue recognition in ASC 605, provides principles for recognizing revenue for the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods and services. The guidance permits two methods of adoption: (1) full retrospective method, under which the new guidance is applied to each prior reporting period presented; and (2) modified retrospective method, under which the cumulative effect of adoption of the new guidance is applied as an adjustment to the opening balance of retained earnings at the date of initial application. ASU No. 2014-09 is effective for annual reporting periods beginning after December 15, 2017, including interim periods within those annual periods. The Company will adopt the new guidance on January 1, 2018, and expects to use the full retrospective method. The Company will identify performance obligations under ASC 606 that are similar to the deliverables and separate units of account identified under the current guidance in ASC 605. As a result, the timing of revenue recognition for most of its contracts will remain the same. A few of the Company's contracts include contingent amounts of variable consideration that were precluded from recognition under ASC 605 because of the requirement for amounts to be "fixed or determinable." Under ASC 606, the Company will estimate these amounts in advance, resulting in earlier revenue recognition for these contracts. Based on the preliminary calculations of the effects of adopting this standard, the Company anticipates that \$4 to \$6 million of 2016 revenue would have been recognized in 2015 and prior. The net impact to 2017 revenue is estimated to be immaterial based on contracts in place as of September 30, 2017.

ASU No. 2014-09 also creates a new subtopic under ASC 340, Other Assets and Deferred Costs, which discusses the deferral of incremental costs of obtaining a contract with a customer, including the period of amortization of such costs. The Company is currently finalizing its assessment of the planned amortization period for such costs, but has concluded the amortization period will be longer as a result of adopting the new standard. The Company anticipates that the new standard will decrease 2016 and 2017 operating expenses by less than \$5 million per year.

The final quantitative effects of the adoption of ASC 606 are subject to change from these estimates, pending the completion of the Company's implementation in the first quarter of 2018.

In May 2017, the FASB issued ASU No. 2017-09, Scope of Modification Accounting, which clarifies when a change in the terms or conditions of a share-based payment award should be accounted for as a modification. ASU No. 2017-09 is effective for annual periods beginning after December 15, 2017, including interim periods within those annual periods. The Company will adopt ASU No. 2017-09 on January 1, 2018, and the adoption is not expected to have a material impact on its consolidated financial statements.

2. WIRE TRANSACTION RECOVERY

In September 2014, the Company was the victim of a crime involving the transfer of \$4.8 million to an overseas account. As a result, the Company recorded charges of \$4.9 million and \$0.9 million to its operating costs and expenses in the third and fourth quarters of 2014, respectively, for the loss and related investigation costs incurred. The Company filed an insurance claim for its loss, and its insurer, Federal Insurance Co. ("Federal") denied coverage. The Company commenced legal action, alleging that Federal had wrongly denied coverage. On July 21, 2017, the United States District Court for the Southern District of New York granted the Company's motion for summary judgment, and denied Federal's motion. In light of this ruling, the Company's operating costs and expenses for the three and nine months ended September 30, 2017 include recognition of the amount that is probable to be recovered, up to the amount of the originally recorded \$4.8 million loss. Any potential recovery amounts that are in excess of the amount of the loss, such as interest, have not been recognized.

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MEDIDATA SOLUTIONS, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Unaudited)

3. STOCKHOLDERS' EQUITY

Common Stock — Common stockholders are entitled to one vote for each share of common stock held. Common stockholders may receive dividends if and when the board of directors determines, at its sole discretion.

Treasury Stock — From time to time, the Company grants nonvested restricted stock awards ("RSAs"), restricted stock units ("RSUs"), and performance-based restricted stock units ("PBRsUs") to its employees pursuant to the terms of its 2017 Long-Term Incentive Plan ("2017 Plan") and formerly pursuant to the terms of its Second Amended and Restated 2009 Long-Term Incentive Plan ("2009 Plan"). Under the provisions of the 2017 Plan and 2009 Plan, unless otherwise elected, participants fulfill their related income tax withholding obligation by having shares withheld at the time of vesting. On the date of vesting, the Company divides the participant's income tax withholding obligation in dollars by the closing price of its common stock and withholds the resulting number of vested shares. The shares withheld are then transferred to the Company's treasury stock at cost.

During the nine months ended September 30, 2017 and 2016, the Company withheld 280,622 shares at an average price of \$58.06 and 338,523 shares at an average price of \$36.22, respectively, in connection with the vesting of equity awards.

Nonvested restricted stock awards forfeited by plan participants are transferred to the Company's treasury stock at par. During the nine months ended September 30, 2017 and 2016, 193,489 and 132,626 forfeited shares, respectively, were transferred to treasury stock at their par value of \$0.01.

4. INVESTMENTS**Marketable Securities**

Marketable securities, which the Company classifies as available-for-sale securities, primarily consist of high quality commercial paper, corporate bonds, and U.S. government debt obligations. Marketable securities with remaining effective maturities of twelve months or less from the balance sheet date are classified as short-term; otherwise, they are classified as long-term on the consolidated balance sheets.

The following tables provide the Company's marketable securities by security type as of September 30, 2017 and December 31, 2016 (in thousands):

	As of September 30, 2017			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
	Commercial paper and corporate bonds	\$388,062	\$ 14	\$ (473)
U.S. government agency debt securities	37,630	—	(56)	37,574
Total	\$425,692	\$ 14	\$ (529)	\$425,177
	As of December 31, 2016			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
	Commercial paper and corporate bonds	\$389,459	\$ 4	\$ (827)
U.S. government agency debt securities	33,132	—	(65)	33,067
Total	\$422,591	\$ 4	\$ (892)	\$421,703

Contractual maturities of the Company's marketable securities as of September 30, 2017 and December 31, 2016 are summarized as follows (in thousands):

	As of September 30, 2017		As of December 31, 2016	
	Cost	Estimated Fair Value	Cost	Estimated Fair Value
Due in one year or less	\$269,606	\$269,351	\$281,591	\$281,285

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Due in one to five years	156,086	155,826	141,000	140,418
Total	\$425,692	\$425,177	\$422,591	\$421,703

At September 30, 2017, the Company had \$0.5 million of gross unrealized losses primarily due to a decrease in the fair value of certain corporate bonds.

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MEDIDATA SOLUTIONS, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Unaudited)

The Company regularly reviews its investment portfolio to identify and evaluate investments that have indications of possible impairment. Investments that are impaired are those that are considered to have losses that are other-than-temporary. Factors considered in determining whether a loss is temporary include:

- the length of time and extent to which fair value has been lower than the cost basis;
- the financial condition, credit quality and near-term prospects of the investee; and
- whether it is more likely than not that the Company will be required to sell the security prior to recovery.

As the Company has the ability and intent to hold these investments until a recovery of fair value, which may be maturity, the Company has determined that the gross unrealized losses on such investments at September 30, 2017 are temporary in nature. Accordingly, the Company did not consider its investments in marketable securities to be other-than-temporarily impaired as of September 30, 2017.

The following tables provide the fair market value and gross unrealized losses of the Company's marketable securities with unrealized losses, aggregated by security type, as of September 30, 2017 and December 31, 2016 (in thousands):

	In Loss Position for Less than 12 Months			
	As of September 30, 2017		As of December 31, 2016	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Commercial paper and corporate bonds	\$261,519	\$ (354)	\$299,708	\$ (771)
U.S. government agency debt securities	16,302	(28)	28,273	(59)
Total	\$277,821	\$ (382)	\$327,981	\$ (830)
	In Loss Position for More than 12 Months			
	As of September 30, 2017		As of December 31, 2016	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Commercial paper and corporate bonds	\$99,983	\$ (119)	\$68,158	\$ (56)
U.S. government agency debt securities	21,272	(28)	4,794	(6)
Total	\$121,255	\$ (147)	\$72,952	\$ (62)

During the three and nine months ended September 30, 2017 and 2016, the Company recorded an insignificant amount of net realized gains from the sale of marketable securities.

Cost Method Investment

The Company holds shares of Series B Preferred Stock of SHYFT Analytics, Inc., purchased via a private placement. This investment is accounted for under the cost method and is included in other assets on the Company's consolidated balance sheet as of September 30, 2017 at its purchase price of \$4.0 million.

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MEDIDATA SOLUTIONS, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Unaudited)

5. FAIR VALUE

The following table summarizes, as of September 30, 2017 and December 31, 2016, the Company's financial assets and liabilities that are measured at fair value on a recurring basis, according to the fair value hierarchy described in the significant accounting policies included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2016 (in thousands):

	As of September 30, 2017				As of December 31, 2016			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash	\$127,672	\$—	\$—	\$127,672	\$93,384	\$—	\$—	-\$93,384
Money market funds	763	—	—	763	135	—	—	135
Total cash and cash equivalents	128,435	—	—	128,435	93,519	—	—	93,519
Commercial paper and corporate bonds	—	387,603	—	387,603	—	388,636	—	388,636
U.S. government agency debt securities	—	37,574	—	37,574	—	33,067	—	33,067
Total marketable securities	—	425,177	—	425,177	—	421,703	—	421,703
Total financial assets measured at fair value on a recurring basis	\$128,435	\$425,177	\$—	\$553,612	\$93,519	\$421,703	\$—	-\$515,222
Contingent consideration – short-term	\$—	\$—	\$3,985	\$3,985	\$—	\$—	\$—	\$—
Contingent consideration – long-term	—	—	1,867	1,867	—	—	—	—
Total financial liabilities measured at fair value on a recurring basis	\$—	\$—	\$5,852	\$5,852	\$—	\$—	\$—	\$—

Investments in commercial paper, corporate bonds, and U.S. government agency debt securities have been classified as Level 2 as they are valued using quoted prices in less active markets or other directly or indirectly observable inputs. Fair values of corporate bonds and U.S. government agency debt securities were derived from a consensus or weighted-average price based on input of market prices from multiple sources at each reporting period. With regard to commercial paper, all of the securities had high credit ratings and one year or less to maturity; therefore, fair value was derived from accretion of purchase price to face value over the term of maturity or quoted market prices for similar instruments if available. During the nine months ended September 30, 2017 and 2016, there were no transfers of financial assets between Level 1 and Level 2.

Contingent consideration liabilities associated with acquisition-related earn-out payments are classified as Level 3 in the fair value hierarchy because they rely significantly on inputs that are unobservable in the market. The fair value of short-term contingent consideration, which is related to the achievement of a technical milestone, has been estimated using situation-based modeling, which considers the probability-weighted present value of the expected payout amount. Significant assumptions include the Company's expectations with regard to the likelihood and timing of achievement of the related technical milestone and a discount rate of 2.9%. The fair value of long-term contingent consideration, which is related to achievement of revenue targets, has been estimated using a Monte Carlo simulation to simulate future performance of the acquired business under a risk-neutral framework; significant assumptions include a risk-adjusted discount rate of 10.2% and revenue volatility of 8.0%. Short-term and long-term contingent consideration are recorded in accrued expenses and other and other long-term liabilities, respectively, on the Company's consolidated balance sheet as of September 30, 2017.

The following table provides a summary of changes in fair value of the Company's Level 3 financial liabilities during the nine months ended September 30, 2017 (in thousands):

Balance as of January 1, 2017	\$—
Contingent consideration — acquisition	5,697
Due to sellers	(5)
Fair value adjustment (included in general and administrative expenses)	160
Balance as of September 30, 2017	\$5,852

The carrying amounts of all other current financial assets and current financial liabilities reflected in the consolidated balance sheets approximate fair value due to their short-term nature.

6. ACQUISITIONS

The Company acquired all outstanding equity interests in CHITA Inc. ("CHITA") and Mytrus, Incorporated ("Mytrus") on February 17, 2017 and April 18, 2017, respectively.

CHITA provides regulated content management for the life sciences industry. Mytrus provides cloud-based software for electronic informed consent ("eConsent"), which replaces paper patient consent forms. Through these acquisitions, the Company

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adds regulated document and standard operating procedure ("SOP") management, electronic trial master file ("eTMF"), and eConsent capabilities to its platform.

Aggregate purchase consideration of \$28.9 million consisted of upfront consideration of \$23.2 million and contingent consideration (associated with CHITA) initially valued at \$5.7 million. In connection with these acquisitions, the Company recognized \$16.6 million in finite-lived intangible assets, deferred tax liabilities of \$2.9 million, and \$1.6 million in other net tangible liabilities, resulting in the recognition of \$16.8 million in goodwill.

Intangible assets acquired were as follows (in thousands):

	Acquisition Date Fair Value	Weighted-Average Useful Life
Developed technology	\$ 15,602	5 years
Customer relationships	890	6 years
Non-competition agreements	110	3.5 years
Total	\$ 16,602	

The Company does not consider these acquisitions, individually or in the aggregate, to be significant to its financial condition or results of operations; its consolidated results of operations for the three and nine months ended September 30, 2017 include the revenues and expenses of CHITA and Mytrus since their respective acquisition dates.

7. GOODWILL AND INTANGIBLE ASSETS

The change in the carrying amount of goodwill during the nine months ended September 30, 2017 was as follows (in thousands):

Balance as of January 1, 2017	\$30,780
Additions related to acquisitions	16,804
Foreign currency translation adjustments	329
Balance as of September 30, 2017	\$47,913

Total intangible assets are summarized as follows (in thousands):

	As of September 30, 2017			As of December 31, 2016		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Developed technology	\$24,427	\$ (7,779)	\$ 16,648	\$8,714	\$ (5,098)	\$ 3,616
Customer relationships	4,486	(2,488)	1,998	3,566	(2,176)	1,390
Non-competition agreements	260	(105)	155	150	(66)	84
Total	\$29,173	\$ (10,372)	\$ 18,801	\$12,430	\$ (7,340)	\$ 5,090

Future amortization of intangible assets is expected to be as follows (in thousands):

Remainder of year ending December 31, 2017	\$1,214
Years ending December 31,	
2018	4,788
2019	4,530
2020	3,787
2021	3,517
2022	921
Thereafter	44
Total	\$18,801

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8. DEBT

The Company's 1.00% convertible senior notes (the "Notes"), issued in August 2013, consisted of the following components as of September 30, 2017 and December 31, 2016 (in thousands):

	September 30, 2017	December 31, 2016
Equity component, net of equity issue costs	\$ 60,222	\$ 60,222
Liability component:		
Principal	287,500	287,500
Less: unamortized debt discount	(12,090)	(22,076)
Less: unamortized debt issuance costs	(1,065)	(2,023)
Net carrying amount	\$ 274,345	\$ 263,401

As of September 30, 2017 and December 31, 2016, the estimated fair value of the Notes was \$394.6 million and \$314.4 million, respectively. The Company considers this disclosure to be a Level 2 measurement because it is based upon a recent modeled bid-price quote for the Notes, reflecting activity in a less active market. Based on the closing price of the Company's common stock as of September 30, 2017 of \$78.06, which is higher than the Notes' initial conversion price of \$58.05, the if-converted value of the Notes exceeded their face value by \$99.1 million.

As of September 30, 2017, the remaining life of the Notes is approximately 10 months, and the Notes are classified as current liabilities on the Company's condensed consolidated balance sheet.

The following table sets forth total interest expense recognized related to the Notes for the three and nine months ended September 30, 2017 and 2016 (in thousands except percentages):

	Three Months Ended September 30,		Nine Months Ended September 30,		
	2017	2016	2017	2016	
Contractual interest expense	\$718	\$718	\$2,156	\$2,156	
Amortization of debt issuance costs	319	320	958	959	
Amortization of debt discount	3,379	3,181	9,986	9,405	
Total	\$4,416	\$4,219	\$13,100	\$12,520	
Effective interest rate	6.5	% 6.5	% 6.5	% 6.5	%

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NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Unaudited)

9. STOCK-BASED COMPENSATION

For the three and nine months ended September 30, 2017 and 2016, the components of stock-based compensation expense were as follows (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 30, 2016	September 30, 2017	September 30, 2016
Stock options	\$735	\$947	\$2,590	\$3,000
Restricted stock awards and units	7,786	6,571	22,474	18,312
Performance-based restricted stock units	2,414	2,264	7,116	7,133
Employee stock purchase plan	1,236	676	3,133	2,710
Total stock-based compensation (1)	\$12,171	\$10,458	\$35,313	\$31,155

(1) Total stock-based compensation is presented in this table on a gross basis, consistent with the additional paid-in capital impact recorded in stockholders' equity. On the Company's consolidated statements of operations and consolidated statements of cash flows, stock-based compensation is presented net of foreign exchange impact and capitalization of eligible software development-related costs.

Stock Options

The fair value of each stock option granted during the three and nine months ended September 30, 2017 and 2016 was estimated on the date of grant using a Black-Scholes pricing model with the following weighted-average assumptions:

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 30, 2016	September 30, 2017	September 30, 2016
Expected volatility	— % 44	% 44	% 44	% 43
Expected life	N/A	6 years	6 years	6 years
Risk-free interest rate	— % 1.20	% 2.07	% 1.42	%
Dividend yield	—	—	—	—

The following table summarizes the status of the Company's stock options as of September 30, 2017, and changes during the nine months then ended (in thousands, except per share data):

	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at January 1, 2017	1,793	\$23.39		
Granted	77	56.90		
Exercised	(285)	34.00		
Forfeited	(70)	48.97		
Expired	(7)	58.92		
Outstanding at September 30, 2017	1,508	\$21.74	4.33 years	\$84,974
Exercisable at September 30, 2017	1,271	\$16.86	3.58 years	\$77,801
Vested and expected to vest at September 30, 2017	1,482	\$21.26	4.26 years	\$84,181

No stock options were granted during the three months ended September 30, 2017. The weighted-average grant-date fair value of stock options granted during the three months ended September 30, 2016 was \$23.15. The weighted-average grant-date fair value of stock options granted during the nine months ended September 30, 2017 and

2016 was \$25.37 and \$17.92, respectively. The total intrinsic value of stock options exercised during the three months ended September 30, 2017 and 2016 was \$0.7 million and \$4.4 million, respectively. The total intrinsic value of stock options exercised during the nine months ended September 30, 2017 and 2016 was \$8.7 million and \$7.4 million, respectively. The total fair value of stock options vested during the three months ended September 30, 2017 and 2016 was \$0.8 million and \$1.7 million, respectively. The total fair value of stock options vested during the nine months ended September 30, 2017 and 2016 was \$2.9 million and \$3.8 million, respectively.

As of September 30, 2017, there was \$4.5 million in unrecognized compensation cost related to all non-vested stock options granted. This cost is expected to be recognized over a weighted-average remaining period of 2.39 years.

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Restricted Stock Awards and Units

The following table summarizes the status of the Company's nonvested time-based RSAs and RSUs as of September 30, 2017, and changes during the nine months then ended (in thousands, except per share data):

	Number of Shares	Weighted- Average Grant Date Fair Value
Nonvested at January 1, 2017	1,850	\$40.89
Granted	757	57.68
Vested	(587)	39.65
Forfeited	(195)	43.39
Nonvested at September 30, 2017	1,825	\$47.99

The total fair value of RSAs and RSUs vested during the three months ended September 30, 2017 and 2016 was \$9.0 million and \$1.5 million, respectively. The total fair value of RSAs and RSUs vested during the nine months ended September 30, 2017 and 2016 was \$40.0 million and \$18.4 million, respectively.

As of September 30, 2017, there was \$69.2 million in unrecognized compensation cost related to all nonvested RSAs and RSUs granted. This cost is expected to be recognized over a weighted-average remaining period of 2.54 years.

Performance-Based Restricted Stock Units

During the three months ended September 30, 2017, the Company granted 46 thousand PBRsUs with performance conditions based on achievement of certain individual and team objectives. No PBRsUs were granted during the three months ended September 30, 2016.

During the nine months ended September 30, 2017, the Company granted: (1) 132 thousand PBRsUs ("2017 TSR PBRsUs") with market conditions based on the Company's total stockholder return ("TSR") relative to that of the Russell 2000 Index over the three-year period ending December 31, 2019, vesting in full in three years with the number of shares ultimately earned ranging from zero to 200% of the target number of shares; (2) 132 thousand PBRsUs ("2017 Net Income PBRsUs") with performance conditions based on the compound annual growth rate of net income over the three-year period ending December 31, 2019, vesting in full in three years with the number of shares ultimately earned ranging from zero to 200% of the target number of shares.

During the nine months ended September 30, 2016, the Company granted 223 thousand PBRsUs ("2016 TSR PBRsUs") with market conditions based on the Company's TSR relative to that of the Russell 2000 Index over the three-year period ending December 31, 2018, vesting in full in three years with the number of shares ultimately earned ranging from zero to 200% of the target number of shares. The Company also granted an insignificant number of other PBRsUs with performance conditions based on achievement of certain individual performance objectives.

The fair value of PBRsUs with market conditions granted during the nine months ended September 30, 2017 and 2016 was estimated as of the date of grant using a Monte Carlo valuation model with the following weighted average assumptions:

	2017 TSR PBRsUs	2016 TSR PBRsUs
Expected volatility - Medidata	42	% 48
Expected volatility - comparison index	43	% 43
Expected life	2.85 years	2.84 years
Risk-free interest rate	1.40	% 0.91
Dividend yield	—	—

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The following table summarizes the status of the Company's PBRsUs based upon expected performance as of September 30, 2017, and changes during the nine months then ended (in thousands, except per share data):

	Net Income	TSR	Other Individual and Team Goals	Total Number of Shares	Weighted-Average Grant Date Fair Value
Nonvested at January 1, 2017	—	390	2	392	\$ 57.05
Granted (based on performance at 100% of targeted levels)	132	132	46	310	72.42
Adjustment related to expected performance	—	402	(34)	368	61.34
Vested	—	(92)	(2)	(94)	66.88
Forfeited	—	(26)	—	(26)	59.60
Nonvested at September 30, 2017	132	806	12	950	\$ 62.68

The total fair value of PBRsUs vested during the three months ended September 30, 2017 and 2016 was \$0.1 million and \$0.1 million, respectively. The total fair value of PBRsUs vested during the nine months ended September 30, 2017 and 2016 was \$5.2 million and \$10.1 million, respectively.

As of September 30, 2017, there was \$21.2 million in unrecognized compensation cost related to all nonvested PBRsUs. This cost is expected to be recognized over a weighted-average remaining period of 1.81 years.

Employee Stock Purchase Plan

The fair value of shares granted under the Company's employee stock purchase plan ("ESPP") was estimated using a Black-Scholes pricing model with the following weighted-average assumptions:

	Three Months Ended		Nine Months Ended		
	September 30,		September 30,		
	2017	2016	2017	2016	
Expected volatility	39	% 41	% 39	% 42	%
Expected life	1.44 years	1.35 years	1.47 years	1.46 years	
Risk-free interest rate	0.72	% 0.54	% 0.65	% 0.53	%
Dividend yield	—	—	—	—	

During the nine months ended September 30, 2017, 103 thousand shares were purchased under the ESPP at a weighted-average price of \$40.50. During the nine months ended September 30, 2016, 89 thousand shares were purchased under the ESPP at a weighted-average price of \$38.35.

As of September 30, 2017, there was \$4.3 million in unrecognized compensation cost related to ESPP shares. This cost is expected to be recognized over a weighted-average remaining period of 1.09 years.

Modifications

Incremental expense associated with modifications to stock options, RSAs and PBRsUs during the three months ended September 30, 2017 and 2016 was none and \$0.1 million in the aggregate, respectively, and immaterial on an individual basis. Incremental expense during the nine months ended September 30, 2017 and 2016 was \$0.1 million and \$0.5 million in the aggregate, respectively, and immaterial on an individual basis.

10. ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The changes in the balances of each component of accumulated other comprehensive income (loss) during the nine months ended September 30, 2017 were as follows (in thousands):

	Foreign currency translation adjustments	Unrealized gains (losses) on marketable securities	Total
Balance as of January 1, 2017	\$ (4,729)	\$ (547)	\$ (5,276)

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Other comprehensive income	1,991	230	2,221
Balance as of September 30, 2017	\$ (2,738)	\$ (317)	\$ (3,055)

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NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Unaudited)

For the nine months ended September 30, 2017 and 2016, reclassifications of items from accumulated other comprehensive income (loss) to net income were insignificant.

11. EARNINGS PER SHARE

Basic earnings per share is calculated by dividing net income available to common stockholders by the weighted-average number of shares outstanding during the period. The holders of unvested RSAs do not have nonforfeitable rights to dividends or dividend equivalents and therefore, such vested awards do not qualify as participating securities and are excluded from the basic earnings per share calculation. Diluted earnings per share includes the determinants of basic net income per share and, in addition, gives effect to the potential dilution that would occur if securities or other contracts to issue common stock are exercised, vested, or converted into common stock, unless they are anti-dilutive. As the Company intends to settle the principal amount of the Notes (see Note 8, "Debt") in cash upon conversion, their dilutive effect is reflected in diluted earnings per share using the treasury stock method, which considers the number of shares that would be required to settle any premium above principal at the average stock price for the period. During the three and nine months ended September 30, 2016, the average price of the Company's stock was below the conversion price of the Notes; as a result, the Notes were not dilutive for those periods.

A reconciliation of the numerator and denominator of basic earnings per share and diluted earnings per share for the three and nine months ended September 30, 2017 and 2016 is shown in the following table (in thousands, except per share data):

	Three Months Ended September 30, 2017		Nine Months Ended September 30, 2016	
Numerator				
Net income	\$12,844	\$7,358	\$30,612	\$18,143
Denominator				
Denominator for basic earnings per share:				
Weighted average common shares outstanding	56,654	55,670	56,389	55,395
Denominator for diluted earnings per share:				
Dilutive potential common shares:				
Stock options	1,021	976	998	977
Restricted stock awards and units	905	681	909	570
Performance-based restricted stock units	657	386	589	330
Employee stock purchase plan	200	25	136	—
Convertible senior notes	1,177	—	643	—
Weighted average common shares outstanding with assumed conversion	60,614	57,738	59,664	57,272
Basic earnings per share	\$0.23	\$0.13	\$0.54	\$0.33
Diluted earnings per share	\$0.21	\$0.13	\$0.51	\$0.32

Anti-dilutive common stock equivalents excluded from the calculation of diluted earnings per share for the three and nine months ended September 30, 2017 and 2016 are shown in the following table (in thousands, except per share data):

	Three Months Ended September 30, 2017		Nine Months Ended September 30, 2016	
Stock options	60	458	99	627
Restricted stock awards and units	—	20	8	30
Performance-based restricted stock units	—	—	3	—

Employee stock purchase plan	—	—	391	262
Total	60	478	501	919

12. INCOME TAXES

The Company's unrecognized tax benefits were approximately \$2.9 million as of September 30, 2017, and were unchanged from December 31, 2016.

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13. COMMITMENTS AND CONTINGENCIES

Legal Matters — The Company is subject to legal proceedings and claims that arise in the ordinary course of business and records an estimated liability for these matters when an adverse outcome is considered to be probable and can be reasonably estimated. Although the outcome of the litigation cannot be predicted with certainty and some lawsuits, claims, or proceedings may be disposed of unfavorably to the Company, which could materially and adversely affect its financial condition or results of operations, the Company does not believe that it is currently a party to any material legal proceedings.

Contractual Warranties — The Company typically provides contractual warranties to its customers covering its solutions and services. To date, any refunds provided to customers have been immaterial.

Change in Control Agreements — The Company has change in control agreements with its chief executive officer and certain other executive officers. These agreements provide for payments to be made to such officers upon involuntary termination of their employment by the Company without cause or by such officers for good reason as defined in the agreements, within a period of 2 years following a change in control. The agreements provide that, upon a qualifying termination event, such officers will be entitled to (a) a severance payment equal to the sum of the officer's base salary and target bonus amount (except that such payment for the Company's chief executive officer and president would be two times such sum); (b) continuation of health benefits for one year (except that such continuation for the Company's chief executive officer and president would be for two years); and (c) immediate vesting of remaining unvested equity awards, unless otherwise specified in the equity award agreements.

Wire Transaction Claim — In September 2014, the Company discovered that it had been the victim of a crime involving the fraudulently induced transfer of \$4.8 million. The Company filed an insurance claim for its loss, and its insurer, Federal Insurance Co. ("Federal"), denied coverage. The Company commenced legal action, alleging that Federal had wrongly denied coverage. On July 21, 2017, the United States District Court for the Southern District of New York granted the Company's motion for summary judgment, and denied Federal's motion. Federal filed a Notice of Appeal with the United States Court of Appeals for the Second Circuit on August 11, 2017. That appeal is pending. For additional details, see Note 2, "Wire Transaction Recovery."

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

This Quarterly Report on Form 10-Q contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended ("Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended ("Exchange Act"). Forward-looking statements reflect our current estimates, expectations and projections about our future results, performance, prospects and opportunities. Forward-looking statements include, among other things, the information concerning our possible future results of operations, business and growth strategies, financing plans, expectations that regulatory developments or other matters will not have a material adverse effect on our business or financial condition, our competitive position and the effects of competition, the projected growth of the industry in which we operate, the benefits and synergies to be obtained from our completed and any future acquisitions, and statements of management's goals and objectives, and other similar expressions concerning matters that are not historical facts. Words such as "may," "should," "could," "would," "predicts," "potential," "continue," "expects," "anticipates," "future," "intends," "plans," "believes," "estimates," "appears," "projects" and similar expressions, as well as statements in the future tense, identify forward-looking statements. Forward-looking statements should not be read as a guarantee of future performance or results, and will not necessarily be accurate indications of the times at, or by which, such performance or results will be achieved. Forward-looking information is based on information available at the time and/or management's good faith belief with respect to future events, and is subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in the statements. Important factors that could cause such differences include, but are not limited to the factors discussed under the "Risk Factors" section included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the Securities and Exchange Commission ("SEC") on February 28, 2017.

The following is a discussion and analysis of our financial condition and results of operations and should be read together with our condensed consolidated financial statements and related notes to condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q and our audited consolidated financial statements and related notes to audited consolidated financial statements included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016.

Overview

Medidata Solutions, Inc., together with its consolidated subsidiaries (collectively, "Medidata"), is a global provider of a platform of cloud-based solutions for life sciences, enabling efficiency and quality through clinical development programs, aimed at accelerating processes, enhancing decision making, minimizing operational risk, saving resources, and enabling transformational trial strategies. We are committed to powering smarter treatments and healthier people while advancing the competitive and scientific goals of our life sciences customers worldwide. As of September 30, 2017, our industry-leading technology platform, the Medidata Clinical Cloud®, was the primary technology solution powering clinical trials for 18 of the world's top 25 global pharmaceutical companies, and was used by 18 of the top 25 medical device developers, from study design and planning through execution, management and reporting. Subscription revenues, which are comprised of fees from clients accessing our cloud-based solutions, represented 84% of our revenues for the first nine months of 2017. Professional services revenues, which are derived from the provision of services that help our clients realize higher value in their clinical development processes, represented 16% of total revenues.

Third Quarter and Year-to-Date 2017 Highlights

• Total revenues increased 17% and 19% compared with the third quarter and first nine months of 2016, respectively.

• Operating income increased 47% and 46% compared with the third quarter and first nine months of 2016, respectively.

• Net income increased 75% and 69% compared with the third quarter and first nine months of 2016, respectively.

• Cash flow from operations for the first nine months of 2017 was \$91.6 million, up 89%, compared with \$48.4 million for the first nine months of 2016.

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Results of Operations

Revenues

Revenues for the three and nine months ended September 30, 2017 and 2016 were as follows:

	Three Months Ended			Nine Months Ended		
	September 30,		Change	September 30,		Change
	2017	2016		2017	2016	
Revenues:	(amounts in thousands except percentages)					
Subscription	\$ 118,411	\$ 101,560	16.6 %	\$ 339,772	\$ 288,288	17.9 %
Percentage of total revenues	84.5 %	84.6 %		84.0 %	85.1 %	
Professional services	21,669	18,501	17.1 %	64,543	50,621	27.5 %
Percentage of total revenues	15.5 %	15.4 %		16.0 %	14.9 %	
Total revenues	\$ 140,080	\$ 120,061	16.7 %	\$ 404,315	\$ 338,909	19.3 %

Year-over-year growth in subscription revenues was driven by major platform customer wins and sales growth among both new and existing customers, with strong contributions from our risk-based monitoring, data analytics, and mobile health solutions. As of September 30, 2017, we had remaining subscription backlog of \$114 million, representing the future contract value of outstanding arrangements, billed and unbilled, to be recognized during the remainder of 2017, excluding renewals. This reflects an increase of 13% compared with remaining backlog of \$101 million at September 30, 2016.

Year-over-year growth in professional services revenues was driven by strong demand from new and existing customers implementing our platform, data analytics, and strategic services.

Cost of Revenues

Cost of revenues for the three and nine months ended September 30, 2017 and 2016 was as follows:

	Three Months Ended			Nine Months Ended		
	September 30,		Change	September 30,		Change
	2017	2016		2017	2016	
Cost of revenues:	(amounts in thousands except percentages)					
Subscription	\$ 17,131	\$ 16,095	6.4 %	\$ 51,277	\$ 46,024	11.4 %
Percentage of total revenues	12.2 %	13.4 %		12.7 %	13.6 %	
Professional services	14,423	13,133	9.8 %	42,811	36,929	15.9 %
Percentage of total revenues	10.3 %	10.9 %		10.6 %	10.9 %	
Total cost of revenues	\$ 31,554	\$ 29,228	8.0 %	\$ 94,088	\$ 82,953	13.4 %
Percentage of total revenues	22.5 %	24.3 %		23.3 %	24.5 %	
Gross profit	\$ 108,526	\$ 90,833	19.5 %	\$ 310,227	\$ 255,956	21.2 %
Gross margin	77.5 %	75.7 %		76.7 %	75.5 %	
Subscription margin	85.5 %	84.2 %		84.9 %	84.0 %	
Professional services margin	33.4 %	29.0 %		33.7 %	27.0 %	

Year-over-year growth in cost of subscription revenues was largely driven by increases in depreciation and amortization of \$1.6 million and \$3.7 million for the three and nine months ended September 30, 2017, respectively, associated with technology obtained through recent business acquisitions and increased software development capitalization. For the three months ended September 30, 2017, this increase was partially offset by a net decrease in personnel costs of \$0.5 million. Expenses for the nine months ended September 30, 2017 were also impacted by higher third-party hosting and software-related costs of \$1.1 million. As a result of the scaling of our business, subscription gross margin increased to 85.5% and 84.9% for the three and nine months ended September 30, 2017, respectively, compared with 84.2% and 84.0% for the three and nine months ended September 30, 2016, respectively.

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Year-over-year growth in cost of professional services revenues was primarily driven by net increases in personnel costs of \$2.2 million and \$4.9 million for the three and nine months ended September 30, 2017, respectively, associated with a 23% year-over-year headcount increase to support strong customer demand. For the three months ended September 30, 2017, this increase was partially offset by a \$1.2 million net decrease in consulting and professional fees. Professional services gross margin increased to 33.4% and 33.7% for the three and nine months ended September 30, 2017, respectively, compared with 29.0% and 27.0% for the three months ended September 30, 2016, respectively, benefiting significantly from effective project mix and more efficient use of resources in the current periods.

Overall gross margin increased to 77.5% and 76.7% for the three and nine months ended September 30, 2017, respectively, compared with 75.7% and 75.5% for the three and nine months ended September 30, 2016, respectively, driven by strong 2017 margins for both subscription and professional services.

Operating Costs and Expenses

Operating costs and expenses for the three and nine months ended September 30, 2017 and 2016 were as follows:

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2017	2016	Change	2017	2016	Change
Operating costs and expenses:	(amounts in thousands except percentages)					
Research and development	\$36,207	\$28,028	29.2 %	\$102,028	\$84,523	20.7 %
Percentage of total revenues	25.9 %	23.4 %		25.3 %	24.9 %	
Sales and marketing	31,428	27,789	13.1 %	94,321	80,856	16.7 %
Percentage of total revenues	22.4 %	23.2 %		23.3 %	23.8 %	
General and administrative	23,701	20,089	18.0 %	70,772	57,866	22.3 %
Percentage of total revenues	16.9 %	16.7 %		17.5 %	17.1 %	
Wire transaction recovery	(4,770)	—	(100.0)%	(4,770)	—	(100.0)%
Percentage of total revenues	(3.4)%	— %		(1.2)%	— %	
Total operating costs and expenses	\$86,566	\$75,906	14.0 %	\$262,351	\$223,245	17.5 %
Percentage of total revenues	61.8 %	63.3 %		64.9 %	65.8 %	
Operating income	\$21,960	\$14,927	47.1 %	\$47,876	\$32,711	46.4 %
Operating margin	15.7 %	12.4 %		11.8 %	9.7 %	

The year-over-year growth in research and development expenses was largely driven by net increases in personnel and recruiting costs of \$3.9 and \$9.3 million for the three and nine months ended September 30, 2017, respectively, resulting from a 31% year-over-year headcount increase in connection with our continued hiring of skilled engineering talent and our acquisitions of CHITA Inc. ("CHITA") and Mytrus Inc. ("Mytrus"). Research and development expenses were also impacted by increased costs for specialized consultants and outside experts of \$1.7 million and \$3.3 million for the three and nine months ended September 30, 2017, respectively, as well as higher third-party software costs and increased rent expense from new and acquired offices. The aforementioned increases were partially offset by capitalization of internal-use software development costs associated with our Clinical Cloud platform.

The year-over-year growth in sales and marketing expenses was predominantly driven by net increases in personnel and recruiting costs of \$3.2 million and \$6.5 million for the three and nine months ended September 30, 2017, respectively, resulting from a 13% year-over-year headcount increase to expand our global sales organization and partner team. Sales and marketing expenses were also impacted by increased conference and event costs. The nine months ended September 30, 2016 included the \$1.4 million cumulative benefit recognized as a result of the enactment of the New Jersey Business Employment Incentive Program in the first quarter of 2016.

The year-over-year increase in general and administrative expenses was primarily driven by net increases in personnel-related costs of \$1.4 million and \$7.3 million for the three and nine months ended September 30, 2017, respectively, resulting from a 15% year-over-year headcount increase. General and administrative expenses were also impacted by increases in legal and professional fees of \$0.8 million and \$3.0 million for the three and nine months

ended September 30, 2017, respectively, associated with litigation matters and recent acquisitions. Expenses were also impacted by increased rent from new and acquired offices.

Operating costs and expenses for the three and nine months ended September 30, 2017 include the probable insurance recovery of \$4.8 million associated with the previously recognized 2014 wire transaction loss. For further information, see Note 2, "Wire Transaction Recovery," to the condensed consolidated financial statements included in this Quarterly Report on Form 10-Q.

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Income Taxes

Provision for income taxes for the three and nine months ended September 30, 2017 and 2016 was as follows:

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2017	2016	2017	2016

(amounts in thousands)

Provision for income taxes \$6,233 \$4,347 \$8,170 \$4,839

The difference between our effective tax rate and the U.S. statutory rate is primarily due to the relative mix of pre-tax income subject to tax in various jurisdictions, state taxes, share-based compensation, and U.S. tax credits and incentives. The benefits from U.S. credits and incentives will likely continue to have a favorable impact on our overall effective tax rate in the future. Share-based compensation will also continue to have an impact on our effective tax rate which may or may not be favorable.

Our quarterly tax provision and quarterly estimate of the annual effective tax rate are subject to significant variation due to several factors, including variability in accuracy of predictions of pre-tax book and taxable income or loss, the mix of jurisdictions to which they relate, and changes in tax law in the jurisdictions in which we conduct business.

Critical Accounting Estimates

Our condensed consolidated financial statements are prepared in conformity with accounting principles generally accepted in the United States of America, which require us to make estimates and assumptions about certain items and future events. These estimates inherently involve levels of subjectivity and judgment and may have a material impact on our financial condition or results of operations. Accordingly, actual results could differ from those estimates. Our critical accounting estimates as of September 30, 2017 are the same as those at December 31, 2016, which are included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016. Also see Note 1, "Summary of Significant Accounting Policies," to the condensed consolidated financial statements included in this Quarterly Report on Form 10-Q, which discusses our significant accounting policies.

Effects of Recently Issued Accounting Pronouncements on Current and Future Trends

Refer to Note 1, "Summary of Significant Accounting Policies — Recently Issued Accounting Pronouncements," to the condensed consolidated financial statements included in this Quarterly Report on Form 10-Q. No other recently issued accounting pronouncements have had or are expected to have a material impact on our current or future trends.

Liquidity and Capital Resources

We believe that our cash flows from operations, cash and cash equivalents, and highly liquid marketable securities will be sufficient to satisfy the anticipated cash requirements associated with our existing operations for the foreseeable future. Our future capital expenditures and other cash requirements could be higher than we currently expect as a result of various factors, including any expansion of our business that we may complete. The following table presents selected financial information related to our liquidity and capital resources as of September 30, 2017 and December 31, 2016, and for the nine-month periods ended September 30, 2017 and 2016 (in thousands):

	September 30, 2017		December 31, 2016	
Cash, cash equivalents, and marketable securities	\$553,612	\$ 515,222		
Furniture, fixtures and equipment, net	81,619	58,461		
1.00% convertible senior notes, net	274,345	263,401		
	Nine Months Ended			
	September 30,			
	2017	2016		
Cash provided by operating activities	\$91,574	\$ 48,366		
Cash used in investing activities	(57,675)	(28,064)		
Cash provided by (used in) financing activities	181	(5,078)		
Cash, Cash Equivalents, and Marketable Securities				

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For the nine months ended September 30, 2017, cash provided by operating activities of \$91.6 million was driven by strong customer collections, partially offset by operating expenditures and cash interest expense on our 1.00% convertible senior notes. Cash used in investing activities of \$57.7 million consisted of net payments of \$22.9 million in aggregate to acquire CHITA and Mytrus, cash payments for capital expenditures of \$30.5 million, and net purchases of marketable securities of \$4.2 million. Cash provided by financing activities of \$0.2 million resulted from the equity plan proceeds of \$16.5 million, partially offset by the acquisition of \$16.3 million of treasury stock in connection with equity plan participant tax withholdings upon vesting.

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For the nine months ended September 30, 2016, cash provided by operating activities of \$48.4 million was driven by strong customer collections, partially offset by operating expenditures and cash interest expense on our 1.00% convertible senior notes. Cash used in investing activities of \$28.1 million consisted of a net payment of \$17.2 million to acquire Intelemage, LLC, cash payments for capital expenditures of \$15.9 million, and \$4.0 million cost method investment, partially offset by net sales of marketable securities of \$9.0 million. Cash used in financing activities of \$5.1 million resulted primarily from the acquisition of \$14.4 million of treasury stock in connection with equity plan participant tax withholdings upon vesting, partially offset by equity plan proceeds of \$9.5 million.

Capital Assets

We acquired \$35.8 million in capital assets during the nine months ended September 30, 2017, predominantly related to our new office spaces in Seoul, South Korea and Hammersmith, UK, continued enhancements to our existing infrastructure and facilities, and capitalization of software development costs. On a cash basis, our capital expenditures during the nine months ended September 30, 2017 were \$30.5 million and included payments for previously accrued assets. We expect to spend approximately \$10 to \$12 million on additional capital assets during the remainder of 2017.

Debt

In August 2013, we issued \$287.5 million of 1.00% convertible senior notes (the "Notes") that will mature on August 1, 2018 unless earlier repurchased or converted. Upon conversion, we will deliver to the holders of the Notes either cash, shares of our common stock, or a combination thereof, at our election. If converted, we intend to settle the principal amount of the Notes in cash and any excess conversion value beyond the principal amount in shares of our common stock, cash, or a combination thereof. As of September 30, 2017, the Notes are classified as current liabilities in our condensed consolidated balance sheet. For further information, see Note 8, "Debt," to the condensed consolidated financial statements included in this Quarterly Report on Form 10-Q.

Contractual Obligations, Commitments and Contingencies

The table below summarizes the aggregate effect that our material contractual obligations as of September 30, 2017 are expected to have on our cash flows in the periods indicated (in thousands):

	Payments Due by Period				
	Total	Remainder 2018 - of 2017	2019	2020 - 2021	2022 and later
Contractual Obligations:					
1.00% convertible senior notes	\$287,500	\$ —	\$287,500	\$—	\$—
Interest payments on convertible senior notes	2,875	—	2,875	—	—
Operating lease obligations	113,929	3,828	31,104	32,535	46,462
Contingent consideration obligations	5,852	—	5,852	—	—
Total	\$410,156	\$ 3,828	\$327,331	\$32,535	\$46,462

Legal Matters

For a discussion of legal matters, refer to Note 13, "Commitments and Contingencies — Legal Matters," to the condensed consolidated financial statements included in this Quarterly Report on Form 10-Q.

Item 3. Quantitative and Qualitative Disclosures about Market Risk**Interest Rate Sensitivity**

We had unrestricted cash and cash equivalents totaling \$128.4 million at September 30, 2017. Our cash equivalents are invested principally in money market funds. We also had investments in marketable securities, which we classify as available-for-sale securities, totaling \$425.2 million at September 30, 2017. Substantially all of our marketable securities are fixed income securities, which primarily consist of high quality commercial paper and corporate bonds. Due to the short duration, laddered maturities, and high credit ratings of these investments, we believe that we do not have any material exposure to changes in the fair value of our investment portfolio as a result of changes in interest rates.

Exchange Rate Sensitivity

Our non-U.S. operating subsidiaries are located in the United Kingdom, Japan, South Korea, Singapore, China, and Germany. The functional currencies for these subsidiaries are the respective local currencies. We have exposure to exchange rate movements that are captured in translation adjustments for these subsidiaries. Such cumulative adjustments are recorded in accumulated other comprehensive income (loss). The estimated potential translation loss for the nine months ended

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September 30, 2017 resulting from a hypothetical 10% adverse change in quoted foreign currency exchange rates amounted to \$2.7 million.

We bill our customers primarily in U.S. dollars. The majority of our foreign billings are billed from Medidata Solutions, Inc., a U.S. entity, and are mainly denominated in Euros, British pounds sterling, Australian dollars, and Canadian dollars. Our foreign currency-denominated costs and expenses are mainly incurred by our non-U.S. operating subsidiaries. Accordingly, future changes in currency exchange rates will impact our future operating results. For the nine months ended September 30, 2017, 4.2% of our revenues and 16.9% of our expenses were denominated in foreign currencies. Total gain (loss) arising from transactions denominated in foreign currencies amounted to \$(0.7) million for the nine months ended September 30, 2017.

Impact of Inflation

We do not believe that inflation has had a material impact on our business, financial condition, or results of operations.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As of September 30, 2017, an evaluation was performed with the participation of our Disclosure Committee and our management, including the Chief Executive Officer ("CEO") and the Chief Financial Officer ("CFO") of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Disclosure controls and procedures are controls and procedures that are designed to ensure that information required to be disclosed 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. Disclosure controls and procedures are also designed to ensure that such information is accumulated and communicated to our management, including our CEO and CFO, as appropriate to allow timely decisions regarding required disclosure. Based upon such evaluation, our CEO and CFO have concluded that our disclosure controls and procedures were effective as of September 30, 2017.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during our most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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PART II - OTHER INFORMATION

Item 1. Legal Proceedings

See Note 13, "Commitments and Contingencies – Legal Matters" to the condensed consolidated financial statements included in this Quarterly Report on Form 10-Q for a description of current legal proceedings.

Item 1A. Risk Factors

We operate in a rapidly changing environment that involves a number of risks, some of which are beyond our control. The risks described in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016 are those that we believe are the material risks we face. There have been no material changes in our risk factors since our Annual Report on Form 10-K for the fiscal year ended December 31, 2016. Any of those disclosed risk factors or additional risks and uncertainties not presently known to us, or that we currently deem immaterial, could have a material adverse effect on our business, financial condition and results of operations.

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

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

From time to time, we grant nonvested restricted stock awards, restricted stock units, or performance-based restricted stock units to our employees, pursuant to the terms of our 2017 Long-Term Incentive Plan ("2017 Plan") and formerly pursuant to the terms of our Second Amended and Restated 2009 Long-Term Incentive Plan ("2009 Plan"). Under the provisions of the 2017 Plan and 2009 Plan, unless otherwise elected, participants fulfill their related income tax withholding obligation by having shares withheld at the time of vesting. On the date of vesting, we divide the participant's income tax withholding obligation in dollars by the closing price of our common stock and withhold the resulting number of vested shares.

A summary of our repurchases of shares of our common stock for the three months ended September 30, 2017 is as follows:

	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet be Purchased under the Plans or Programs
July 1 – July 31, 2017	4,259	\$ 78.20	—	—
August 1 – August 31, 2017	3,777	\$ 75.89	—	—
September 1 – September 30, 2017	11,849	\$ 74.96	—	—
Total	19,885	\$ 75.83	—	—

(1) Represents the number of shares acquired as payment by employees of applicable statutory withholding taxes owed upon vesting of restricted stock awards, restricted stock units, or performance-based restricted stock units granted under the 2017 Plan and 2009 Plan.

Item 3. Defaults upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

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Item 6. Exhibits

Exhibit No. Description

<u>10.1</u> ^{†*}	<u>Form of Medidata Solutions, Inc. Nonstatutory Stock Option Agreement</u>
<u>31.1</u> *	<u>Certification of CEO pursuant to Rule 13a-14(a) or Rule 15d-14(a) under the Exchange Act</u>
<u>31.2</u> *	<u>Certification of CFO pursuant to Rule 13a-14(a) or Rule 15d-14(a) under the Exchange Act</u>
<u>32.1</u> **	<u>Certification of CEO pursuant to Rules 13a-14(b) or 15d-14(b) under the Exchange Act and 18 U.S.C. 1350</u>
<u>32.2</u> **	<u>Certification of CFO pursuant to Rules 13a-14(b) or 15d-14(b) under the Exchange Act and 18 U.S.C. 1350</u>
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed herewith.

**Furnished herewith.

[†] Indicates a management contract or any compensatory plan, contract, or arrangement.

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Signature

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.

MEDIDATA SOLUTIONS, INC.

By: /s/ ROUVEN BERGMANN

Rouven Bergmann

Chief Financial Officer (Principal Financial and Principal Accounting Officer)

Date: November 3, 2017

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