

ASPEN TECHNOLOGY INC /DE/
Form 10-Q
January 24, 2018
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended December 31, 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: 001-34630

ASPEN TECHNOLOGY, INC.

(Exact name of registrant as specified in its charter)

Delaware 04-2739697

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

20 Crosby Drive

Bedford, Massachusetts 01730

(Address of principal executive offices) (Zip Code)

(781) 221-6400

(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.

Large accelerated filer ☒ Accelerated filer ☐

Non-accelerated ☐ Smaller reporting company ☐

filer ☐ (Do not check if

a 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. ☐

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Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act): Yes o No ☒ y
As of January 17, 2018, there were 71,938,925 shares of the registrant's common stock (par value \$0.10 per share) outstanding.

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aspenONE is one of our registered trademarks. All other trade names, trademarks and service marks appearing in this Form 10-Q are the property of their respective owners.

Our fiscal year ends on June 30th, and references to a specific fiscal year are to the twelve months ended June 30th of such year (for example, "fiscal 2018" refers to the year ending June 30, 2018).

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PART I - FINANCIAL INFORMATION

Item 1. Financial Statements.

Consolidated Financial Statements (unaudited)

ASPEN TECHNOLOGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)

	Three Months Ended December 31,		Six Months Ended December 31,	
	2017	2016	2017	2016
	(Dollars in Thousands, Except per Share Data)			
Revenue:				
Subscription and software	\$117,658	\$112,916	\$233,414	\$226,360
Services and other	7,244	7,017	14,269	13,623
Total revenue	124,902	119,933	247,683	239,983
Cost of revenue:				
Subscription and software	5,486	5,176	11,269	10,245
Services and other	6,603	6,403	13,552	12,839
Total cost of revenue	12,089	11,579	24,821	23,084
Gross profit	112,813	108,354	222,862	216,899
Operating expenses:				
Selling and marketing	24,380	21,829	47,951	43,854
Research and development	19,790	18,597	39,279	37,229
General and administrative	14,178	11,863	27,854	25,020
Total operating expenses	58,348	52,289	115,084	106,103
Income from operations	54,465	56,065	107,778	110,796
Interest income	40	216	181	488
Interest (expense)	(1,261)	(892)	(2,467)	(1,762)
Other (expense) income, net	(238)	697	(854)	1,344
Income before provision for income taxes	53,006	56,086	104,638	110,866
Provision for income taxes	14,928	19,076	31,805	38,855
Net income	\$38,078	\$37,010	\$72,833	\$72,011
Net income per common share:				
Basic	\$0.53	\$0.48	\$1.00	\$0.92
Diluted	\$0.52	\$0.48	\$0.99	\$0.92
Weighted average shares outstanding:				
Basic	72,342	76,905	72,683	77,977
Diluted	73,036	77,318	73,333	78,356

See accompanying Notes to these unaudited consolidated financial statements.

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ASPEN TECHNOLOGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited)

	Three Months Ended December 31,		Six Months Ended December 31,	
	2017	2016	2017	2016
	(Dollars in Thousands)			
Net income	\$38,078	\$37,010	\$72,833	\$72,011
Other comprehensive income (loss):				
Net unrealized losses on available for sale securities, net of tax effects of (\$5) and \$10 for the three and six months ended December 31, 2016	—	10	—	(17)
Foreign currency translation adjustments	73	(1,717)	1,474	(2,620)
Total other comprehensive income (loss)	73	(1,707)	1,474	(2,637)
Comprehensive income	\$38,151	\$35,303	\$74,307	\$69,374

See accompanying Notes to these unaudited consolidated financial statements.

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ASPEN TECHNOLOGY, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(Unaudited)

	December 31, 2017	June 30, 2017
	(Dollars in Thousands, Except Share Data)	
ASSETS		
Current assets:		
Cash and cash equivalents	\$48,703	\$101,954
Accounts receivable, net	24,208	27,670
Prepaid expenses and other current assets	10,420	12,061
Prepaid income taxes	5,408	4,501
Total current assets	88,739	146,186
Property, equipment and leasehold improvements, net	11,483	13,400
Computer software development costs, net	766	667
Goodwill	55,703	51,248
Intangible assets, net	27,737	20,789
Non-current deferred tax assets	10,093	14,352
Other non-current assets	1,275	1,300
Total assets	\$195,796	\$247,942
LIABILITIES AND STOCKHOLDERS' DEFICIT		
Current liabilities:		
Accounts payable	\$3,996	\$5,467
Accrued expenses and other current liabilities	42,753	48,149
Income taxes payable	17	1,603
Borrowings under credit agreement	151,000	140,000
Current deferred revenue	232,653	272,024
Total current liabilities	430,419	467,243
Non-current deferred revenue	26,025	28,335
Other non-current liabilities	13,859	13,148
Commitments and contingencies (Note 15)		
Series D redeemable convertible preferred stock, \$0.10 par value—		
Authorized— 3,636 shares as of December 31, 2017 and June 30, 2017	—	—
Issued and outstanding— none as of December 31, 2017 and June 30, 2017		
Stockholders' deficit:		
Common stock, \$0.10 par value— Authorized—210,000,000 shares		
Issued— 102,775,919 shares at December 31, 2017 and 102,567,129 shares at June 30, 2017	10,278	10,257
Outstanding— 72,034,435 shares at December 31, 2017 and 73,421,153 shares at June 30, 2017		
Additional paid-in capital	699,428	687,479
Retained earnings	229,353	156,520
Accumulated other comprehensive income	2,933	1,459
Treasury stock, at cost—30,741,484 shares of common stock at December 31, 2017 and 29,145,976 shares at June 30, 2017	(1,216,499)	(1,116,499)
Total stockholders' deficit	(274,507)	(260,784)
Total liabilities and stockholders' deficit	\$195,796	\$247,942

See accompanying Notes to these unaudited consolidated financial statements.

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ASPEN TECHNOLOGY, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

	Six Months Ended December 31,	
	2017	2016
	(Dollars in Thousands)	
Cash flows from operating activities:		
Net income	\$ 72,833	\$ 72,011
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	3,358	3,300
Net foreign currency (gains) losses	990	(2,301)
Stock-based compensation	11,869	9,630
Deferred income taxes	4,296	182
Provision for (recovery from) bad debts	(28)	56
Tax benefits from stock-based compensation	—	1,032
Excess tax benefits from stock-based compensation	—	(1,032)
Other non-cash operating activities	207	40
Changes in assets and liabilities:		
Accounts receivable	3,656	2,494
Prepaid expenses, prepaid income taxes, and other assets	959	3,661
Accounts payable, accrued expenses, income taxes payable and other liabilities	(1,792)	5,084
Deferred revenue	(41,586)	(40,740)
Net cash provided by operating activities	54,762	53,417
Cash flows from investing activities:		
Purchases of marketable securities	—	(683,748)
Maturities of marketable securities	—	613,379
Purchases of property, equipment and leasehold improvements	(156)	(1,374)
Payments for business acquisitions, net of cash acquired	(10,800)	(36,171)
Payments for capitalized computer software costs	(356)	(100)
Net cash used in investing activities	(11,312)	(108,014)
Cash flows from financing activities:		
Exercises of stock options	3,548	4,843
Repurchases of common stock	(105,037)	(199,584)
Payments of tax withholding obligations related to restricted stock	(3,467)	(2,786)
Deferred business acquisition payments	(2,600)	—
Excess tax benefits from stock-based compensation	—	1,032
Proceeds from credit agreement	11,000	—
Payments of credit agreement issuance costs	(351)	—
Net cash used in financing activities	(96,907)	(196,495)
Effect of exchange rate changes on cash and cash equivalents	206	(218)
Decrease in cash and cash equivalents	(53,251)	(251,310)
Cash and cash equivalents, beginning of period	101,954	318,336
Cash and cash equivalents, end of period	\$ 48,703	\$ 67,026
Supplemental disclosure of cash flow information:		
Income taxes paid, net	\$ 29,742	\$ 25,000
Interest paid	2,039	1,579
Supplemental disclosure of non-cash investing and financing activities:		
	\$ (44)	\$ 506

Change in purchases of property, equipment and leasehold improvements included in accounts payable and accrued expenses

Change in common stock repurchases included in accounts payable and accrued expenses (5,037) 416

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See accompanying Notes to these unaudited consolidated financial statements.

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ASPEN TECHNOLOGY, INC. AND SUBSIDIARIES
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS

1. Interim Unaudited Consolidated Financial Statements

The accompanying interim unaudited consolidated financial statements of Aspen Technology, Inc. and its subsidiaries have been prepared on the same basis as our annual consolidated financial statements. We have omitted certain information and footnote disclosures normally included in our annual consolidated financial statements. Such interim unaudited consolidated financial statements have been prepared in conformity with U.S. Generally Accepted Accounting Principles (GAAP), as defined in the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) Topic 270, Interim Reporting, for interim financial information and with the instructions to Rule 10-01 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by GAAP for complete financial statements. It is suggested that these unaudited consolidated financial statements be read in conjunction with the audited consolidated financial statements for the year ended June 30, 2017, which are contained in our Annual Report on Form 10-K, as previously filed with the U.S. Securities and Exchange Commission (SEC). In the opinion of management, all adjustments, consisting of normal and recurring adjustments, considered necessary for a fair presentation of the financial position, results of operations, and cash flows at the dates and for the periods presented have been included and all intercompany accounts and transactions have been eliminated in consolidation. The results of operations for the three and six months ended December 31, 2017 are not necessarily indicative of the results to be expected for the subsequent quarter or for the full fiscal year.

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions. These estimates and assumptions affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Unless the context requires otherwise, references to we, our and us refer to Aspen Technology, Inc. and its subsidiaries.

2. Significant Accounting Policies

(a) Principles of Consolidation

The accompanying consolidated financial statements include the accounts of Aspen Technology, Inc. and our wholly owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

(b) Significant Accounting Policies

Our significant accounting policies are described in Note 2 to the consolidated financial statements included in our Annual Report on Form 10-K for the fiscal year ended June 30, 2017. We adopted Accounting Standards Update (ASU) No. 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting ("ASU No. 2016-09") effective July 1, 2017. Refer to Note 2 (g), "Recently Issued Accounting Pronouncements," for further information regarding the adoption of ASU No. 2016-09. There were no other significant changes to our significant accounting policies during the three and six months ended December 31, 2017.

(c) Revenue Recognition

We generate revenue from the following sources: (1) Subscription and software revenue; and (2) Services and other revenue. We sell our software products to end users primarily under fixed-term licenses. We license our software products primarily through a subscription offering which we refer to as our aspenONE licensing model, which

includes software maintenance and support, known as our Premier Plus SMS offering, for the entire term. Our aspenONE products are organized into three suites: 1) engineering; 2) manufacturing and supply chain; and 3) asset performance management. The aspenONE licensing model provides customers with access to all of the products within the aspenONE suite(s) they license. We refer to these arrangements as token arrangements. Tokens are fixed units of measure. The amount of software usage is limited by the number of tokens purchased by the customer. We also license our software through point product term arrangements, which include our Premier Plus SMS offering for the entire term, as well as perpetual license arrangements.

Four basic criteria must be satisfied before software license revenue can be recognized: persuasive evidence of an arrangement between us and an end user; delivery of our product has occurred; the fee for the product is fixed or determinable; and collection of the fee is probable.

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Persuasive evidence of an arrangement—We use a signed contract as evidence of an arrangement for software licenses and SMS. For professional services we use a signed contract and a work proposal to evidence an arrangement. In cases where both a signed contract and a purchase order are required by the customer, we consider both taken together as evidence of the arrangement.

Delivery of our product—Software and the corresponding access keys are generally delivered to customers via electronic delivery or via physical medium with standard shipping terms of Free Carrier, our warehouse (i.e., FCA, AspenTech).

Our software license agreements do not contain conditions for acceptance.

Fee is fixed or determinable—We assess whether a fee is fixed or determinable at the outset of the arrangement.

Significant judgment is involved in making this assessment.

As a standard business practice, we offer fixed-term license arrangements, which are generally payable on an annual basis.

We cannot assert that the fees under our aspenONE licensing model and point product arrangements with Premier Plus SMS are fixed or determinable because of the rights provided to customers, economics of the arrangements, and because we do not have an established history of our arrangements going to term end date without providing concessions to customers. As a result, the amount of revenue recognized for these arrangements is limited by the amount of customer payments that become due.

Collection of fee is probable—We assess the probability of collecting from each customer at the outset of the arrangement based on a number of factors, including the customer's payment history, its current creditworthiness, economic conditions in the customer's industry and geographic location, and general economic conditions. If in our judgment collection of a fee is not probable, revenue is recognized as cash is collected, provided all other conditions for revenue recognition have been met.

Vendor-Specific Objective Evidence of Fair Value (VSOE)

We have established VSOE for professional services and certain training offerings, but not for our software products or our SMS offerings. We assess VSOE for SMS, professional services, and training, based on an analysis of standalone sales of the offerings using the bell-shaped curve approach. We do not have a history of selling our Premier Plus SMS offering to customers on a standalone basis, and as a result are unable to establish VSOE for this deliverable.

Subscription and Software Revenue

Subscription and software revenue consists primarily of product and related revenue from our (i) aspenONE licensing model; (ii) point product arrangements with our Premier Plus SMS offering included for the contract term; and (iii) perpetual arrangements.

When a customer elects to license our products under our aspenONE licensing model, our Premier Plus SMS offering is included for the entire term of the arrangement and the customer receives, for the term of the arrangement, the right to any new unspecified future software products and updates that may be introduced into the licensed aspenONE software suite. Due to our obligation to provide unspecified future software products and updates and because we do not have VSOE for our Premier Plus SMS offering, we are required to recognize revenue ratably over the term of the arrangement, once the other revenue recognition criteria noted above have been met.

Our point product arrangements with Premier Plus SMS include SMS for the term of the arrangement. Since we do not have VSOE for our Premier Plus SMS offering, the SMS element of our point product arrangements is not separable. As a result, revenue associated with point product arrangements with Premier Plus SMS included for the contract term is recognized ratably over the term of the arrangement, once the other revenue recognition criteria have been met.

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Services and Other Revenue

Professional Services Revenue

Professional services are provided to customers on a time-and-materials (T&M) or fixed-price basis. We recognize professional services fees for our T&M contracts based upon hours worked and contractually agreed-upon hourly rates. Revenue from fixed-price engagements is recognized using the proportional performance method based on the ratio of costs incurred to the total estimated project costs. Project costs are typically expensed as incurred. The use of the proportional performance method is dependent upon our ability to reliably estimate the costs to complete a project. We use historical experience as a basis for future estimates to complete current projects. Additionally, we believe that costs are the best available measure of performance. Out-of-pocket expenses which are reimbursed by customers are recorded as revenue.

In certain circumstances, professional services revenue may be recognized over a longer time period than the period over which the services are performed. If the costs to complete a project are not estimable or the completion is uncertain, the revenue and related costs are recognized upon completion of the services. In circumstances in which professional services are sold as a single arrangement with, or in contemplation of, a new aspenONE license or point product arrangement with Premier Plus SMS, revenue is deferred and recognized on a ratable basis over the longer of (i) the period the services are performed, or (ii) the license term. When we provide professional services considered essential to the functionality of the software, we recognize the combined revenue from the sale of the software and related services using the completed contract or percentage-of-completion method.

We have occasionally been required to commit unanticipated additional resources to complete projects, which resulted in losses on those contracts. Provisions for estimated losses on contracts are made during the period in which such losses become probable and can be reasonably estimated.

Training Revenue

We provide training services to our customers, including on-site, Internet-based, public and customized training. Revenue is recognized in the period in which the services are performed. In circumstances in which training services are sold as a single arrangement with, or in contemplation of, a new aspenONE license or point product arrangement with Premier Plus SMS, revenue is deferred and recognized on a ratable basis over the longer of (i) the period the services are performed or (ii) the license term.

Deferred Revenue

Deferred revenue includes amounts billed or collected in advance of revenue recognition, including arrangements under the aspenONE licensing model, point product arrangements with Premier Plus SMS, professional services, and training. Deferred revenue is recorded as each invoice becomes due.

Other Licensing Matters

Our standard licensing agreements include a product warranty provision. We have not experienced significant claims related to software warranties beyond the scope of SMS support, which we are already obligated to provide, and consequently, we have not established reserves for warranty obligations.

Our agreements with our customers generally require us to indemnify the customer against claims that our software infringes third-party patent, copyright, trademark or other proprietary rights. Such indemnification obligations are generally limited in a variety of industry-standard respects, including our right to replace an infringing product. As of

December 31, 2017 and June 30, 2017, we had not experienced any material losses related to these indemnification obligations and no claims with respect thereto were outstanding. We do not expect significant claims related to these indemnification obligations, and consequently, have not established any related reserves.

(d) Loss Contingencies

We accrue estimated liabilities for loss contingencies arising from claims, assessments, litigation and other sources when it is probable that a liability has been incurred and the amount of the claim, assessment or damages can be reasonably estimated. We believe that we have sufficient accruals to cover any obligations resulting from claims, assessments or litigation that have met these criteria. Please refer to Note 15 for discussion of these matters and related liability accruals.

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(e) Foreign Currency Transactions

Foreign currency exchange gains and losses generated from the settlement and remeasurement of transactions denominated in currencies other than the functional currency of our subsidiaries are recognized in our results of operations as incurred as a component of other income (expense), net. Net foreign currency (losses) gains were \$(0.2) million and \$(0.9) million during the three and six months ended December 31, 2017, respectively, and \$0.7 million and \$1.3 million during the three and six months ended December 31, 2016, respectively.

(f) Research and Development Expense

We charge research and development expenditures to expense as the costs are incurred. Research and development expenses consist primarily of personnel expenses related to the creation of new products, enhancements and engineering changes to existing products and costs of acquired technology prior to establishing technological feasibility.

We acquired technology for \$0.4 million during the six months ended December 31, 2016. At the time we acquired the technology, the projects to develop commercially available products did not meet the accounting definition of having reached technological feasibility and therefore the cost of the acquired technology was expensed as a research and development expense.

(g) Recently Issued Accounting Pronouncements

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606). ASU No. 2014-09 supersedes the revenue recognition requirements in Revenue Recognition (Topic 605), and requires entities to recognize revenue when they transfer promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services. Under the new guidance, an entity is required to evaluate revenue recognition through a five-step process. In applying the principles of ASU 2014-09, it is possible more judgment and estimates may be required within the revenue recognition process than is required under existing U.S. GAAP, including identifying performance obligations in the contract, estimating the amount of variable consideration to include in the transaction price, and allocating the transaction price to each separate performance obligation. As currently issued and amended, ASU 2014-09 is effective for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period, though early adoption is permitted for annual reporting periods beginning after December 15, 2016. We will adopt ASU No. 2014-09 during the first quarter of fiscal 2019. Based on our preliminary assessment, the adoption of ASU No. 2014-09 will impact the timing of the license portion of the revenue recognized from our term contracts. Under the new standard, for arrangements that include term-based software licenses bundled with maintenance and support, we will be required to recognize as revenue a portion of the arrangement fee upon delivery of the software license. We are continuing to evaluate all the potential impacts of ASU No. 2014-09 on our consolidated financial statements and implementing accounting system changes related to the adoption.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). Under the amendment, lessees will be required to recognize virtually all of their leases on the balance sheet, by recording a right-of-use asset and lease liability. The ASU is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2018. Early adoption is permitted. We are currently evaluating the impact of ASU No. 2016-02 on our consolidated financial statements.

In March 2016, the FASB issued ASU No. 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. The amendment identifies several areas for simplification applicable to entities that issue share-based payment awards to their employees, including income tax consequences, the option to recognize gross stock compensation expense with actual forfeitures recognized when they occur, and certain classifications on the statements of cash flows. The ASU is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2016. We adopted ASU No. 2016-09 effective July 1, 2017.

As a result of adopting the new standard, excess tax benefits from stock-based compensation are now reflected in the consolidated statements of operations as a component of the provision for income taxes, whereas they were previously a component of stockholders' deficit. The adoption of ASU No. 2016-09 resulted in a decrease in our provision for income taxes of \$0.4 million and \$1.0 million for the three and six months ended December 31, 2017, respectively. This represents a decrease in our effective tax rate of approximately 1.0 percentage point for both the three and six months ended December 31, 2017, due to the recognition of excess tax benefits for options exercised and the vesting of equity awards. There was no change as a result of how we account for forfeitures for financial statement reporting purposes. We adopted the cash flow presentation prospectively, and accordingly, excess tax benefits from stock-based compensation of \$1.0 million is presented as a cash inflow from operating activity included within the change in income tax payable for the six months ended December 31, 2017, while \$1.0 million of excess tax benefits from equity-based compensation is presented as a financing activity for the six months

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ended December 31, 2016. We prospectively excluded the excess tax benefits from the assumed proceeds available to repurchase shares in the computation of diluted earnings per share under the treasury stock method, which did not have a material impact on our diluted earnings per share for the three and six months ended December 31, 2017.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments - Credit Losses (Topic 326). The amendment changes the impairment model for most financial assets and certain other instruments. Entities will be required to use a model that will result in the earlier recognition of allowances for losses for trade and other receivables, held-to-maturity debt securities, loans, and other instruments. For available-for-sale debt securities with unrealized losses, the losses will be recognized as allowances rather than as reductions in the amortized cost of the securities. The ASU is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2019. Early adoption is permitted. We are currently evaluating the impact of ASU No. 2016-13 on our consolidated financial statements.

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230). The amendment updates the guidance as to how certain cash receipts and cash payments should be presented and classified, and is intended to reduce the existing diversity in practice. The ASU is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2017. Early adoption is permitted. We are currently evaluating the impact of ASU No. 2016-15 on our consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-01, Business Combinations (Topic 805) - Clarifying the Definition of a Business. The amendment changes the definition of a business to assist entities in evaluating when a set of transferred assets and activities constitutes a business. The ASU is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2017. Early adoption is permitted. We do not anticipate the adoption of ASU No. 2017-01 will have a material effect on the consolidated financial statements or related disclosures.

In January 2017, the FASB issued ASU No. 2017-04, Intangibles - Goodwill and Other Topics (Topic 350) - Simplifying the Test for Goodwill Impairment. The amendment eliminates Step 2 of the goodwill impairment test and requires goodwill impairment to be measured as the amount by which a reporting unit's carrying amount exceeds its fair value, not to exceed the carrying amount of its goodwill. The ASU is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2017. Early adoption is permitted. We early adopted ASU No. 2017-04 during the three months ended December 31, 2017, prior to our annual testing of goodwill impairment. There was no impact on our consolidated financial statements and related disclosures as a result of adopting ASU No. 2017-04.

3. Fair Value

We determine fair value by utilizing a fair value hierarchy that ranks the quality and reliability of the information used in its determination. Fair values determined using "Level 1 inputs" utilize unadjusted quoted prices in active markets for identical assets or liabilities that we have the ability to access. Fair values determined using "Level 2 inputs" utilize data points that are observable, such as quoted prices, interest rates and yield curves for similar assets and liabilities.

Cash equivalents of \$4.9 million and \$79.7 million as of December 31, 2017 and June 30, 2017, respectively, were reported at fair value utilizing quoted market prices in identical markets, or "Level 1 inputs." Our cash equivalents consist of short-term, highly liquid investments with remaining maturities of three months or less when purchased.

Financial instruments not measured or recorded at fair value in the accompanying unaudited consolidated financial statements consist of accounts receivable, accounts payable and accrued liabilities. The estimated fair value of these financial instruments approximates their carrying value. The estimated fair value of the borrowings under the Credit Agreement (described below in Note 10, Credit Agreement) approximates its carrying value due to the floating interest rate.

4. Accounts Receivable

Our accounts receivable, net of the related allowance for doubtful accounts, were as follows as of December 31, 2017 and June 30, 2017:

	Gross	Allowance	Net
	(Dollars in Thousands)		
December 31, 2017:			
Accounts receivable	\$25,263	\$ 1,055	\$24,208
June 30, 2017:			
Accounts receivable	\$28,955	\$ 1,285	\$27,670

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As of December 31, 2017, we had one customer receivable balance that individually represented approximately 11% of our net accounts receivable.

5. Property and Equipment

Property, equipment and leasehold improvements in the accompanying unaudited consolidated balance sheets consisted of the following:

	December 31, 2017	June 30, 2017
	(Dollars in Thousands)	
Property, equipment and leasehold improvements, at cost:		
Computer equipment	\$ 8,366	\$ 8,262
Purchased software	24,183	24,091
Furniture & fixtures	6,861	6,805
Leasehold improvements	12,078	12,025
Property, equipment and leasehold improvements, at cost	51,488	51,183
Accumulated depreciation	(40,005)	(37,783)
Property, equipment and leasehold improvements, net	\$ 11,483	\$ 13,400

6. Acquisitions

RtTech Software, Inc.

In December 2017, we acquired certain net assets, principally technology, from RtTech Software, Inc. ("RtTech") for a total cash consideration of \$12.0 million. The purchase price consisted of \$10.8 million of cash paid at closing and an additional \$1.2 million to be held back until December 2018 as security for certain representations, warranties, and obligations of the sellers. The acquisition met the definition of a business combination as it contained inputs and processes that are capable of being operated as a business. We allocated \$8.0 million of the purchase price to developed technology and \$4.0 million to goodwill. The fair value of the developed technology of \$8.0 million was determined using the replacement cost approach. The developed technology is being amortized on a straight-line basis over its estimated useful life of seven years. The acquisition is treated as an asset purchase for tax purposes and accordingly, the goodwill resulting from the acquisition is expected to be deductible.

Mtelligence Corporation

On October 26, 2016, we completed the acquisition of all the outstanding shares of Mtelligence Corporation ("Mtell"), a provider of predictive and prescriptive maintenance software and related services used to optimize asset performance, for total cash consideration of \$37.4 million. The purchase price consisted of \$31.9 million of cash paid at closing and an additional \$5.5 million to be held back until April 2018 as security for certain representations, warranties, and obligations of the sellers. The holdback was recorded at its fair value as of the acquisition date of \$5.3 million, and is recorded in other current liabilities in our consolidated balance sheet.

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An allocation of the purchase price is as follows:

	Amount (Dollars in Thousands)
Tangible assets acquired, net	\$ 779
Identifiable intangible assets:	
Developed technology	11,385
Customer relationships	679
Non-compete agreements	553
Goodwill	25,888
Deferred tax liabilities, net	(2,099)
Total assets acquired	\$ 37,185

We used the income approach to determine the values of the identifiable intangible assets. The weighted-average discount rate (or rate of return) used to determine the value of the Mtell intangible assets was 19% and the effective tax rate used was 34%. The values of the developed technology, customer relationships and non-compete agreements are being amortized on a straight-line basis, except technology, which is being amortized on a proportional use basis, over their estimated useful lives of 12 years, 6 years and 3 years, respectively.

The goodwill, which is not deductible for tax purposes, reflects the value of the assembled workforce and the company-specific synergies we expect to realize by selling Mtell products and services to our existing customers. The results of operations of Mtell have been included prospectively in our results of operations since the date of acquisition.

7. Intangible Assets

We include in our amortizable intangible assets those intangible assets acquired in our business and asset acquisitions. We amortize acquired intangible assets with finite lives over their estimated economic lives, generally using the straight-line method. Each period, we evaluate the estimated remaining useful lives of acquired intangible assets to determine whether events or changes in circumstances warrant a revision to the remaining period of amortization. Acquired intangibles are removed from the accounts when fully amortized and no longer in use.

Intangible assets consisted of the following as of December 31, 2017 and June 30, 2017:

	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
(Dollars in Thousands)			
December 31, 2017:			
Technology and patents	\$ 30,443	\$ (4,203)	\$ 26,240
Customer relationships	1,432	(273)	1,159
Non-compete agreements	553	(215)	338
Total	\$ 32,428	\$ (4,691)	\$ 27,737
June 30, 2017:			
Technology and patents	\$ 22,350	\$ (3,254)	\$ 19,096
Customer relationships	1,432	(169)	1,263
Non-compete agreements	553	(123)	430
Total	\$ 24,335	\$ (3,546)	\$ 20,789

Total amortization expense related to intangible assets is included in operating expenses and amounted to approximately \$0.5 million and \$1.1 million for the three and six months ended December 31, 2017, respectively, and approximately \$0.1 million for the three and six months ended December 31, 2016.

Future amortization expense as of December 31, 2017 is expected to be as follows:

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Year Ended June 30,	Amortization Expense (Dollars in Thousands)
2018	\$ 1,623
2019	3,206
2020	3,277
2021	3,349
2022	3,594
Thereafter	12,688
Total	\$ 27,737

8. Goodwill

The changes in the carrying amount of goodwill for our subscription and software reporting unit during the six months ended December 31, 2017 was as follows:

	Gross Carrying Amount (Dollars in Thousands)	Accumulated Impairment Losses	Effect of Currency Translation	Net Carrying Amount
June 30, 2017:	\$ 116,817	\$ (65,569)	\$ —	\$ 51,248
Goodwill from acquisitions	4,000	—	—	4,000
Foreign currency translation	—	—	455	455
December 31, 2017:	\$ 120,817	\$ (65,569)	\$ 455	\$ 55,703

We test goodwill for impairment annually (or more often if impairment indicators arise), at the reporting unit level. We first assess qualitative factors to determine whether the existence of events or circumstances indicates that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If we determine based on this assessment that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, we perform the goodwill impairment test. The first step requires us to determine the fair value of the reporting unit and compare it to the carrying amount, including goodwill, of such reporting unit. If the fair value exceeds the carrying amount, no impairment loss is recognized. However, if the carrying amount of the reporting unit exceeds its fair value, the goodwill of the unit is impaired. In January 2017, the FASB issued ASU No. 2017-04, which eliminates Step 2 of the goodwill impairment test and requires goodwill impairment to be measured as the amount by which a reporting unit's carrying amount exceeds its fair value, not to exceed the carrying amount of its goodwill. We early adopted ASU No. 2017-04 during the three months ended December 31, 2017, prior to our annual testing of goodwill impairment. There was no impact on our consolidated financial statements and related disclosures as a result of adopting ASU No. 2017-04.

Fair value of a reporting unit is determined using a combined weighted average of a market-based approach (utilizing fair value multiples of comparable publicly traded companies) and an income-based approach (utilizing discounted projected cash flows). In applying the income-based approach, we would be required to make assumptions about the amount and timing of future expected cash flows, growth rates and appropriate discount rates. The amount and timing of future cash flows would be based on our most recent long-term financial projections. The discount rate we would utilize would be determined using estimates of market participant risk-adjusted weighted-average costs of capital and reflect the risks associated with achieving future cash flows.

We have elected December 31st as the annual impairment assessment date and perform additional impairment tests if triggering events occur. We performed our annual impairment test for the subscription and software reporting unit as of December 31, 2017 and, based upon the results of our qualitative assessment, determined that it was not likely that its fair value was less than its carrying amount. As such, we did not recognize impairment losses as a result of our

analysis. If an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying value, goodwill will be evaluated for impairment between annual tests.

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9. Accrued Expenses and Other Liabilities

Accrued expenses and other current liabilities in the accompanying unaudited consolidated balance sheets consisted of the following:

	December 31, 2017	June 30, 2017
	(Dollars in Thousands)	
Payroll and payroll-related	\$ 15,770	\$ 20,864
Royalties and outside commissions	3,035	2,733
Professional fees	2,265	2,216
Deferred acquisition payments	7,191	8,548
Other	14,492	13,788
Total accrued expenses and other current liabilities	\$ 42,753	\$ 48,149

Other non-current liabilities in the accompanying unaudited consolidated balance sheets consisted of the following:

	December 31, 2017	June 30, 2017
	(Dollars in Thousands)	
Deferred rent	\$ 7,052	\$ 6,916
Uncertain tax positions	4,228	3,921
Other	2,579	2,311
Total other non-current liabilities	\$ 13,859	\$ 13,148

10. Credit Agreement

On February 26, 2016, we entered into a \$250.0 million Credit Agreement (the “Credit Agreement”) with JPMorgan Chase Bank, N.A., as administrative agent, Silicon Valley Bank, as syndication agent, and the lenders and other parties named therein (the “Lenders”). On August 9, 2017, we entered into an Amendment to increase the Credit Agreement to \$350.0 million. The indebtedness evidenced by the Credit Agreement matures on February 26, 2021. Prior to the maturity of the Credit Agreement, any amounts borrowed may be repaid and, subject to the terms and conditions of the Credit Agreement, borrowed again in whole or in part without penalty. We had \$151.0 million and \$140.0 million in outstanding borrowings under the Credit Agreement as of December 31, 2017 and June 30, 2017, respectively.

Borrowings under the Credit Agreement bear interest at a rate equal to either, at our option, the sum of (a) the highest of (1) the rate of interest publicly announced by JPMorgan Chase Bank, N.A. as its prime rate in effect, (2) the Federal Funds Effective Rate plus 0.5%, and (3) the one-month Adjusted LIBO Rate plus 1.0%, plus (b) a margin initially of 0.5% for the first full fiscal quarter ending after the date of the Credit Agreement and thereafter based on our Leverage Ratio; or the Adjusted LIBO Rate plus a margin initially of 1.5% for the first full fiscal quarter ending after the date of the Credit Agreement and thereafter based on our Leverage Ratio. We must also pay, on a quarterly basis, an unused commitment fee at a rate of between 0.2% and 0.3% per annum, based on our Leverage Ratio. The interest rates as of December 31, 2017 were 3.07% on \$140.0 million of our outstanding borrowings and 2.91% on the remaining \$11.0 million of our outstanding borrowings.

All borrowings under the Credit Agreement are secured by liens on substantially all of our assets. The Credit Agreement contains affirmative and negative covenants customary for facilities of this type, including restrictions on: incurrence of additional debt; liens; fundamental changes; asset sales; restricted payments; and transactions with

affiliates. The Credit Agreement contains financial covenants regarding maintenance as of the end of each fiscal quarter, commencing with the quarter ending June 30, 2016, of a maximum Leverage Ratio of 3.0 to 1.0 and a minimum Interest Coverage Ratio of 3.0 to 1.0. As of December 31, 2017 we were in compliance with these covenants.

11. Stock-Based Compensation

The weighted average estimated fair value of option awards granted was \$16.65 and \$16.86 during the three and six months ended December 31, 2017, respectively, and \$12.45 and \$12.96 during the three and six months ended December 31, 2016, respectively.

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We utilized the Black-Scholes option valuation model with the following weighted average assumptions:

	Six Months Ended December 31, 2017 2016	
Risk-free interest rate	1.7 %	1.1 %
Expected dividend yield	0.0 %	0.0 %
Expected life (in years)	4.6	4.6
Expected volatility factor	28.1 %	31.4 %

The stock-based compensation expense under all equity plans and its classification in the unaudited consolidated statements of operations for the three and six months ended December 31, 2017 and 2016 are as follows:

	Three Months Ended December 31, 2017 2016		Six Months Ended December 31, 2017 2016	
	(Dollars in Thousands)			
Recorded as expenses:				
Cost of services and other	\$324	\$374	\$774	\$743
Selling and marketing	1,006	1,010	1,891	1,965
Research and development	1,891	1,495	3,788	2,558
General and administrative	2,234	1,792	5,416	4,364
Total stock-based compensation	\$5,455	\$4,671	\$11,869	\$9,630

A summary of stock option and RSU activity under all equity plans for the six months ended December 31, 2017 is as follows:

	Stock Options			Restricted Stock Units		
	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in 000's)	Shares	Weighted Average Grant Date Fair Value
Outstanding at June 30, 2017	1,353,558	\$ 37.98	7.30	\$ 23,535	615,998	\$ 45.62
Granted	386,556	63.24			319,741	63.24
Settled (RSUs)	—				(158,814)	49.79
Exercised	(103,334)	34.29			—	
Cancelled / Forfeited	(33,563)	50.54			(27,152)	54.83
Outstanding at December 31, 2017	1,603,217	\$ 44.05	7.54	\$ 35,522	749,773	\$ 51.92
Vested and exercisable at December 31, 2017	878,023	\$ 36.56	6.42	\$ 26,023	—	
Vested and expected to vest as of December 31, 2017	1,527,998	\$ 43.58	7.47	\$ 34,563	670,628	\$ 51.94

The weighted average grant-date fair value of RSUs granted was \$66.52 and \$63.24 during the three and six months ended December 31, 2017, respectively, and \$47.73 and \$45.93 during the three and six months ended December 31,

2016, respectively. The total fair value of shares vested from RSU grants was \$4.9 million and \$10.2 million during the three and six months ended December 31, 2017, respectively, and \$4.2 million and \$8.3 million during the three and six months ended December 31, 2016, respectively.

At December 31, 2017, the total future unrecognized compensation cost related to stock options was \$9.4 million and is expected to be recorded over a weighted average period of 2.8 years. At December 31, 2017, the total future unrecognized compensation cost related to RSUs was \$32.5 million and is expected to be recorded over a weighted average period of 2.8 years.

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The total intrinsic value of options exercised was \$1.3 million and \$2.9 million during the three and six months ended December 31, 2017, respectively, and \$1.4 million and \$4.1 million during the three and six months ended December 31, 2016, respectively. We received cash proceeds from option exercises of \$1.1 million and \$3.5 million during the three and six months ended December 31, 2017, respectively, and \$1.8 million and \$4.8 million during the three and six months ended December 31, 2016, respectively. We withheld withholding taxes on vested RSUs of \$1.8 million and \$3.4 million during the three and six months ended December 31, 2017, respectively, and \$1.5 million and \$2.8 million during the three and six months ended December 31, 2016, respectively.

At December 31, 2017, common stock reserved for future issuance or settlement under equity compensation plans was 10.5 million shares.

12. Stockholders' Deficit

Stock Repurchases

On January 22, 2015, our Board of Directors approved a share repurchase program (the "Share Repurchase Program") for up to \$450.0 million worth of our common stock. On April 26, 2016 and June 8, 2017, the Board of Directors approved a \$400.0 million and \$200.0 million increase to the Share Repurchase Program, respectively. The timing and amount of any shares repurchased are based on market conditions and other factors. All shares of our common stock repurchased have been recorded as treasury stock under the cost method.

During the three and six months ended December 31, 2017, we repurchased 756,349 and 1,595,508 shares, respectively, of our common stock in the open market for \$50.0 million and \$100.0 million, respectively. As of December 31, 2017, the total remaining value under the Share Repurchase Program was approximately \$246.3 million.

Accumulated Other Comprehensive Income

As of December 31, 2017, accumulated other comprehensive income was comprised of foreign currency translation adjustments of \$2.9 million. As of June 30, 2017, accumulated other comprehensive income was comprised of foreign currency translation adjustments of \$1.5 million and net unrealized gains on available for sale securities of less than \$0.1 million.

13. Net Income Per Share

Basic income per share is determined by dividing net income by the weighted average common shares outstanding during the period. Diluted income per share is determined by dividing net income by diluted weighted average shares outstanding during the period. Diluted weighted average shares reflect the dilutive effect, if any, of potential common shares. To the extent their effect is dilutive, employee equity awards and other commitments to be settled in common stock are included in the calculation of diluted net income per share based on the treasury stock method.

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The calculations of basic and diluted net income per share and basic and dilutive weighted average shares outstanding for the three and six months ended December 31, 2017 and 2016 are as follows:

	Three Months Ended December 31,		Six Months Ended December 31,	
	2017	2016	2017	2016
	(Dollars and Shares in Thousands, Except per Share Data)			
Net income	\$ 38,078	\$ 37,010	\$ 72,833	\$ 72,011
Weighted average shares outstanding	72,342	76,905	72,683	77,977
Dilutive impact from:				
Share-based payment awards	694	413	650	379
Dilutive weighted average shares outstanding	73,036	77,318	73,333	78,356
Income per share				
Basic	\$ 0.53	\$ 0.48	\$ 1.00	\$ 0.92
Dilutive	\$ 0.52	\$ 0.48	\$ 0.99	\$ 0.92

For the three and six months ended December 31, 2017 and 2016, certain employee equity awards were anti-dilutive based on the treasury stock method. The following employee equity awards were excluded from the calculation of dilutive weighted average shares outstanding because their effect would be anti-dilutive as of December 31, 2017 and 2016:

	Three Months Ended December 31, 2017		Six Months Ended December 31, 2016	
	(Shares in Thousands)			
Employee equity awards	388	721	664	873

Included in the table above are options to purchase 10,723 and 377,740 shares of our common stock during the three and six months ended December 31, 2017, respectively, which were not included in the computation of dilutive weighted average shares outstanding, because their exercise prices ranged from \$63.25 per share to \$66.57 per share and were greater than the average market price of our common stock during the periods then ended. These options were outstanding as of December 31, 2017 and expire at various dates through December 5, 2027.

14. Income Taxes

The effective tax rate for the periods presented was primarily the result of income earned in the U.S., taxed at U.S. federal and state statutory income tax rates, income earned in foreign tax jurisdictions taxed at the applicable rates, as well as the impact of permanent differences between book and tax income.

On December 22, 2017, the President of the United States signed into law Public Law No. 115-97, commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"), following its passage by the United States Congress. The Tax Act will make significant changes to U.S. federal income tax laws, including reduction of the corporate tax rate from 35.0% to

21.0%, limitation of the tax deduction for interest expense to 30.0% of earnings (except for certain small businesses), limitation of the deduction for net operating losses to 80.0% of current year taxable income and elimination of net operating loss carrybacks, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, elimination of U.S. tax on foreign earnings (subject to certain important exceptions), immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modifying or repealing many business deductions.

As a result of the Tax Act, we have revised our estimated annual effective rate to reflect a change in the federal statutory rate from 35.0% to 21.0%. The rate change is administratively effective as of January 1, 2018. As a result, the blended statutory tax rate for our fiscal year is 28.1%.

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Our effective tax rate was 28.2% and 30.4% for the three and six months ended December 31, 2017, respectively, and 33.9% and 35.0% for the three and six months ended December 31, 2016, respectively. Our effective tax rate decreased for the three and six months ended December 31, 2017 compared to the same periods in 2016 due to a reduction in the federal corporate tax rate from 35.0% to the blended rate of 28.1%, partially offset by a discrete tax expense of \$4.3 million due to the revaluation of the net deferred tax assets as of the enactment date of the Tax Act on December 22, 2017 due to the reduction in the tax rate. During the three and six months ended December 31, 2017 and 2016, our income tax expense was driven primarily by pre-tax profitability in our domestic and foreign operations and the impact of permanent items. The permanent items are predominantly a U.S. domestic production activity deduction and tax credits for research expenditures.

The Tax Act has several significant changes that impacts all taxpayers, including a transition tax, which is a one-time tax charge on accumulated, undistributed foreign earnings. The calculation of accumulated foreign earnings requires an analysis of each foreign entity's financial results going back to 1986. We are currently estimating that we will not be subject to the transition tax associated with our accumulated, undistributed foreign earnings. We will continue to evaluate this area and expect to finalize our conclusions by the end of fiscal 2018.

We adopted ASU No. 2016-09 effective July 1, 2017. As a result of adopting the new standard, excess tax benefits from stock-based compensation are now reflected in the consolidated statements of operations as a component of the provision for income taxes, whereas they were previously a component of stockholders' deficit. The adoption of ASU No. 2016-09 resulted in a decrease in our provision for income taxes of \$0.4 million and \$1.0 million for the three and six months ended December 31, 2017, respectively. This represents a decrease in our effective tax rate of approximately 1.0 percentage point for both the three and six months ended December 31, 2017, due to the recognition of excess tax benefits for options exercised and the vesting of equity awards.

Deferred income taxes are recognized based on temporary differences between the financial statement and tax bases of assets and liabilities. Deferred tax assets and liabilities are measured using the statutory tax rates and laws expected to apply to taxable income in the years in which the temporary differences are expected to reverse. Valuation allowances are provided against net deferred tax assets if, based upon the available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income and the timing of the temporary differences becoming deductible. Management considers, among other available information, scheduled reversals of deferred tax liabilities, projected future taxable income, limitations of availability of net operating loss carryforwards, and other matters in making this assessment.

We do not provide deferred taxes on unremitted earnings of our foreign subsidiaries as we intend to indefinitely reinvest those earnings. We are also estimating that the transition tax on any undistributed earnings that existed as of December 31, 2017 will be zero.

15. Commitments and Contingencies

Operating Leases

We lease certain facilities under non-cancellable operating leases with terms in excess of one year. Rental expense on leased facilities under operating leases was approximately \$2.0 million and \$4.1 million during the three and six months ended December 31, 2017, respectively, and \$2.1 million and \$4.2 million during the three and six months ended December 31, 2016, respectively.

Standby letters of credit for \$3.0 million and \$2.9 million secure our performance on professional services contracts, certain facility leases and potential liabilities as of December 31, 2017 and June 30, 2017, respectively. The letters of credit expire at various dates through fiscal 2025.

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Legal Matters

In the ordinary course of business, we are, from time to time, involved in lawsuits, claims, investigations, proceedings and threats of litigation. These matters include an April 2004 claim by a customer that certain of our software products and implementation services failed to meet the customer's expectations. In March 2014, a judgment was issued by the trial court against us in the amount of approximately 1.9 million Euro ("€") plus interest and a portion of legal fees. We subsequently filed an appeal of that judgment. In March 2016, the appellate court determined that we are liable for damages in the amount of approximately €1.7 million plus interest, with the possibility of additional damages to be determined in further proceedings by the appellate court. In December 2017, following additional proceedings in the appellate court, the court issued a judgment against us in the amount of approximately €3.5 million, including interest, plus approximately €0.1 million in costs and legal fees. As of December 31, 2017, there has been no change to the appellate court's determination.

While the outcome of the proceedings and claims referenced above cannot be predicted with certainty, there were no such matters, as of December 31, 2017 that, in the opinion of management, are reasonably possible to have a material adverse effect on our financial position, results of operations or cash flows. Liabilities, if applicable, related to the aforementioned matters discussed in this Note have been included in our accrued liabilities at December 31, 2017, and are not material to our financial position for the period then ended. As of December 31, 2017, we do not believe that there is a reasonable possibility of a material loss exceeding the amounts already accrued for the proceedings or matters discussed above. However, the results of litigation (including the above-referenced appeal) and claims cannot be predicted with certainty; unfavorable resolutions are possible and could materially affect our results of operations, cash flows or financial position. In addition, regardless of the outcome, litigation could have an adverse impact on us because of attorneys' fees and costs, diversion of management resources and other factors.

16. Segment Information

Operating segments are defined as components of an enterprise that engage in business activities for which discrete financial information is available and regularly reviewed by the chief operating decision maker in deciding how to allocate resources and to assess performance. Our chief operating decision maker is our President and Chief Executive Officer.

The subscription and software segment is engaged in the licensing of process optimization and asset performance management software solutions and associated support services. The services segment includes professional services and training. We do not track assets or capital expenditures by operating segments. Consequently, it is not practical to present assets, capital expenditures, depreciation or amortization by operating segments.

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The following table presents a summary of our reportable segments' profits:

	Subscription and Software	Services	Total
	(Dollars in Thousands)		
Three Months Ended December 31, 2017			
Segment revenue	\$ 117,658	\$ 7,244	\$ 124,902
Segment expenses (1)	(49,656)	(6,603)	(56,259)
Segment profit	\$ 68,002	\$ 641	\$ 68,643
Three Months Ended December 31, 2016			
Segment revenue	\$ 112,916	\$ 7,017	\$ 119,933
Segment expenses (1)	(45,602)	(6,403)	(52,005)
Segment profit	\$ 67,314	\$ 614	\$ 67,928

	Subscription and Software	Services	Total
	(Dollars in Thousands)		
Six Months Ended December 31, 2017			
Segment revenue	\$ 233,414	\$ 14,269	\$ 247,683
Segment expenses (1)	(98,499)	(13,552)	(112,051)
Segment profit	\$ 134,915	\$ 717	\$ 135,632
Six Months Ended December 31, 2016			
Segment revenue	\$ 226,360	\$ 13,623	\$ 239,983
Segment expenses (1)	(91,328)	(12,839)	(104,167)
Segment profit	\$ 135,032	\$ 784	\$ 135,816

(1) Our reportable segments' operating expenses include expenses directly attributable to the segments. Segment expenses include selling and marketing, research and development, stock-based compensation and certain corporate expenses incurred in support of the segments. Segment expenses do not include allocations of general and administrative; interest income, net; and other income, net.

Reconciliation to Income before Income Taxes

The following table presents a reconciliation of total segment profit to income before income taxes for the three and six months ended December 31, 2017 and 2016:

	Three Months Ended December 31,		Six Months Ended December 31,	
	2017	2016	2017	2016
	(Dollars in Thousands)			
Total segment profit for reportable segments	\$ 68,643	\$ 67,928	\$ 135,632	\$ 135,816
General and administrative	(14,178)	(11,863)	(27,854)	(25,020)
Other (expense) income, net	(238)	697	(854)	1,344
Interest (expense) income, net	(1,221)	(676)	(2,286)	(1,274)
Income before income taxes	\$ 53,006	\$ 56,086	\$ 104,638	\$ 110,866

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

You should read the following discussion in conjunction with our unaudited consolidated financial statements and related notes thereto contained in this report. In addition to historical information, this discussion contains forward-looking statements that involve risks and uncertainties. You should read "Item 1A. Risk Factors" of Part II for a discussion of important factors that could cause our actual results to differ materially from our expectations.

Our fiscal year ends on June 30th, and references in this Quarterly Report to a specific fiscal year are to the twelve months ended June 30th of such year (for example, "fiscal 2018" refers to the year ending on June 30, 2018).

Business Overview

We are a leading global supplier of asset optimization solutions that optimize asset design, operations and maintenance in complex, industrial environments. We combine decades of process modeling and operations expertise with big data machine-learning and analytics. Our purpose-built software solutions improve the competitiveness and profitability of our customers by increasing throughput, energy efficiency, and production, reducing unplanned downtime, enhancing capital efficiency, and decreasing working capital requirements over the entire asset lifecycle to support operational excellence.

Our software incorporates our proprietary mathematical and empirical models of manufacturing and planning processes and reflects the deep domain expertise we have amassed from focusing on solutions for the process and other capital-intensive industries for over 35 years. We have developed our applications to design and optimize processes across three principal business areas: engineering, manufacturing and supply chain, and asset performance management. We are a recognized market and technology leader in providing process optimization and asset performance management software solutions for each of these business areas.

We have established sustainable competitive advantages based on the following strengths:

- Innovative products that can enhance our customers' profitability and productivity;
- Long-term customer relationships;
- Large installed base of users of our software; and
- Long-term license contracts.

We have approximately 2,100 customers globally. Our customers consist of companies in the process and other capital-intensive industries such as energy, chemicals, engineering and construction, as well as pharmaceuticals, transportation, power, metals and mining, pulp and paper, and consumer packaged goods.

Business Segments

We have two operating and reportable segments: i) subscription and software and ii) services. The subscription and software segment is engaged in the licensing of asset optimization software solutions and associated support services. The services segment includes professional services and training.

Key Components of Operations

Revenue

We generate revenue primarily from the following sources:

Subscription and Software Revenue. We sell our software products to end users primarily under fixed-term licenses. We license our software products primarily through a subscription offering which we refer to as our aspenONE licensing model, which includes software maintenance and support, known as our Premier Plus SMS offering, for the entire term. Our aspenONE products are organized into three suites: 1) engineering; 2) manufacturing and supply chain; and 3) asset performance management. The aspenONE licensing model provides customers with access to all of the products within the aspenONE suite(s) they license. Customers can change or alternate the use of multiple products in a licensed suite through the use of exchangeable units of measurement, called tokens, licensed in quantities determined by the customer. This licensing system enables customers to use products as needed and to experiment with different products to best solve whatever critical business challenges they face. Customers can increase their usage of our software by purchasing additional tokens as business needs evolve.

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We provide customers technical support, access to software fixes and updates and the right to any new unspecified future software products and updates that may be introduced into the licensed aspenONE software suite. Our technical support services are provided from our customer support centers throughout the world, as well as via email and through our support website.

We also license our software through point product arrangements with our Premier Plus SMS offering included for the contract term, as well as perpetual license arrangements.

Services and Other Revenue. We provide training and professional services to our customers. Our professional services are focused on implementing our technology in order to improve customers' plant performance and gain better operational data. Customers who use our professional services typically engage us to provide those services over periods of up to 24 months. We charge customers for professional services on a time-and-materials or fixed-price basis. We provide training services to our customers, including on-site, Internet-based and customized training.

Our services and other revenue consists of revenue related to professional services and training. The amount and timing of this revenue depend on a number of factors, including:

- whether the professional services arrangement was sold as a single arrangement with, or in contemplation of, a new aspenONE licensing arrangement;
- the number, value and rate per hour of service transactions booked during the current and preceding periods;
- the number and availability of service resources actively engaged on billable projects;
- the timing of milestone acceptance for engagements contractually requiring customer sign-off;
- the timing of collection of cash payments when collectability is uncertain;
- and
- the size of the installed base of license contracts.

Cost of Revenue

Cost of Subscription and Software. Our cost of subscription and software revenue consists of (i) royalties, (ii) amortization of capitalized software and intangibles, (iii) distribution fees, and (iv) costs of providing Premier Plus SMS bundled with our aspenONE licensing and point product arrangements.

Cost of Services and Other. Our cost of services and other revenue consists primarily of personnel-related and external consultant costs associated with providing customers professional services and training.

Operating Expenses

Selling and Marketing Expenses. Selling expenses consist primarily of the personnel and travel expenses related to the effort expended to license our products and services to current and potential customers, as well as for overall management of customer relationships. Marketing expenses include expenses needed to promote our company and our products and to conduct market research to help us better understand our customers and their business needs.

Research and Development Expenses. Research and development expenses consist primarily of personnel expenses related to the creation of new software products, enhancements and engineering changes to existing products and costs of acquired technology prior to establishing technological feasibility.

General and Administrative Expenses. General and administrative expenses include the costs of corporate and support functions, such as executive leadership and administration groups, finance, legal, human resources and corporate communications, and other costs, such as outside professional and consultant fees and provision for bad debts.

Other Income and Expenses

Interest Income. Interest income is recorded for the accretion of interest on the investment in marketable securities and short-term money market instruments.

Interest Expense. During the three and six months ended December 31, 2017 and 2016, interest expense was primarily related to the Credit Agreement we entered into with various lenders on February 26, 2016, as amended August 9, 2017 (the "Credit Agreement").

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Other Income (Expense), Net. Other income (expense), net is comprised primarily of foreign currency exchange gains (losses) generated from the settlement and remeasurement of transactions denominated in currencies other than the functional currency of our operating units.

Provision for Income Taxes. Provision for income taxes is comprised of domestic and foreign taxes. We record interest and penalties related to income tax matters as a component of income tax expense. Our effective income tax rate may fluctuate between fiscal years and from quarter to quarter due to items arising from discrete events, such as tax benefits from the disposition of employee equity awards, settlements of tax audits and assessments and tax law changes. Our effective income tax rate is also impacted by, and may fluctuate in any given period because of, the composition of income in foreign jurisdictions where tax rates differ.

Key Business Metrics

We utilize certain key non-GAAP and other business measures to track and assess the performance of our business and we make these measures available to investors. We have refined the set of appropriate business metrics in the context of our evolving business and use the following non-GAAP business metrics in addition to GAAP measures to track our business performance:

• Annual spend;

• Free cash flow; and

• Non-GAAP operating income.

None of these metrics should be considered as an alternative to any measure of financial performance calculated in accordance with GAAP.

Annual Spend

Annual spend is an estimate of the annualized value of our portfolio of term license arrangements, as of a specific date. Management believes that this financial measure is a useful metric to investors as it provides insight into the growth component of license bookings during a fiscal period. Annual spend is calculated by summing the most recent annual invoice value of each of our active term license contracts. Annual spend also includes the annualized value of standalone SMS agreements purchased in conjunction with term license agreements. Comparing annual spend for different dates can provide insight into the growth and retention rates of our business, and since annual spend represents the estimated annualized billings associated with our active term license agreements, it provides insight into the future value of subscription and software revenue.

Annual spend increases as a result of:

• New term license agreements with new or existing customers;

• Renewals or modifications of existing term license agreements that result in higher license fees due to price escalation or an increase in the number of tokens (units of software usage) or products licensed; and

• Escalation of annual payments in our active term license contracts.

Annual spend is adversely affected by term license and standalone SMS agreements that are renewed at a lower entitlement level or not renewed and, to a lesser extent, by customer contracts that are terminated during the contract term due to the customer ceasing operations.

We estimate that annual spend grew by approximately 1.7% during the second quarter of fiscal 2018, from \$460.9 million at September 30, 2017 to \$469.0 million at December 31, 2017, and by approximately 2.0% during the first six months of fiscal 2018, from \$459.6 million at June 30, 2017.

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Free Cash Flow

We use a non-GAAP measure of free cash flow to analyze cash flows generated from our operations. Management believes that this financial measure is useful to investors because it permits investors to view our performance using the same tools that management uses to gauge progress in achieving our goals. We believe this measure is also useful to investors because it is an indication of cash flow that may be available to fund investments in future growth initiatives or to repay borrowings under the Credit Agreement, and it is a basis for comparing our performance with that of our competitors. The presentation of free cash flow is not meant to be considered in isolation or as an alternative to cash flows from operating activities as a measure of liquidity.

Free cash flow is calculated as net cash provided by operating activities adjusted for the net impact of: purchases of property, equipment and leasehold improvements; capitalized computer software development costs; excess tax benefits from stock-based compensation; non-capitalized acquired technology; and other nonrecurring items, such as acquisition related payments.

The following table provides a reconciliation of net cash flows provided by operating activities to free cash flow for the indicated periods:

	Six Months Ended December 31,	
	2017	2016
	(Dollars in Thousands)	
Net cash provided by operating activities	\$ 54,762	\$ 53,417
Purchases of property, equipment, and leasehold improvements	(156)	(1,374)
Capitalized computer software development costs	(356)	(100)
Non-capitalized acquired technology	75	846
Excess tax benefits from stock-based compensation	—	1,032
Acquisition related fee payments	88	413
Free cash flows (non-GAAP)	\$ 54,413	\$ 54,234

Total free cash flow on a non-GAAP basis increased by \$0.2 million during the six months ended December 31, 2017 as compared to the same period of the prior fiscal year primarily due to changes in working capital.

In the six months ended December 31, 2017 and 2016, we have excluded payments of \$0.1 million and \$0.8 million, respectively, for non-capitalized acquired technology (including \$0.1 million and \$0.5 million, respectively, of final payments related to non-capitalized acquired technology from prior fiscal periods) from free cash flow to be consistent with the treatment of other transactions where the acquired assets were capitalized.

Non-GAAP Operating Income

Non-GAAP operating income excludes certain non-cash and non-recurring expenses, and is used as a supplement to operating income presented on a GAAP basis. We believe that non-GAAP operating income is a useful financial measure because removing certain non-cash and other items provides additional insight into recurring profitability and cash flow from operations.

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The following table presents our net income, as adjusted for stock-based compensation expense, non-capitalized acquired technology and amortization of purchased technology intangibles, and other items, such as the impact of litigation judgments and acquisition related fees, for the indicated periods:

	Three Months Ended December 31,		2017 Compared to 2016			Six Months Ended December 31,		2017 Compared to 2016		
	2017	2016	\$	%		2017	2016	\$	%	
(Dollars in Thousands)										
GAAP income from operations	\$54,465	\$56,065	\$ (1,600)	(2.9)%		\$107,778	\$110,796	\$ (3,018)	(2.7)%	
Plus:										
Stock-based compensation	5,455	4,671	784	16.8 %		11,869	9,630	2,239	23.3 %	
Non-capitalized acquired technology	—	—	—	— %		—	350	(350)	(100.0)%	
Amortization of intangibles	526	56	470	839.3 %		1,052	111	941	847.7 %	
Litigation judgment	1,548	—	1,548	100.0 %		1,548	—	1,548	100.0 %	
Acquisition related fees	198	99	99	100.0 %		328	461	(133)	(28.9)%	
Non-GAAP income from operations	\$62,192	\$60,891	\$ 1,301	2.1 %		\$122,575	\$121,348	\$ 1,227	1.0 %	

During the six months ended December 31, 2016, we acquired technology that did not meet the accounting requirements for capitalization and therefore the cost of the acquired technology was expensed as research and development. We have excluded the expense of the acquired technology from non-GAAP operating income to be consistent with transactions where the acquired assets were capitalized. During the three and six months ended December 31, 2017, we incurred an expense associated with a litigation judgment in the amount of \$1.5 million. We have excluded the expense of the litigation judgment from non-GAAP operating income to reflect the non-recurring nature of the expense.

Critical Accounting Estimates and Judgments

Note 2, "Significant Accounting Policies" to the audited consolidated financial statements in our Annual Report on Form 10-K for the fiscal year ended June 30, 2017 describes the significant accounting policies and methods used in the preparation of the consolidated financial statements appearing in this report. The accounting policies that reflect our more significant estimates, judgments and assumptions in the preparation of our consolidated financial statements are described in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of our Annual Report on Form 10-K for the fiscal year ended June 30, 2017, and include the following:

• revenue recognition;

• accounting for income taxes; and

• loss contingencies.

There were no significant changes to our critical accounting policies and estimates during the three and six months ended December 31, 2017.

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Results of Operations

Comparison of the Three and Six Months Ended December 31, 2017

The following table sets forth the results of operations and the period-over-period percentage change in certain financial data for the three and six months ended December 31, 2017:

	Three Months Ended December 31,		Increase / (Decrease) Change		Six Months Ended December 31,		Increase / (Decrease) Change	
	2017	2016	%		2017	2016	%	
	(Dollars in Thousands)							
Revenue:								
Subscription and software	\$ 117,658	\$ 112,916	4.2	%	\$ 233,414	\$ 226,360	3.1	%
Services and other	7,244	7,017	3.2	%	14,269	13,623	4.7	%
Total revenue	124,902	119,933	4.1	%	247,683	239,983	3.2	%
Cost of revenue:								
Subscription and software	5,486	5,176	6.0	%	11,269	10,245	10.0	%
Services and other	6,603	6,403	3.1	%	13,552	12,839	5.6	%
Total cost of revenue	12,089	11,579	4.4	%	24,821	23,084	7.5	%
Gross profit	112,813	108,354	4.1	%	222,862	216,899	2.7	%
Operating expenses:								
Selling and marketing	24,380	21,829	11.7	%	47,951	43,854	9.3	%
Research and development	19,790	18,597	6.4	%	39,279	37,229	5.5	%
General and administrative	14,178	11,863	19.5	%	27,854	25,020	11.3	%
Total operating expenses, net	58,348	52,289	11.6	%	115,084	106,103	8.5	%
Income from operations	54,465	56,065	(2.9)	%	107,778	110,796	(2.7)	%
Interest income	40	216	(81.5)	%	181	488	(62.9)	%
Interest (expense)	(1,261)	(892)	41.4	%	(2,467)	(1,762)	40.0	%
Other (expense) income, net	(238)	697	(134.1)	%	(854)	1,344	(163.5)	%
Income before provision for income taxes	53,006	56,086	(5.5)	%	104,638	110,866	(5.6)	%
Provision for income taxes	14,928	19,076	(21.7)	%	31,805	38,855	(18.1)	%
Net income	\$ 38,078	\$ 37,010	2.9	%	\$ 72,833	\$ 72,011	1.1	%

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The following table sets forth the results of operations as a percentage of net revenue for certain financial data for the three and six months ended December 31, 2017:

	Three Months Ended December 31, 2017		2016		Six Months Ended December 31, 2017		2016	

The period-over-period increase of \$4.7 million and \$7.1 million in subscription and software revenue during the three and six months ended December 31, 2017, respectively, was primarily attributable to the growth of our base of license arrangements being recognized on a ratable basis.

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We expect subscription and software revenue to continue to increase as a result of: (i) having a larger base of license arrangements recognized on a ratable basis; (ii) increased customer usage of our software; (iii) adding new customers; and (iv) escalating annual payments.

Services and Other Revenue

	Three Months Ended December 31,		Period-to-Period Change		Six Months Ended December 31,		Period-to-Period Change	
	2017	2016	\$	%	2017	2016	\$	%
	(Dollars in Thousands)							
Services and other revenue	\$7,244	\$7,017	\$ 227	3.2 %	\$14,269	\$13,623	\$ 646	4.7 %
As a percent of total revenue	5.8 %	5.9 %			5.8 %	5.7 %		

The period-over-period increase of \$0.2 million in services and other revenue during the three months ended December 31, 2017 was primarily attributable to higher training revenue of \$0.3 million and lower professional services revenue of \$0.1 million.

The period-over-period increase of \$0.6 million in services and other revenue during the six months ended December 31, 2017 was primarily attributable to higher professional services revenue of \$0.5 million and higher training revenue of \$0.1 million.

Under the aspenONE licensing model, revenue from committed professional service arrangements that are sold as a single arrangement with, or in contemplation of, a new aspenONE licensing transaction is deferred and recognized on a ratable basis over the longer of (a) the period the services are performed or (b) the term of the related software arrangement. As our typical contract term approximates five years, professional services revenue on these types of arrangements will usually be recognized over a longer period than the period over which the services are performed.

Cost of Revenue

Cost of Subscription and Software Revenue

	Three Months Ended December 31,		Period-to-Period Change		Six Months Ended December 31,		Period-to-Period Change	
	2017	2016	\$	%	2017	2016	\$	%
	(Dollars in Thousands)							
Cost of subscription and software revenue	\$5,486	\$5,176	\$ 310	6.0 %	\$11,269	\$10,245	\$ 1,024	10.0 %
As a percent of subscription and software revenue	4.7 %	4.6 %			4.8 %	4.5 %		

Cost of subscription and software revenue increased \$0.3 million and \$1.0 million for the three and six months ended December 31, 2017, respectively, as compared to the corresponding periods of the prior fiscal year primarily due to increased amortization expense related to acquired technology.

Subscription and software gross profit margin was consistent at 95.3% and 95.4% during the three months ended December 31, 2017 and 2016, respectively. Subscription and software gross profit margin was consistent at 95.2% and 95.5% during the six months ended December 31, 2017 and 2016, respectively.

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Cost of Services and Other Revenue

	Three Months Ended December 31,		Period-to-Period Change		Six Months Ended December 31,		Period-to-Period Change	
	2017	2016	\$	%	2017	2016	\$	%
	(Dollars in Thousands)							
Cost of services and other revenue	\$6,603	\$6,403	\$ 200	3.1 %	\$13,552	\$12,839	\$ 713	5.6 %
As a percent of services and other revenue	91.2	% 91.2	%		95.0	% 94.2	%	

The timing of revenue and expense recognition on professional service arrangements can impact the comparability of cost and gross profit margin of professional services revenue from year to year.

Cost of services and other revenue increased \$0.2 million and \$0.7 million for the three and six months ended December 31, 2017, respectively, as compared to the corresponding period of the prior fiscal year.

Gross profit margin on services and other revenue of 8.8% for the three months ended December 31, 2017 was consistent with the corresponding period of the prior fiscal year.

Gross profit margin on services and other revenue of 5.0% for the six months ended December 31, 2017 decreased from 5.8% for the corresponding period of the prior fiscal year, primarily due to higher subcontractor costs of \$0.6 million.

Gross Profit

Gross profit increased \$4.5 million and \$6.0 million for the three and six months ended December 31, 2017, respectively, as compared to the corresponding period of the prior fiscal year.

Gross profit margin of 90.3% during the three months ended December 31, 2017 was consistent with the corresponding period of the prior fiscal year, while it decreased from 90.4% during the six months ended December 31, 2016 to 90.0% during the corresponding period of the current fiscal year. For further discussion of subscription and software gross profit and services and other gross profit, please refer to the “Cost of Subscription and Software Revenue” and “Cost of Services and Other Revenue” sections above.

Operating Expenses

Selling and Marketing Expense

	Three Months Ended December 31,		Period-to-Period Change		Six Months Ended December 31,		Period-to-Period Change	
	2017	2016	\$	%	2017	2016	\$	%
	(Dollars in Thousands)							
Selling and marketing expense	\$24,380	\$21,829	\$ 2,551	11.7 %	\$47,951	\$43,854	\$ 4,097	9.3 %
As a percent of total revenue	19.5	% 18.2	%		19.4	% 18.3	%	

The period-over-period increase of \$2.6 million in selling and marketing expense during the three months ended December 31, 2017 was primarily attributable to higher compensation costs of \$1.1 million related to an increase in headcount, higher commissions of \$0.7 million, and higher professional services fees of \$0.3 million.

The period-over-period increase of \$4.1 million in selling and marketing expense during the six months ended December 31, 2017 was primarily attributable to higher compensation costs of \$2.0 million related to an increase in headcount, higher commissions of \$1.2 million, and higher professional services fees of \$0.4 million.

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Research and Development Expense

	Three Months Ended December 31,		Period-to-Period Change		Six Months Ended December 31,		Period-to-Period Change	
	2017	2016	\$	%	2017	2016	\$	%
	(Dollars in Thousands)							
Research and development expense	\$19,790	\$18,597	\$ 1,193	6.4 %	\$39,279	\$37,229	\$ 2,050	5.5 %
As a percent of total revenue	15.8	% 15.5	%		15.9	% 15.5	%	

The period-over-period increase of \$1.2 million in research and development expense during the three months ended December 31, 2017 was primarily attributable to higher compensation costs of \$1.0 million related to an increase in headcount and higher stock-based compensation of \$0.4 million, partially offset by lower professional services fees of \$0.2 million.

The period-over-period increase of \$2.1 million in research and development expense during the six months ended December 31, 2017 was primarily attributable to higher compensation costs of \$1.8 million related to an increase in headcount and higher stock-based compensation of \$1.2 million, partially offset by lower overhead allocations of \$0.5 million and lower costs of acquired technology of \$0.4 million.

Overhead allocations consist of information systems costs, facility costs and certain benefit costs. The overhead expenses are allocated to departments based on relative headcount, geographic location and total salary.

In the six months ended December 31, 2016, we acquired technology for \$0.4 million. At the time we acquired the technology, the projects to develop commercially available products did not meet the accounting definition of having reached technological feasibility and therefore the cost of the acquired technology was expensed as a research and development expense.

General and Administrative Expense

	Three Months Ended December 31,		Period-to-Period Change		Six Months Ended December 31,		Period-to-Period Change	
	2017	2016	\$	%	2017	2016	\$	%
	(Dollars in Thousands)							
General and administrative expense	\$14,178	\$11,863	\$ 2,315	19.5 %	\$27,854	\$25,020	\$ 2,834	11.3 %
As a percent of total revenue	11.4	% 9.9	%		11.2	% 10.4	%	

The period-over-period increase of \$2.3 million in general and administrative expense during the three months ended December 31, 2017 was primarily attributable to higher litigation related expenses of \$1.8 million, higher compensation costs of \$0.5 million related to an increase in headcount, and higher stock-based compensation of \$0.4 million, partially offset by lower office-related costs of \$0.5 million.

The period-over-period increase of \$2.8 million in general and administrative expense during the six months ended December 31, 2017 was primarily attributable to higher litigation related expenses of \$1.8 million, higher overhead allocations of \$1.3 million, higher stock-based compensation of \$1.1 million, higher compensation costs of \$0.7 million related to an increase in headcount, and higher bonus costs of \$0.3 million, partially offset by lower office-related costs of \$1.2 million, lower consulting fees of \$0.7 million, and lower amortization expense of \$0.4 million.

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Non-Operating Income (Expense)

Interest Income

	Three Months Ended December 31,		Period-to-Period Change		Six Months Ended December 31,		Period-to-Period Change	
	2017	2016	\$	%	2017	2016	\$	%
	(Dollars in Thousands)							
Interest income	\$40	\$216	\$(176)	(81.5)%	\$181	\$488	\$(307)	(62.9)%
As a percent of total revenue	—	% 0.2	%		0.1	% 0.2	%	

The period-over-period decrease of \$0.2 million and \$0.3 million in interest income during the three and six months ended December 31, 2017, respectively, was attributable to a lower level of interest income from investments.

Interest Expense

	Three Months Ended December 31,		Period-to-Period Change		Six Months Ended December 31,		Period-to-Period Change	
	2017	2016	\$	%	2017	2016	\$	%
	(Dollars in Thousands)							
Interest expense	\$(1,261)	\$(892)	\$(369)	41.4 %	\$(2,467)	\$(1,762)	\$(705)	40.0 %
As a percent of total revenue	(1.0)%	(0.7)%			(1.0)%	(0.7)%		

The period-over-period increase of \$0.4 million and \$0.7 million in interest expense during the three and six months ended December 31, 2017, respectively, was attributable to an \$11.0 million increase in our outstanding borrowings and an increase in applicable interest rates compared to the prior fiscal year related to our outstanding borrowings, which we entered into in February 2016, as described in the "Liquidity and Capital Resources" section below.

Other (Expense) Income, net

	Three Months Ended December 31,		Period-to-Period Change		Six Months Ended December 31,		Period-to-Period Change	
	2017	2016	\$	%	2017	2016	\$	%
	(Dollars in Thousands)							
Other (expense) income, net	\$(238)	\$697	\$(935)	(134.1)%	\$(854)	\$1,344	\$(2,198)	(163.5)%
As a percent of total revenue	(0.2)%	0.6 %			(0.3)%	0.6 %		

During the three months ended December 31, 2017 and 2016, other (expense) income, net was comprised of \$(0.2) million and \$0.7 million of currency (losses) gains, respectively. During the six months ended December 31, 2017 and 2016, other (expense) income, net was comprised of \$(0.9) million and \$1.3 million of currency (losses) gains, respectively.

Provision for Income Taxes

	Three Months Ended December 31,		Period-to-Period Change		Six Months Ended December 31,		Period-to-Period Change	
	2017	2016	\$	%	2017	2016	\$	%

(Dollars in Thousands)

Provision for income taxes	\$14,928	\$19,076	\$(4,148)	(21.7)%	\$31,805	\$38,855	\$(7,050)	(18.1)%	
Effective tax rate	28.2	%	33.9	%	30.4	%	35.0	%	-0.046

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On December 22, 2017, the President of the United States signed into law Public Law No. 115-97, commonly referred to as the Tax Cuts and Jobs Act (the “Tax Act”), following its passage by the United States Congress. The Tax Act will make significant changes to U.S. federal income tax laws, including reduction of the corporate tax rate from 35.0% to 21.0%, limitation of the tax deduction for interest expense to 30.0% of earnings (except for certain small businesses), limitation of the deduction for net operating losses to 80.0% of current year taxable income and elimination of net operating loss carrybacks, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, elimination of U.S. tax on foreign earnings (subject to certain important exceptions), immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modifying or repealing many business deductions.

As a result of the Tax Act, we have revised our estimated annual effective rate to reflect a change in the federal statutory rate from 35.0% to 21.0%. The rate change is administratively effective at the beginning of our fiscal year, using a blended rate for the annual period. As a result, the blended statutory tax rate for our fiscal year is 28.1%.

The effective tax rate for the periods presented is primarily the result of income earned in the U.S. taxed at U.S. federal and state statutory income tax rates, income earned in foreign tax jurisdictions taxed at the applicable rates, as well as the impact of permanent differences between book and tax income. Our effective tax rate decreased to 28.2% and 30.4% for the three and six months ended December 31, 2017, respectively, compared to 33.9% and 35.0% for the corresponding periods of the prior fiscal year due to the reduced federal corporate tax rate, partially offset by a discrete tax expense of \$4.3 million due to the revaluation of the net deferred tax assets as of the enactment date of the Tax Act on December 22, 2017 due to the reduction in the tax rate. The adoption of ASU No. 2016-09 resulted in a decrease in our provision for income taxes of \$0.4 million and \$1.0 million for the three and six months ended December 31, 2017, respectively. This represents a decrease in our effective tax rate of approximately 1.0 percentage point for both the three and six months ended December 31, 2017, due to the recognition of excess tax benefits for options exercised and the vesting of equity awards.

The Tax Act has several significant changes that impacts all taxpayers, including a transition tax, which is a one-time tax charge on accumulated, undistributed foreign earnings. The calculation of accumulated foreign earnings requires an analysis of each foreign entity’s financial results going back to 1986. We are currently estimating that we will not be subject to the transition tax associated with our accumulated, undistributed foreign earnings. We will continue to evaluate this area and expect to finalize our conclusions by the end of fiscal 2018.

Liquidity and Capital Resources

Resources

In recent years, we have financed our operations with cash generated from operating activities. As of December 31, 2017, our principal capital resources consisted of \$48.7 million in cash and cash equivalents.

We believe our existing cash and cash equivalents, together with our cash flows from operating activities, will be sufficient to meet our anticipated cash needs for at least the next twelve months. We may need to raise additional funds if we decide to make one or more acquisitions of businesses, technologies or products. If additional funding for such purpose is required beyond existing resources and our Credit Agreement described below, we may not be able to effect a receivable, equity or debt financing on terms acceptable to us or at all.

Credit Agreement

On February 26, 2016, we entered into the \$250.0 million Credit Agreement with various lenders. On August 9, 2017, we entered into an amendment to increase the Credit Agreement to \$350.0 million. The Credit Agreement matures on

February 26, 2021. Prior to the maturity of the Credit Agreement, any amounts borrowed may be repaid and, subject to the terms and conditions of the Credit Agreement, borrowed again whole or in part without penalty. As of December 31, 2017, we had \$151.0 million in outstanding borrowings under the Credit Agreement.

For a more detailed description of the Credit Agreement, see Note 10, Credit Agreement, to our Unaudited Consolidated Financial Statements in Item 1 of this Form 10-Q.

Cash Equivalents and Cash Flows

Our cash equivalents of \$4.9 million consisted of money market funds as of December 31, 2017. The objective of our investment policy is to manage our cash and investments to preserve principal and maintain liquidity.

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The following table summarizes our cash flow activities for the periods indicated:

	Six Months Ended December 31,	
	2017	2016
	(Dollars in Thousands)	
Cash flow provided by (used in):		
Operating activities	\$54,762	\$53,417
Investing activities	(11,312)	(108,014)
Financing activities	(96,907)	(196,495)
Effect of exchange rates on cash balances	206	(218)
Decrease in cash and cash equivalents	\$(53,251)	\$(251,310)

Operating Activities

Our primary source of cash is from the annual installments associated with our software license arrangements and related software support services, and to a lesser extent from professional services and training. We believe that cash inflows from our term license business will grow as we benefit from the continued growth of our portfolio of term license contracts.

Cash from operating activities provided \$54.8 million during the six months ended December 31, 2017. This amount resulted from net income of \$72.8 million, adjusted for non-cash items of \$20.7 million and net uses of cash of \$38.8 million related to changes in working capital.

Non-cash items during the six months ended December 31, 2017 consisted primarily of stock-based compensation expense of \$11.9 million, deferred income taxes of \$4.3 million, and depreciation and amortization expense of \$3.4 million.

Cash used by working capital of \$38.8 million during the six months ended December 31, 2017 was primarily attributable to cash outflows related to decreases in deferred revenue of \$41.6 million (cash flows related to deferred revenue vary due to the timing of invoicing, in particular the anniversary dates of annual installments associated with multi-year software license arrangements) and accounts payable, accrued expenses and other current liabilities of \$1.8 million, partially offset by cash provided by decreases in accounts receivable of \$3.7 million and prepaid expenses, prepaid income taxes, and other assets of \$1.0 million.

Investing Activities

During the six months ended December 31, 2017, we used \$11.3 million of cash for investing activities. We used \$10.8 million for business acquisitions, \$0.4 million for capitalized computer software development costs, and \$0.2 million for capital expenditures.

Financing Activities

During the six months ended December 31, 2017, we used \$96.9 million of cash for financing activities. We used \$105.0 million for repurchases of our common stock, \$3.5 million for withholding taxes on vested and settled restricted stock units, \$2.6 million for deferred business acquisition payments, and \$0.4 million for issuance costs in connection with the Credit Agreement, partially offset by proceeds of \$11.0 million from the Credit Agreement and \$3.5 million from the exercise of employee stock options.

Contractual Obligations

Standby letters of credit for \$3.0 million and \$2.9 million secure our performance on professional services contracts, certain facility leases and potential liabilities as of December 31, 2017 and June 30, 2017, respectively. The letters of credit expire at various dates through fiscal 2025.

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Item 3. Quantitative and Qualitative Disclosures About Market Risk.

In the ordinary course of conducting business, we are exposed to certain risks associated with potential changes in market conditions. These market risks include changes in currency exchange rates and interest rates which could affect operating results, financial position and cash flows. We manage our exposure to these market risks through our regular operating and financing activities and, if considered appropriate, we may enter into derivative financial instruments such as forward currency exchange contracts.

Foreign Currency Risk

During the three months ended December 31, 2017 and 2016, 9.5% and 10.0% of our total revenue was denominated in a currency other than the U.S. dollar, respectively. During the six months ended December 31, 2017 and 2016, 9.5% and 10.0% of our total revenue was denominated in a currency other than the U.S. dollar, respectively. In addition, certain of our operating costs incurred outside the United States are denominated in currencies other than the U.S. dollar. We conduct business on a worldwide basis and as a result, a portion of our revenue, earnings, net assets, and net investments in foreign affiliates is exposed to changes in foreign currency exchange rates. We measure our net exposure for cash balance positions and for cash inflows and outflows in order to evaluate the need to mitigate our foreign exchange risk. We may enter into foreign currency forward contracts to minimize the impact related to unfavorable exchange rate movements, although we have not done so during the three and six months ended December 31, 2017 and 2016. Our largest exposures to foreign currency exchange rates exist primarily with the Euro, Pound Sterling, Canadian Dollar, and Japanese Yen.

During the three months ended December 31, 2017 and 2016, we recorded \$(0.2) million and \$0.7 million of net foreign currency exchange (losses) gains related to the settlement and remeasurement of transactions denominated in currencies other than the functional currency of our operating units. Our analysis of operating results transacted in various foreign currencies indicated that a hypothetical 10% change in the foreign currency exchange rates could have increased or decreased the consolidated results of operations by approximately \$0.9 million and \$1.0 million for the three months ended December 31, 2017 and 2016, respectively.

During the six months ended December 31, 2017 and 2016, we recorded \$(0.9) million and \$1.3 million of net foreign currency exchange (losses) gains related to the settlement and remeasurement of transactions denominated in currencies other than the functional currency of our operating units. Our analysis of operating results transacted in various foreign currencies indicated that a hypothetical 10% change in the foreign currency exchange rates could have increased or decreased the consolidated results of operations by approximately \$1.8 million and \$2.2 million for the six months ended December 31, 2017 and 2016, respectively.

Interest Rate Risk

We place our investments in money market instruments and high quality, investment grade, fixed-income corporate debt securities that meet high credit quality standards, as specified in our investment guidelines.

We mitigate the risks by diversifying our investment portfolio, limiting the amount of investments in debt securities of any single issuer and using a third-party investment manager. We held no investments in marketable securities as of December 31, 2017 and June 30, 2017. We do not use derivative financial instruments in our investment portfolio.

Our analysis of our investment portfolio and interest rates at December 31, 2017 indicated that a hypothetical 100 basis point increase or decrease in interest rates would not have a material impact on the fair value of our investment portfolio determined in accordance with an income-based approach utilizing portfolio future cash flows discounted at the appropriate rates.

We had \$151.0 million in outstanding borrowings under our Credit Agreement as of December 31, 2017. A hypothetical 10% increase or decrease in interest rates paid on outstanding borrowings under the Credit Agreement would not have a material impact on our financial position, results of operations or cash flows.

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Item 4. Controls and Procedures.

a) Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2017. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Securities Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Securities Exchange Act is accumulated and communicated to the Company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2017, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective.

b) Changes in Internal Controls Over Financial Reporting

During the three and six months ended December 31, 2017, no changes were identified in our internal controls over financial reporting that materially affected, or were reasonably likely to materially affect, our internal controls over financial reporting.

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PART II - OTHER INFORMATION

Item 1. Legal Proceedings.

Refer to Note 15, "Commitments and Contingencies," in the Notes to the Unaudited Consolidated Financial Statements for information regarding certain legal proceedings, the contents of which are herein incorporated by reference.

Item 1A. Risk Factors.

The risks described in "Item 1A. Risk Factors" in our Annual Report on Form 10-K for the year ended June 30, 2017, could materially and adversely affect our business, financial condition and results of operations. These risk factors do not identify all risks that we face—our operations could also be affected by factors that are not presently known to us or that we currently consider to be immaterial to our operations. The Risk Factors section of our 2017 Annual Report on Form 10-K remains current in all material respects, with the exception of the revised risk factors below.

Fluctuations in foreign currency exchange rates could result in declines in our reported revenue and operating results.

During the three and six months ended December 31, 2017 and 2016, 9.5% and 10.0% of our total revenue was denominated in a currency other than the U.S. dollar, respectively. During the six months ended December 31, 2017 and 2016, 9.5% and 10.0% of our total revenue was denominated in a currency other than the U.S. dollar, respectively. In addition, certain of our operating expenses incurred outside the United States are denominated in currencies other than the U.S. dollar. Our reported revenue and operating results are subject to fluctuations in foreign exchange rates. Foreign currency risk arises primarily from the net difference between non-U.S. dollar receipts from customers outside the United States and non-U.S. dollar operating expenses for subsidiaries in foreign countries. Currently, our largest exposures to foreign exchange rates exist primarily with the Euro, Pound Sterling, Canadian dollar and Japanese Yen against the U.S. dollar. During the three and six months ended December 31, 2017 and 2016, we did not enter into, and were not a party to any, derivative financial instruments, such as forward currency exchange contracts, intended to manage the volatility of these market risks. We cannot predict the impact of foreign currency fluctuations, and foreign currency fluctuations in the future may adversely affect our revenue and operating results. Any hedging policies we may implement in the future may not be successful, and the cost of those hedging techniques may have a significant negative impact on our operating results.

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

The following table provides information about purchases by us during the three months ended December 31, 2017 of shares of our common stock:

Period	Total Number of Shares Purchased (2)	Average Price Paid per Share (3)	Total Number of Shares Purchased as Part of Publicly Announced Program (1)	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Program (4)
October 1 to 31, 2017	247,065	\$ 64.85	247,065	
November 1 to 30, 2017	260,769	\$ 66.74	260,769	
December 1 to 31, 2017	248,515	\$ 66.68	248,515	
Total	756,349	\$ 66.11	756,349	\$ 246,292,803

(1) On January 22, 2015, our Board of Directors approved a share repurchase program (the "Share Repurchase Program") for up to \$450.0 million worth of our common stock. On April 26, 2016 and June 8, 2017, the Board of

Directors approved a \$400.0 million and \$200.0 million increase to the Share Repurchase Program, respectively.

(2) As of December 31, 2017, the total number of shares of common stock repurchased under all programs approved by the Board of Directors was 30,741,484.

(3) The total average price paid per share is calculated as the total amount paid for the repurchase of our common stock during the period divided by the total number of shares repurchased.

(4) As of December 31, 2017, the total remaining value under the Share Repurchase Program was approximately \$246.3 million.

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Item 6. Exhibits.

		Incorporated by Reference		
Exhibit Number	Description	Filed with this Form 10-Q	Form	Filing Date with SEC
31.1	<u>Certification of Principal Executive Officer pursuant to Exchange Act Rules 13a-14 and 15d-14, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>	X		
31.2	<u>Certification of Principal Financial Officer pursuant to Exchange Act Rules 13a-14 and 15d-14, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>	X		
32.1	<u>Certification of President and Chief Executive Officer and Executive Vice President and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u>	X		
101.INS	Instance Document	X		
101.SCH	XBRL Taxonomy Extension Schema Document	X		
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	X		
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	X		
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	X		
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	X		

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SIGNATURES

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

Aspen Technology, Inc.

Date: January 24, 2018 By: /s/ ANTONIO J. PIETRI

Antonio J. Pietri
President and Chief Executive Officer
(Principal Executive Officer)

Date: January 24, 2018 By: /s/ KARL E. JOHNSEN

Karl E. Johnsen
Senior Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

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