PDF SOLUTIONS INC
Form 10-Q
November 07, 2016

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

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

For the Quarterly Period ended September 30, 2016

or

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

For the transition period from _______________ to ______________

Commission File Number 000-31311

PDF SOLUTIONS, INC.

(Exact name of Registrant as Specified in its Charter)

Delaware	**25-1701361**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
333 West San Carlos Street, Suite 1000	
San Jose, California	**95110**
(Address of Principal Executive Offices)	(Zip Code)

(408) 280-7900

(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 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, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

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

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

The number of shares outstanding of the Registrant's Common Stock as of October 28, 2016 was 31,484,967.

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PART I — FINANCIAL INFORMATION

Item 1. Financial Statements

PDF SOLUTIONS, INC.

CONDENSED CONSOLIDATED BALANCE SHEETS

(unaudited)

(in thousands, except par value)

	September 30, 2016	December 31, 2015
ASSETS		
Current assets:		
Cash and cash equivalents	$ 118,534	$ 126,158
Accounts receivable, net of allowance of $200 and $299, respectively	44,023	33,438
Prepaid expenses and other current assets	5,163	3,655
Total current assets	167,720	163,251
Property and equipment, net	18,192	11,325
Deferred tax assets	10,201	10,299
Goodwill	215	215
Intangible assets, net	4,411	5,028
Other non-current assets	9,413	1,651
Total assets	$ 210,152	$ 191,769
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 947	$ 1,293
Accrued compensation and related benefits	5,190	4,812
Accrued and other current liabilities	3,077	2,382
Deferred revenues – current portion	8,399	4,702
Billings in excess of recognized revenue	73	1,267
Total current liabilities	17,686	14,456
Long-term income taxes payable	2,859	2,540
Other non-current liabilities	657	466
Total liabilities	21,202	17,462
Commitments and contingencies (Note 9)		
Stockholders' equity:		
	—	—

Preferred stock, $0.00015 par value, 5,000 shares authorized, no shares issued and outstanding		
Common stock, $0.00015 par value, 70,000 shares authorized: shares issued 38,077 and 37,476, respectively; shares outstanding 31,482 and 31,111, respectively	5	5
Additional paid-in-capital	277,498	266,008
Treasury stock at cost, 6,595 and 6,365 shares in 2016 and 2015, respectively	(53,726)	(50,383)
Accumulated deficit	(33,614)	(39,780)
Accumulated other comprehensive loss	(1,213)	(1,543)
Total stockholders' equity	188,950	174,307
Total liabilities and stockholders' equity	$ 210,152	$ 191,769

See accompanying Notes to Condensed Consolidated Financial Statements (unaudited).

PDF SOLUTIONS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME

(unaudited)

(in thousands, except per share amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	**2015**	**2016**	**2015**
Revenues:				
Design-to-silicon-yield solutions	$18,552	$17,246	$57,704	$49,557
Gainshare performance incentives	8,707	6,632	21,324	24,348
Total revenues	27,259	23,878	79,028	73,905
Costs of Design-to-silicon-yield solutions:				
Direct costs of Design-to-silicon-yield solutions	11,366	10,172	32,034	28,863
Amortization of acquired technology	86	80	278	80
Total cost of Design-to-silicon-yield solutions	11,452	10,252	32,312	28,943
Gross profit	15,807	13,626	46,716	44,962
Operating expenses:				
Research and development	7,017	5,173	20,388	13,698
Selling, general and administrative	5,548	5,665	15,766	15,336
Amortization of other acquired intangible assets	106	89	340	89
Total operating expenses	12,671	10,927	36,494	29,123
Income from operations	3,136	2,699	10,222	15,839
Interest and other income (expense), net	(101)	64	(388)	166
Income before income taxes	3,035	2,763	9,834	16,005
Income tax provision	1,145	1,269	3,668	6,395
Net income	$1,890	$1,494	$6,166	$9,610
Net income per share:				
Basic	$0.06	$0.05	$0.20	$0.31
Diluted	$0.06	$0.05	$0.19	$0.30
Weighted average common shares:				
Basic	31,413	31,516	31,286	31,458
Diluted	32,373	32,106	32,040	32,266
Net income	$1,890	$1,494	$6,166	$9,610
Other comprehensive income:				
Foreign currency translation adjustments, net of tax	157	(54)	331	(656)

Comprehensive income	$2,047	$1,440	$6,497	$8,954

See accompanying Notes to Condensed Consolidated Financial Statements (unaudited).

PDF SOLUTIONS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

(unaudited)

(in thousands)

	Nine Months Ended September 30, 2016	2015
Operating activities:		
Net income	$6,166	$9,610
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	2,584	1,919
Stock-based compensation expense	7,935	7,118
Accrued contingent earn-out payments	—	475
Amortization of acquired intangible assets	617	169
Deferred taxes	92	1,623
Loss on disposal of property and equipment	107	3
Purchases of treasury stock in connection with tax withholdings on restricted stock grants	(1,161)	(1,057)
Reversal of allowance for doubtful accounts	(99)	(82)
Unrealized gain on foreign currency forward contract	(54)	(4)
Tax benefit related to stock-based compensation expense	1,003	1,756
Excess tax benefit from stock-based compensation	(950)	(1,661)
Changes in operating assets and liabilities:		
Accounts receivable	(10,486)	6,261
Prepaid expenses and other assets	(9,250)	(3,378)
Accounts payable	33	(287)
Accrued compensation and related benefits	277	(1,946)
Accrued and other liabilities	139	609
Deferred revenues	3,959	796
Billings in excess of recognized revenues	(1,194)	149
Net cash provided by (used in) operating activities	(282)	22,073
Investing activities:		
Purchases of property and equipment	(8,860)	(4,032)
Payments for business acquisitions, net of cash acquired	—	(5,152)
Net cash used in investing activities	(8,860)	(9,184)
Financing activities:		
Proceeds from exercise of stock options	1,132	4,899
Proceeds from employee stock purchase plan	1,558	1,379
Excess tax benefit from stock-based compensation	950	1,661
Purchases of treasury stock	(2,182)	(9,613)
Payments on long-term obligations assumed in business acquisition	—	(347)
Net cash provided by (used in) financing activities	1,458	(2,021)

Effect of exchange rate changes on cash and cash equivalents	60	(73)
Net change in cash and cash equivalents	(7,624)	10,795
Cash and cash equivalents, beginning of period	126,158	115,464
Cash and cash equivalents, end of period	$118,534	$126,259
Supplemental disclosure of cash flow information:		
Cash paid during the period for:		
Taxes	$2,616	$4,347
Interest	$—	$16
Property and equipment received and accrued in accounts payable and accrued and other liabilities	$913	$268

See accompanying Notes to Condensed Consolidated Financial Statements (unaudited).

PDF SOLUTIONS, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

1. BASIS OF PRESENTATION

Basis of Presentation

The interim unaudited condensed consolidated financial statements included herein have been prepared by PDF Solutions, Inc. ("the Company") pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC"), including the instructions to the Quarterly Report on Form 10-Q and Article 10 of Regulation S-X. Certain information and footnote disclosures normally included in annual financial statements prepared in accordance with accounting principles generally accepted in the United States of America have been condensed or omitted. The interim unaudited condensed consolidated financial statements reflect, in the opinion of management, all adjustments necessary (consisting only of normal recurring adjustments), to present a fair statement of results for the interim periods presented. The operating results for any interim period are not necessarily indicative of the results that may be expected for other interim periods or the full fiscal year. The accompanying interim unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto in the Company's Annual Report on Form 10-K for the year ended December 31, 2015.

The condensed consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries after the elimination of all intercompany balances and transactions.

The condensed consolidated balance sheet at December 31, 2015, has been derived from the audited consolidated financial statements but does not include all disclosures required by accounting principles generally accepted in the United States of America.

Use of Estimates — The preparation of financial statements in conformity with generally accepted accounting principles in the United States ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant estimates in these financial statements include revenue recognition for fixed-price solution implementation service contracts, accounting for goodwill and intangible assets, stock-based compensation expense and accounting for income taxes. Actual results could differ from those estimates.

Revenue Recognition — The Company derives revenue from two sources: Design-to-silicon-yield solutions and Gainshare performance incentives.

Design-to-Silicon-Yield Solutions — Revenue that is derived from Design-to-silicon-yield solutions comes from services and software licenses. The Company recognizes revenue of Design-to-silicon-yield solutions as follows:

The Company generates a significant portion of its Design-to-silicon-yield solutions revenue from fixed-price solution implementation service contracts delivered over a specific period of time. These contracts require reliable estimation of costs to perform obligations and the overall scope of each engagement. Revenue under project–based contracts for solution implementation services is recognized as services are performed using percentage of completion method of contract accounting based on costs or labor-hours input method, whichever is the most appropriate measure of the progress towards completion of the contract. Losses on fixed-price solution implementation contracts are recognized in the period when they become probable. Revisions in profit estimates are reflected in the period in which the conditions that require the revisions become known and can be estimated (cumulative catch-up method). Revenue under time and materials contracts for solution implementation services are recognized as the services are performed. On occasion, the Company licenses its software products as a component of its fixed-price service contracts. In such instances, the software products are licensed to customers over a specified term of the agreement with support and maintenance to be provided at each customer's option over the license term. The amount of product and service revenue recognized in a given period is affected by the Company’s judgment as to whether an arrangement includes multiple deliverables and, if so, the Company’s determination of the fair value of each deliverable. In general, vendor-specific objective evidence of selling price (“VSOE”) does not exist for the Company’s solution implementation services and software products and because the Company’s services and products include our unique technology, the Company is not able to determine third-party evidence of selling price (“TPE”). Therefore, in such circumstances the Company uses best estimated selling prices (“BESP”) in the allocation of arrangement consideration. In determining BESP, the Company applies significant judgment as the Company’s weighs a variety of factors, based on the facts and circumstances of the arrangement. The Company typically arrives at BESP for a product or service that is not sold separately by considering company-specific factors such as geographies, internal costs, gross margin objectives, pricing practices used to establish bundled pricing, and existing portfolio pricing and discounting. After fair value is established for each deliverable, the total transaction amount is allocated to each deliverable based upon its relative fair value. Fees allocated to solution implementation services are recognized using the percentage of completion method of contract accounting. Fees allocated to software and related support and maintenance are recognized under software revenue recognition guidance.

The Company defers certain pre-contract costs incurred for specific anticipated contracts. Deferred costs consist primarily of direct costs to provide solution implementation services in relation to the specific anticipated contracts. The Company recognizes such costs as a component of cost of revenues, the timing of which is dependent upon persuasive evidence of contract arrangement assuming all other revenue recognition criteria are met. The Company also defers costs from arrangements that required the Company to defer the revenues, typically due to revenue recognition from multi-element arrangements or from contracts subject to customer acceptance. These costs are recognized in proportion to the related revenue. At the end of reporting period, the Company evaluates its deferred costs for their probable recoverability. The Company recognizes impairment of deferred costs when it is determined that the costs no longer have future benefits and are no longer recoverable.

The Company also licenses its software products separately from its solution implementations. For software license arrangements that do not require significant modification or customization of the underlying software, software license revenue is recognized under the residual method when (1) persuasive evidence of an arrangement exists, (2) delivery has occurred, (3) the fee is fixed or determinable, (4) collectability is probable, and (5) the arrangement does not require services that are essential to the functionality of the software. When arrangements include multiple elements such as support and maintenance, consulting (other than for its fixed price solution implementations), installation, and training, revenue is allocated to each element of a transaction based upon its fair value as determined by the Company's VSOE and such services are recorded as services revenue. VSOE for maintenance is generally established based upon negotiated renewal rates while VSOE for consulting, installation, and training services is established based upon the Company's customary pricing for such services when sold separately. When software is licensed for a specified term, fees for support and maintenance are generally bundled with the license fee over the entire term of the contract. The Company is unable to establish VSOE of fair value for maintenance services that are generally bundled with term licenses. In these cases, the Company recognizes revenue ratably over the term of the contract.

Revenue from Software-as-a-Service (SaaS) that allows for the use of a hosted software product or service over a contractually determined period of time without taking possession of software is accounted for as a subscription and recognized as revenue ratably over the coverage period beginning on the date the service is first made available to customers.

Revenue for software licenses with extended payment terms is not recognized in excess of amounts due. For software license arrangements that require significant modification or customization of the underlying software, the software license revenue is recognized as services are performed using the percentage of completion method of contract accounting, and such revenue is recorded as services revenue.

Deferred revenues consist primarily of amounts invoiced in advance of revenue recognition and are recognized as the revenue recognition criteria are met. Deferred revenues that will be recognized during the succeeding 12-month period are recorded as current deferred revenues and the remaining portion is recorded as non- current deferred revenues. The non-current portion of deferred revenue was $0.5 million as of September 30, 2016 and $0.3 million as of December 31, 2015. This balance was recorded in the other non-current liabilities in the accompanying condensed consolidated balance sheets.

Gainshare Performance Incentives — When the Company enters into a contract to provide yield improvement services, the contract usually includes two components: (1) a fixed fee for performance by the Company of services delivered over a specific period of time; and (2) a Gainshare performance incentive component where the customer may pay a contingent variable fee, usually after the fixed fee period has ended. Revenue derived from Gainshare performance incentives represents profit sharing and performance incentives earned contingent upon the Company's customers reaching certain defined operational levels established in related solution implementation service contracts. Gainshare performance incentives periods are usually subsequent to the delivery of all contractual services and therefore have no cost to the Company. Due to the uncertainties surrounding attainment of such operational levels, the Company recognizes Gainshare performance incentives revenue (to the extent of completion of the related solution implementation contract) upon receipt of performance reports or other related information from the customer supporting the determination of amounts and probability of collection.

2. RECENT ACCOUNTING PRONOUNCEMENTS

There have been no developments to recently issued accounting standards, including the expected dates of adoption and estimated effects on the Company's consolidated financial statements and footnote disclosures, from those disclosed in the Company's 2015 Annual Report on Form 10-K, except for the following:

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update No. ("ASU") 2014-09, Revenue from Contracts with Customers, as a new Topic, Accounting Standards Codification ("ASC") Topic 606. The new revenue recognition standard provides a five-step analysis of transactions to determine when and how revenue is recognized. The core principle is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. This new standard is effective for annual periods beginning after December 15, 2016, including interim periods within that reporting period, and shall be applied retrospectively to each period presented or as a cumulative-effect adjustment as of the date of adoption. In August 2015, the FASB issued ASU 2015-14, Revenue from Contracts with Customers (Topic 606), deferring the effective date of ASU 2014-09 by one year. The provision of ASU 2014-09 are effective for annual periods beginning after December 15, 2017, including interim periods within that reporting period. In March 2016, the FASB issued ASU No. 2016-08, Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net). This update clarifies the implementation guidance on principal versus agent considerations. The guidance includes indicators to assist an entity in determining whether it controls a specified good or service before it is transferred to the customers. In April 2016, the FASB issued ASU No. 2016-10, Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing. The amendments in this update affect entities with transactions included within the scope of Topic 606. The core principle of the guidance in Topic 606 is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The amendments in this Update do not change the core principle of the guidance in Topic 606. Rather, the amendments in this update clarify the following two aspects of Topic 606: identifying performance obligations and the licensing implementation guidance, while retaining the related principles for those areas. In May 2016, the FASB issued ASU No. 2016-12, Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients. The purpose of this standard is to clarify certain narrow aspects of Topic 660 such as assessing the collectability criterion, presentation of sales taxes and other similar taxes collected from customers, noncash consideration, contract modifications at transition, completed contracts at transition, and technical correction. These standards should be adopted concurrently with adoption of ASU 2014-09 which is effective for the Company's annual and interim periods beginning January 1, 2018. The Company has not yet selected a transition method nor has it determined the effect of the standard on its ongoing financial reporting.

In February 2016, the Financial Accounting Standards Board (or FASB) issued Accounting Standards Update (or ASU) No. 2016-2, Leases (Topic 842). The update requires that most leases, including operating leases, be recorded on the balance sheet as an asset and a liability, initially measured at the present value of the lease payments. Subsequently, the lease asset will be amortized generally on a straight-line basis over the lease term, and the lease liability will bear interest expense and be reduced for lease payments. The amendments in this update are effective for public companies' financial statements issued for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The Company is currently assessing the impact that adopting this new accounting standard will have on its consolidated financial statements and footnote disclosures.

In March 2016, the FASB issued ASU No. 2016-09, Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. This standard makes several modifications to Topic 718 related to the accounting for forfeitures, employer tax withholding on share-based compensation and the financial statement presentation of excess tax benefits or deficiencies. ASU 2016-09 also clarifies the statement of cash flows presentation for certain components of share-based awards. The update is effective for interim and annual reporting periods beginning after December 15, 2016, and interim periods within those annual periods. Early adoption is permitted in any interim or annual period. If an entity early adopts the amendments in an interim period, any adjustments should be reflected as of the beginning of the fiscal year that includes that interim period. An entity that elects early adoption must adopt all of the amendments in the same period. The Company is currently assessing the impact that adopting this new accounting standard will have on its consolidated financial statements and footnote disclosures.

In May 2016, the FASB issued ASU No. 2016-11, Revenue Recognition (Topic 605) and Derivatives and Hedging (Topic 815): Rescission of SEC Guidance Because of Accounting Standards Updates 2014-09 and 2014-16 pursuant to Staff announcements at the March 3, 2016 EITF Meeting. The purpose of this standard is to rescind from the FASB Accounting Standards Codification certain SEC paragraphs as a result of two SEC Staff Announcements at the March 3, 2016 meeting. The amendments in this update related to Topic 605 are effective for interim and annual reporting periods beginning after December 15, 2017 and amendments related to Topic 815 are effective for interim and annual reporting periods beginning after December 15, 2015. The Company is currently assessing the impact that adopting this new accounting standard will have on its consolidated financial statements and footnote disclosures.

In August 2016, the FASB issued ASU No. 2016-15, Classification of Certain Cash Receipts and Cash Payments. The purpose of this standard is to clarify the treatment of several cash flow categories. This update is effective for annual periods beginning after December 15, 2017, and interim periods within those fiscal years, with early adoption permitted, including adoption in an interim period. The Company is currently assessing the impact that adopting this new accounting standard will have on its consolidated financial statements and footnote disclosures.

3. BALANCE SHEET COMPONENTS

Accounts receivable include amounts that are unbilled at the end of the period that are expected to be billed and collected within 12-month period. Unbilled accounts receivable are determined on an individual contract basis. Unbilled accounts receivable, included in accounts receivable, totaled $18.5 million and $11.5 million as of September 30, 2016 and December 31, 2015, respectively. Unbilled accounts receivable that are not expected to be billed and collected during the succeeding 12-month period are recorded in other non-current assets and totaled $7.7 million and $0.1 million as of September 30, 2016 and December 31, 2015, respectively. The increase in other non-current asset is due to the increase in the long-term unbilled portion of two of the Company's Design-to-silicon-yield solutions contracts. Deferred costs balance was $0.8 million and zero as of September 30, 2016 and December 31, 2015, respectively. The balance was included in prepaid expense and other current assets and other non-current assets in the accompanying balance sheets.

Property and equipment, net consists of (in thousands):

	September 30, 2016	**December 31, 2015**
Property and equipment, net:		
Computer equipment	$ 10,828	$ 9,188
Software	1,835	1,713
Furniture, fixtures and equipment	1,140	907
Leasehold improvements	1,157	1,126
Test equipment	10,799	7,214
Construction-in-progress	8,588	4,777
	34,347	24,925
Less: accumulated depreciation	(16,155)	(13,600)
Total	$ 18,192	$ 11,325

Depreciation and amortization expense was $1.0 million and $0.7 million for the three months ended September 30, 2016 and 2015, respectively. Depreciation and amortization expense was $2.6 million and $1.9 million for the nine months ended September 30, 2016 and 2015, respectively. Property and equipment related to our DFI solution was $9.6 million and $2.7 million as of September 30, 2016 and December 31, 2015, respectively.

As of both September 30, 2016 and December 31, 2015, the carrying amount of goodwill was $0.2 million. The following is a rollforward of the Company's goodwill balance (in thousands):

	September 30, 2016
Balance as of December 31, 2015	$ 215
Adjustment	—
Balance as of September 30, 2016	$ 215

Intangible assets balance was $4.4 million and $5.0 million as of September 30, 2016 and December 31, 2015, respectively. Intangible assets as of September 30, 2016 and December 31, 2015 consist of the following (in thousands):

		September 30, 2016			**December 31, 2015**		
	Amortization Period (Years)	**Gross Carrying Amount**	**Accumulated Amortization**	**Net Carrying Amount**	**Gross Carrying Amount**	**Accumulated Amortization**	**Net Carrying Amount**
Acquired identifiable intangibles:							
Customer relationships	1 - 9	$ 5,920	$ (3,756)	$ 2,164	$ 5,920	$ (3,547)	$ 2,373
Developed technology	4 - 6	14,100	(12,263)	1,837	14,100	(11,976)	2,124
Tradename	2 - 4	610	(570)	40	610	(533)	77
Backlog	1	100	(100)	-	100	(46)	54
Patent	7 - 10	1,800	(1,430)	370	1,800	(1,400)	400
Other acquired intangibles	4	255	(255)	-	255	(255)	-
Total		$ 22,785	$ (18,374)	$ 4,411	$ 22,785	$ (17,757)	$ 5,028

The weighted average amortization period for acquired identifiable intangible assets was 6.61 years as of September 30, 2016. For both the three months ended September 30, 2016 and 2015, intangible asset amortization expense was $0.2 million. For the nine months ended September 30, 2016 and 2015, intangible asset amortization expense was $0.6 million and $0.2 million, respectively. The Company expects annual amortization of acquired identifiable intangible assets to be as follows (in thousands):

Period Ending September 30,	
2016 (remaining 3 months)	$188
2017	728
2018	701
2019	701
2020	701
2021 and thereafter	1,392
Total future amortization expense	$4,411

Intangible assets are amortized over their useful lives unless these lives are determined to be indefinite. Intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. During the three and nine months ended September 30, 2016, there were no indicators of impairment related to the Company's intangible assets.

4. STOCKHOLDERS' EQUITY

Stock-based compensation is estimated at the grant date based on the award's fair value and is recognized on a straight-line basis over the vesting periods, generally four years. Stock-based compensation expense before taxes related to the Company's stock plans and employee stock purchase plan was allocated as follows (in thousands):

	Three Months Ended September 30,		**Nine Months Ended September 30,**	
	2016	**2015**	**2016**	**2015**
Cost of design-to-silicon yield-solutions	$1,191	$1,039	$3,232	$2,840
Research and development	894	617	2,251	1,618
Selling, general and administrative	892	908	2,452	2,660
Stock-based compensation expense	$2,977	$2,564	$7,935	$7,118

On September 30, 2016, the Company had the following stock-based compensation plans:

Stock Plans — All new equity awards are issued by the Company under its 2011 Stock Incentive Plan, as amended and restated from time to time (the "2011 Plan"). The 2011 Plan was initially approved by the Company's stockholders at the annual meeting of stockholders on November 16, 2011, and then again – as amended and restated each time –at the 2013 annual meeting of stockholders on May 28, 2013, the 2014 annual meeting of stockholders on May 27, 2014, and most recently at the annual meeting of stockholders on May 31, 2016. Under the 2011 Plan, the Company may award stock options, stock appreciation rights, stock grants or stock units covering shares of the Company's common stock to employees, directors, non-employee directors and contractors. The aggregate number of shares reserved for awards under this plan is 7,800,000 shares, plus up to 3,500,000 shares previously issued under the 2001 Plan that are forfeited or repurchased by the Company or shares subject to awards previously issued under the 2001 Plan that expire or that terminate without having been exercised or settled in full on or after November 16, 2011. In case of awards other than options or stock appreciation rights, the aggregate number of shares reserved under the plan will be decreased at a rate of 1.33 shares issued pursuant to such awards. The exercise price for stock options must generally be at prices no less than the fair market value at the date of grant. Stock options generally expire ten years from the date of grant and become vested and exercisable over a four-year period.

In 2001, the Company adopted a 2001 Stock Plan (the "2001 Plan"). In 2003, in connection with its acquisition of IDS Systems Inc., the Company assumed IDS' 2001 Stock Option / Stock Issuance Plan (the "IDS Plan"). Both the 2001Plan and the IDS Plan expired in 2011. Stock options granted under the 2001 and IDS Plans generally expire ten years from the date of grant and become vested and exercisable over a four-year period. Although no new awards may be granted under the 2001 or IDS Plans, awards made under the 2001 and IDS Plans that are currently outstanding remain subject to the terms of each plan, as applicable.

The Company estimated the fair value of share-based awards granted under the Stock Plan during the period using the Black-Scholes-Merton option-pricing model with the following weighted average assumptions, resulting in the following weighted average fair values:

	Three Months Ended September 30,		**Nine Months Ended September 30,**	
	2016	**2015**	**2016**	**2015**
Expected life (in years)	4.42	4.51	4.42	4.51
Volatility	42.97%	45.56%	43.82%	45.96%
Risk-free interest rate	1.10 %	1.38 %	1.20 %	1.36 %
Expected dividend	—	—	—	—
Weighted average fair value per share of options granted during the period	$5.52	$5.48	$4.82	$5.85

As of September 30, 2016, 8.3 million shares of common stock were reserved to cover stock-based awards under the 2011 Plan, of which 3.5 million shares were available for future grant. The number of shares reserved and available under the 2011 Plan includes 0.5 million shares that were subject to awards previously made under the 2001 Plan and were forfeited, expired or repurchased by the Company after adoption of the 2011 Plan through September 30, 2016. As of September 30, 2016, there were no outstanding awards that had been granted outside of the 2011, 2001 or the IDS Plans (collectively, the "Stock Plans").

Stock option activity under the Company's Stock Plans during the nine months ended September 30, 2016, was as follows:

	Number of Options (in thousands)	**Weighted Average Exercise Price per Share**	**Weighted Average Remaining Contractual Term (years)**	**Aggregate Intrinsic Value (in thousands)**

Outstanding, January 1, 2016	1,764	$ 7.88		
Granted (weighted average fair value of $4.82 per share)	75	$ 12.98		
Exercised	(150)	$ 7.55		
Canceled	(28)	$ 13.68		
Expired	(75)	$ 13.78		
Outstanding, September 30, 2016	1,586	$ 7.77	4.55	$ 16,565
Vested and expected to vest, September 30, 2016	1,577	$ 7.74	4.53	$ 16,520
Exercisable, September 30, 2016	1,452	$ 7.22	4.15	$ 15,943

The aggregate intrinsic value in the table above represents the total intrinsic value based on the Company's closing stock price of $18.17 per share as of September 30, 2016. The total intrinsic value of options exercised during the nine months ended September 30, 2016, was $1.1 million.

As of September 30, 2016, there was $0.6 million of total unrecognized compensation cost related to unvested stock options. That cost is expected to be recognized over a weighted average period of 3.0 years. The total fair value of shares vested during the nine months ended September 30, 2016, was $0.5 million.

Nonvested restricted stock units activity during the nine months ended September 30, 2016, was as follows:

	Shares (in thousands)	**Weighted Average Grant Date Fair Value Per Share**
Nonvested, January 1, 2016	1,166	$ 17.03
Granted	902	$ 14.05
Vested	(278)	$ 16.55
Forfeited	(104)	$ 15.85
Nonvested, September 30, 2016	1,686	$ 15.58

As of September 30, 2016, there was $21.4 million of total unrecognized compensation cost related to nonvested restricted stock units. That cost is expected to be recognized over a weighted average period of 2.9 years. Restricted stock units do not have rights to dividends prior to vesting.

Employee Stock Purchase Plan — In July 2001, the Company adopted a ten-year Employee Stock Purchase Plan (as amended, "Purchase Plan") under which eligible employees can contribute up to 10% of their compensation, as defined in the Purchase Plan, towards the purchase of shares of PDF common stock at a price of 85% of the lower of the fair market value at the beginning of the offering period or the end of the purchase period. The Purchase Plan consists of twenty-four-month offering periods with four nine-month purchase periods in each offering period. Under the Purchase Plan, on January 1 of each year, the number of shares reserved for issuance will automatically increase by the lesser of (1) 675,000 shares, (2) 2% of the Company's outstanding common stock on the last day of the immediately preceding year, or (3) the number of shares determined by the board of directors. At the annual meeting of stockholders on May 18, 2010, the Company's stockholders approved an amendment to the Purchase Plan to extend it through May 17, 2020.

The Company estimated the fair value of purchase rights granted under the Purchase Plan during the period using the Black-Scholes-Merton option-pricing model with the following weighted average assumptions, resulting in the following weighted average fair values:

	Nine months Ended September 30,	
	2016	**2015**
Expected life (in years)	1.25	1.25
Volatility	44.00 %	50.12 %
Risk-free interest rate	0.50 %	0.34 %
Expected dividend	—	—
Weighted average fair value of purchase rights granted under the Purchase Plan	$3.70	$5.51

During the three months ended September 30, 2016 and 2015, a total of 89,000 and 59,000 shares, respectively, were issued at a weighted-average purchase price of $8.81 and $11.91 per share. During the nine months ended September 30, 2016 and 2015, a total of 173,000 and 110,000 shares, respectively, were issued at a weighted-average purchase price of $9.00 and $12.57 per share, respectively, under the Purchase Plan. As of September 30, 2016, there was $1.0 million of unrecognized compensation cost related to the Purchase Plan. That cost is expected to be recognized over a weighted average period of 1.4 years. As of September 30, 2016, 2.6 million shares were available for future issuance under the Purchase Plan.

Stock Repurchase Program —On October 21, 2014, the Board of Directors adopted a program, effective immediately, to repurchase up to $25.0 million of the Company's common stock both on the open market and in privately negotiated transactions over the next two years. During the three and nine months ended September 30, 2016, the Company repurchased 20,000 and 149,457 shares, respectively, under this program. As of September 30, 2016, 1,239,230 shares had been repurchased at an average price of $13.48 per share under this program for a total purchase of $16.7 million, and $8.3 million remained available for future repurchases. This program expired on October 21, 2016. On October 25, 2016, the Board of Directors adopted a new program, effective immediately, to repurchase up to $25.0 million of the Company's common stock both on the open market and in privately negotiated transactions over the next two years.

5. INCOME TAXES

Income tax provision decreased $2.7 million for the nine months ended September 30, 2016, to $3.7 million as compared to an income tax provision of $6.4 million for the nine months ended September 30, 2015. The Company's effective tax rate was 37.3% and 40% for the nine months ended September 30, 2016, and September 30, 2015, respectively. The Company's effective tax rate decreased in the nine months ended September 30, 2016, as compared to the same period in 2015, primarily due to the permanent reinstatement of the U.S. federal research tax credit. On December 18, 2015, the President of the United States signed into law the Protecting Americans from Tax Hikes Act of 2015 which permanently reinstated the research tax credit retroactive to January 1, 2015. As a result of the new legislation, the Company recognized a benefit in the first three quarters of 2016 and no benefit in the same period in 2015.

The Company's total amount of unrecognized tax benefits, excluding interest and penalties, as of September 30, 2016, was $11.6 million, of which $7.0 million, if recognized, would decrease the Company's effective tax rate. The Company's total amount of unrecognized tax benefits, excluding interest and penalties, as of December 31, 2015, was $11.0 million, of which $6.5 million, if recognized, would affect the Company's effective tax rate. As of September 30, 2016, the Company has recorded unrecognized tax benefits of $2.9 million, including interest and penalties, as long-term taxes payable in its condensed consolidated balance sheet. The remaining $9.3 million has been recorded net of our deferred tax assets, of which $4.6 million is subject to a full valuation allowance.

The valuation allowance was approximately $6.5 million and $6.2 million as of September 30, 2016 and December 31, 2015, respectively, which was related to California R&D tax credits and California net operating losses related to our acquisition of Syntricity that we currently do not believe are more likely than not to be ultimately realized.

The Company conducts business globally and, as a result, files numerous consolidated and separate income tax returns in the U.S. federal, various state and foreign jurisdictions. Because the Company used some of the tax attributes carried forward from previous years to tax years that are still open, statutes of limitation remain open for all tax years to the extent of the attributes carried forward into tax year 2002 for federal and California tax purposes. The Company is not subject to income tax examinations in any of its major foreign subsidiaries' jurisdictions.

6. NET INCOME PER SHARE

Basic net income per share is computed by dividing net income by weighted average number of common shares outstanding for the period (excluding outstanding stock options and shares subject to repurchase). Diluted net income per share is computed using the weighted-average number of common shares outstanding for the period plus the potential effect of dilutive securities which are convertible into common shares (using the treasury stock method), except in cases in which the effect would be anti-dilutive. Under the treasury stock method, the amount that the employee must pay for exercising stock options, the amount of compensation cost for future service that the Company has not yet recognized, and the amount of the tax benefits that would be recorded in additional paid-in capital when the award becomes deductible are assumed to be used to repurchase shares. The following is a reconciliation of the numerators and denominators used in computing basic and diluted net income per share (in thousands except per share amount):

	Three Months Ended September 30,		**Nine Months Ended September 30,**	
	2016	**2015**	**2016**	**2015**
Numerator:				
Net income	$1,890	$1,494	$6,166	$9,610
Denominator:				
Basic weighted average common shares outstanding	31,413	31,516	31,286	31,458
Dilutive effect of equity incentive plans	960	590	754	808
Diluted weighted average common shares outstanding	32,373	32,106	32,040	32,266
Net income per share:				
Basic	$0.06	$0.05	$0.20	$0.31
Diluted	$0.06	$0.05	$0.19	$0.30

The following table sets forth potential shares of common stock that are not included in the diluted net income per share calculation above because to do so would be anti-dilutive for the periods indicated (in thousands):

	Three Months Ended September 30,		**Nine Months Ended September 30,**	
	2016	**2015**	**2016**	**2015**
Outstanding options	119	228	188	116
Nonvested restricted stock units	226	1,231	389	660
Employee Stock Purchase Plan	25	276	162	252
Total	370	1,735	739	1,028

7. CUSTOMER AND GEOGRAPHIC INFORMATION

Operating segments are defined as components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision maker, or group, in deciding how to allocate resources and in assessing performance.

The Company’s chief operating decision maker, the chief executive officer, reviews discrete financial information presented on a consolidated basis for purposes of regularly making operating decisions and assessing financial performance. Accordingly, the Company considers itself to be in one operating segment, specifically the licensing and implementation of yield improvement solutions for companies designing and/or manufacturing integrated circuits.

The Company had revenues from individual customers in excess of 10% of total revenues as follows:

	Three Months Ended September 30,		**Nine Months Ended September 30,**	
Customer	**2016**	**2015**	**2016**	**2015**
A	38 %	60 %	42 %	52 %
B	12 %	* %	12 %	12 %

* represents less than 10%

The Company had gross accounts receivable from individual customers in excess of 10% of gross accounts receivable as follows:

Customer	**September 30, 2016**		**December 31, 2015**	
A	45	%	65	%
C	10	%	*	%

* represents less than 10%

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Revenues from customers by geographic area based on the location of the customers' work sites are as follows (in thousands):

	Three Months Ended September 30, 2016			2015		
	Revenues	Percentage of Revenues		Revenues	Percentage of Revenues	
United States	$8,680	32	%	$12,795	54	%
Germany	4,896	18		5,017	21	
Taiwan	4,079	15		2,469	10	
South Korea	3,027	11		764	3	
China	2,907	11		204	1	
Rest of the world	3,670	13		2,629	11	
Total revenue	$27,259	100	%	$23,878	100	%

	Nine Months Ended September 30, 2016			2015		
	Revenues	Percentage of Revenues		Revenues	Percentage of Revenues	
United States	$30,320	38	%	$34,545	47	%
Taiwan	11,988	15		5,747	8	
Germany	11,924	15		17,626	24	
South Korea	8,523	11		8,309	11	
Rest of the world	16,273	21		7,678	10	
Total revenue	$79,028	100	%	$73,905	100	%

Long-lived assets, net by geographic area are as follows (in thousands):

	September 30, 2016	December 31, 2015
United States	$ 17,661	$ 10,752
Rest of the world	531	573
Total long-lived assets, net	$ 18,192	$ 11,325

8. FAIR VALUE MEASUREMENTS

Fair value is the exit price, or the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants as of the measurement date. The multiple assumptions used to value financial instruments are referred to as inputs, and a hierarchy for inputs used in measuring fair value is established, that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs reflect assumptions market participants would use in pricing an asset or liability based on market data obtained from independent sources while unobservable inputs reflect a reporting entity's pricing based upon its own market assumptions. These inputs are ranked according to a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels.

Level 1 - Inputs are quoted prices in active markets for identical assets or liabilities.

Level 2 - Inputs are quoted prices for similar assets or liabilities in an active market, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable and market-corroborated inputs which are derived principally from or corroborated by observable market data.

Level 3 - Inputs are derived from valuation techniques in which one or more significant inputs or value drivers are unobservable.

The following table represents the Company's assets measured at fair value on a recurring basis as of September 30, 2016, and the basis for that measurement (in thousands):

Assets	**Total**	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Money market mutual funds	$26,438	$26,438	$ —	$ —

The following table represents the Company's assets measured at fair value on a recurring basis as of December 31, 2015, and the basis for that measurement (in thousands):

Assets	**Total**	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Money market mutual funds	$26,371	$26,371	$ —	$ —

The Company enters into foreign currency forward contracts to reduce the exposure to foreign currency exchange rate fluctuations on certain foreign currency denominated monetary assets and liabilities, primarily on third-party accounts payables and intercompany balances. The primary objective of the Company's hedging program is to reduce volatility of earnings related to foreign currency exchange rate fluctuations. The counterparty to these foreign currency forward contracts is a large global financial institution that the Company believes is creditworthy, and therefore, the Company believes the credit risk of counterparty nonperformance is not significant. These foreign currency forward contracts are not designated for hedge accounting treatment. Therefore, the change in fair value of these contracts is recorded into earnings as a component of other income (expense), net, and offsets the change in fair value of the foreign currency denominated assets and liabilities, which is also recorded in other income (expense), net. For the three months ended September 30, 2016 and 2015, the Company recognized a realized gain of $37,000 and a realized loss of $15,000 on the contracts, respectively, which was recorded in other income (expense), net in the Company's Statements of Operations and Comprehensive Income. For the nine months ended September 30, 2016 and 2015, the Company recognized a realized gain of $45,000 and a realized loss of $0.6 million on the contracts, respectively, which was recorded in other income (expense), net in the Company's Statements of Operations and Comprehensive

Income.

The Company carries these derivatives financial instruments on its Consolidated Balance Sheets at their fair values. The Company's foreign currency forward contracts are classified as Level 2 because it is not actively traded and the valuation inputs are based on quoted prices and market observable data of similar instruments. As of September 30, 2016, the Company had one outstanding forward contract with a notional amount of $7.2 million and recorded $8,000 other current liabilities associated with this outstanding forward contract. As of December 31, 2015, the Company had one outstanding forward contract with a notional amount of $6.7 million and had recorded $62,000 other current liabilities associated with the outstanding forward contract.

9. COMMITMENTS AND CONTINGENCIES

Leases

The Company leases administrative and sales offices and certain equipment under noncancelable operating leases, which contain various renewal options and, in some cases, require payment of common area costs, taxes and utilities. These operating leases expire at various times through 2024. Rent expense was $0.6 million and $0.5 million for the three months ended September 30, 2016 and 2015, respectively. Rent expense was $1.7 million and $1.6 million for the nine months ended September 30, 2016 and 2015.

Future minimum lease payments under noncancelable operating leases at September 30, 2016, are as follows (in thousands):

Period Ending September 30,	**Amount**
2016 (remaining three months)	$ 516
2017	1,737
2018	1,089
2019	265
2020	196
2021 and thereafter	62
Total future minimum lease payments	$ 3,865

Litigation — From time to time, the Company is subject to various claims and legal proceedings that arise in the ordinary course of business. The Company accrues for losses related to litigation when a potential loss is probable and the loss can be reasonably estimated in accordance with FASB requirements. During the reported period, the Company was not party to any material legal proceedings, thus no loss was probable and no amount was accrued at September 30, 2016.

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

Forward-Looking Statements

The following discussion of our financial condition and results of operations contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. All statements other than statements of historical fact may be forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “may,” “could,” “should,” “expect,” “plan,” “anticipate,” “beli “estimate,” “predict,” “potential”, “target” or “continue,” the negative effect of terms like these or other similar expressions. An statement concerning future financial performance (including future revenues, earnings or growth rates), ongoing business strategies or prospects, and possible actions taken by us or our subsidiaries, which may be provided by us are also forward-looking statements. These forward-looking statements are only predictions. Forward-looking statements are based on current expectations and projections about future events and are inherently subject to a variety of risks and uncertainties, many of which are beyond our control, which could cause actual results to differ materially from those anticipated or projected. All forward-looking statements included in this document are based on information available to us on the date of filing and we further caution investors that our business and financial performance are subject to substantial risks and uncertainties. We assume no obligation to update any such forward-looking statements. In evaluating these statements, you should specifically consider various factors, including the risk factors set forth in Item 1. “Business” and Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report on Form 10-K for the year ended December 31, 2015, filed with the Securities and Exchange Commission on March 1, 2016. All references to “we”, “us”, “our”, “PDF”, “PDF Solutions” or “the Company” refer to PDF Solutions, Inc.

Overview

We analyze our customers’ IC design and manufacturing processes to identify, quantify, and correct the issues that cause yield loss to improve our customers’ profitability by improving time-to-market, increasing yield and reducing total design and manufacturing costs. We package our solutions in various ways to meet our customers’ specific business and budgetary needs, each of which provides us various revenue streams. We receive a mix of fixed fees and variable, performance-based fees for the vast majority of our yield improvement solutions. The fixed fees are typically reflective of the length of time and the resources needed to characterize a customer’s manufacturing process and receive preliminary results of proposed yield improvement suggestions. The variable fee, or what we call Gainshare, usually depends on our achieving certain yield targets by a deadline. Variable fees are currently typically tied to wafer volume on the node size of the manufacturing facility where we performed the yield improvement solutions. We receive license fees and service fees for related installation, integration, training, and maintenance and support services for our software that we license on a stand-alone basis.

Industry Trend

Consistent with the trend since 2010, we expect that the largest logic foundries will continue to invest significantly in leading edge nodes and capacity throughout 2016. Leading foundries continue to invest in new technologies such as multi-patterned lithography and 3-D transistor architecture, which provide opportunities to increase our business.

The capacity utilization of our customers on 28nm declined during 2015, which caused our Gainshare revenue to decline significantly in the same period. Capacity utilization on 28nm has been improving throughout 2016 after hitting bottom at the end of 2015. We expect that improvement to continue for the foreseeable future.

Generally, the demand for consumer electronics and communications devices continues to drive technological innovation in the semiconductor industry as the need for products with greater performance, lower power consumption, reduced costs and smaller size continues to grow with each new product generation. In addition, advances in computing systems and mobile devices have fueled demand for higher capacity memory chips. To meet these demands, IC manufacturers and designers are constantly challenged to improve the overall performance of their ICs by designing and manufacturing ICs with more embedded applications to create greater functionality while lowering cost per transistor. As a result, both logic and memory manufacturers have migrated to more and more advanced manufacturing nodes, capable of integrating more devices with higher performance, higher density, and lower power. As this trend continues, companies will continually be challenged to improve process capabilities to optimally produce ICs with minimal random and systematic yield loss, which is driven by the lack of compatibility between the design and its respective manufacturing process. We believe that as volume production of deep submicron ICs continues to grow, the difficulties of integrating IC designs with their respective processes and ramping new manufacturing processes will create a greater need for products and services that address the yield loss and escalating cost issues the semiconductor industry is facing today and will face in the future.

Customer Contracts

Although a substantial portion of our total revenues are concentrated in a small number of customers, the total revenues for each of these customers in any period is the result of Design-to-silicon-yield solutions and Gainshare performance incentives revenues recognized in the period under multiple, separate contracts, with no interdependent performance obligations. These contracts were all entered into in the ordinary course of our business and contain general terms and conditions that are standard across most of our yield improvement solutions customers, including providing services typically targeted to one manufacturing process node, for example the 28 or 20 nanometer node. Fluctuations in future results may occur if any of these customers renegotiate pre-existing contractual commitments due to adverse changes in their own business. See the additional discussion in Part I, Item 1, "Customers," on page 9 of our Annual Report on Form 10-K for the year ended December 31, 2015, and in Item 1A, "Risk Factors," on pages 12 through 19 of our Annual Report on Form 10-K for the year ended December 31, 2015, for related information on the risks associated with customer concentration and Gainshare performance incentives revenue.

Financial Highlights

Financial highlights for the three months ended September 30, 2016, were as follows:

- Total revenues for the three months ended September 30, 2016, were $27.3 million, an increase of $3.4 million, or 14%, compared to $23.9 million for the three months ended September 30, 2015. Design-to-silicon-yield solutions revenue for the three months ended September 30, 2016, was $18.6 million, an increase of $1.3 million, or 8%, when compared to Design-to-silicon yield solutions revenue of $17.2 million for the three months ended September 30, 2015. The increase in Design-to-silicon-yield solutions was primarily the result of more billable hours to revenue generating projects in the period due to increased business activity and an increase in the revenue from our Exensio big data solution. Gainshare performance incentives revenue for the three months ended September 30, 2016, was $8.7 million, an increase of $2.1 million, or 31%, compared to $6.6 million for the three months ended September 30, 2015. The increase in revenue from Gainshare performance incentives was primarily the result of higher net volumes reported at 28nm and an increase in the number of engagements contributing to 14nm gainshare.

- Net income for the three months ended September 30, 2016 was $1.9 million, compared to $1.5 million for the three months ended September 30, 2015. The increase in net income was primarily attributable to a $2.2 million increase in gross margin due to the overall increase in revenue and favorable mix shift between Design-to-silicon yield solutions and Gainshare performance incentive revenue, and a $0.1 million decrease in tax provision, offset by a $1.7 million increase in operating expense, which was primarily driven by the development activity related to our Design-For-Inspection (DFI) solution development program and a $0.2 million unfavorable change in interest and other income (expense).

- Net income per basic and diluted share was $0.06 for the three months ended September 30, 2016, as compared to net income per basic and diluted share of $0.05 for the three months ended September 30, 2015.

Financial highlights for the nine months ended September 30, 2016, were as follows:

- Total revenues for the nine months ended September 30, 2016, were $79.0 million, an increase of $5.1 million, or 7%, compared to $73.9 million for the nine months ended September 30, 2015. Design-to-silicon-yield solutions revenue for the nine months ended September 30, 2016, was $57.7 million, an increase of $8.1 million, or 16%, when compared to Design-to-silicon yield solutions revenue of $49.6 million for the nine months ended September 30, 2015. The increase in Design-to-silicon-yield solutions was primarily the result of more billable hours to revenue-generating projects in the period due to increased business activity and an increase in the revenue from our Exensio big data solution. Gainshare performance incentives revenue for the nine months ended September 30, 2016, was $21.3 million, a decrease of $3.0 million, or 12%, compared to $24.3 million for the nine months ended September 30, 2015. The decrease in revenue from Gainshare performance incentives was primarily the result of lower net volumes reported at 28nm engagements, partially offset by higher gainshare from 14nm engagements.

- Net income for the nine months ended September 30, 2016, was $6.2 million, compared to $9.6 million for the nine months ended September 30, 2015. The decrease in net income was primarily attributable to a $7.4 million increase in operating expense, which was primarily driven by the development activity related to our DFI solution development program and a $0.6 million unfavorable change in interest and other income (loss) which was due to foreign exchange rate movement, partially offset by a $1.8 million increase in gross margin due to the increase in revenues and a $2.7 million decrease in income tax provision due to the permanent reinstatement of the U.S. federal research tax credit and a decrease in level of income.

- Net income per basic and diluted share was $0.20 and $0.19, respectively, for the nine months ended September 30, 2016, compared to net income per basic and diluted share of $0.31 and $0.30, respectively, for the nine months ended September 30, 2015.

Critical Accounting Policies

There were no significant changes in our critical accounting policies. Please refer to Management’s Discussion and Analysis of Financial Condition and Results of Operations contained in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2015. The following is a brief discussion of the more significant accounting policies and methods that we use.

General

Our discussion and analysis of our financial conditions, results of operations and cash flows are based on our consolidated financial statements, which have been prepared in conformity with accounting principles generally accepted in the United States of America. Our preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the dates of the financial statements and the reported amounts of revenues and expenses during the reporting periods. We based our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. The most significant estimates and assumptions relate to revenue recognition, stock-based compensation and the realization of deferred tax assets. Actual amounts may differ from such estimates under different assumptions or conditions.

Revenue Recognition

We derive revenue from two sources: Design-to-silicon-yield solutions, which include services and software licenses, and Gainshare performance incentives.

Design-to-Silicon-Yield Solutions — Revenue that is derived from Design-to-silicon-yield solutions comes from services and software licenses. We recognize revenue for Design-to-silicon-yield solutions as follows:

We generate a significant portion of our Design-to-silicon-yield solutions revenue from fixed-price solution implementation service contracts delivered over a specific period of time. These contracts require reliable estimation of costs to perform obligations and the overall scope of each engagement. Revenue under project–based contracts for solution implementation services is recognized as services are performed using percentage of completion method of contract accounting based on costs or labor-hours input method, whichever is the most appropriate measure of the progress towards completion of the contract. Losses on solution implementation contracts are recognized in the period when they become probable. Revisions in profit estimates are reflected in the period in which the conditions that require the revisions become known and can be estimated. If we do not accurately estimate the resources required or the scope of work to be performed, or do not manage the projects properly within the planned period of time or satisfy our obligations under contracts, resulting contract margins could be materially different than those anticipated when the contracts were executed. Any such reductions in contract margin could have a material negative impact on our operating results. Revenue under certain time and materials contracts for solution implementation services is recognized as the services are performed.

We defer certain pre-contract costs incurred for specific anticipated contracts. Deferred costs consist primarily of direct costs to provide solution implementation services in relation to the specific anticipated contracts. We recognize such costs as a component of cost of revenues, the timing of which is dependent upon persuasive evidence of contract arrangement assuming all other revenue recognition criteria are met. We also defer costs from arrangements that required us to defer the revenues, typically due to revenue recognition from multi-element arrangements or from contracts subject to customer acceptance. These costs are recognized in proportion to the related revenue. At the end of reporting period, we evaluate its deferred costs for their probable recoverability. We recognize impairment of deferred costs when it is determined that the costs no longer have future benefits and are no longer recoverable.

On occasion, we license our software products as a component of our fixed price service contracts. In such instances, the software products are licensed to customers over a specified term of the agreement with support and maintenance to be provided at each customer's option over the license term. The amount of product and service revenue recognized in a given period is affected by our judgment as to whether an arrangement includes multiple deliverables and, if so, our determination of the fair value of each deliverable. In general, vendor-specific objective evidence of selling price (“VSOE”) does not exist for our solution implementation services and software products and because our services and products include our unique technology, we are not able to determine third-party evidence of selling price (“TPE”). Therefore, in such circumstances, we use best estimated selling prices (“BESP”) in our allocation of arrangement consideration. In determining BESP, we apply significant judgment as we weigh a variety of factors, based on the facts and circumstances of the arrangement. We typically arrive at BESP for a product or service that is not sold separately by considering company-specific factors such as geographies, internal costs, gross margin objectives, pricing practices used to establish bundled pricing, and existing portfolio pricing and discounting. After fair value is established for each deliverable, the total transaction amount is allocated to each deliverable based upon its relative fair value. Fees allocated to solution implementation services are recognized using the percentage of completion method of contract accounting. Fees allocated to software and related support and maintenance are recognized under software revenue recognition guidance.

We also license our software products separately from our solution implementation services. For software license arrangements that do not require significant modification or customization of the underlying software, software license revenue is recognized under the residual method when (1) persuasive evidence of an arrangement exists, (2) delivery has occurred, (3) the fee is fixed or determinable, (4) collectability is probable, and (5) the arrangement does not require services that are essential to the functionality of the software. When arrangements include multiple elements such as support and maintenance, consulting (other than for our fixed price solution implementations), installation, and training, revenue is allocated to each element of a transaction based upon its fair value as determined by our VSOE and such services are recorded as services revenues. VSOE for maintenance is generally established based upon negotiated renewal rates while VSOE for consulting, installation, and training services is established based upon our customary pricing for such services when sold separately. When software is licensed for a specified term, fees for support and maintenance are generally bundled with the license fee over the entire term of the contract. The Company is unable to establish VSOE of fair value for maintenance services that are generally bundled with term licenses. In these cases, the Company recognizes revenue ratably over the term of the contract.

Revenue from Software-as-a-Service (SaaS) that allows for the use of a hosted software product or service over a contractually determined period of time without taking possession of software is accounted for as a subscription and recognized as revenue ratably over the coverage period beginning on the date the service is first made available to customers.

Revenue for software licenses with extended payment terms is not recognized in excess of amounts due. For software license arrangements that require significant modification or customization of the underlying software, the software license revenue is recognized as services are performed using the percentage of completion method of contract accounting, and such revenue is recorded as services revenue.

Deferred revenues consist primarily of amounts invoiced in advance of revenue recognition and are recognized as the revenue recognition criteria are met. Deferred revenues that will be recognized during the succeeding 12-month period are recorded as current deferred revenues and the remaining portion is recorded as non- current deferred revenues.

Gainshare Performance Incentives — When we enter into a contract to provide yield improvement services, the contract usually includes two components: (1) a fixed fee for performance by us of services delivered over a specific period of time; and (2) a Gainshare performance incentives component where the customer may pay a contingent variable fee, usually after the fixed fee period has ended. Revenues derived from Gainshare performance incentives represent profit sharing and performance incentives earned contingent upon our customers reaching certain defined operational levels established in related solution implementation service contracts. Gainshare performance incentives periods are usually subsequent to the delivery of all contractual services and therefore have no cost to us. Due to the uncertainties surrounding attainment of such operational levels, we recognize Gainshare performance incentives revenues (to the extent of completion of the related solution implementation services) upon receipt of performance reports or other related information from our customers supporting the determination of amounts and probability of collection. Gainshare performance incentives revenue is dependent on many factors which are outside our control, which can include among others, continued production of the related ICs by our customers, sustained yield improvements by our customers, and our ability to enter into new Design-to-silicon-yield solutions contracts containing provisions for Gainshare performance incentives.

Stock-Based Compensation

Stock-based compensation is estimated at the grant date based on the award’s fair value and is recognized on a straight-line basis over the vesting periods, generally four years. As stock-based compensation expense recognized is based on awards ultimately expected to vest, it has been reduced for estimated forfeitures. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

We have elected to use the Black-Scholes-Merton option-pricing model, which incorporates various assumptions including volatility, expected life and interest rates. The expected volatility is based on the historical volatility of our common stock over the most recent period commensurate with the estimated expected life of stock options. The expected life of an award is based on historical experience and on the terms and conditions of the stock awards granted to employees. The interest rate assumption is based upon observed Treasury yield curve rates appropriate for the expected life of stock options.

Income Taxes

We are required to assess the likelihood that our deferred tax assets will be recovered from future taxable income and if we believe that they are not likely to be realizable before the expiration dates applicable to such assets then, to the extent we believe that recovery is not likely, establish a valuation allowance. Changes in the net deferred tax assets, less offsetting valuation allowance, in a period are recorded through the income tax provision in the condensed consolidated statements of operations. The valuation allowance was approximately $6.5 million and $6.2 million as of September 30, 2016 and December 31, 2015, respectively, which was related to California R&D tax credits and California net operating losses related to acquisition that we currently do not believe to be more likely than not to be ultimately realized. If we conclude at a future financial reporting period that there has been a change in our ability to realize our California R&D credit and net operating loss carry forward deferred tax assets, and it is at such time no longer “more–likely-than-not” that we will realize the tax credits before applicable expiration dates, our tax provision will increase in the period in which we make such determination.

Our income tax calculations are based on application of the respective U.S. federal, state or foreign tax law. Our tax filings, however, are subject to audit by the respective tax authorities. Accordingly, we recognize tax liabilities based upon our estimate of whether, and the extent to which, additional taxes will be due when such estimates are more-likely-than-not to be sustained. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. To the extent the final tax liabilities are different than the amounts originally accrued, the increases or decreases are recorded as income tax expense or benefit in the consolidated statements of operations.

Software Development Costs

Internally developed software includes software developed to meet our internal needs to provide solution implementation services to our end-customers. These capitalized costs consist of internal compensation related costs and external direct costs incurred during the application development stage and are amortized over their useful lives, generally six years.

The costs to develop software that is marketed externally have not been capitalized as we believe our current software development process is essentially completed concurrent with the establishment of technological feasibility. As such, all related software development costs are expensed as incurred and included in research and development expense in our consolidated statements of operations.

Goodwill and Intangible Assets

We record goodwill when the purchase consideration of an acquisition exceeds the fair value of the net tangible and identified intangible assets as of the date of acquisition. We perform an annual impairment assessment of goodwill during the fourth quarter of each calendar year or more frequently if required to determine if any events or circumstances exist, such as an adverse change in business climate or a decline in the overall industry demand, that would indicate that it would more likely than not reduce the fair value of a reporting unit below its carrying amount, including goodwill. If events or circumstances do not indicate that the fair value of a reporting unit is below its carrying amount, then goodwill is not considered to be impaired and no further testing is required. If further testing is required, we perform a two-step process. The first step involves comparing the fair value of its reporting unit to its carrying value, including goodwill. If the carrying value of the reporting unit exceeds its fair value, the second step of the test is performed by comparing the carrying value of the goodwill in the reporting unit to its implied fair value. An impairment charge is recognized for the excess of the carrying value of goodwill over its implied fair value. For the purpose of impairment testing, we have determined that we have one reporting unit. There was no impairment of goodwill for the period ended September 30, 2016.

Our long-lived assets, excluding goodwill, consist of property and equipment and intangible assets. We periodically review our long-lived assets for impairment. For assets to be held and used, we initiate our review whenever events or changes in circumstances indicate that the carrying amount of a long-lived asset group may not be recoverable. Recoverability of an asset group is measured by comparison of its carrying amount to the expected future undiscounted cash flows that the asset group is expected to generate. If it is determined that an asset group is not recoverable, an impairment loss is recorded in the amount by which the carrying amount of the asset group exceeds its fair value. During the three and nine months ended September 30, 2016, there was no impairment related to our long-lived assets.

Recent Accounting Pronouncements and Accounting Changes

See Note 2 of “Notes to Condensed Consolidated Financial Statements (Unaudited)” of this Quarterly Report on Form 10-Q for a description of recent accounting pronouncements and accounting changes, including the expected dates of adoption and estimated effects, if any, on our consolidated financial statements.

Results of Operations

The following table sets forth, for the periods indicated, the percentage of total revenues represented by the line items reflected in our condensed consolidated statements of operations:

	Three Months Ended September 30, 2016	2015	Nine Months Ended September 30, 2016	2015
Revenues:				
Design-to-silicon-yield solutions	68 %	72 %	73 %	67 %
Gainshare performance incentives	32	28	27	33
Total revenues	100 %	100 %	100 %	100 %
Costs of design-to-silicon-yield solutions	42	43	41	39
Amortization of acquired technology	—	—	—	—
Total costs of Design-to-silicon-yield solutions	42	43	41	39
Gross profit	58	57	59	61
Operating expenses:				
Research and development	26	22	26	19
Selling, general and administrative	21	24	20	20
Amoritization of other acquired intangible assets	—	—	—	—
Total operating expenses	47	46	46	39
Income from operations	11	11	13	22
Interest and other income (expense), net	—	—	—	—
Income before taxes	11	11	13	22
Income tax provision	4	5	5	9
Net income	7 %	6 %	8 %	13 %

Comparison of the Three Months Ended September 30, 2016 and 2015

Revenues	**Three Months Ended September 30, 2016**	**2015**	**$ Change**	**% Change**	
(in thousands, except for percentages)					
Design-to-silicon-yield solutions	$18,552	$17,246	$1,306	8	%
Gainshare performance incentives	8,707	6,632	2,075	31	%
Total revenues	$27,259	$23,878	$3,381	14	%

Design-to-silicon-yield solutions. Design-to-silicon-yield solutions revenue is derived from services (including solution implementations, software support and maintenance, consulting, and training) and software licenses, provided during our customer yield improvement engagements as well as during solution product sales. Design-to-silicon-yield solutions revenue increased $1.3 million for the three months ended September 30, 2016, compared to the three months ended September 30, 2015, primarily due to an increase in the revenue from fixed fee integrated solutions, the result of more billable hours to revenue-generating projects in the period due to increased business activity and an increase in the revenue from our Exensio big data solution. Our Design-to-silicon-yield solutions revenue may fluctuate in the future and is dependent on a number of factors, including the semiconductor industry's continued acceptance of our solutions, the timing of purchases by existing customers, and our ability to attract new customers and penetrate new markets including photovoltaic and LED, and further penetration of our current customer base. Fluctuations in future results may also occur if any of our significant customers renegotiate pre-existing contractual commitments due to adverse changes in their own business or, in the case of a time and materials contract, may take advantage of contractual provisions that permit the suspension of contracted work for a period if their business experiences a financial hardship.

Gainshare Performance Incentives. Gainshare performance incentives revenues represent profit sharing and performance incentives earned contingent upon our customers reaching certain defined operational levels. Revenue derived from Gainshare performance incentives increased $2.1 million for the three months ended September 30, 2016, compared to the three months ended September 30, 2015. Gainshare performance incentives was primarily the result of higher net volumes reported at 28nm and an increase in the number of engagements contributing to 14nm gainshare. Our Gainshare performance incentives revenue may continue to fluctuate from period to period. Gainshare performance incentives revenue is dependent on many factors that are outside our control, including among others, continued production of ICs by our customers at facilities at which we generate gainshare, sustained yield improvements by our customers, and our ability to enter into new Design-to-silicon-yield solutions contracts containing provisions for Gainshare performance incentives.

	Three Months Ended	**$**	**%**

Costs of Design-to-silicon-yield solutions	September 30, 2016	2015	Change	Change	
(in thousands, except for percentages)					
Direct costs of Design-to-silicon-yield solutions	$11,366	$10,172	$1,194	12	%
Amortization of acquired technology	86	80	6	8	%
Total costs of Design-to-silicon-yield solutions	$11,452	$10,252	$1,200	12	%

Costs of Design-to-silicon-yield solutions. Costs of Design-to-silicon-yield solutions consist of costs incurred to provide and support our services and costs recognized in connection with licensing our software. Services costs consist of material, employee compensation and related benefits, overhead costs, travel and facilities-related costs. Software license costs consist of costs associated with licensing third-party software sold in conjunction with our software products. Direct costs of Design-to-silicon-yield solutions for the three months ended September 30, 2016 increased $1.2 million compared to the three months ended September 30, 2015, primarily due to a $0.8 million increase in personnel cost driven by hiring in Asia and world-wide merit increases, a $0.3 million increase in subcontractor expense due to increased revenues, a $0.2 million increase in depreciation expense, a $0.2 million increase in facility cost, and a $0.1 million increase in travel expense, offset by a $0.4 million decrease in equipment costs. Amortization of acquired technology for the three months ended September 30, 2016 and 2015 was due to the amortization of acquired technology from the Syntricity acquisition.

Research and Development	**Three Months Ended September 30, 2016**	**2015**	**$ Change**	**% Change**
(in thousands, except for percentages)				
Research and development	$7,017	$5,173	$ 1,844	36 %

Research and Development. Research and development expenses consist primarily of personnel-related costs to support product development activities, including compensation and benefits, outside development services, travel and facilities cost allocations, and stock-based compensation charges. Research and development expenses increased $1.8 million for the three months ended September 30, 2016, compared to the three months ended September 30, 2015, primarily due to a $0.9 million personnel-related expense due to higher headcount and world-wide merit increases, a $0.7 million increase in subcontractor expense, a $0.1 million increase in lab supplies, and a $0.2 million increase in travel expense, offset by $0.1 million decrease in acquisition costs related to Syntricity acquisition in the prior year. The increased investment in research and development is primarily driven by continued development activity related to our DFI solution development program. We anticipate our expenses in research and development will fluctuate in absolute dollars from period to period as a result of cost control initiatives and the timing of when we hire personnel as a result of the size and the timing of product development projects.

Selling, General and Administrative	**Three Months Ended September 30, 2016**	**2015**	**$ Change**	**% Change**
(in thousands, except for percentages)				
Selling, general and administrative	$5,548	$5,665	$ (117)	(2)%

Selling, General and Administrative. Selling, general and administrative expenses consist primarily of compensation and benefits for sales, marketing and general and administrative personnel, legal and accounting services, marketing communications, travel and facilities cost allocations, and stock-based compensation charges. Selling, general and administrative expenses decreased $0.1 million for the three months ended September 30, 2016, compared to the three months ended September 30, 2015, primarily due to a $0.7 million decrease in acquisition-related costs related to Syntricity acquisition in the prior year, offset by a $0.4 million increase in personnel-related expense as a result of headcount increases and world-wide merit increases, and a $0.2 million increase in subcontractor costs. We anticipate our selling, general and administrative expenses will fluctuate in absolute dollars from period to period as a result of cost control initiatives and to support increased selling efforts in the future.

	Three Months Ended September 30,			
Amortization of Other Acquired Intangible Assets	**2016**	**2015**	**$ Change**	**% Change**
(In thousands, except for percentages)				
Amortization of other acquired intangible assets	$106	$89	$17	19%

Amortization of Other Acquired Intangible Assets. Amortization of other acquired intangible assets consists of amortization of intangibles acquired as a result of certain business combinations. The amortization of other acquired intangible assets for the three months ended September 30, 2016 is related to amortization of acquired intangible assets from the Syntricity acquisition.

	Three Months Ended September 30,			
Interest and Other Income (Expense), Net	**2016**	**2015**	**$ Change**	**% Change**
(in thousands, except for percentages)				
Interest and other income (expense), net	$(101)	$64	$(165)	(258)%

Interest and Other Income (expense), net. Interest and other income (expense), net changed $0.2 million for the three months ended September 30, 2016 compared to the three months ended September 30, 2015. The change was primarily due to foreign exchange rate movements.

Income Tax Provision	**Three Months Ended September 30, 2016**	**2015**	**$ Change**	**% Change**
(in thousands, except for percentages)				
Income tax provision	$1.145	$1,269	$ (124)	(10)%

Income Tax Provision. Income tax provision decreased $0.1 million for the three months ended September 30, 2016, compared to three months ended September 30, 2015, primarily due to primarily due to the permanent reinstatement of the U.S. federal research tax credit.

Comparison of the Nine Months Ended September 30, 2016 and 2015

Revenues	**Nine Months Ended September 30, 2016**	**2015**	**$ Change**	**% Change**
(In thousands, except for percentages)				
Design-to-silicon-yield solutions	$57,704	$49,557	$8,147	16 %
Gainshare performance incentives	21,324	24,348	(3,024)	(12)%
Total	$79,028	$73,905	$5,123	7 %

Design-to-Silicon-Yield Solutions. Design-to-silicon-yield solutions revenue increased $8.1 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015, primarily due to an increase in the revenue from fixed fee integrated solutions, the result of more billable hours to revenue-generating projects in the period due to increased business activity and an increase in the revenue from our Exensio big data solution.

Gainshare Performance Incentives. Revenue derived from gainshare performance incentives decreased $3.0 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015. The decrease was primarily the result of lower net volumes reported at 28nm engagements, partially offset by higher gainshare from 14nm engagements.

Costs of Design-to-silicon-yield solutions	**Nine Months Ended September 30, 2016**	**2015**	**$ Change**	**% Change**	
(in thousands, except for percentages)					
Direct costs of Design-to-silicon-yield solutions	$32,034	$28,863	$3,171	11	%
Amortization of acquired technology	278	80	198	248	%
Total costs of Design-to-silicon-yield solutions	$32,312	$28,943	$3,369	12	%

Costs of Design-to-Silicon-Yield Solutions. Direct costs of Design-to-silicon-yield solutions increased $3.2 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015. The increase was primarily due to a $2.1 million increase in personnel-related costs, driven by hiring in Asia and world-wide merit increases, a $0.5 increase in million subcontractor costs, a $0.4 million increase in depreciation expense related to our test equipment, a $0.9 million increase in facility expense, offset by a $0.5 million decrease in equipment costs. Amortization of acquired technology for the three months ended September 30, 2016 was due to the amortization of acquired technology from the Syntricity acquisition.

Research and Development	**Nine Months Ended September 30, 2016**	**2015**	**$ Change**	**% Change**	
(In thousands, except for percentages)					
Research and development	$20,388	$13,698	$6,690	49	%

Research and Development. Research and development expenses increased $6.7 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015, primarily due to a $3.4 million increase in personnel-related expense due to a higher headcount and world-wide merit increases, a $2.1 million increase in subcontractor expenses, a $0.7 million increase in facility expense, $0.2 million increase in lab supplies, $0.3 million increase in travel expense and a $0.1 million increase in depreciation expense, offset by a $0.1 million decrease in acquisition costs. The increased investment in research and development is primarily driven by a continued development activity related to our DFI solution development program.

Selling, General and Administrative	**Nine Months Ended September 30, 2016**	**2015**	**$ Change**	**% Change**
(In thousands, except for percentages)				
Selling, general and administrative	$15,766	$15,336	$ 430	3 %

Selling, General and Administrative. Selling, general and administrative expenses increased $0.4 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015, primarily due to a $1.1 million increase in personnel-related expense as a result of increased headcount from Syntricity acquisition in the third quarter of fiscal year 2015, hiring in our software solution business and world-wide merit increases, a $0.3 million increase in subcontractor expense, a $0.2 million increase in facility expense, a $0.1 million increase in accounting and legal expense, a $0.1 million increase in recruiting expense, offset by a $1.2 million decrease in acquisition costs relating to the Syntricity acquisition in the prior year and a $0.2 million decrease in travel expense.

Amortization of Other Acquired Intangible Assets	**Nine Months Ended September 30, 2016**	**2015**	**$ Change**	**% Change**
(In thousands, except for percentages)				
Amortization of other acquired intangible assets	$340	$ 89	$ 251	282 %

The amortization of other acquired intangible assets for the nine months ended September 30, 2016 is related to amortization of acquired intangible assets from the Syntricity acquisition.

	Nine Months Ended September 30,	**$**	**%**

Interest and Other Income (Expense), Net	2016	2015	Change	Change
(In thousands, except for percentages)				
Interest and other income (expense), net	$(388)	$166	$ (554)	(334)%

Interest and Other Income (Expense), Net. Interest and other income (expense) changed $0.6 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015. The change was primarily due to foreign exchange rate movements.

	Nine Months Ended September 30,		$	%
Income Tax Provision	**2016**	**2015**	**Change**	**Change**
(In thousands, except for percentages)				
Income tax provision	$3,668	$6,395	$(2,727)	(43)%

Income Tax Provision. Income tax provision decreased $2.7 million for the nine months ended September 30, 2016 compared to nine months ended September 30, 2015, primarily due to the permanent reinstatement of the U.S. federal research tax credit and a decrease in level of income.

Liquidity and Capital Resources

Operating Activities

Cash flows used in operating activities was $0.3 million for the nine months ended September 30, 2016. This resulted from net income of $6.2 million, an adjustment of $10.1 million for non-cash charges and a cash decrease of $16.5 million reflected in the net change of operating assets and liabilities. Non-cash charges consisted primarily of stock-based compensation of $7.9 million, depreciation and amortization of $2.6 million, amortization of acquired intangible assets of $0.6 million, a loss on disposal of property and equipment of $0.1 million and deferred taxes of $0.1 million, a tax benefit related to stock-based compensation of $1.0 million, partially offset by tax withholdings related to net share settlements of restricted stock awards and units of $1.2 million, an excess tax benefit from stock-based compensation of $1.0 million, a $0.1 million reversal of allowance for doubtful accounts and $0.1 million unrealized gain from foreign currency forward contract. Cash flow decreases resulting from the net change in operating assets and liabilities primarily consisted of a $10.5 million increase in accounts receivable, a $9.3 million increase in prepaid expense and other assets due to the increase in the long-term unbilled portion of two of the Company's Design-to-silicon-yield solutions contracts, a $1.2 million decrease in billing in excess of recognized revenues, offset by a $3.9 million increase in deferred revenue, a $0.3 million increase in accrued compensation and related benefits and a $0.1 million increase in accrued and other liabilities.

Cash flows provided by operating activities was $22.1 million for the nine months ended September 30, 2015. This resulted from net income of $9.6 million, adjustment of $10.3 million for non-cash charges and a cash increase of $2.2 million reflected in the net change of operating assets and liabilities. Non-cash charges consisted primarily of stock-based compensation of $7.1 million, deferred taxes of $1.6 million, tax benefit related to a stock-based compensation plan of $1.8 million, depreciation and amortization of $1.9 million, accrued contingent earn-out payments of $0.5 million, and amortization of acquired intangible assets of $0.2 million, partially offset by excess tax benefit from stock-based compensation of $1.7 million and tax withholdings related to net share settlements of restricted stock awards and units of $1.1 million. Cash flow increases resulting from the net change in operating assets and liabilities primarily consisted of a $6.3 million decrease in accounts receivable, primarily driven by strong collections, a $0.8 million net increase in deferred revenue, a $0.6 million increase in accrued and other liabilities, and a $0.1 million increase in billings in excess of recognized revenues, offset by a $0.3 million decrease in accounts payable, $1.9 million decrease in accrued compensation and related benefits, driven by the payment of variable compensation during the period, and a $3.4 million decrease in prepaid expenses and other assets. The $7.2 million combined cash flow increase resulting from the decrease in accounts receivable, the increase in deferred revenue and the increase in billings in excess of recognized revenues, was primarily due to the timing of billing milestones and payments received

Investing Activities

Cash flows used in investing activities of for the nine months ended September 30, 2016 consisted of $8.9 million payment for capital expenditures, primarily related to our DFI test equipment.

Cash flows used in investing activities for the nine months ended September 30, 2015 of $9.2 million consisted of $4.0 million payments for capital expenditures, primarily test equipment and $5.2 million payments for business acquisitions, net of cash acquired.

Financing Activities

Cash flows provided by financing activities of $1.5 million for the nine months ended September 30, 2016, consisted primarily of $1.1 million of proceeds from the exercise of stock options, $1.6 million of proceeds from our Employee Stock Purchase Plan, a $1.0 million of excess tax benefit from stock-based compensation, offset by $2.2 million of cash used to repurchase 149,457 shares of our common stock at an average price of $14.57 per share.

Cash flows used in financing activities of $2.0 million for the nine months ended September 30, 2015, consisted primarily of $4.9 million of proceeds from the exercise of stock options, $1.4 million of proceeds from our Employee Stock Purchase Plan, and $1.7 million of excess tax benefit from stock-based compensation, offset by $9.6 million of cash used to repurchase 636,996 shares of our common stock at an average price of $15.09 per share.

Liquidity

As of September 30, 2016, our working capital, defined as total current assets less total current liabilities, was $150.0 million, compared with $148.8 million as of December 31, 2015. Cash and cash equivalents were $118.5 million as of September 30, 2016, compared to $126.2 million as of December 31, 2015. As of September 30, 2016 and December 31, 2015, cash and cash equivalents held by our foreign subsidiaries were $2.9 million and $2.2 million, respectively. We believe that our existing cash resources and anticipated funds from operations will satisfy our cash requirements to fund our operating activities, capital expenditures and other obligations for the foreseeable future.

Off-Balance Sheet Agreements

We do not have any off-balance sheet arrangements, investments in special purpose entities or undisclosed borrowings or debt.

Contractual Obligations

The following table summarizes our known contractual obligations (in thousands) as of September 30, 2016:

	Payments Due by Period						
Contractual Obligations (1)	**2016 (remaining three months)**	**2017**	**2018**	**2019**	**2020**	**2021 and thereafter**	**Total**
Operating lease obligations	$516	$1,737	$1,089	$265	$196	$ 62	$3,865

(1) The contractual obligation table above excludes liabilities for uncertain tax positions of $2.9 million, which are not practicable to assign to any particular years, due to the inherent uncertainty of the tax positions. See Note 5 of "Notes to Consolidated Financial Statements" for further discussion.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

The following discusses our exposure to market risk related to changes in interest rates and foreign currency exchange rates. We do not currently own any equity investments, nor do we expect to own any in the foreseeable future. This discussion contains forward-looking statements that are subject to risks and uncertainties. Actual results could vary materially as a result of a number of factors.

Interest Rate Risk. As of September 30, 2016, we had cash and cash equivalents of $118.5 million. Cash and cash equivalents consisted of cash and highly liquid money market instruments. We would not expect our operating results or cash flows to be affected to any significant degree by the effect of a sudden change in market interest on our portfolio. A hypothetical increase in market interest rates of 100 basis points from the market rates in effect at September 30, 2016, would cause the fair value of these investments to decrease by an immaterial amount which would not have significantly impacted our financial position or results of operations. Declines in interest rates over time will result in lower interest income and interest expense.

Foreign Currency and Exchange Risk. Certain of our payables for our international offices are denominated in the local currency, including the Euro, Yen and RMB. Therefore, a portion of our operating expenditures is subject to foreign currency risks. We enter into foreign currency forward contracts to reduce the exposure to foreign currency exchange rate fluctuations on certain foreign currency denominated monetary assets and liabilities. We do not use foreign currency forward contracts for speculative or trading purposes. We record these forward contracts at fair value. The counterparty to these foreign currency forward contracts is a large global financial institution that we believe is creditworthy, and therefore, we believe the credit risk of counterparty non-performance is not significant. The change in fair value of these contracts is recorded into earnings as a component of other income (expense), net and offsets the change in fair value of foreign currency denominated monetary assets and liabilities, which is also recorded in other income (expense), net. As of September 30, 2016, we had one outstanding forward contract with a notional amount of $7.2 million. The foreign currency exchange rate movement of plus-or-minus 10% will result in the change in fair value of this contract of plus-or-minus $0.7 million.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and principal financial and accounting officer, evaluated the effectiveness of our "disclosure controls and procedures" as defined in Exchange Act Rules 13a-15(e) and 15d-15(e) as of September 30, 2016, in connection with the filing of this Quarterly Report on Form 10-Q. Based on that evaluation as of September 30, 2016, our principal executive officer and principal financial and accounting officer concluded that our disclosure controls and procedures were effective to ensure that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in rules and forms of the SEC and accumulated and communicated to our management as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting

There were no changes in the Company's internal control over financial reporting during the three months ended September 30, 2016, that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

PART II — OTHER INFORMATION

Item 1. Legal Proceedings

From time to time, we are subject to various claims and legal proceedings that arise in the ordinary course of business. We accrue for losses related to litigation when a potential loss is probable and the loss can be reasonably estimated in accordance with FASB requirements. During the reported period, we were not a party to any material legal proceedings, thus no loss was probable and no amount was accrued at September 30, 2016.

Item 1A. Risk Factors

Item 1A, “Risk Factors,” on pages 12 through 19 of the Company’s Annual Report on Form 10-K for the year ended December 31, 2015, provides information on the significant risks associated with our business. There have been no subsequent material changes to these risks.

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

The table below sets forth the information with respect to purchases made by or on behalf of the Company or any “affiliated purchaser” (as the term is defined in Rule 10b-18(a)(3) under the Securities Exchange Act of 1934) of our common stock during the three months ended September 30, 2016 (in thousands except per share amounts):

ISSUER PURCHASES OF EQUITY SECURITIES

Period	**Total Number of Shares Purchased (1)**	**Average Price Paid Per Share**	**Total Number of Shares Purchased as Part of Publicly Announced Programs (1)**	**Approximate Dollar Value of Shares that May Yet Be Purchased Under Programs (1)**
Month #7 (July 1, 2016 through July 30, 2016)	—	$ —	—	$ 8,631
Month #8 (August 1, 2016 through August 31, 2016)	20	$ 16.90	20	$ 8,293
Month #9 (September 1, 2016 through September 30, 2016)	—	$ —	—	$ 8,293
Total	20	$ 16.90	20	

(1) On October 21, 2014, the Board of Directors adopted a program, effectively immediately, to repurchase up to $25.0 million of the Company's common stock both on the open market and in privately negotiated transactions over the next two years. This program expired on October 21, 2016. On October 25, 2016, the Board of Directors adopted a new program, effective immediately, to repurchase up to $25.0 million of the Company's common stock both on the open market and in privately negotiated transactions over the next two years.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

None.

Item 5. Other Information

None.

Item 6. Exhibits

Exhibit Number	**Description**
31.01	Certification of the principal executive officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.02	Certification of the principal financial and accounting officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.01	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.02	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema Document.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.

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.

PDF SOLUTIONS, INC.

Date: November 3, 2016	By: /s/ JOHN K. KIBARIAN John K. Kibarian President and Chief Executive Officer (principal executive officer)
Date: November 3, 2016	By: /s/ GREGORY C. WALKER Gregory C. Walker Vice President, Finance and Chief Financial Officer (principal financial and accounting officer)

INDEX TO EXHIBITS

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