UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

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

For the quarterly period ended September 30, 2017

OR

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

For the transition period from _______ to _______

Commission File Number: 000-24612

ADTRAN, Inc.
(Exact Name of Registrant as Specified in its Charter)

Delaware (State or other jurisdiction of incorporation or organization)	**63-0918200** (I.R.S. Employer Identification No.)
901 Explorer Boulevard **Huntsville, Alabama** (Address of principal executive offices)	**35806-2807** (Zip Code)

Registrant's telephone number, including area code: (256) 963-8000

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒		Accelerated filer	☐
Non-accelerated filer	☐	(Do not check if a small reporting company)	Small reporting company	☐
Emerging growth company	☐			

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

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

As of October 23, 2017, the registrant had 48,149,591 shares of common stock, $0.01 par value per share, outstanding.

ADTRAN, Inc.

Quarterly Report on Form 10-Q
For the Three and Nine Months Ended September 30, 2017

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FORWARD LOOKING STATEMENTS

The Private Securities Litigation Reform Act of 1995 provides a safe harbor for forward-looking statements made by or on behalf of ADTRAN. ADTRAN and its representatives may from time to time make written or oral forward-looking statements, including statements contained in this report, our other filings with the Securities and Exchange Commission (SEC) and other communications with our stockholders. Generally, the words, "believe," "expect," "intend," "estimate," "anticipate," "will," "may," "could" and similar expressions identify forward-looking statements. We caution you that any forward-looking statements made by us or on our behalf are subject to uncertainties and other factors that could cause such statements to be wrong. A list of factors that could materially affect our business, financial condition or operating results is included under "Factors that Could Affect Our Future Results" in "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained in Item 2 of Part I of this report. They have also been discussed in Item 1A of Part I in our most recent Annual Report on Form 10-K for the year ended December 31, 2016 filed on February 24, 2017 with the SEC. Though we have attempted to list comprehensively these important factors, we caution investors that other factors may prove to be important in the future in affecting our operating results. New factors emerge from time to time, and it is not possible for us to predict all of these factors, nor can we assess the impact each factor or a combination of factors may have on our business.

You are further cautioned not to place undue reliance on these forward-looking statements because they speak only of our views as of the date that the statements were made. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

PART I. FINANCI AL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

ADTRAN, INC.
CONSOLIDATED BALANCE SHEETS
(Unaudited)
(In thousands, except per share amounts)

	September 30, 2017	December 31, 2016
ASSETS		
Current Assets		
Cash and cash equivalents	$ 128,253	$ 79,895
Short-term investments	31,385	43,188
Accounts receivable, less allowance for doubtful accounts of $— at September 30, 2017 and December 31, 2016	101,613	92,346
Other receivables	18,541	15,137
Income tax receivable, net	—	760
Inventory, net	116,230	105,117
Prepaid expenses and other current assets	23,127	16,459
Total Current Assets	**419,149**	**352,902**
Property, plant and equipment, net	85,665	84,469
Deferred tax assets, net	37,130	38,036
Goodwill	3,492	3,492
Other assets	13,135	12,234
Long-term investments	136,987	176,102
Total Assets	**$ 695,558**	**$ 667,235**
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities		
Accounts payable	$ 73,127	$ 77,342
Unearned revenue	13,651	16,326
Accrued expenses	15,099	12,434
Accrued wages and benefits	15,345	20,433
Income tax payable, net	7,696	—
Total Current Liabilities	**124,918**	**126,535**
Non-current unearned revenue	4,918	6,333
Other non-current liabilities	34,756	28,050
Bonds payable	26,800	26,800
Total Liabilities	**191,392**	**187,718**
Commitments and contingencies (see Note 14)		
Stockholders' Equity		
Common stock, par value $0.01 per share; 200,000 shares authorized; 79,652 shares issued and 48,003 shares outstanding at September 30, 2017 and 79,652 shares issued and 48,472 shares outstanding at December 31, 2016	797	797
Additional paid-in capital	258,655	252,957
Accumulated other comprehensive loss	(4,256)	(12,188)
Retained earnings	941,845	921,942
Less treasury stock at cost: 31,649 and 31,180 shares at September 30, 2017 and December 31, 2016, respectively	(692,875)	(683,991)
Total Stockholders' Equity	**504,166**	**479,517**
Total Liabilities and Stockholders' Equity	**$ 695,558**	**$ 667,235**

See notes to consolidated financial statements

ADTRAN, INC.
CONSOLIDATED STATEMENTS OF INCOME
(Unaudited)
(In thousands, except per share amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Sales				
Products	$ 145,467	$ 136,277	$ 444,607	$ 398,709
Services	39,645	32,613	95,457	75,086
Total Sales	**185,112**	**168,890**	**540,064**	**473,795**
Cost of sales				
Products	73,528	70,988	229,845	202,905
Services	25,086	22,094	65,374	50,333
Total Cost of Sales	**98,614**	**93,082**	**295,219**	**253,238**
Gross Profit	**86,498**	**75,808**	**244,845**	**220,557**
Selling, general and administrative expenses	34,652	33,716	104,102	97,367
Research and development expenses	33,528	31,962	98,945	92,727
Operating Income	**18,318**	**10,130**	**41,798**	**30,463**
Interest and dividend income	952	910	2,857	2,692
Interest expense	(139)	(143)	(417)	(430)
Net realized investment gain	1,009	1,316	2,869	4,154
Other expense, net	(933)	(246)	(1,686)	(378)
Gain on bargain purchase of a business	—	3,550	—	3,550
Income before provision for income taxes	**19,207**	**15,517**	**45,421**	**40,051**
Provision for income taxes	(3,309)	(3,102)	(10,471)	(12,394)
Net Income	**$ 15,898**	**$ 12,415**	**$ 34,950**	**$ 27,657**
Weighted average shares outstanding – basic	47,870	48,470	48,110	48,839
Weighted average shares outstanding – diluted	48,531	48,678	48,618	49,036
Earnings per common share – basic	$ 0.33	$ 0.26	$ 0.73	$ 0.57
Earnings per common share – diluted	$ 0.33	$ 0.26	$ 0.72	$ 0.56
Dividend per share	$ 0.09	$ 0.09	$ 0.27	$ 0.27

See notes to consolidated financial statements

ADTRAN, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited)
(In thousands)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	**2016**	**2017**	**2016**
Net Income	$ 15,898	$ 12,415	$ 34,950	$ 27,657
Other Comprehensive Income, net of tax				
Net unrealized gains (losses) on available-for-sale securities	804	258	2,512	(162)
Net unrealized gains (losses) on cash flow hedges	142	—	(196)	—
Defined benefit plan adjustments	73	36	214	103
Foreign currency translation	1,541	575	5,402	1,202
Other Comprehensive Income, net of tax	**2,560**	**869**	**7,932**	**1,143**
Comprehensive Income, net of tax	**$ 18,458**	**$ 13,284**	**$ 42,882**	**$ 28,800**

See notes to consolidated financial statements

ADTRAN, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)
(In thousands)

	Nine Months Ended September 30, 2017	Nine Months Ended September 30, 2016
Cash flows from operating activities:		
Net income	$ 34,950	$ 27,657
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	12,034	10,260
Amortization of net premium on available-for-sale investments	352	489
Net realized gain on long-term investments	(2,869)	(4,154)
Net (gain) loss on disposal of property, plant and equipment	(10)	21
Gain on bargain purchase of a business	—	(3,550)
Stock-based compensation expense	5,573	4,601
Deferred income taxes	—	(463)
Changes in operating assets and liabilities:		
Accounts receivable, net	(6,975)	(29,370)
Other receivables	(2,924)	7,475
Inventory	(9,483)	(683)
Prepaid expenses and other assets	(9,647)	(5,180)
Accounts payable	(4,727)	16,363
Accrued expenses and other liabilities	(2,820)	7,307
Income tax payable/receivable, net	8,571	(2,941)
Net cash provided by operating activities	**22,025**	**27,832**
Cash flows from investing activities:		
Purchases of property, plant and equipment	(12,304)	(12,684)
Proceeds from disposals of property, plant and equipment	16	—
Proceeds from sales and maturities of available-for-sale investments	137,272	141,103
Purchases of available-for-sale investments	(79,713)	(139,181)
Acquisition of business	—	(943)
Net cash provided by (used in) investing activities	**45,271**	**(11,705)**
Cash flows from financing activities:		
Proceeds from stock option exercises	6,606	1,076
Purchases of treasury stock	(17,348)	(22,917)
Dividend payments	(13,031)	(13,230)
Net cash used in financing activities	**(23,773)**	**(35,071)**
Net increase (decrease) in cash and cash equivalents	43,523	(18,944)
Effect of exchange rate changes	4,835	686
Cash and cash equivalents, beginning of period	**79,895**	**84,550**
Cash and cash equivalents, end of period	**$ 128,253**	**$ 66,292**
Supplemental disclosure of non-cash investing activities:		
Purchases of property, plant and equipment included in accounts payable	$ 272	$ 1,174

See notes to consolidated financial statements

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The accompanying unaudited consolidated financial statements of ADTRAN ®, Inc. and its subsidiaries (ADTRAN) have been prepared pursuant to the rules and regulations for reporting on Quarterly Reports on Form 10-Q. Accordingly, certain information and notes required by generally accepted accounting principles for complete financial statements are not included herein. The December 31, 2016 Consolidated Balance Sheet is derived from audited financial statements, but does not include all disclosures required by accounting principles generally accepted in the United States.

In the opinion of management, all adjustments necessary to fairly state these interim statements have been recorded and are of a normal and recurring nature. The results of operations for an interim period are not necessarily indicative of the results for the full year. The interim statements should be read in conjunction with the financial statements and notes thereto included in ADTRAN's Annual Report on Form 10-K for the year ended December 31, 2016, filed on February 24, 2017 with the SEC.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America 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 revenue and expense during the reporting period. Our more significant estimates include the obsolete and excess inventory reserves, warranty reserves, customer rebates, determination of the deferred revenue components of multiple element sales agreements, estimated costs to complete obligations associated with deferred revenues, estimated income tax provision and income tax contingencies, the fair value of stock-based compensation, impairment of goodwill, valuation and estimated lives of intangible assets, estimated pension liability, fair value of investments, and the evaluation of other-than-temporary declines in the value of investments. Actual amounts could differ significantly from these estimates.

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update No. 2014-09, *Revenue from Contracts with Customers (Topic 606)* (ASU 2014-09), which supersedes the revenue recognition requirements in Topic 605, *Revenue Recognition*, including most industry-specific revenue recognition guidance throughout the Industry Topics of the Codification. The core principle of ASU 2014-09 is to recognize revenues when promised goods or services are transferred to customers in an amount that reflects the consideration that is expected to be received for those goods or services. In August 2015, the FASB issued ASU 2015-14, which deferred the effective date of ASU 2014-09 to fiscal years beginning after December 31, 2017, and interim periods within those fiscal years, with early adoption permitted for reporting periods beginning after December 15, 2016. Subsequently, the FASB issued ASUs in 2016 containing implementation guidance related to ASU 2014-09, including: ASU 2016-08, *Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net)*, which is intended to improve the operability and understandability of the implementation guidance on principal versus agent considerations; ASU 2016-10, *Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing*, which is intended to clarify two aspects of Topic 606: identifying performance obligations and the licensing implementation guidance; ASU 2016-12, *Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients*, which contains certain provisions and practical expedients in response to identified implementation issues; and ASU 2016-20, *Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers,* which is intended to clarify the Codification or to correct unintended application of guidance. ASU 2014-09 allows for either full retrospective or modified retrospective adoption. We plan to adopt ASU 2014-09 and the related ASUs on January 1, 2018 using the modified retrospective method. We are continuing to evaluate and assess the potential impacts of these ASUs through an analysis of revenue streams, contract reviews, and our control environment.

We are finalizing our assessment of the proper method of measuring progress toward satisfaction of each respective contract performance obligation for our network installation services revenues. At this time, we believe the output method will be used to measure network installation services progress. We believe the primary impact will be accelerated revenue recognition for certain performance obligations related to revenue arrangements that are currently deferred until customer acceptance.

In connection with the adoption of the new revenue standard, effective January 1, 2018, we will also adopt ASC 340-40, *Other Assets and Deferred Costs - Contracts with Customers* , with respect to capitalization and amortization of incremental costs of obtaining a contract. As a result, certain costs of obtaining a contract may need to be capitalized, including sales commissions, as the guidance requires the capitalizatio n of all incremental costs incurred to obtain a contract with a customer that it would not have incurred if the contract had not been obtained, provided the costs are recoverable. We believe the primary impact will be capitalization of certain sales commis sions for our extended maintenance and support contracts in excess of one year and costs associated with our capital lease arrangements that are billed monthly, and amortization of those costs over the period that the related revenue is recognized.

We do not believe there will be a significant impact to product or maintenance revenues. However, we are still assessing the impact of the allocation of revenue between deliverables with multiple performance obligations and timing of revenue recognition.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, *Leases (Topic 842)* (ASU 2016-02). ASU 2016-02 requires an entity to recognize lease assets and lease liabilities on the balance sheet and to disclose key information about the entity's leasing arrangements. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. A modified retrospective approach is required. We anticipate the adoption of ASU 2016-02 will have a material impact on our financial position; however, we do not believe adoption will have a material impact on our results of operations. We believe the most significant impact relates to our accounting for operating leases for office space and equipment.

In January 2017, the FASB issued Accounting Standards Update No. 2017-04, *Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment* (ASU 2017-04). ASU 2017-04 simplifies the measurement of goodwill by eliminating step 2 of the goodwill impairment test. Under ASU 2017-04, entities will be required to compare the fair value of a reporting unit to its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. ASU 2017-04 is effective for annual or interim impairment tests performed in fiscal years beginning after December 15, 2019, with early adoption permitted for annual or interim impairment tests performed on testing dates after January 1, 2017. The amendments should be applied prospectively. We are currently evaluating whether to early adopt ASU 2017-04, but we do not expect it will have a material impact on our financial position, results of operations or cash flows.

In March 2017, the FASB issued Accounting Standards Update No. 2017-07, *Compensation – Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost* (ASU 2017-07). ASU 2017-07 amends ASC 715, *Compensation — Retirement Benefits* , to require employers that present a measure of operating income in their statements of earnings to include only the service cost component of net periodic pension cost and net periodic postretirement benefit cost in operating expenses (together with other employee compensation costs). The other components of net benefit cost, including amortization of prior service cost/credit, and settlement and curtailment effects, are to be included in non-operating expenses. ASU 2017-07 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017, with early adoption permitted. We do not expect ASU 2017-07 will have a material impact on our financial position, results of operations or cash flows.

In August 2017, the FASB issued Accounting Standards Update No. 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities* (ASU 2017-12). ASU 2017-12 expands and refines hedge accounting for both financial and non-financial risk components, aligns the recognition and presentation of the effects of hedging instruments and hedge items in the financial statements, and includes certain targeted improvements to ease the application of current guidance related to the assessment of hedge effectiveness. ASU 2017-12 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018, with early adoption permitted. We are currently evaluating the impact ASU 2017-12 will have on our financial position, results of operations and cash flows.

During 2017, we adopted the following accounting standards, which had no material effect on our financial position, results of operations or cash flows:

In July 2015, the FASB issued Accounting Standards Update No. 2015-11, *Inventory (Topic 330): Simplifying the Measurement of Inventory* (ASU 2015-11). Currently, Topic 330, *Inventory* , requires an entity to measure inventory at the lower of cost or market. Market could be replacement cost, net realizable value, or net realizable value less an approximately normal profit margin. ASU 2015-11 does not apply to inventory that is measured using last-in, first-out (LIFO) or the retail inventory method. The amendments apply to all other inventory, which includes inventory that is measured using first-in, first-out (FIFO) or average cost. ASU 2015-11 requires an entity to measure in scope inventory at the lower of cost and net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. ASU 2015-11 is effective for annual reporting periods beginning after December 15, 2016, including interim periods within that reporting period. The amendments should be applied prospectively with earlier application permitted as of the beginning of an interim or annual reporting period. We adopted ASU 2015-11 in the first quarter of 2017, and there was no material impact on our financial position, results of operations or cash flows.

In January 2017, we adopted ASU 2016-09, *Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting*. As a result, beginning in the first quarter of 2017, we began recognizing all excess tax benefits and tax deficiencies as income tax expense or benefit as a discrete event. The treatment of forfeitures has changed as we have elected to discontinue our past practice of estimating forfeitures and now account for forfeitures as they occur. As a result, we recorded an increase in additional paid in capital of $0.1 million, a charge to beginning retained earnings of $0.1 million, and an increase in the deferred tax assets related to non-qualified stock options and RSUs of $10 thousand. In addition, cash flows related to excess tax benefits will no longer be separately classified as a financing activity apart from other income tax cash flows within operating activities. We elected to retrospectively apply the changes in presentation to the statements of cash flows and no longer classify excess tax benefits as a financing activity, which had an immaterial impact on our cash flows for the nine months ended September 30, 2016. There was no material impact on our financial position, results of operations or cash flows as a result of these changes.

2. BUSINESS COMBINATIONS

On September 13, 2016, we acquired key fiber access products, technologies and service relationships from subsidiaries of CommScope, Inc. for $0.9 million in cash. This acquisition will enhance our solutions for the cable MSO industry and will provide cable operators with the scalable solutions, services and support they require to compete in the multi-gigabit service delivery market. This transaction was accounted for as a business combination. We have included the financial results of this acquisition in our consolidated financial statements since the date of acquisition. These revenues are included in the Network Solutions reportable segment, and in the Access & Aggregation and Customer Devices categories.

We recorded a bargain purchase gain of $3.5 million during the third quarter of 2016, net of income taxes, which was subject to customary working capital adjustments between the parties. The bargain purchase gain of $3.5 million represents the excess fair value of the net assets acquired over the consideration exchanged. We have assessed the recognition and measurement of the assets acquired and liabilities assumed based on historical and forecasted data for future periods and have concluded that our valuation procedures and resulting measures were appropriate.

Working capital adjustments were recorded in the fourth quarter of 2016 and resulted in an immaterial reduction in the in ventory acquired, accounts payable assumed, deferred income taxes and bargain purchase gain. If these adjustments had been recorded on the date of acquisition, the bargain purchase gain would have been reduced by $8 thousand for the three months ended Sept ember 30, 2016. The final allocation of the purchase price to the estimated fair value of the assets acquired and liabilities assumed at the acquisition date is as follows:

(In Thousands)		
Assets		
Inventory	$	3,131
Property, plant and equipment		352
Intangible assets		4,700
Total assets acquired		**8,183**
Liabilities		
Accounts payable		(1,250)
Warranty payable		(61)
Accrued wages and benefits		(122)
Deferred income taxes		(2,265)
Total liabilities assumed		**(3,698)**
Total net assets		**4,485**
Gain on bargain purchase of a business, net of tax		(3,542)
Total purchase price	**$**	**943**

The details of the acquired intangible assets are as follows:

In thousands		Value	Life (years)
Supply agreement	$	1,400	0.8
Customer relationships		1,200	6.0
Developed technology		800	10.0
License		500	1.3
Patent		500	7.3
Non-compete		200	2.3
Trade name		100	2.0
Total	**$**	**4,700**	

The following unaudited supplemental pro forma information presents the financial results as if the acquisition had occurred on January 1, 2015. This unaudited supplemental pro forma information does not purport to be indicative of what would have occurred had the acquisition been completed on January 1, 2015, nor is it indicative of any future results. Aside from revising the 2015 net income for the effect of the bargain purchase gain, there were no material, non-recurring adjustments to this unaudited pro forma information.

	Three Months Ended September 30,		Nine Months Ended September 30,	
(In thousands)	2016	2015	2016	2015
Pro forma revenue	$ 170,498	$ 159,375	$ 478,184	$ 463,916
Pro forma net income	$ 9,495	$ 6,691	$ 24,761	$ 15,071
Pro forma earnings per share - basic	$ 0.20	$ 0.13	$ 0.51	$ 0.29
Pro forma earnings per share - diluted	$ 0.20	$ 0.13	$ 0.50	$ 0.29

For the three and nine months ended September 30, 2017, we incurred acquisition and integration related expenses and amortization of acquired intangibles of $0.2 million and $1.6 million, respectively, related to this acquisition.

3. INCOME TAXES

Our effective tax rate decreased from 34.0%, excluding the tax impact of the bargain purchase gain, in the nine months ended September 30, 2016, to 23.1% in the nine months ended September 30, 2017. The decrease in the effective tax rate between the periods is primarily attributable to additional research and development tax credits being recognized in the current quarter, an increase in stock option exercises and a greater mix of international income.

4. PENSION BENEFIT PLAN

We maintain a defined benefit pension plan covering employees in certain foreign countries.

The following table summarizes the components of net periodic pension cost for the three and nine months ended September 30, 2017 and 2016:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(In thousands)	2017	2016	2017	2016
Service cost	$ 327	$ 305	$ 930	$ 912
Interest cost	158	182	448	542
Expected return on plan assets	(329)	(266)	(935)	(796)
Amortization of actuarial losses	80	44	228	132
Net periodic pension cost	**$ 236**	**$ 265**	**$ 671**	**$ 790**

5. STOCK-BASED COMPENSATION

The following table summarizes the stock-based compensation expense related to stock options, performance stock units (PSUs), restricted stock units (RSUs) and restricted stock for the three and nine months ended September 30, 2017 and 2016, which was recognized as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(In thousands)	2017	2016	2017	2016
Stock-based compensation expense included in cost of sales	**$ 97**	**$ 88**	**$ 281**	**$ 282**
Selling, general and administrative expense	994	765	3,018	2,322
Research and development expense	743	639	2,274	1,997
Stock-based compensation expense included in operating expenses	**1,737**	**1,404**	**5,292**	**4,319**
Total stock-based compensation expense	**1,834**	**1,492**	**5,573**	**4,601**
Tax benefit for expense associated with non-qualified options, PSUs, RSUs and restricted stock	(402)	(218)	(1,215)	(643)
Total stock-based compensation expense, net of tax	**$ 1,432**	**$ 1,274**	**$ 4,358**	**$ 3,958**

Stock Options

The following table is a summary of our stock options outstanding as of December 31, 2016 and September 30, 2017 and the changes that occurred during the nine months ended September 30, 2017:

(In thousands, except per share amounts)	Number of Stock Options	Weighted Avg. Exercise Price	Weighted Avg. Remaining Contractual Life In Years	Aggregate Intrinsic Value
Stock options outstanding, December 31, 2016	**6,338**	**$ 22.14**	**5.63**	**$ 16,972**
Stock options granted	—	$ —		
Stock options exercised	(358)	$ 18.44		
Stock options forfeited	(54)	$ 17.49		
Stock options expired	(90)	$ 27.31		
Stock options outstanding, September 30, 2017	**5,836**	**$ 22.33**	**4.92**	**$ 20,669**
Stock options vested and expected to vest, September 30, 2017	**5,836**	**$ 22.33**	**4.92**	**$ 20,669**
Stock options exercisable, September 30, 2017	**4,311**	**$ 24.02**	**3.99**	**$ 10,845**

The aggregate intrinsic values in the table above represent the total pre-tax intrinsic value (the difference between the closing price of our stock on the last t rading day of the quarter and the exercise price, multiplied by the number of in-the-money stock options) that would have been received by the option holders had all option holders exercised their options on September 30, 2017. The aggregate intrinsic valu e will change based on the fair market value of our stock.

The total pre-tax intrinsic value of options exercised during the three and nine months ended September 30, 2017 was $1.1 million and $1.6 million, respectively.

As of September 30, 2017, there was $4.0 million of unrecognized compensation expense related to unvested stock options, which is expected to be recognized over an average remaining recognition period of 1.7 years.

The fair value of our stock options is estimated using the Black-Scholes model. The determination of the fair value of stock options on the date of grant using the Black-Scholes model is affected by our stock price, as well as assumptions regarding a number of complex and subjective variables that may have a significant impact on the fair value estimate.

There were no stock options granted during the three or nine months ended September 30, 2017. The weighted-average assumptions and value of options granted during the three and nine months ended September 30, 2016 were as follows:

	Three Months Ended September 30, 2016	Nine Months Ended September 30, 2016
Expected volatility	34.55%	34.66%
Risk-free interest rate	1.20%	1.28%
Expected dividend yield	1.83%	1.88%
Expected life (in years)	6.21	6.24
Weighted-average estimated value	$ 5.64	$ 5.50

PSUs, RSUs and restricted stock

The following table is a summary of our PSUs, RSUs and restricted stock outstanding as of December 31, 2016 and the changes that occurred during the nine months ended September 30, 2017:

(In thousands, except per share amounts)	Number of Shares	Weighted Avg. Grant Date Fair Value
Unvested PSUs, RSUs and restricted stock outstanding, December 31, 2016	**519**	**$ 20.51**
PSUs, RSUs and restricted stock granted	526	$ 22.23
PSUs, RSUs and restricted stock vested	(4)	$ 18.00
PSUs, RSUs and restricted stock forfeited	(21)	$ 20.88
Unvested PSUs, RSUs and restricted stock outstanding, September 30, 2017	**1,020**	**$ 21.40**

The fair value of our PSUs with market conditions is calculated using a Monte Carlo Simulation valuation method. The fair value of RSUs and restricted stock is equal to the closing price of our stock on the date of grant. During the first quarter of 2017, the Compensation Committee of the Board of Directors approved a PSU grant of 0.5 million shares that contain performance conditions. The fair value of these performance-based PSU awards was equal to the closing price of our stock on the date of grant.

As of September 30, 2017, there was $7.1 million of unrecognized compensation expense related to unvested market-based PSUs, RSUs and restricted stock, which is expected to be recognized over an average remaining recognition period of 2.8 years. In addition, there was $11.5 million of unrecognized compensation expense related to unvested performance-based PSUs, which will be recognized over the requisite service period of three years as achievement of the performance objective becomes probable. For the three and nine months ended September 30, 2017, no compensation expense was recognized related to these performance-based PSU awards.

6. INVESTMENTS

At September 30, 2017, we held the following securities and investments, recorded at either fair value or cost:

(In thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Carrying Value
Deferred compensation plan assets	$ 15,898	$ 3,230	$ (15)	$ 19,113
Corporate bonds	45,223	75	(79)	45,219
Municipal fixed-rate bonds	4,887	4	(17)	4,874
Asset-backed bonds	7,791	5	(11)	7,785
Mortgage/Agency-backed bonds	7,364	7	(41)	7,330
U.S. government bonds	21,000	3	(109)	20,894
Foreign government bonds	725	3	—	728
Marketable equity securities	32,394	2,649	(961)	34,082
Available-for-sale securities held at fair value	**$ 135,282**	**$ 5,976**	**$ (1,233)**	**$ 140,025**
Restricted investment held at cost				**27,800**
Other investments held at cost				**547**
Total carrying value of available-for-sale investments				**$ 168,372**

At December 31, 2016, we held the following securities and investments, recorded at either fair value or cost:

(In thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Carrying Value
Deferred compensation plan assets	$ 12,367	$ 2,271	$ (42)	$ 14,596
Corporate bonds	66,522	64	(174)	66,412
Municipal fixed-rate bonds	11,799	12	(37)	11,774
Asset-backed bonds	10,201	19	(14)	10,206
Mortgage/Agency-backed bonds	13,080	15	(91)	13,004
U.S. government bonds	30,022	15	(270)	29,767
Foreign government bonds	3,729	2	(1)	3,730
Variable rate demand notes	11,855	—	—	11,855
Marketable equity securities	30,571	311	(1,503)	29,379
Available-for-sale securities held at fair value	**$ 190,146**	**$ 2,709**	**$ (2,132)**	**$ 190,723**
Restricted investment held at cost				**27,800**
Other investments held at cost				**767**
Total carrying value of available-for-sale investments				**$ 219,290**

As of September 30, 2017, our corporate bonds, municipal fixed-rate bonds, asset-backed bonds, mortgage/agency-backed bonds, U.S. government bonds and foreign government bonds had the following contractual maturities:

(In thousands)	Corporate bonds	Municipal fixed-rate bonds	Asset-backed bonds	Mortgage / Agency-backed bonds	U.S. government bonds	Foreign government bonds
Less than one year	$ 20,232	$ 2,250	$ —	$ —	$ 8,903	$ —
One to two years	11,678	724	$ 2,638	—	—	—
Two to three years	10,029	730	2,235	—	10,413	728
Three to five years	3,280	1,170	1,550	917	1,578	—
Five to ten years	—	—	450	1,348	—	—
More than ten years	—	—	912	5,065	—	—
Total	**$ 45,219**	**$ 4,874**	**$ 7,785**	**$ 7,330**	**$ 20,894**	**$ 728**

Actual maturities may differ from contractual maturities because some borrowers have the right to call or prepay obligations with or without call or prepayment penalties.

Our investment policy provides limitations for issuer concentration, which limits, at the time of purchase, the concentration in any one issuer to 5% of the market value of our total investment portfolio.

At September 30, 2017, we held a $27.8 million restricted certificate of deposit, which is carried at cost. This investment serves as a collateral deposit against the principal amount outstanding under loans made to ADTRAN pursuant to an Alabama State Industrial Development Authority revenue bond (the Bond), which totaled $27.8 million at September 30, 2017 and December 31, 2016. At September 30, 2017 and December 31, 2016, the estimated fair value of the Bond using a level 2 valuation technique was approximately $28.0 million and $28.1 million, respectively, based on a debt security with a comparable interest rate and maturity and a Standard and Poor's credit rating of AAA. We have the right to set-off the bal ance of the Bond with the collateral deposit in order to reduce the balance of the indebtedness. The Bond matures on January 1, 2020, and bears interest at the rate of 2% per annum. In conjunction with this program, we are eligible to receive certain econo mic incentives from the state of Alabama that reduce the amount of payroll withholdings we are required to remit to the state for those employment positions that qualify under this program. We are required to make payments in the amounts necessary to pay t he interest on the amounts currently outstanding. It is our intent to make annual principal payments in addition to the interest amounts that are due.

We review our investment portfolio for potential "other-than-temporary" declines in value on an individual investment basis. We assess, on a quarterly basis, significant declines in value which may be considered other-than-temporary and, if necessary, recognize and record the appropriate charge to write-down the carrying value of such investments. In making this assessment, we take into consideration qualitative and quantitative information, including but not limited to the following: the magnitude and duration of historical declines in market prices, credit rating activity, assessments of liquidity, public filings, and statements made by the issuer. We generally begin our identification of potential other-than-temporary impairments by reviewing any security with a fair value that has declined from its original or adjusted cost basis by 25% or more for six or more consecutive months. We then evaluate the individual security based on the previously identified factors to determine the amount of the write-down, if any. For the three and nine months ended September 30, 2017 and 2016, other-than-temporary impairment charges were not significant.

Realized gains and losses on sales of securities are computed under the specific identification method. The following table presents gross realized gains and losses related to our investments:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(In thousands)	**2017**	**2016**	**2017**	**2016**
Gross realized gains	$ 1,094	$ 1,346	$ 3,324	$ 5,226
Gross realized losses	$ (85)	$ (30)	$ (455)	$ (1,072)

As of September 30, 2017 and 2016, gross unrealized losses related to individual securities in a continuous loss position for 12 months or longer were not significant.

We have categorized our cash equivalents held in money market funds and our investments held at fair value into a three-level fair value hierarchy based on the priority of the inputs to the valuation technique for the cash equivalents and investments as follows: Level 1 - Values based on unadjusted q uoted prices for identical assets or liabilities in an active market; Level 2 - Values based on quoted prices in markets that are not active or model inputs that are observable either directly or indirectly; Level 3 - Values based on prices or valuation te chniques that require inputs that are both unobservable and significant to the overall fair value measurement. These inputs include information supplied by investees.

	Fair Value Measurements at September 30, 2017 Using			
(In thousands)	**Fair Value**	**Quoted Prices in Active Market for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Cash equivalents				
Money market funds	$ 8,115	$ 8,115	$ —	$ —
Commercial Paper	35,436	—	35,436	—
Cash equivalents	**43,551**	**8,115**	**35,436**	**—**
Available-for-sale securities				
Deferred compensation plan assets	19,113	19,113	—	—
Available-for-sale debt securities				
Corporate bonds	45,219	—	45,219	—
Municipal fixed-rate bonds	4,874	—	4,874	—
Asset-backed bonds	7,785	—	7,785	—
Mortgage/Agency-backed bonds	7,330	—	7,330	—
U.S. government bonds	20,894	20,894	—	—
Foreign government bonds	728	—	728	—
Available-for-sale marketable equity securities				
Marketable equity securities – various industries	34,082	34,082	—	—
Available-for-sale securities	**140,025**	**74,089**	**65,936**	**—**
Total	**$ 183,576**	**$ 82,204**	**$ 101,372**	**$ —**

	Fair Value Measurements at December 31, 2016 Using			
(In thousands)	**Fair Value**	**Quoted Prices in Active Market for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Cash equivalents				
Money market funds	$ 6,878	$ 6,878	$ —	$ —
Commercial Paper	17,222	—	17,222	—
Cash equivalents	**24,100**	**6,878**	**17,222**	**—**
Available-for-sale securities				
Deferred compensation plan assets	14,596	14,596	—	—
Available-for-sale debt securities				
Corporate bonds	66,412	—	66,412	—
Municipal fixed-rate bonds	11,774	—	11,774	—
Asset-backed bonds	10,206	—	10,206	—
Mortgage/Agency-backed bonds	13,004	—	13,004	—
U.S. government bonds	29,767	29,767	—	—
Foreign government bonds	3,730	—	3,730	—
Variable Rate Demand Notes	11,855	—	11,855	—
Available-for-sale marketable equity securities				
Marketable equity securities – various industries	29,379	29,379	—	—
Available-for-sale securities	**190,723**	**73,742**	**116,981**	**—**
Total	**$ 214,823**	**$ 80,620**	**$ 134,203**	**$ —**

The fair value of our Level 2 securities is calculated using a weighted average market price for each security. Market prices are obtained from a variety of ind ustry standard data providers, security master files from large financial institutions, and other third-party sources. These multiple market prices are used as inputs into a distribution-curve-based algorithm to determine the daily market value of each sec urity.

Our variable rate demand notes have a structure that implies a standard expected market price. The frequent interest rate resets make it reasonable to expect the price to stay at par. These securities are priced at the expected market price.

7. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES

We participate in foreign exchange forward contracts in connection with the management of exposure to fluctuations in foreign exchange rates.

Cash Flow Hedges

Our cash flow hedging activities utilize foreign exchange forward contracts to reduce the risk that movements in exchange rates will adversely affect the net cash flows resulting from the planned purchase of products from foreign suppliers. Purchases of U.S. denominated inventory by our European subsidiary represent our primary exposure. Changes in the fair value of derivatives designated as cash flow hedges are not recognized in current operating results, but are recorded in accumulated other comprehensive income. Amounts related to cash flow hedges are reclassified from accumulated other comprehensive income when the underlying hedged item impacts earnings. This reclassification is recorded in the same line item of the consolidated statements of income as where the effects of the hedged item are recorded, which is cost of sales.

Undesignated Hedges

We have certain customers and suppliers who are invoiced or pay in a non-functional currency. Changes in the monetary exchange rates may adversely affect our results of operations and financial condition, as outstanding non-functional balances are revalued to the functional currency through profit and loss. When appropriate, we utilize foreign exchange forward contracts to help manage the volatility relating to these valuation exposures. All changes in the fair value of our derivative instruments that do not qualify for or are not designated for hedged accounting transactions are recognized as other income (expense) in the Consolidated Statements of Income.

As of September 30, 2017, we had foreign exchange forward contracts outstanding with notional amounts totaling $7.0 million (€5.9 million), which hedge a portion of projected inventory purchases expected to be settled in the fourth quarter of 2017. We have determined that there was no hedge ineffectiveness for the quarter ended September 30, 2017 related to these contracts.

We do not hold or issue derivative instruments for trading or other speculative purposes. Our derivative instruments are recorded in the Consolidated Balance Sheets at their fair values. Our derivative instruments are not subject to master netting arrangements and are not offset in the Consolidated Balance Sheets.

The fair values of our derivative instruments recorded in the Consolidated Balance Sheet as of September 30, 2017 and December 31, 2016 were as follows:

(In thousands)	**Balance Sheet Location**	**September 30, 2017**	**December 31, 2016**
Derivatives Not Designated as Hedging Instruments (Level 2):			
Foreign exchange contracts – derivative assets	Other receivables	$ —	$ 159
Foreign exchange contracts – derivative liabilities	Accounts payable	(402)	—
Total derivatives		**$ (402)**	**$ 159**

The change in the fair values of our derivative instruments recorded in the Consolidated Statements of Income during the three and nine months ended September 30, 2017 and 2016 were as follows:

		Three Months Ended September 30,		**Nine Months Ended September 30,**	
(In thousands)	**Income Statement Location**	**2017**	**2016**	**2017**	**2016**
Derivatives Not Designated as Hedging Instruments:					
Foreign exchange contracts	Other income (expense)	$ (334)	$ (37)	$ (819)	$ 153

The change in our derivatives designated as hedging instruments recorded in other comprehensive income (OCI) and reclassified to income, net of tax, during the three and nine months ended Septem ber 30, 2017 and 2016 were as follows:

	Amount of Gains (Losses) Recognized in OCI on Derivatives Three Months Ended September 30,		Location of Gains (Losses) Reclassified from AOCI into Income	Amount of Gains (Losses) Reclassified from AOCI into Income Three Months Ended September 30,	
(In thousands)	2017	2016		2017	2016
Derivatives Designated as Hedging Instruments:					
Foreign exchange contracts	$ (127)	$ —	Cost of Sales	$ (269)	$ —

	Amount of Gains (Losses) Recognized in OCI on Derivatives Nine Months Ended September 30,		Location of Gains (Losses) Reclassified from AOCI into Income	Amount of Gains (Losses) Reclassified from AOCI into Income Nine Months Ended September 30,	
(In thousands)	2017	2016		2017	2016
Derivatives Designated as Hedging Instruments:					
Foreign exchange contracts	$ (619)	$ —	Cost of Sales	$ (423)	$ —

8. INVENTORY

At September 30, 2017 and December 31, 2016, inventory consisted of the following:

(In thousands)	September 30, 2017	December 31, 2016
Raw materials	$ 44,002	$ 40,461
Work in process	4,859	4,003
Finished goods	67,369	60,653
Total	**$ 116,230**	**$ 105,117**

We establish reserves for estimated excess, obsolete, or unmarketable inventory equal to the difference between the cost of the inventory and the estimated fair value of the inventory based upon assumptions about future demand and market conditions. At September 30, 2017 and December 31, 2016, raw materials reserves totaled $16.8 million and $14.6 million, respectively, and finished goods inventory reserves totaled $12.9 million and $10.6 million, respectively.

9. GOODWILL AND INTANGIBLE ASSETS

Goodwill, all of which relates to our acquisition of Bluesocket, Inc., was $3.5 million at September 30, 2017 and December 31, 2016, of which $3.1 million and $0.4 million is allocated to our Network Solutions and Services & Support reportable segments, respectively.

We evaluate the carrying value of goodwill during the fourth quarter of each year and between annual evaluations if events occur or circumstances change that would more likely than not reduce the fair value of the reporting unit below its carrying amount. We have elected to first assess the qualitative factors to determine whether it is more likely than not that the fair value of the reporting unit to which the goodwill is assigned is less than its carrying amount as a basis for determining whether it is necessary to perform the two-step impairment test. If we determine that it is more likely than not that its fair value is less than its carrying amount, then the two-step impairment test will be performed. Based on the results of our qualitative assessment in 2016, we concluded that it was not necessary to perform the two-step impairment test. There have been no impairment losses recognized since the acquisition in 2011.

Intangible assets are included in other assets in the accompanying Consolidated Balance Sheets and include intangibles acquired in conjunction with our acquisitions of Bluesocket, Inc. on August 4, 2011, the NSN BBA business on May 4, 2012, and CommScope’s active fiber access business on September 13, 2016.

The following table presents our in tangible assets as of September 30, 2017 and December 31, 2016:

(In thousands)	September 30, 2017			December 31, 2016		
	Gross Value	Accumulated Amortization	Net Value	Gross Value	Accumulated Amortization	Net Value
Customer relationships	$ 7,400	$ (4,042)	$ 3,358	$ 6,899	$ (3,208)	$ 3,691
Developed technology	6,740	(5,789)	951	6,444	(5,061)	1,383
Intellectual property	2,340	(2,229)	111	2,340	(2,129)	211
Supply agreement	1,400	(1,400)	—	1,400	(544)	856
License	500	(403)	97	500	(113)	387
Patent	500	(71)	429	500	(20)	480
Trade names	370	(322)	48	370	(285)	85
Non-compete	200	(93)	107	200	(26)	174
Total	**$ 19,450**	**$ (14,349)**	**$ 5,101**	**$ 18,653**	**$ (11,386)**	**$ 7,267**

Amortization expense, all of which relates to business acquisitions, was $0.5 million for the three months ended September 30, 2017 and 2016, and $2.4 million and $1.4 million for the nine months ended September 30, 2017 and 2016, respectively.

As of September 30, 2017, the estimated future amortization expense of our intangible assets is as follows:

(In thousands)	Amount
Remainder of 2017	$ 473
2018	1,207
2019	691
2020	654
2021	599
Thereafter	1,477
Total	**$ 5,101**

10. STOCKHOLDERS' EQUITY

A summary of the changes in stockholders' equity for the nine months ended September 30, 2017 is as follows:

(In thousands)	Stockholders' Equity
Balance, December 31, 2016	**$ 479,517**
Net income	34,950
Dividend payments	(13,031)
Dividends accrued for unvested restricted stock units	(43)
Net unrealized gains on available-for-sale securities (net of tax)	2,512
Net unrealized losses on cash flow hedges (net of tax)	(196)
Defined benefit plan adjustments (net of tax)	214
Foreign currency translation adjustment	5,402
Proceeds from stock option exercises	6,606
Purchase of treasury stock	(17,348)
ASU 2016-09 adoption	10
Stock-based compensation expense	5,573
Balance, September 30, 2017	**$ 504,166**

Stock Repurchase Program

Since 1997, our Board of Directors has approved multiple share repurchase programs that have authorized open market repurchase transactions of up to 50.0 million shares of our common stock, which will be implemented through open market or private purchases from time to time as conditions warrant. During the nine months ended September 30, 2017, we repurchased 0.9 million shares of our common stock at an average price of $20.27 per share. As of September 30, 2017, we have the authority to purchase an additional 3.6 million shares of our common stock under the current plans approved by the Board of Directors.

Stock Option Exercises

We issued 0.4 million shares of treasury stock during the nine months ended September 30, 2017 to accommodate employee stock option exercises. The stock options had exercise prices ranging from $15.29 to $23.64. We received proceeds totaling $6.6 million from the exercise of these stock options during the nine months ended September 30, 2017.

Dividend Payments

During the nine months ended September 30, 2017, we paid cash dividends as follows (in thousands except per share amounts):

Record Date	Payment Date	Per Share Amount	Total Dividend Paid
February 2, 2017	February 16, 2017	$ 0.09	$ 4,369
May 4, 2017	May 18, 2017	$ 0.09	$ 4,350
August 3, 2017	August 17, 2017	$ 0.09	$ 4,312

Other Comprehensive Income

Other comprehensive income consists of unrealized gains (losses) on available-for-sale securities; unrealized gains (losses) on cash flow hedges; reclassification adjustments for amounts included in net income related to impairments of available-for-sale securities, realized gains (losses) on available-for-sale securities, realized gains (losses) on cash flow hedges, and amortization of actuarial gains (losses) related to our defined benefit plan; defined benefit plan adjustments; and foreign currency translation adjustments.

The following tables present the changes in accumulated other comprehensive income, net of tax, by component for the three months ended September 30, 2017 and 2016:

	Three Months Ended September 30, 2017				
(In thousands)	Unrealized Gains (Losses) on Available-for-Sale Securities	Unrealized Gains (Losses) on Cash Flow Hedges	Defined Benefit Plan Adjustments	Foreign Currency Adjustments	Total
Beginning balance	**$ 2,112**	**$ (338)**	**$ (4,876)**	**$ (3,714)**	**$ (6,816)**
Other comprehensive income (loss) before reclassifications	1,420	(127)	—	1,541	**2,834**
Amounts reclassified from accumulated other comprehensive income	(616)	269	73	—	**(274)**
Net current period other comprehensive income (loss)	804	142	73	1,541	**2,560**
Ending balance	**$ 2,916**	**$ (196)**	**$ (4,803)**	**$ (2,173)**	**$ (4,256)**

	Three Months Ended September 30, 2016			
(In thousands)	Unrealized Gains (Losses) on Available-for-Sale Securities	Defined Benefit Plan Adjustments	Foreign Currency Adjustments	Total
Beginning balance	**$ 1,512**	**$ (3,828)**	**$ (6,379)**	**$ (8,695)**
Other comprehensive income (loss) before reclassifications	1,028	—	575	1,603
Amounts reclassified from accumulated other comprehensive income	(770)	36	—	(734)
Net current period other comprehensive income (loss)	258	36	575	869
Ending balance	**$ 1,770**	**$ (3,792)**	**$ (5,804)**	**$ (7,826)**

The following tables present the changes in accumulated other comprehensive income, net of tax, by component for the nine months ended September 30, 2017 and 20 16:

(In thousands)	Nine Months Ended September 30, 2017 Unrealized Gains (Losses) on Available-for-Sale Securities	Unrealized Gains (Losses) on Cash Flow Hedges	Defined Benefit Plan Adjustments	Foreign Currency Adjustments	Total
Beginning balance	**$ 404**	**$ —**	**$ (5,017)**	**$ (7,575)**	**$ (12,188)**
Other comprehensive income (loss) before reclassifications	4,262	(619)	—	5,402	9,045
Amounts reclassified from accumulated other comprehensive income	(1,750)	423	214	—	(1,113)
Net current period other comprehensive income (loss)	2,512	(196)	214	5,402	7,932
Ending balance	**$ 2,916**	**$ (196)**	**$ (4,803)**	**$ (2,173)**	**$ (4,256)**

(In thousands)	Nine Months Ended September 30, 2016 Unrealized Gains (Losses) on Available-for-Sale Securities	Defined Benefit Plan Adjustments	Foreign Currency Adjustments	Total
Beginning balance	**$ 1,932**	**$ (3,895)**	**$ (7,006)**	**$ (8,969)**
Other comprehensive income (loss) before reclassifications	2,267	—	1,202	3,469
Amounts reclassified from accumulated other comprehensive income	(2,429)	103	—	(2,326)
Net current period other comprehensive income (loss)	(162)	103	1,202	1,143
Ending balance	**$ 1,770**	**$ (3,792)**	**$ (5,804)**	**$ (7,826)**

The following tables present the details of reclassifications out of accumulated other comprehensive income for the three months ended September 30, 2017 and 2016 :

(In thousands)	Three Months Ended September 30, 2017	
Details about Accumulated Other Comprehensive Income Components	**Amount Reclassified from Accumulated Other Comprehensive Income**	**Affected Line Item in the Statement Where Net Income Is Presented**
Unrealized gains (losses) on available-for-sale securities:		
Net realized gain on sales of securities	$ 1,066	Net realized investment gain
Impairment expense	(57)	Net realized investment gain
Net losses on derivatives designated as hedging instruments	(385)	Cost of sales
Defined benefit plan adjustments – actuarial losses	(106)	(1)
Total reclassifications for the period, before tax	**518**	
Tax (expense) benefit	(244)	
Total reclassifications for the period, net of tax	**$ 274**	

(1) Included in the computation of net periodic pension cost. See Note 4 of Notes to Consolidated Financial Statements.

(In thousands)	Three Months Ended September 30, 2016	
Details about Accumulated Other Comprehensive Income Components	**Amount Reclassified from Accumulated Other Comprehensive Income**	**Affected Line Item in the Statement Where Net Income Is Presented**
Unrealized gains (losses) on available-for-sale securities:		
Net realized gain on sales of securities	$ 1,268	Net realized investment gain
Impairment expense	(6)	Net realized investment gain
Defined benefit plan adjustments – actuarial losses	(51)	(1)
Total reclassifications for the period, before tax	**1,211**	
Tax (expense) benefit	(477)	
Total reclassifications for the period, net of tax	**$ 734**	

(1) Included in the computation of net periodic pension cost. See Note 4 of Notes to Consolidated Financial Statements.

The following tables present the details of reclassifications out of accumulated other comprehensive income for the nine months ended September 30, 2017 and 2016:

(In thousands)	Nine Months Ended September 30, 2017	
Details about Accumulated Other Comprehensive Income Components	**Amount Reclassified from Accumulated Other Comprehensive Income**	**Affected Line Item in the Statement Where Net Income Is Presented**
Unrealized gains (losses) on available-for-sale securities:		
Net realized gain on sales of securities	$ 3,031	Net realized investment gain
Impairment expense	(162)	Net realized investment gain
Net losses on derivatives designated as hedging instruments	(539)	Cost of sales
Defined benefit plan adjustments – actuarial losses	(310)	(1)
Total reclassifications for the period, before tax	2,020	
Tax (expense) benefit	(907)	
Total reclassifications for the period, net of tax	**$ 1,113**	

(1) Included in the computation of net periodic pension cost. See Note 4 of Notes to Consolidated Financial Statements.

(In thousands)	Nine Months Ended September 30, 2016	
Details about Accumulated Other Comprehensive Income Components	**Amount Reclassified from Accumulated Other Comprehensive Income**	**Affected Line Item in the Statement Where Net Income Is Presented**
Unrealized gains (losses) on available-for-sale securities:		
Net realized gain on sales of securities	$ 4,383	Net realized investment gain
Impairment expense	(401)	Net realized investment gain
Defined benefit plan adjustments – actuarial losses	(149)	(1)
Total reclassifications for the period, before tax	3,833	
Tax (expense) benefit	(1,507)	
Total reclassifications for the period, net of tax	**$ 2,326**	

(1) Included in the computation of net periodic pension cost. See Note 4 of Notes to Consolidated Financial Statements.

The following table presents the tax effects related to the change in each component of other comprehensive income for the three months ended September 30, 2017 and 2016:

	Three Months Ended September 30, 2017			Three Months Ended September 30, 2016		
(In thousands)	Before-Tax Amount	Tax (Expense) Benefit	Net-of-Tax Amount	Before-Tax Amount	Tax (Expense) Benefit	Net-of-Tax Amount
Unrealized gains (losses) on available-for-sale securities	$ 2,328	$ (908)	$ 1,420	$ 1,685	$ (657)	$ 1,028
Unrealized gains (losses) on cash flow hedges	(184)	57	(127)	—	—	—
Reclassification adjustment for amounts related to available-for-sale investments included in net income	(1,009)	393	(616)	(1,262)	492	(770)
Reclassification adjustment for amounts related to cash flow hedges included in net income	385	(116)	269	—	—	—
Reclassification adjustment for amounts related to defined benefit plan adjustments included in net income	106	(33)	73	51	(15)	36
Foreign currency translation adjustment	1,541	—	1,541	575	—	575
Total Other Comprehensive Income (Loss)	**$ 3,167**	**$ (607)**	**$ 2,560**	**$ 1,049**	**$ (180)**	**$ 869**

The following table presents the tax effects related to the change in each component of other comprehensive income for the nine months ended September 30, 2017 and 2016:

	Nine Months Ended September 30, 2017			Nine Months Ended September 30, 2016		
(In thousands)	Before-Tax Amount	Tax (Expense) Benefit	Net-of-Tax Amount	Before-Tax Amount	Tax (Expense) Benefit	Net-of-Tax Amount
Unrealized gains (losses) on available-for-sale securities	$ 6,987	$ (2,725)	$ 4,262	$ 3,716	$ (1,449)	$ 2,267
Unrealized gains (losses) on cash flow hedges	(897)	278	(619)	—	—	—
Reclassification adjustment for amounts related to available-for-sale investments included in net income	(2,869)	1,119	(1,750)	(3,982)	1,553	(2,429)
Reclassification adjustment for amounts related to cash flow hedges included in net income	539	(116)	423	—	—	—
Reclassification adjustment for amounts related to defined benefit plan adjustments included in net income	310	(96)	214	149	(46)	103
Foreign currency translation adjustment	5,402	—	5,402	1,202	—	1,202
Total Other Comprehensive Income (Loss)	**$ 9,472**	**$ (1,540)**	**$ 7,932**	**$ 1,085**	**$ 58**	**$ 1,143**

11. EARNINGS PER SHARE

A summary of the calculation of basic and diluted earnings per share for the three and nine months ended September 30, 2017 and 2016 is as follows:

(In thousands, except per share amounts)	Three Months Ended September 30, 2017	Three Months Ended September 30, 2016	Nine Months Ended September 30, 2017	Nine Months Ended September 30, 2016
Numerator				
Net income	$ 15,898	$ 12,415	$ 34,950	$ 27,657
Denominator				
Weighted average number of shares – basic	47,870	48,470	48,110	48,839
Effect of dilutive securities				
Stock options	487	137	385	137
PSUs, RSUs and restricted stock	174	71	123	60
Weighted average number of shares – diluted	48,531	48,678	48,618	49,036
Net income per share – basic	$ 0.33	$ 0.26	$ 0.73	$ 0.57
Net income per share – diluted	$ 0.33	$ 0.26	$ 0.72	$ 0.56

Anti-dilutive options to purchase common stock outstanding were excluded from the above calculations. Anti-dilutive options totaled 3.2 million and 5.6 million for the three months ended September 30, 2017 and 2016, respectively, and 3.9 million and 5.7 million for the nine months ended September 30, 2017 and 2016, respectively.

12. SEGMENT INFORMATION

We operate in two reportable segments: (1) Network Solutions and (2) Services & Support. Network Solutions includes hardware products and next-generation virtualized solutions used in service provider or business networks, as well as prior-generation products. Services & Support includes our suite of ProCloud ® managed services, network installation, engineering and maintenance services, and fee-based technical support and equipment repair/replacement plans.

We evaluate the performance of our segments based on gross profit; therefore, selling, general and administrative expenses, research and development expenses, interest and dividend income, interest expense, net realized investment gain/loss, other income/expense and provision for taxes are reported on a company-wide, functional basis only. There are no inter-segment revenues.

The following table presents information about the reported sales and gross profit of our reportable segments for the three and nine months ended September 30, 2017 and 2016. We do not produce asset information by reportable segment; therefore, it is not reported.

	Three Months Ended			
	September 30, 2017		September 30, 2016	
(In thousands)	Sales	Gross Profit	Sales	Gross Profit
Network Solutions	$ 145,467	$ 71,939	$ 136,277	$ 65,289
Services & Support	39,645	14,559	32,613	10,519
Total	**$ 185,112**	**$ 86,498**	**$ 168,890**	**$ 75,808**

	Nine Months Ended			
	September 30, 2017		September 30, 2016	
(In thousands)	Sales	Gross Profit	Sales	Gross Profit
Network Solutions	$ 444,607	$ 214,762	$ 398,709	$ 195,804
Services & Support	95,457	30,083	75,086	24,753
Total	**$ 540,064**	**$ 244,845**	**$ 473,795**	**$ 220,557**

Sales by Category

In addition to our reporting segments, we also report revenue for the following three categories – **Access & Aggregation, Customer Devices,** and **Traditional & Other Products.**

The table below presents sales information by category for the three and nine months ended September 30, 2017 and 2016:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(In thousands)	2017	2016	2017	2016
Access & Aggregation	$ 135,959	$ 120,618	$ 394,741	$ 316,705
Customer Devices	35,582	32,984	105,683	106,213
Traditional & Other Products	13,571	15,288	39,640	50,877
Total	**$ 185,112**	**$ 168,890**	**$ 540,064**	**$ 473,795**

13. LIABILITY FOR WARRANTY RETURNS

Our products generally include warranties of 90 days to five years for product defects. We accrue for warranty returns at the time revenue is recognized based on our estimate of the cost to repair or replace the defective products. We engage in extensive product quality programs and processes, including actively monitoring and evaluating the quality of our component suppliers. Our products continue to become more complex in both size and functionality as many of our product offerings migrate from line card applications to total systems. The increasing complexity of our products will cause warranty incidences, when they arise, to be more costly. Our estimates regarding future warranty obligations may change due to product failure rates, material usage, and other rework costs incurred in correcting a product failure. In addition, from time to time, specific warranty accruals may be recorded if unforeseen problems arise. Should our actual experience relative to these factors be worse than our estimates, we will be required to record additional warranty expense. Alternatively, if we provide for more reserves than we require, we will reverse a portion of such provisions in future periods. The liability for warranty obligations totaled $10.9 million and $8.5 million at September 30, 2017 and December 31, 2016 respectively. During the three months ended March 31, 2017, we recorded a receivable and a reduction in warranty expense related to a settlement with a third party supplier for a defective component, the impact of which is reflected in the table below. These liabilities are included in accrued expenses in the accompanying Consolidated Balance Sheets.

A summary of warranty expense and write-off activity for the three and nine months ended September 30, 2017 and 2016 is as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(In thousands)	2017	2016	2017	2016
Balance at beginning of period	$ 9,180	$ 8,935	$ 8,548	$ 8,739
Plus: Amounts charged to cost and expenses	4,087	4,012	6,401	6,341
Less: Deductions	(2,328)	(4,195)	(4,010)	(6,328)
Balance at end of period	**$ 10,939**	**$ 8,752**	**$ 10,939**	**$ 8,752**

14. COMMITMENTS AND CONTINGENCIES

In the ordinary course of business, we may be subject to various legal proceedings and claims, including employment disputes, patent claims, disputes over contract agreements and other commercial disputes. In some cases, claimants seek damages or other relief, such as royalty payments related to patents, which, if granted, could require significant expenditures. Although the outcome of any claim or litigation can never be certain, it is our opinion that the outcome of all contingencies of which we are currently aware will not materially affect our business, operations, financial condition or cash flows.

We have committed to invest up to an aggregate of $7.9 million in two private equity funds, and we have contributed $8.4 million as of September 30, 2017, of which $7.7 million has been applied to these commitments.

15. SUBSEQUENT EVENTS

On October 17, 2017, we announced that our Board of Directors declared a quarterly cash dividend of $0.09 per common share to be paid to stockholders of record at the close of business on November 1, 2017. The payment date will be November 15, 2017. The quarterly dividend payment will be approximately $4.3 million. In July 2003, our Board of Directors elected to begin declaring quarterly dividends on our common stock considering the tax treatment of dividends and adequate levels of Company liquidity.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion should be read in conjunction with the Consolidated Financial Statements and the related notes that appear elsewhere in this document.

OVERVIEW

ADTRAN, Inc. is a leading global provider of networking and communications equipment. Our solutions enable voice, data, video and Internet communications across a variety of network infrastructures. These solutions are deployed by many of the United States' and the world's largest communications service providers (CSPs), distributed enterprises and small and medium-sized businesses, public and private enterprises, and millions of individual users worldwide.

Our success depends upon our ability to increase unit volume and market share through the introduction of new products and succeeding generations of products having lower selling prices and increased functionality as compared to both the prior generation of a product and to the products of competitors. An important part of our strategy is to reduce the cost of each succeeding product generation and then lower the product's selling price based on the cost savings achieved in order to gain market share and/or improve gross margins. As a part of this strategy, we seek in most instances to be a high-quality, low-cost provider of products in our markets. Our success to date is attributable in large measure to our ability to design our products initially with a view to their subsequent redesign, allowing both increased functionality and reduced manufacturing costs in each succeeding product generation. This strategy enables us to sell succeeding generations of products to existing customers, while increasing our market share by selling these enhanced products to new customers.

We report revenue for the following three categories – **Access & Aggregation, Customer Devices,** and **Traditional & Other Products.**

Access & Aggregation solutions are used by CSPs to connect their network infrastructure to their subscribers. This category includes software and hardware-based products and services that aggregate and/or originate access technologies. The portfolio of ADTRAN solutions within this category includes a wide array of modular or fixed physical form factors designed to deliver the best technology and economic fit based on the target subscriber density and environmental conditions.

The Access & Aggregation category includes product and service families such as:

- Total Access ® 5000 Series Fiber to the Premises (FTTP) and Fiber to the Node (FTTN) Multi-Service Access Nodes (MSAN)
- hiX 5600 Series fiber aggregation and FTTN MSAN
- Fiber to the Distribution Point (FTTdp) G.fast Optical Network Units (ONU)
- GPON, EPON and 10G PON Optical Line Terminals (OLT)
- SDX Fiber Access network elements
- Optical Networking Edge (ONE) aggregation
- IP Digital Subscriber Line Access Multiplexers (DSLAMs)
- Cabinet and Outside-Plant (OSP) enclosures and services
- Network Management and Cloud-based software platforms and applications
- Pluggable optical transceivers (i.e., SFP, SFP+, XFP, QSFP), cables and other miscellaneous materials
- Planning, engineering, program management, maintenance, installation and commissioning services to implement customer network solutions
- Other products and services that are generally applicable to Access & Aggregation

Customer Devices includes our products and services that provide end users access to CSP networks. Our Customer Devices portfolio includes a comprehensive array of service provider and enterprise hardware and software products and services.

The Customer Devices category includes products and services such as:

- Broadband customer premise solutions, including Passive Optical Network (PON) and point-to-point Ethernet Optical Network Terminals (ONTs)
- Radio Frequency over Glass (RFoG) MicroNodes
- Residential and business gateways
- Wi-Fi access points and associated powering and switching infrastructure
- enterprise Session Border Controllers (eSBC)
- Branch office and access routers
- Carrier Ethernet services termination devices
- VoIP media gateways
- ProServices pre-sale and post-sale technical support
- Planning, engineering, program management, maintenance, installation and commissioning services to implement the customer devices solutions into consumer, small business and enterprise locations
- Other products and services that are generally applicable to customer devices

Traditional & Other Products generally includes a mix of prior generation technologies' products and services, as well as other products and services that do not fit within the Access & Aggregation or Customer Devices categories.

The Traditional & Other Products category includes products and services such as:

- Time Division Multiplexed (TDM) and Asynchronous Transfer Mode (ATM) based aggregation systems and customer devices
- HDSL, ADSL and other mature technologies used to deliver business and residential services over the CSP access and customer networks
- Other products and services that do not fit within the Access & Aggregation and Customer Devices categories

See Note 12 of Notes to Consolidated Financial Statements in this report for further information regarding these product categories.

Sales were $185.1 million and $540.1 million for the three and nine months ended September 30, 2017, compared to $168.9 million and $473.8 million for the three and nine months ended September 30, 2016. Our gross margin increased to 46.7% in the three months ended September 30, 2017 from 44.9% in the three months ended September 30, 2016, and decreased to 45.3% in the nine months ended September 30, 2017 from 46.6% in the nine months ended September 30, 2016. Our operating income margin increased to 9.9% and 7.7% for the three and nine months ended September 30, 2017, from 6.0% and 6.4% for the three and nine months ended September 30, 2016. Net income was $15.9 million and $35.0 million for the three and nine months ended September 30, 2017, compared to $12.4 million and $27.7 million for the three and nine months ended September 30, 2016. Our effective tax rate, excluding the effect of the bargain purchase gain in 2016, decreased to 17.2% and 23.1% for the three and nine months ended September 30, 2017, from 25.9% and 34.0% for the three and nine months ended September 30, 2016. Earnings per share, assuming dilution, were $0.33 and $0.72 for the three and nine months ended September 30, 2017, compared to $0.26 and $0.56 for the three and nine months ended September 30, 2016.

Our operating results have fluctuated on a quarterly basis in the past, and may vary significantly in future periods due to a number of factors, including customer order activity and backlog. Backlog levels vary because of seasonal trends, the timing of customer projects and other factors that affect customer order lead times. Many of our customers require prompt delivery of products. This requires us to maintain sufficient inventory levels to satisfy anticipated customer demand. If near-term demand for our products declines, or if potential sales in any quarter do not occur as anticipated, our financial results could be adversely affected. Operating expenses are relatively fixed in the short term; therefore, a shortfall in quarterly revenues could significantly impact our financial results in a given quarter.

Our operating results may also fluctuate as a result of a number of other factors, including a decline in general economic and market conditions, foreign currency exchange rate movements, increased competition, customer order patterns, changes in product and services mix, timing differences between price decreases and product cost reductions, product warranty returns, expediting costs and announcements of new products by us or ou r competitors. Additionally, maintaining sufficient inventory levels to assure prompt delivery of our products increases the amount of inventory that may become obsolete and increases the risk that the obsolescence of this inventory may have an adverse eff ect on our business and operating results. Also, not maintaining sufficient inventory levels to assure prompt delivery of our products may cause us to incur expediting costs to meet customer delivery requirements, which may negatively impact our operating results in a given quarter.

Accordingly, our historical financial performance is not necessarily a meaningful indicator of future results, and, in general, management expects that our financial results may vary from period to period. Factors that could materially affect our business, financial condition or operating results are included in Item 1A of Part I in our most recent Annual Report on Form 10-K for the year ended December 31, 2016, filed on February 24, 2017 with the SEC.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our critical accounting policies and estimates have not changed significantly from those detailed in our most recent Annual Report on Form 10-K for the year ended December 31, 2016, filed on February 24, 2017 with the SEC.

EFFECT OF RECENT ACCOUNTING PRONOUNCEMENTS

See Note 1 of Notes to Consolidated Financial Statements in Item 1 of this Form 10-Q for a full description of recent accounting pronouncements, including the expected dates of adoption and estimated effects on results of operations and financial condition, which is incorporated herein by reference.

RESULTS OF OPERATIONS – THREE AND NINE MONTHS ENDED SEPTEMBER 30, 2017 COMPARED TO THREE AND NINE MONTHS ENDED SEPTEMBER 30, 2016

SALES

Our sales increased 9.6% from $168.9 million in the three months ended September 30, 2016 to $185.1 million in the three months ended September 30, 2017, and increased 14.0% from $473.8 million in the nine months ended September 30, 2016 to $540.1 million in the nine months ended September 30, 2017. The increase in sales for the three months ended September 30, 2017 is primarily attributable to a $15.3 million increase in sales of our Access & Aggregation products, a $2.6 million increase in sales of our Customer Devices products, partially offset by a $1.7 million decrease in sales of our Traditional & Other Products. The increase in sales for the nine months ended September 30, 2017 is primarily attributable to a $78.0 million increase in sales of our Access & Aggregation products, partially offset by an $11.2 million decrease in sales of our Traditional & Other Products.

Network Solutions sales increased 6.7% from $136.3 million in the three months ended September 30, 2016 to $145.5 million in the three months ended September 30, 2017, and increased 11.5% from $398.7 million in the nine months ended September 30, 2016 to $444.6 million in the nine months ended September 30, 2017. The increase in sales for the three months ended September 30, 2017 is primarily attributable to an increase in sales of Access & Aggregation products and Customer Devices products, partially offset by a decrease in sales of Traditional & Other Products. The increase in sales for the nine months ended September 30, 2017 is primarily attributable to an increase in Access & Aggregation product sales, partially offset by a decrease in sales of Traditional & Other Products. The increase in sales of our Access & Aggregation products for the three and nine months ended September 30, 2017 is primarily attributable to increased VDSL2 vectoring product sales in the U.S. and European carrier markets. The increase in sales of our Customer Devices products for the three months ended September 30, 2017 is primarily attributable to increased sales of GPON ONTs. While we expect that revenues from Traditional & Other Products will continue to decline over time, these revenues may fluctuate and continue for years because of the time required for our customers to transition to newer technologies.

Services & Support sales increased 21.6% from $32.6 million in the three months ended September 30, 2016 to $39.6 million in the three months ended September 30, 2017, and increased 27.1% from $75.1 million in the nine months ended September 30, 2016 to $95.5 million in the nine months ended September 30, 2017. The increase in sales for the three and nine months ended September 30, 2017 is primarily attributable to an increase in network installation services for Access & Aggregation products.

International sales, which are included in the Network Solutions and Services & Support amounts discussed above, decreased 9.7% from $41.2 million in the three months ended September 30, 2016 to $37.2 million in the three months ended September 30, 2017, and increased 31.2% from $96.2 million in the nine mont hs ended September 30, 2016 to $126.2 million in the nine months ended September 30, 2017. International sales, as a percentage of total sales, decreased from 24.4.% for the three months ended September 30, 2016 to 20.1% for the three months ended Septemb er 30, 2017, and increased from 20.3% for the nine months ended September 30, 2016 to 23.4% for the nine months ended September 30, 2017. The decrease in sales for the three months ended September 30, 2017 is primarily attributable to a decrease in sales i n EMEA and Latin America. The increase in sales for the nine months ended September 30, 2017 is primarily attributable to an increase in sales in EMEA, partially offset by a decrease in sales in Latin America. In the first quarter of 2017, our largest Euro pean customer resumed network upgrades, whereas, in 2016, they focused on completing network upgrades activities in regions outside of our footprint with them.

Our international revenues are largely focused on broadband infrastructure and are impacted by the decisions of our customers as to timing for installation of new technologies, expansion of their networks and/or network upgrades. Our international customers must make these decisions in the regulatory and political environment in which they operate – both nationally and in some instances, regionally – whether of a multi-country region or a more local region within a country. For example, the European Commission launched a Gigabit Society initiative, and before that, the Digital Agenda, which has provided a favorable market environment for the deployment of ultra-broadband and Gigabit network solutions. Although the overall environment and market demand for broadband service deployment in the European Union has improved, some new broadband technologies are still being reviewed for regulatory and standards completion, which may affect the timing of those technologies. In Mexico, regulatory changes have created uncertainty for customers, which has resulted in slowdowns in network buying patterns. The competitive landscape in certain international markets is also impacted by the increased presence of Asian manufacturers that seek to compete aggressively on price. A strengthening U.S. dollar can also negatively impact our revenues in regions such as Latin America, where our products are traditionally priced in U.S. dollars, while in regions where our products are sold in local currency, such as Europe, a stronger U.S. dollar can negatively impact operating income. Consequently, while we expect the global trend towards deployment of more robust broadband speeds and access to continue to create expanded market opportunities for us, the factors described above may result in pressure on revenues and operating income. However, we do not presently foresee a significant negative impact to our financial condition based on our strong liquidity and the generally positive environment described above.

We recognized a positive impact to our revenues in the first half of 2017 due to our being awarded a network expansion program by a large European tier-1 customer. We anticipate that as our European and Latin American customers resume their network upgrade projects, we may experience further enhancement to our revenues. We have recently announced receipt of a new nationwide award in the Pacific region, as well as additional awards based on new ADTRAN technologies in the EMEA region that we believe will likely result in a positive impact to our revenues. Further, we expect that a resolution of the regulatory changes in Mexico may result in business with our major customer in that region returning to a more normal level.

COST OF SALES

As a percentage of sales, cost of sales decreased from 55.1% in the three months ended September 30, 2016 to 53.3% in the three months ended September 30, 2017, and increased from 53.4% in the nine months ended September 30, 2016 to 54.7% in the nine months ended September 30, 2017. The decrease in cost of sales as a percentage of sales for the three months ended September 30, 2017 is primarily attributable to the customer and product mix, services and support mix and a decrease in warranty expense. The increase in cost of sales as a percentage of sales for the nine months ended September 30, 2017 is primarily attributable to a regional revenue shift, customer and product mix, and services and support mix.

Network Solutions cost of sales, as a percent of that segment's sales, decreased from 52.1% in the three months ended September 30, 2016 to 50.5% in the three months ended September 30, 2017, and increased from 50.9% in the nine months ended September 30, 2016 to 51.7% in the nine months ended September 30, 2017. The decrease in cost of sales as a percentage of sales for the three months ended September 30, 2017 is primarily attributable to a decrease in warranty expense. The increase in cost of sales as a percentage of sales for the nine months ended September 30, 2017 is primarily attributable to customer and product mix.

An important part of our strategy is to reduce the product cost of each succeeding product generation and then to lower the product's price based on the cost savings achieved. This may cause variations in our gross profit percentage due to timing differences between the recognition of cost reductions and the lowering of product selling prices.

Services & Support cost of sales, as a percent of that segment's sales, decreased from 67.7% in the three months ended September 30, 2016 to 63.3% in the three months ended September 30, 2017, and increased from 67.0% in the nine months ended September 30, 2016 to 68.5% in the nine months ended September 30, 2017. The decrease in cost of sales as a percentage of sales for the three months ended September 30, 2017 is primarily attributable to services and support mix. The increase in cost of sales as a percentage of sales for the nine months ended September 30, 2017 is primarily attributable to an increase in network installation services during 2017, which have higher costs, as opposed to a greater mix of maintenance and support services, which have lower costs.

Our Services business has experienced significant growth since 2015 as competitive pressures to expand broadband access and speeds have strained carriers' ability to respond to customer demand. Our Services & Support revenues are compri sed of network planning and implementation, maintenance, support and cloud-based management services, with network planning and implementation being the largest and fastest growing component. Compared to our other services such as maintenance, support and cloud-based management services, our network planning and implementation services typically utilize a higher percentage of internal and subcontracted engineers, professionals and contractors to perform the work for customers. The additional costs incurred to perform these infrastructure and labor intensive services inherently result in lower average gross margins as compared to maintenance and support services.

As our network planning and implementation revenues have grown and are now the largest component of our Services & Support business, our Services & Support segment gross margins have decreased versus those reported when maintenance and support comprised the majority of the business. Further, because the growth in our network planning and implementation services has resulted in our Services & Support revenues comprising a larger percentage of our overall revenues, and because our Services & Support gross margins are below those of the Network Solutions segment, our overall corporate gross margins have declined as that business has continued to grow. Within the Services & Support segment, we do expect variability in gross margins from quarter-to-quarter based on the mix of the services recognized.

SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

Selling, general and administrative expenses increased 2.8% from $33.7 million in the three months ended September 30, 2016 to $34.7 million in the three months ended September 30, 2017, and increased 6.9% from $97.4 million in the nine months ended September 30, 2016 to $104.1 million in the nine months ended September 30, 2017. The increase in selling, general and administrative expenses for the three months ended September 30, 2017 is primarily attributable to increases in ERP implementation expenses, performance and equity-based compensation expense, and deferred compensation expense. The increase in selling, general and administrative expenses for the nine months ended September 30, 2017 is primarily attributable to increases in performance and equity-based compensation expense, deferred compensation expense, ERP implementation expense, and travel expenses.

As a percentage of sales, selling, general and administrative expenses decreased from 20.0% in the three months ended September 30, 2016 to 18.7% in the three months ended September 30, 2017, and decreased from 20.6% in the nine months ended September 30, 2016 to 19.3% in the nine months ended September 30, 2017. Selling, general and administrative expenses as a percentage of sales may fluctuate whenever there is a significant fluctuation in revenues for the periods being compared.

RESEARCH AND DEVELOPMENT EXPENSES

Research and development expenses increased 4.9% from $32.0 million in the three months ended September 30, 2016 to $33.5 million in the three months ended September 30, 2017, and increased 6.7% from $92.7 million in the nine months ended September 30, 2016 to $98.9 million in the nine month ended September 30, 2017. The increase in research and development expenses for the three months ended September 30, 2017 is primarily attributable to an increase in labor and engineering materials related to customer specific projects. The increase in research and development expenses for the nine months ended September 30, 2017 is primarily attributable to an increase in labor and engineering materials related to customer specific projects and amortization of intangibles acquired in the third quarter of 2016.

As a percentage of sales, research and development expenses decreased from 18.9% in the three months ended September 30, 2016 to 18.1% in the three months ended September 30, 2017, and decreased from 19.6% in the nine months ended September 30, 2016 to 18.3% in the nine months ended September 30, 2017. Research and development expenses as a percentage of sales will fluctuate whenever there are incremental product development activities or a significant fluctuation in revenues for the periods being compared.

We expect to continue to incur research and development expenses in connection with our new and existing products and our expansion into international markets. We continually evaluate new product opportunities and engage in intensive research and product development efforts, which provides for new product development, enhancement of existing products and product cost reductions. We may incur significant research and development expenses prior to the receipt of revenues from a major new product group.

INTEREST AND DIVIDEND INCOME

Interest and dividend income increased 4.6% from $0.9 million in the three months ended September 30, 2016 to $1.0 million in the three months ended September 30, 2017, and increased 6.1% from $2.7 million in the nine months ended September 30, 2016 to $2.9 million in the nine months ended September 30, 2017. The increase in interest and dividend income for the three and nine months ended September 30, 2017 is primarily attributable to an increase in the rate of return on fixed income investments.

INTEREST EXPENSE

Interest expense, which is primarily related to our taxable revenue bond, remained constant at $0.1 million in the three months ended September 30, 2016 and 2017, and $0.4 million in the nine months ended September 30, 2016 and 2017, as we had no substantial change in our fixed-rate borrowing. See "Liquidity and Capital Resources" below for additional information on our revenue bond.

NET REALIZED INVESTMENT GAIN

Net realized investment gains decreased 23.3% from $1.3 million in the three months ended September 30, 2016 to $1.0 million in the three months ended September 30, 2017, and decreased 30.9% from $4.2 million in the nine months ended September 30, 2016 to $2.9 million in the nine months ended September 30, 2017. The decrease in net realized investment gains for the three and nine months ended September 30, 2017 is primarily attributable to decreased gains from the sale of equity securities, partially offset by increased investment gains on our deferred compensation plans. See "Investing Activities" in "Liquidity and Capital Resources" below for additional information.

OTHER EXPENSE, NET

Other expense, net, comprised primarily of miscellaneous income, gains and losses on foreign currency transactions, gains and losses on foreign exchange forward contracts, investment account management fees, and scrap raw material sales, increased 279.3% from $0.2 million of expense in the three months ended September 30, 2016 to $0.9 million of expense in the three months ended September 30, 2017, and increased 346.0% from $0.4 million of expense in the nine months ended September 30, 2016 to $1.7 million of expense in the nine months ended September 30, 2017. The increase in other expense for the three and nine months ended September 30, 2017 is primarily attributable to increased losses on our foreign exchange contracts.

GAIN ON BARGAIN PURCHASE OF A BUSINESS

Gain on bargain purchase of a business is related to our acquisition of key fiber access products, technologies and service relationships from a third party on September 13, 2016. See note 2 of Notes to Consolidated Financial Statements for additional information.

INCOME TAXES

Our effective tax rate decreased from 34.0%, excluding the tax impact of the bargain purchase gain, in the nine months ended September 30, 2016 to 23.1% in the nine months ended September 30, 2017. The decrease in the effective tax rate between the periods is primarily attributable to additional R&D tax credits being recognized in the current quarter, an increase in stock option exercises and a greater mix of international income.

NET INCOME

As a result of the above factors, net income increased $3.5 million from $12.4 million in the three months ended September 30, 2016 to $15.9 million in the three months ended September 30, 2017, and increased $7.3 million from $27.7 million in the nine months ended September 30, 2016 to $35.0 million in the nine months ended September 30, 2017.

As a percentage of sales, net income increased from 7.4% in the three months ended September 30, 2016 to 8.6% in the three months ended September 30, 2017, and increased from 5.8% in the nine months ended September 30, 2016 to 6.5% in the nine months ended September 30, 2017.

LIQUIDITY AND CAPITAL RESOURCES

Liquidity

We intend to finance our operations with cash flow from operations. We have used, and expect to continue to use, the cash generated from operations for working capital, purchases of treasury stock, shareholder dividends, and other general corporate purposes, including (i) product development activities to enhance our existing products and develop new products and (ii) expansion of sales and marketing activities. We believe our cash and cash equivalents, investments and cash generated from operations to be adequate to meet our operating and capital needs for at least the next 12 months.

At September 30, 2017, cash on hand was $128.3 million and short-term investments were $31.4 million, which resulted in available short-term liquidity of $159.6 million, of which $63.9 million was held by our foreign subsidiaries. At December 31, 2016, cash on hand was $79.9 million and short-term investments were $43.2 million, which resulted in available short-term liquidity of $123.1 million, of which $42.1 million was held by our foreign subsidiaries. We intend to permanently reinvest these funds outside the U.S. and our current business plans do not indicate a need to repatriate these funds to finance domestic operations. The increase in short-term liquidity from December 31, 2016 to September 30, 2017 is primarily attributable to shifts among available investment option tenures to provide funds for our short-term cash needs.

Operating Activities

Our working capital, which consists of current assets less current liabilities, increased 30.0% from $226.4 million as of December 31, 2016 to $294.2 million as of September 30, 2017, and our current ratio, defined as current assets divided by current liabilities, increased from 2.79 as of December 31, 2016 to 3.36 as of September 30, 2017. The increase in our working capital and current ratio is primarily attributable to an increase in cash and cash equivalents, inventory, accounts receivable, and prepaid expenses and other current assets, partially offset by an increase in income tax payable. The quick ratio, defined as cash, cash equivalents, short-term investments, and net accounts receivable, divided by current liabilities, increased from 1.70 as of December 31, 2016 to 2.09 as of September 30, 2017. The increase in the quick ratio is primarily attributable to an increase in cash and cash equivalents, short-term investments, and accounts receivable.

Accounts receivable increased 10.0% from $92.3 million at December 31, 2016 to $101.6 million at September 30, 2017. We had no allowance for doubtful accounts at December 31, 2016 or September 30, 2017. Quarterly accounts receivable days sales outstanding (DSO) decreased from 52 days as of December 31, 2016 to 51 days as of September 30, 2017. The change in net accounts receivable is due to changes in customer mix and the timing of sales and collections during the quarter. Certain international customers can have longer payment terms than U.S. customers. Other receivables increased 22.5% from $15.1 million at December 31, 2016 to $18.5 million at September 30, 2017. The increase in other receivables is primarily attributable to an increase in lease receivables, partially offset by the timing of filing returns and collections of VAT receivables in our international subsidiaries and the timing of shipments and collections for materials supplied to our contract manufacturers during the quarter.

Quarterly inventory turnover decreased from 3.67 turns as of December 31, 2016 to 3.43 turns at September 30, 2017. Inventory increased 10.6% from $105.1 million at December 31, 2016 to $116.2 million at September 30, 2017. The increase in inventory at September 30, 2017 is primarily attributable to customer specific projects. We expect inventory levels to fluctuate as we attempt to maintain sufficient inventory in response to services activity and seasonal cycles of our business, ensuring competitive lead times while managing the risk of inventory obsolescence that may occur due to rapidly changing technology and customer demand.

Prepaid expense and other current assets increased 40.5% from $16.5 million at December 31, 2016 to $23.1 million at September 30, 2017. The increase in prepaid expenses and other current assets is primarily attributable to deferred costs related to incomplete network installation services.

Accounts payable decreased 5.4% from $77.3 million at December 31, 2016 to $73.1 million at September 30, 2017. Accounts payable will fluctuate due to variations in the timing of the receipt of supplies, inventory and services and our subsequent payments for these purchases.

Investing Activities

Capital expenditures totaled approximately $12.3 million and $12.7 million for the nine months ended September 30, 2017 and 2016, respectively. These expenditures were primarily used to purchase computer hardware, software, manufacturing and test equipment, and building improvements.

Our combined short-term and long-term investments decreased $50.9 million from $219.3 million at December 31, 2016 to $168.4 million at September 30, 2017. This decrease reflects our cash needs for capital expenditures, purchases of treasury stock, and shareholder dividends partially offset by funds available for investment provided by our operating activities and stock option exercises by our employees, as well as net realized and unrealized gains and losses and amortization of net premiums on our combined investments.

We invest all available cash not required for immediate use in operations primarily in securities that we believe bear minimal risk of loss. At September 30, 2017 these investments included corporate bonds of $45.2 million, municipal fixed-rate bonds of $4.9 million, asset-backed bonds of $7.8 million, mortgage/agency-backed bonds of $7.3 million, U.S. government bonds of $20.9 million, and foreign government bonds of $0.7 million. At December 31, 2016, these investments included corporate bonds of $66.4 million, municipal fixed-rate bonds of $11.8 million, asset-backed bonds of $10.2 million, mortgage/agency-backed bonds of $13.0 million, U.S. government bonds of $29.8 million, foreign government bonds of $3.7 million and variable rate demand notes of $11.9 million. As of September 30, 2017, our corporate bonds, municipal fixed-rate bonds, asset-backed bonds, mortgage/agency-backed bonds, U.S. government bonds, and foreign government bonds were classified as available-for-sale and had a combined duration of 0.8 years with an average Standard & Poor’s credit rating of A+. Because our bond portfolio has a high quality rating and contractual maturities of a short duration, we are able to obtain prices for these bonds derived from observable market inputs, or for similar securities traded in an active market, on a daily basis.

Our long-term investments decreased 22.2% from $176.1 million at December 31, 2016 to $137.0 mil lion at September 30, 2017. Long-term investments at September 30, 2017 and December 31, 2016 included an investment in a certificate of deposit of $27.8 million, which serves as collateral for our revenue bond. See “Debt” below for additional information. We have various equity investments included in long-term investments at a cost of $32.4 million and $30.6 million, and with a fair value of $34.1 million and $29.4 million, at September 30, 2017 and December 31, 2016, respectively.

Long-term investments at September 30, 2017 and December 31, 2016 also included $19.1 million and $14.6 million, respectively, related to our deferred compensation plans, and $0.5 million and $0.8 million, respectively, of other investments carried at cost, consisting of interests in two private equity funds and an investment in a privately held telecommunications equipment manufacturer.

We review our investment portfolio for potential “other-than-temporary” declines in value on an individual investment basis. We assess, on a quarterly basis, significant declines in value which may be considered other-than-temporary and, if necessary, recognize and record the appropriate charge to write-down the carrying value of such investments. In making this assessment, we take into consideration qualitative and quantitative information, including but not limited to the following: the magnitude and duration of historical declines in market prices, credit rating activity, assessments of liquidity, public filings, and statements made by the issuer. We generally begin our identification of potential other-than-temporary impairments by reviewing any security with a fair value that has declined from its original or adjusted cost basis by 25% or more for six or more consecutive months. We then evaluate the individual security based on the previously identified factors to determine the amount of the write-down, if any. For the three and nine months ended September 30, 2017 and 2016, other-than-temporary impairment charges were not significant.

Financing Activities

Dividends

In July 2003, our Board of Directors elected to begin declaring quarterly dividends on our common stock considering the tax treatment of dividends and adequate levels of Company liquidity. During the nine months ended September 30, 2017, we paid dividends totaling $13.0 million.

Debt

We have amounts outstanding under loans made pursuant to an Alabama State Industrial Development Authority revenue bond (the Bond) which totaled $27.8 million at September 30, 2017 and December 31, 2016. At September 30, 2017, the estimated fair value of the Bond was approximately $28.0 million, based on a debt security with a comparable interest rate and maturity and a Standard & Poor’s credit rating of AAA. Included in long-term investments are restricted funds in the amount of $27.8 million at September 30, 2017 and December 31, 2016, which is a collateral deposit against the principal amount of the Bond. We have the right to set-off the balance of the Bond with the collateral deposit in order to reduce the balance of the indebtedness. The Bond matures on January 1, 2020, and bears interest at the rate of 2% per annum. In conjunction with this program, we are eligible to receive certain economic incentives from the state of Alabama that reduce the amount of payroll withholdings we are required to remit to the state for those employment positions that qualify under this program. We are required to make payments in the amounts necessary to pay the interest on the amounts currently outstanding. It is our intent to make annual principal payments in addition to the interest amounts that are due. In connection with this decision, $1.0 million of the Bond has been classified as a current liability in accounts payable in the Consolidated Balance Sheet at September 30, 2017.

Stock Repurchase Program

Since 1997, our Board of Directors has approved multiple share repurchase programs that have authorized open market repurchase transactions of up to 50.0 million shares of our common stock, which will be implemented through open market or private purchases from time to time as conditions warrant. During the nine months ended September 30, 2017, we repurchased 0.9 million shares of our common stock at an average price of $20.27 per share. As of September 30, 2017, we have the authority to purchase an additional 3.6 million shares of our common stock under the current plans approved by the Board of Directors.

Stock Option Exercises

We issued 0.4 million shares of treasury stock during the nine months ended September 30, 2017 to accommodate employee stock option exercises. The stock options had exercise prices ranging from $15.29 to $23.64. We received proceeds totaling $6.6 million from the exercise of these stock options during the nine months ended September 30, 2017.

Off- Balance Sheet Arrangements and Contractual Obligations

We do not have off-balance sheet financing arrangements and have not engaged in any related party transactions or arrangements with unconsolidated entities or other persons that are reasonably likely to materially affect liquidity or the availability of or requirements for capital resources. During the nine months ended September 30, 2017, there have been no material changes in contractual obligations and commercial commitments from those discussed in our most recent Annual Report on Form 10-K for the year ended December 31, 2016 filed on February 24, 2017 with the SEC.

We have committed to invest up to an aggregate of $7.9 million in two private equity funds, and we have contributed $8.4 million as of September 30, 2017, of which $7.7 million has been applied to these commitments.

ITEM 3. QUANTITATIVE AND QUALITATI VE DISCLOSURES ABOUT MARKET RISK

We are exposed to financial market risks, including changes in interest rates, foreign currency rates and prices of marketable equity and fixed-income securities. The primary objective of the large majority of our investment activities is to preserve principal while at the same time achieving appropriate yields without significantly increasing risk. To achieve this objective, a majority of our marketable securities are investment grade corporate bonds, municipal fixed-rate bonds, asset-backed bonds, mortgage/agency backed bonds, U.S. and foreign government bonds and municipal money market instruments denominated in U.S. dollars. Our investment policy provides limitations for issuer concentration, which limits, at the time of purchase, the concentration in any one issuer to 5% of the market value of our total investment portfolio.

We maintain depository investments with certain financial institutions. Although these depository investments may exceed government insured depository limits, we have evaluated the credit worthiness of these financial institutions, and determined the risk of material financial loss due to exposure of such credit risk to be minimal. As of September 30, 2017, $125.2 million of our cash and cash equivalents, primarily certain domestic money market funds, commercial paper and foreign depository accounts, were in excess of government provided insured depository limits.

As of September 30, 2017, approximately $108.1 million of our cash and investments may be directly affected by changes in interest rates. We have performed a hypothetical sensitivity analysis assuming market interest rates increase or decrease by 50 basis points (bps) for an entire year, while all other variables remain constant. At September 30, 2017, we held $39.4 million of cash and variable-rate investments where a change in interest rates would impact our interest income. A hypothetical 50 bps decline in interest rates as of September 30, 2017 would reduce annualized interest income on our cash and investments by approximately $0.2 million. In addition, we held $68.7 million of fixed-rate bonds whose fair values may be directly affected by a change in interest rates. A hypothetical 50 bps increase in interest rates as of September 30, 2017 would reduce the fair value of our fixed-rate bonds by approximately $0.3 million.

As of September 30, 2016, approximately $178.8 million of our cash and investments was subject to being directly affected by changes in interest rates. We have performed a hypothetical sensitivity analysis assuming market interest rates increase or decrease by 50 bps for the entire year, while all other variables remain constant. A hypothetical 50 bps decline in interest rates as of September 30, 2016 would have reduced annualized interest income on our cash, money market instruments and variable rate demand notes by approximately $0.4 million. In addition, a hypothetical 50 bps increase in interest rates as of September 30, 2016 would have reduced the fair value of our fixed-rate bonds by approximately $0.5 million.

We are exposed to changes in foreign currency exchange rates to the extent that such changes affect our revenue and gross margin on revenue derived from some international customers, expenses, and assets and liabilities held in non-functional currencies related to our foreign subsidiaries. Our primary exposures to foreign currency exchange rates are with our German subsidiary, whose functional currency is the Euro, our Australian subsidiary, whose functional currency is the Australian dollar, and our Mexican subsidiary, whose functional currency is the United States dollar. We are exposed to changes in foreign currency exchange rates to the extent of our German subsidiary’s use of contract manufacturers and raw material suppliers whom we predominately pay in U.S. dollars. We may establish cash flow hedges utilizing foreign exchange forward contracts to reduce the risk that movements in exchange rates will adversely affect the net cash flows resulting from the planned purchase of products from foreign suppliers. As a result, changes in currency exchange rates could cause variations in gross margin in the products that we sell in the EMEA region.

We have certain customers and suppliers who are invoiced or pay in a non-functional currency. Changes in the monetary exchange rates may adversely affect our results of operations and financial condition, as outstanding non-functional balances are revalued to the functional currency through profit and loss. When appropriate, we utilize foreign exchange forward contracts to help manage the volatility relating to these valuation exposures. All changes in the fair value of our derivative instruments that do not qualify for or are not designated for hedged accounting transactions are recognized as other income (expense) in the Consolidated Statements of Income. We do not hold or issue derivative instruments for trading or other speculative purposes. All non-functional currencies billed would result in a combined hypothetical gain or loss of $0.1 million if the U.S. dollar weakened or strengthened 10% against the billing currencies. Any gain or loss would be partially mitigated by these derivative instruments.

As of September 30, 2017, we had no material contracts, other than accounts receivable and accounts payable, denominated in foreign currencies. As of September 30, 2017, we had forward contracts outstanding with notional amounts totaling $7.0 million (€5.9 million).

For further information about the fair value of our available-for-sale investments and our derivative and hedging activities as of September 30, 2017, see Notes 6 and 7 of Notes to Consolidated Financial Statements.

ITEM 4. CONTROLS AND PROCEDURES

(a) *Evaluation of disclosure controls and procedures.* Our Chief Executive Officer and Chief Financial Officer are responsible for establishing and maintaining "disclosure controls and procedures" (as defined in the Securities Exchange Act of 1934 Rules 13a-15(e) and 15d-15(e)) for ADTRAN. Our Chief Executive Officer and Chief Financial Officer, after evaluating the effectiveness of our disclosure controls and procedures as of the end of the period covered by this quarterly report, have concluded that our disclosure controls and procedures are effective.

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

PART II. OTHER INFORMATION

ITEM 1A. RISK FACTORS

A list of factors that could materially affect our business, financial condition or operating results is described in Part I, Item 1A, "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2016. There have been no material changes to our risk factors since our Annual Report on Form 10-K for the year ended December 31, 2016.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

The following table sets forth repurchases of our common stock for the months indicated:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs
July 1, 2017 – July 31, 2017	—	$ —	—	3,560,769
August 1, 2017 – August 31, 2017	1,701	$ 21.50	1,701	3,559,068
September 1, 2017 – September 30, 2017	—	$ —	—	3,559,068
Total	**1,701**		**1,701**	

On July 14, 2015, our Board of Directors authorized the repurchase of an additional 5.0 million shares of our common stock (bringing the total shares authorized for repurchase to 50.0 million). This authorization will be implemented through open market or private purchases from time to time as conditions warrant.

ITEM 6. EXHIBITS

Exhibits.

Exhibit No.	Description
31	Rule 13a-14(a)/15d-14(a) Certifications
32	Section 1350 Certifications
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.LAB	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document

SIGNA TURE

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.

ADTRAN, Inc.
(Registrant)

Date: November 7, 2017

/s/ Roger D. Shannon
Roger D. Shannon
Senior Vice President of Finance,
Chief Financial Officer,
Corporate Treasurer and Secretary
(Principal Financial Officer)

Exhibit 31

CERTIFICATIONS

I, Thomas R. Stanton, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of ADTRAN, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 7, 2017

/s/ Thomas R. Stanton
Thomas R. Stanton
Chief Executive Officer and Chairman of the Board

CERTIFICATIONS

I, Roger D. Shannon, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of ADTRAN, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 7, 2017

/s/ Roger D. Shannon

Roger D. Shannon
Senior Vice President of Finance,
Chief Financial Officer,
Corporate Treasurer and Secretary

Exhibit 32

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report of ADTRAN, Inc. (the "Company") on Form 10-Q for the quarter ending September 30, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Thomas R. Stanton, Chief Executive Officer and Chairman of the Board of the Company, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Thomas R. Stanton
Thomas R. Stanton
Chief Executive Officer and Chairman of the Board
November 7, 2017

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of ADTRAN, Inc. (the "Company") on Form 10-Q for the quarter ending September 30, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Roger D. Shannon, Senior Vice President of Finance, Chief Financial Officer, Corporate Secretary and Treasurer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Roger D. Shannon
Roger D. Shannon
Senior Vice President of Finance,
Chief Financial Officer,
Corporate Secretary and Treasurer
November 7, 2017