

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2017

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____
Commission file number: 001-36146

CommScope Holding Company, Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

**1100 CommScope Place, SE
Hickory, North Carolina**

(Address of principal executive offices)

28602

(Zip Code)

27-4332098

(I.R.S. Employer
Identification No.)

(828) 324-2200

(Telephone number)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class

Name of each exchange on which registered

Common Stock, par value \$.01 per share

Nasdaq

Securities registered pursuant to Section 12(g) of the Act: **NONE**

Indicate by check mark whether the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

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 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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Large accelerated filer Accelerated filer

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

Emerging growth company

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

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.

The aggregate market value of the shares of Common Stock held by non-affiliates of the registrant was approximately \$7,236 million as of June 30, 2017. For purposes of this computation, shares held by affiliates and by directors and officers of the registrant have been excluded.

As of February 5, 2018 there were 190,971,960 shares of the registrant's Common Stock outstanding.

Documents Incorporated by Reference

Portions of the registrant's Proxy Statement for the 2018 Annual Meeting of Stockholders are incorporated by reference in Part III hereof.

CommScope Holding Company, Inc.
Form 10-K
December 31, 2017
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PART I

Unless the context otherwise requires, references to “CommScope Holding Company, Inc.,” “CommScope,” “the Company,” “Registrant,” “we,” “us,” or “our” are to CommScope Holding Company, Inc. and its direct and indirect subsidiaries on a consolidated basis.

This Annual Report on Form 10-K includes forward-looking statements identified by certain terms and phrases including but not limited to “intend,” “goal,” “estimate,” “expect,” “project,” “projections,” “plans,” “anticipate,” “should,” “could,” “designed to,” “foreseeable future,” “believe,” “think,” “scheduled,” “outlook,” “target,” “guidance” and similar expressions. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date the statement was made. Item 1A, “Risk Factors,” of this Annual Report on Form 10-K sets forth more detailed information about the factors that may cause our actual results to differ, perhaps materially, from the views stated in such forward-looking statements. We are not undertaking any duty or obligation to update any forward-looking statements to reflect developments or information obtained after the date of this Annual Report on Form 10-K, except to the extent required by law.

ITEM 1. BUSINESS

Company Overview

We are a global leader in providing infrastructure solutions for the core, access and edge layers of communications networks. Our portfolio includes robust and innovative wireless and fiber optic solutions for today’s evolving digital lifestyle. Our talented and experienced global team helps customers increase bandwidth; maximize existing capacity; improve network response time and performance; and simplify technology migration. Our solutions are found in some of the largest venues and outdoor spaces; in data centers and buildings of all shapes, sizes and complexities; at wireless cell sites; in telecom central offices and cable television headends; in fiber-to-the-X (FTTX) deployments; and in airports, trains, and tunnels. Vital networks around the world run on CommScope solutions.

We have a team of over 20,000 people to serve our customers in over 100 countries through a network of more than 30 world-class manufacturing and distribution facilities strategically located around the globe. Our customers include substantially all of the leading global telecommunication operators, data center managers, leading multi-system operators (MSOs) and thousands of enterprise customers, including many Fortune 500 companies. We have long-standing, direct relationships with our customers and serve them through a direct sales force and a global network of channel partners.

For the year ended December 31, 2017, our revenues were \$4.56 billion and our net income was \$193.8 million. For further discussion of our current and prior year financial results, see Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

CommScope enables and empowers many of the top-performing wireless, telecommunications, business enterprise, broadband and cable television networks in existence today by providing solutions for the core, access and edge layers of these networks. The core layer is the central part of a network that provides very high-speed services to entities that are connected to the network. The core layer includes data centers, headends and central offices and the high-speed networks that connect them. The access layer connects subscribers and edge devices to the core and includes outside-plant distribution networks. The access layer typically runs from a central office, headend or wiring center to cell sites, commercial buildings, multi-dwelling units or homes. The edge layer is the entry point on or off the network. The edge network includes routers, certain wireless base stations and building and campus networks, including single and multi-dwelling unit residences. The table below summarizes 2017 revenue, global leadership position and solutions offerings for our two segments:

	Connectivity Solutions (CCS)	Mobility Solutions (CMS)
2017 Revenue	\$2,810 million	\$1,751 million
Global Leadership Position	A global leader in innovative fiber optic and copper connectivity solutions for use in data centers and business enterprise, telecommunications, cable television and residential broadband networks	A global leader in providing infrastructure for the most advanced wireless networks
Network CORE	<ul style="list-style-type: none"> • High density fiber connectivity (shelves/panels, modules, trunks, jumpers/arrays and cable) • Pre-terminated fiber and copper cable and connectivity • Intelligent infrastructure management hardware and software • Data center raceways and cable assemblies • Fiber and central office LAN solutions • Quick-turn delivery of fiber and copper assemblies 	
Network ACCESS	<ul style="list-style-type: none"> • High-capacity fiber and apparatus • Plug and play hardened connector systems for harsh environments • FTTX solutions • Fiber distribution hubs and management systems • Broadband MSO solutions • Intelligent infrastructure management hardware and software 	<ul style="list-style-type: none"> • Microwave backhaul antennas and power solutions
Network EDGE	<ul style="list-style-type: none"> • Single mode and multi-mode fiber and apparatus • Coaxial and structured copper cabling systems and apparatus • Campus network fiber cabling systems • Intelligent infrastructure management hardware and software • Residential connectivity (amplifiers, splitters, drop cable, interconnects) 	<ul style="list-style-type: none"> • Base station antenna systems • Interconnectivity (fiber, hybrid fiber/power and coaxial feeder cabling; connectors and assemblies) • Radio frequency (RF) conditioning and interference mitigation (amplifiers, filters, diplexers and combiners) • Metro cell antenna and concealment solutions • DAS and small cell solutions • In-building cellular solutions

Industry Background

We participate in the large and growing global market for connectivity and essential communications infrastructure. This market is being driven by the growth in bandwidth demand associated with the continued adoption of smartphones, tablets and machine-to-machine (M2M) communication as well as the proliferation of data centers, Big Data, cloud-based services, streaming media content and the Internet of Things (IoT). Telecommunications operators are deploying 4G and fiber optic networks and are planning 5G networks to support the dramatic growth in bandwidth demand. As users consume more data on smartphones, tablets and computers, enterprises face a growing need for higher bandwidth networks, in-building cellular coverage and more robust, efficient and intelligent data centers. Operators are investing in their networks to deliver a competitive triple-play of services (voice, video and high-speed data) and to maintain service quality. There are several major trends that we expect to drive network deployments and investment, including:

Evolving Network Architecture

The pace of change in networking has increased as consumers and data-driven businesses utilize more bandwidth and shift toward ubiquitous mobile applications. Exponential growth in video and “universal mobility” are revolutionizing how we connect to each other and changing the network architecture needed to support consumer demand. This trend requires better network coverage, greater broadband access and increased capacity and data storage.

Operators are working to transition their networks to become faster and more efficient. CommScope sees several key network trends that will continue to impact CommScope and the industry during 2018 and beyond:

- 1) **Network Convergence:** Operators are moving toward converged or multi-use network architectures. Rather than building upon independent wireline and wireless networks, operators are now shifting toward networks that combine voice, video and data communications into a single, converged network. In fact, we are developing solutions that support the convergence of wireline and wireless networks in preparation for 5G. These changes are expected to help operators increase the efficiency and capability of the network, improve asset utilization and reduce cost. We expect that fiber and wireless technologies will be essential building blocks of converged networks. Convergence of fiber-based broadband networks and traditional wireless networks will be essential for the success of 5G technologies.
- 2) **Densification:** As wireless operators work to meet consumer demand, they utilize three primary tools to increase capacity: a) adding wireless spectrum, b) improving network efficiency and c) increasing network density (i.e., adding more cell sites or sectors to an existing cell site). Although the Company benefits from all three strategies, densification of cell sites is expected to be a key driver as operators transition toward 5G networks. A solid 4G network will be the foundation for 5G. Densification includes enhanced sectorization at macro cell sites, building new metro cell or small cell sites and establishing better in-building coverage. The Company expects that densification will require significant fiber cable and connectivity between wireless cell sites (fronthaul, crosshaul and backhaul).
- 3) **Virtualization and Centralization:** Operators are virtualizing and centralizing wireless networks to make them more flexible and efficient. The first step toward capacity virtualization is deploying centralized radio access networks (CRAN). CRAN is a centralized computing architecture for radio networks which requires installation of direct fiber connectivity to individual cell sites. By leveraging the signal carrying capacity of fiber, operators can centrally control dozens or even hundreds of cell sites in the network. Centralizing independent wireless base stations can support the efficient distribution of capacity, improve network response time, reduce the amount of equipment needed at each individual cell site, and lower power and leasing costs. These CRAN nodes will evolve to become “Cloud RAN” nodes as operators “virtualize” the network by combining hardware and software network resources and network functionality into a single, software-based administrative entity. Network virtualization also supports the transition to 5G.
- 4) **Optimization:** Deployment of wired and wireless networks is complex and costly. Operators are highly focused on optimizing network resources and reducing the total cost of ownership. Optimization includes techniques such as innovative fiber connectivity solutions to reduce installation time, network intelligence to monitor equipment efficiency, precise antenna patterns to optimize cell site capacity, spectrum reuse, offloading traffic onto Wi-Fi and utilization of unlicensed spectrum—especially inside buildings.

Fiber Deep Deployments

Residential and business bandwidth consumption continues to grow substantially. The proliferation of over-the-top video, multiscreen viewing, cloud services and social media are prompting operators to accelerate fiber deployment. Operators can increase network capacity by installing fiber deeper into their networks. Although consumer devices are increasingly connected to the network via a wireless connection such as LTE or Wi-Fi, these wireless access points must have abundant backhaul capacity available to provide consumers the experience they expect. Operators around the globe are deploying fiber deep to build next generation networks. These networks use the capabilities of fiber to enable consumers access to content at higher speeds with lower network response time. As networks improve and deliver higher speed and greater reliability, many operators are choosing to provide both residential and business services over a common physical layer infrastructure, saving them time and money. In addition, with the deployments of metro cells, outdoor small cells and fixed wireless broadband to the home, these same service providers are planning to utilize this common physical layer infrastructure to provide connectivity to these wireless access points.

Shift in Enterprise Spending

Several trends in the enterprise market are expected to create opportunities and challenges. First, the shift toward mobility in business enterprises is expected to impact the amount and type of structured copper connectivity needed over the longer-term. As the bandwidth requirements for Wi-Fi and indoor cellular networks increase, more access points will be needed throughout commercial buildings. As a result, enterprises are expected to adjust in-building cabling designs to deliver both power and high-speed data to those devices. Power-over-ethernet is expected to become increasingly important as the number of devices used for Wi-Fi and indoor cellular networks multiplies. While enterprises continue to need copper connectivity to power edge devices, enterprises are deploying fiber more extensively in data centers. Over the next several years, we expect the growing demand for fiber solutions to be somewhat offset by decelerating demand for copper solutions in networks. Due to huge increases in data traffic and migration of applications to the cloud, enterprises are also shifting spending toward multi-tenant (co-located) data centers and hyperscale cloud service providers, which offer cloud data center services as a replacement to in-house corporate data centers. Multi-tenant and hyperscale data center managers are focused on ultra-low loss, high density, scalable fiber connectivity solutions.

An increase in average data center size and the number of assets in a data center significantly raises the total cost of ownership and the complexity of managing data center infrastructure. Data center operators strive to manage their resources efficiently and to reduce energy consumption by monitoring all elements within the data center. Automated infrastructure management software helps operators improve operational efficiency, maximize capability and reduce costs by providing clear insight into cooling capacity, power usage, utilization, applications and overall performance.

Momentum of 5G

Although not expected to be standardized until the end of the decade, 5G wireless is evolving from an industry vision toward a tangible, next generation wireless technology. Some operators are already planning for a transition to 5G wireless and have announced trials and pre-standard deployments of 5G technology. The primary benefits of 5G are expected to include:

- Enhanced mobile broadband—to support significant improvement in data rates and user experience,
- IoT and M2M communications to support the expected billions of connections between machines as well as short bursts of information to other systems and
- Ultra-fast response time—to support applications like public safety, autonomous vehicles and drones.

Densification, virtualization and optimization of the network are all required to support 5G. Operators will need to both acquire and launch new spectrum for 5G, as well as continue their strategy of re-allocation of spectrum from one generation to another. Some of this spectrum will be at much higher frequencies and will use new technologies to deliver exceptional amounts of bandwidth to subscribers. 5G also requires significant fiber to connect wireless access points to each other to improve the response time of the network. As operators transition toward 5G, they must also manage the fundamental network deployment issues of site acquisition, power, backhaul and in-building wireless proliferation.

Metro Cell, DAS and Small Cell Investment to Enhance and Expand Wireless Coverage and Capacity

The traditional macro cell network requires mobile users to connect directly to macro cell base stations. Macro cells are primarily designed to provide coverage over wide areas and typically transmit high power. Alone, they are not optimal for dense urban areas where physical structures often create coverage gaps and capacity is frequently constrained. Adding new macro cells or increasing the number of sectors on existing sites has been the traditional way to increase mobile capacity and will continue to be a foundational layer of the network. As demand growth continues to outpace capacity growth, new solutions are required for densely populated areas. Metro cells and indoor networks have emerged as important layers of the network. Metro cells are smaller outdoor cell sites, located closer to the ground, having a lower power level than a traditional macro cell site. Metro cells blend into their environment and are often found integrated with traditional street furniture, which helps alleviate zoning restrictions that have made traditional deployments difficult. Finally, there are small cell and DAS solutions that address the capacity and speed requirements from an indoor perspective. These systems provide coverage and capacity to the indoor environment and reduce the load from the macro and metro layers, which improves overall network performance. Small cell and DAS systems may range from small single operator, single-band, low-capacity systems for use in enterprise buildings to large multi-carrier, multi-technology, multi-band systems for use in high-capacity public venues.

Wireless operators view in-building coverage as a critical component of their network deployment strategies. Key challenges for wireless operators in providing in-building cellular coverage are signal loss while penetrating building structures and interference created by mobile devices while connected to macro cell sites. In-building DAS solutions bring the antenna significantly closer to the user, which results in better coverage and capacity while simultaneously reducing interference. In-building DAS provides seamless signal handover for users inside buildings and can support multi-operator, multi-frequency and multi-protocol (2G, 3G, 4G, 5G) solutions. Small cells are self-contained radio units that generally provide support for fewer bands from a single service provider to a relatively small area, similar to a Wi-Fi access point. The benefits of small cell technologies are becoming increasingly important with the trend towards mobility in the enterprise market.

Operators also commonly use traditional DAS solutions to address outdoor capacity issues in urban areas, deploying them in effect as metro cells. By deploying multi-band, multi-technology solutions in this way, operators can create small coverage re-use areas, which optimizes use of existing licensed spectrum by increasing repeated usage of the same frequencies within a defined coverage area.

Strategy

We believe consumer demand for bandwidth, competition among operators and continuous technology advancements are driving communication network deployments and investment. We believe these trends position us for future growth and value creation because of our leading positions across diverse and growing market segments and geographies, our platform of innovative solutions, complementary market opportunities and our strong financial profile. We see growth opportunities in the markets we serve and it is our plan to capitalize on these opportunities by providing our customers with products that can transform their networks with efficient solutions that optimize network performance and deployment speed. Our strategy and 2018 priorities are to:

Become a Preferred Partner to Our Customers

We plan to expand our industry leadership positions in fiber and wireless by developing and enhancing value-creating partner relationships with our customers, suppliers, distributors as well as our channel and technology partners. We intend to expand these relationships by innovating, collaborating and selling with our customers. We expect to meet our commitments and maintain our product quality while collaborating with our customers to provide solutions to their key network challenges.

Relentlessly Focus on Innovation to Solve Critical Problems

We plan to build on our legacy of innovation and on our worldwide portfolio of patents and patent applications by continuing to invest in research and development. We also intend to utilize our deep industry expertise to offer unique perspectives to solve customers' challenges. We intend to focus our investment on high growth markets.

Enhance Sales Growth

We expect to capitalize on our technology leadership, operational excellence, scale, market position, broad product offerings and quality to generate growth opportunities by:

- Differentiating with speed. We intend to make it easier for customers to do business with CommScope by improving our business velocity related to decisions, delivery, sales and customer service.
- Enabling growth. We intend to drive organic sales growth by refocusing on key markets and developing processes and tools to turn new ideas into growth.
- Continuing to drive solutions offerings. We intend to focus on selling solutions to our customers that align with their evolving needs, thereby enhancing our position as a strategic partner. With the addition of our high-speed migration portfolio and quick-turn delivery capabilities, we have broadened our range of solutions.
- Making strategic acquisitions. We will continue our disciplined approach to evaluating, executing and successfully integrating strategic acquisitions.

Expand Culture of Excellence

We strive to be viewed as a top employment destination where premier talent is hired, developed and retained. We also intend to make high-performance and operational excellence the standard throughout the Company while prioritizing collaboration and zero-tolerance for quality issues.

Continue to Enhance Operational Efficiency and Cash Flow Generation

We continuously pursue strategic initiatives aimed at optimizing our resources by reducing manufacturing and distribution costs and optimizing our overall cost structure. We believe that we have a strong track record of improving operational efficiency and successfully executing on formalized annual profit improvement plans, cost-savings initiatives and working capital improvements to drive future profitability and cash flows. We intend to use the cash we generate to invest in our business to make strategic acquisitions, reduce our indebtedness and return capital to stockholders.

Operating Segments

We report financial performance based on two operating segments: CommScope Connectivity Solutions (CCS) and CommScope Mobility Solutions (CMS).

The distribution of net revenues between our two segments is as follows:

	Year Ended December 31,		
	2017	2016	2015
CCS	61.6%	60.2%	48.4%
CMS	38.4	39.8	51.6
Total	100.0%	100.0%	100.0%

CommScope Connectivity Solutions Segment

The CCS segment provides innovative fiber optic and copper cable and connectivity solutions for use in data centers and business enterprise, telecommunications, cable television and residential broadband networks. Our CCS portfolio includes innovative solutions for indoor and outdoor network applications. Indoor network solutions, which account for slightly over half of CCS net sales, are found in commercial buildings and in the network core—which includes data centers, central offices and cable television headends. Our outdoor network solutions are found in access and edge networks. Fiber optic solutions account for slightly less than half of CCS net sales.

Indoor Connectivity Solutions

We have a leading global market position in enterprise connectivity for data centers and commercial buildings. Our solutions support mission-critical, high bandwidth applications. We integrate our structured cabling, connectors, in-building cellular solutions and network intelligence capabilities to create physical layer solutions that enable voice, video and data communication and building automation. We use proprietary modeling and simulation techniques to optimize networks to provide performance that exceeds established standards. Through our Cable Exchange acquisition, we have expanded our capabilities and presence in the hyperscale and cloud data center market. Our global network of partners offers customers custom, turnkey network solutions that are tailored to each customer's unique requirements. Data centers and other fiber solutions account for nearly one-third of indoor network solutions net sales.

We believe that our strong market position results from our differentiated technology, long-standing relationships with customers and channel partners, strong brand recognition, premium product features and the performance and reliability of our solutions. These comprehensive solutions, sold primarily under the SYSTIMAX, NETCONNECT and Uniprise brands, include optical fiber and twisted pair structured cable solutions, intelligent infrastructure management hardware and software and network rack and cabinet enclosures.

Our data center, central office and headend solutions include a robust portfolio of high-density fiber optic connectivity, including shelves/panels, modules, trunks, jumpers/arrays and cable. We also offer fiber management systems, patch cords and panels, pre-terminated fiber connectivity, complete cabling systems and cable assemblies for use in offices and data centers. These connectivity solutions can deliver data speeds of more than 100 gigabits per second (Gbps).

Outdoor Connectivity Solutions

We have a leading global position in providing fiber optic and coaxial cable solutions that support the multichannel video, voice and high-speed data services provided by telecommunications operators and MSOs. We provide a broad portfolio of connectivity solutions including fiber-to-the-home (FTTH) equipment. Our fiber optic connectivity solutions are primarily comprised of hardened connector systems, fiber distribution hubs and management systems, couplers and splitters, plug and play multiport service terminals, hardened optical terminating enclosures, high density cable assemblies and splice closures. These products are used in both local-area and wide-area networks and "last-mile" FTTH installations, including deployments of fiber-to-the-node (FTTN), fiber-to-the-premises (FTTP) and fiber-to-the-distribution point (FTTdP) to homes, businesses and cell sites. These networks use the capabilities of fiber to enable consumers access to content at higher speeds and faster response times.

Our customers are pushing fiber deeper into networks. They are investing in broadband to deliver higher-speed data to homes and businesses; fiber to macro cell towers, metro cells and small cells; and enabling network virtualization in wireless networks. These networks are capital intensive with a high portion of deployment costs related to labor in the field. We are focused on enabling solutions for our customers to build an effective and efficient FTTX network. With our technological capabilities and diverse fiber connectivity portfolio, we can help operators lower capital expenditures and reduce the total cost of ownership by creating solutions that shift labor from the field to the factory. While the timing of cable and connectivity deployments can be difficult to predict, we have a broad, technologically-advanced FTTX connectivity portfolio which we believe positions us to capitalize on the expected growth in fiber networks.

CommScope Mobility Solutions Segment

The CMS segment provides the integral building blocks for cellular base station sites and related connectivity; indoor, small cell and distributed antenna wireless systems; and wireless network backhaul planning and optimization products and services. Our macro cell site solutions can be found at wireless tower sites and on rooftops. Our metro cell solutions can be found on street poles and on other urban structures. Macro and metro cell site applications represent approximately 80% of our CMS segment net sales. Our DAS and small cell solutions allow wireless operators to increase spectral efficiency and enhance cellular coverage and capacity in challenging network conditions such as commercial buildings, urban areas, stadiums and transportation systems.

Our solutions, marketed primarily under the Andrew brand, enable wireless operators to meet coverage and capacity requirements for next generation networks. We focus our physical-layer solutions on all aspects of the Radio Access Network (RAN) from the macro through the metro, to the indoor layer. Our macro cell site, metro cell site, DAS and small cell solutions establish us as a global leader in RF infrastructure solutions for wireless operators and original equipment manufacturers (OEMs). We strive to provide a one-stop source for managing the technology lifecycle of a wireless network, including complete physical layer infrastructure solutions for 2G, 3G, 4G and 5G applications. In preparation for 5G networks, we continue to invest heavily in relevant research and development, support customer technology trials and actively participate in industry forums to help shape 5G standards. Our comprehensive solutions include products for every major wireless protocol and allow wireless network operators to operate across multiple frequency bands, reduce cost, achieve faster data rates, improve network response time and accelerate migration to the latest wireless technologies. Our wireless solutions are built using a modular approach, which has allowed us to leverage our core technology across generations of networks and mitigate technology risk. We provide a complete portfolio of RF infrastructure products, and we are recognized for our leading technologies, best-in-class performance, comprehensive product portfolio and global scale.

Our macro cell site solutions include base station antennas, microwave antennas, hybrid fiber-feeder and power cables, coaxial cables, connectors and filters. We also provide a comprehensive portfolio at the base of the tower including cabinets, platforms, fiber backhaul connectivity hubs and power solutions that allow operators to minimize capital expenditures, operating expenses and deployment time.

Our metro cell solutions include RF delivery, equipment, housing and concealment. The fully integrated outdoor systems include specialized antennas, filters/combiners, backhaul solutions, intra-system cabling and power distribution, all minimized to fit an urban environment. These solutions facilitate site acquisition and improve RF network performance in the metro area while minimizing interference with the macro layer. Furthermore, they enable faster zoning approvals and expedite construction.

Our small cell and DAS solutions are primarily comprised of distributed antenna systems and distributed cell solutions. The combination of our innovative small cell offerings and our industry-leading DAS portfolio enables us to provide a broader range of solutions, addressing single-operator, single-band, low capacity environments all the way through multi-carrier, multi-technology, multi-band, high capacity environments.

Manufacturing and Distribution

We develop, design, fabricate, manufacture and assemble many of our products and solutions in-house at our facilities located around the world. We have strategically located our manufacturing and distribution facilities to provide superior service levels to customers. We utilize lower-cost geographies for high labor content products while investing in largely automated plants in higher-cost regions close to customers. Most of our manufacturing employees are located in lower-cost geographies such as Mexico, China, India and the Czech Republic. We continually evaluate and adjust operations to improve service, lower cost and improve the return on our capital investments. In addition, we utilize contract manufacturers for many of our product groups, including certain cabinets and filter products. We expect to continue modifying global operations to adapt to changing product demand or business conditions.

Research and Development

Research and development is important to preserve and expand our position as a market leader and to provide the most technologically advanced solutions in the marketplace. We invested \$185 million in research and development during 2017 and expect to continue with substantial investments in future years. We continue to focus our major research and development activities on high-growth opportunities such as fiber optic connectivity for FTTX and data centers, active and passive base-station antennas, and metro cell and small cell wireless solutions. We are also in the process of developing solutions that support the convergence of wireline and wireless networks in preparation for 5G. Several of our professionals are leaders and active contributors in standards-setting organizations which helps ensure that our products can be formulated to achieve broad market acceptance.

Customers

Our customers include substantially all of the leading global telecom operators, data center managers, leading cable television providers or MSOs and thousands of enterprise customers, including many Fortune 500 companies, which we serve both directly and indirectly. Major customers and distributors include companies such as America Movil, S.A.B. de C.V.; Anixter International Inc.; AT&T Inc.; Charter Communications, Inc.; Comcast Corporation; Deutsche Telekom AG; Ericsson, Inc.; Graybar Electric Company, Inc.; NBN Co. Limited; Talley Inc.; T-Mobile; Verizon Communications Inc.; Vodafone Group, Plc; and Wesco International Inc. We support our global sales organization with regional service centers in locations around the world.

Products from our CCS segment are primarily sold through independent distributors or system integrators for large telecommunications operators. We also sell directly to cable television system operators, broadband operators, or service providers that deploy broadband networks. Sales to our top three CCS segment customers represented 18% and 19% of our consolidated net sales for the years ended December 31, 2017 and 2016, respectively. Net sales to our largest customer, Anixter International Inc. and its affiliates (Anixter), accounted for 11% of our consolidated net sales for the years ended December 31, 2017 and 2016.

Products from our CMS segment are primarily sold directly to wireless operators, OEMs that sell equipment to wireless operators or other service providers that deploy elements of wireless networks at the direction of wireless operators. Our customer service and engineering groups maintain close working relationships with these customers due to the significant amount of customization associated with some of these products. Sales to our top three CMS segment operator customers represented 13% and 17% of our consolidated net sales for the years ended December 31, 2017 and 2016, respectively. Sales to our top three OEM customers represented 5% of our consolidated net sales for the years ended December 31, 2017 and 2016. No CMS segment customer accounted for 10% or more of our consolidated net sales for the years ended December 31, 2017 and 2016. While we sell to most wireless operators globally, we are dependent on a small number of large operators.

We generally have no minimum purchase commitments with any of our distributors, system integrators, value-added resellers, wireless operators or OEM customers, and our contracts with these parties do not prohibit them from purchasing or offering products or services that compete with ours. Although we maintain long-term relationships with these parties and have not historically lost key customers, we have experienced variability in the level of purchases by our key customers. Any significant reduction in sales to these customers, including as a result of the inability or unwillingness of these customers to continue purchasing our products, could materially and adversely affect our business, financial condition, results of operations and cash flows. See Part I, Item 1A, “Risk Factors.”

We employ a global manufacturing and distribution strategy to control production costs and provide world-class service to customers. We support our international sales efforts with sales representatives based in Europe, Latin America, Asia and other regions throughout the world. Our net sales from international operations were \$2.1 billion, \$2.3 billion and \$1.9 billion for the years ended December 31, 2017, 2016 and 2015, respectively.

Patents and Trademarks

We pursue an active policy of seeking intellectual property protection, including patents and registered trademarks, for new products and designs. On a worldwide basis, we held approximately 10,000 patents and patent applications and approximately 2,400 registered trademarks and trademark applications as of December 31, 2017. We consider our patents and trademarks to be valuable assets, and while no single patent is material to our overall operations, we believe the CommScope, Andrew, SYSTIMAX, HELIAX and NETCONNECT trade names and related trademarks are critical assets to our business. We intend to rely on our intellectual property rights, including our proprietary knowledge, trade secrets and continuing technological innovation, to develop and maintain our competitive position. We will continue to protect our key intellectual property rights.

Backlog and Seasonality

At December 31, 2017 and 2016 we had an order backlog of \$492 million and \$612 million, respectively. Orders typically fluctuate from quarter to quarter based on customer demand and general business conditions. Our backlog includes only orders that are believed to be firm. Sometimes, unfilled orders may be canceled prior to shipment of goods, but cancellations historically have not been material. However, our current order backlog may not guarantee future demand.

Due to the variability of shipments under large contracts, customers’ seasonal installation considerations and variations in product mix and in profitability of individual orders, we can experience significant quarterly fluctuations in sales and operating income. Our operating performance is typically weaker during the first and fourth quarters and stronger during the second and third quarters. These variations are expected to continue in the future. It may be more meaningful to focus on annual rather than interim results.

Competition

The market for our products is highly competitive and subject to rapid technological change. We encounter significant domestic and international competition across both segments of our business. Our competitors include large, diversified companies — some of whom have substantially more assets and greater financial resources than we do. We also face competition from small to medium-sized companies and less diversified companies that have concentrated efforts in one or more areas of the markets we serve. Our competitors include AFL (a subsidiary of Fujikura, Ltd.); Amphenol Corporation; Belden Inc.; Berk-Tek (a Company of Nexans S.A.); Comba Telecom Systems Holding Ltd.; Corning Incorporated; Emerson Electric Co.; Ericsson Inc.; Huawei Technologies Co., Ltd.; JMA Wireless; KATHREIN-Werke KG; Leviton Manufacturing Co., Inc.; Nokia Corp; Ortronics (a brand of Legrand NA, LLC); Panduit Corp.; RFS (a subsidiary of Nokia Corp); SOLiD Technologies; SpiderCloud Wireless (a subsidiary of Corning Incorporated); Sumitomo Corp; and ZTE Corp. We compete primarily on the basis of delivering solutions, product specifications, quality, price, customer service and delivery time. We believe that we differentiate ourselves in many of our markets based on our market leadership, global sales channels, intellectual property, strong reputation with our customer base, the scope of our product offering, the quality and performance of our solutions and our service and technical support.

Competitive Strengths

We are a global leader in connectivity and essential infrastructure solutions for communications networks, and we believe we hold leading market positions in our segments. Since our founding in 1976, CommScope has been a leading brand in connectivity solutions for communications networks. In the wireless industry, Andrew is one of the world's most recognized brands and a global leader in RF solutions for wireless networks. In the enterprise market, SYSTIMAX, NETCONNECT and Uniprise are recognized as global market leaders in enterprise connectivity solutions for business enterprise and data center applications.

We believe the following competitive strengths have been instrumental to our success and position us well for future growth and strong financial performance:

Differentiated Solutions Supported by Ongoing Innovation and Significant Proprietary Intellectual Property (IP)

Our integrated solutions for wireless, enterprise, fiber optic and broadband networks are differentiated in the marketplace and are a significant global competitive advantage. We invested \$185 million in research and development during 2017 and expect to continue with substantial investments in future years. We have also added significant IP and innovation through acquisitions, such as BNS, which added approximately 7,000 patents and patent applications worldwide and gave us access to leading fiber technology that will help us better address a transition to fiber deployments deeper into networks and data centers as consumers and businesses generate increasing bandwidth requirements; Airvana, which expanded our leadership and capabilities in providing indoor wireless capacity and coverage; and Argus Technologies (Argus), which enhanced our next-generation base station antenna technology. Our ongoing innovation, supported by proprietary IP and technology know-how, has allowed us to sustain this competitive advantage. With these new innovative solutions, we expect to solve more customer communications challenges, while providing greater opportunities to our business partners.

- *Integrated solutions.* Our wireless network offerings include complete connectivity solutions supporting 2G, 3G and 4G wireless technologies for both macro and metro, as well as DAS and small cell sites. We are also developing solutions that support the convergence of wireline and wireless networks in preparation for 5G. We provide a complete portfolio of integrated RF solutions from the output of the base station (or baseband processor) at the bottom of the tower to the antenna at the top of the tower. In the enterprise and data center markets, we deliver a comprehensive solution including connectivity and cables, enclosures and network intelligence software. In the FTTX market, we offer end-to-end solutions including connectors, cabling, splice closures and fiber management systems. Our ability to provide integrated connectivity solutions for wireless, enterprise, fiber optic and broadband networks makes us a value-added solutions provider to our customers and gives us a significant competitive advantage.
- *Strong design capabilities and technology know-how.* We have a long tradition of developing highly engineered connectivity solutions, demonstrating superior performance across various generations of networks. Our ongoing focus on engineering innovation has enabled us to create high quality products that are reliable, have a desirable form factor and enable our customers to optimize the performance, flexibility, installation time, energy consumption and space requirements of their network deployments.
- *Significant proprietary IP.* Our proven record of innovation and decades of experience creating market-leading technology products are evidenced by our approximately 10,000 patents and patent applications, as well as our approximately 2,400 registered trademarks and trademark applications, worldwide. Our significant proprietary IP, when combined with our deep engineering expertise, allows us to create industry defining solutions for customers around the world.

Established Sales Channels and Customer Relationships

We serve customers in over 100 countries and have become a trusted advisor to many of them through our industry expertise, quality products, leading technology and long-term relationships. These factors enable us to provide mission-critical connectivity solutions that our customers need to build high-performing communication networks.

Our customers include substantially all of the leading global telecom operators, data center managers, leading cable television providers or MSOs and thousands of enterprise customers, including many Fortune 500 companies. We are a key supplier within the wireless infrastructure market and enjoy established sales channels across all geographies and technologies. Our long-standing relationships with telecommunication operators enable us to work closely with them in providing highly customized solutions aligned with their technology roadmaps. We have a global sales force with sales representatives based in North America, Europe, Latin America, Asia and other regions, and an extensive global network of channel partners including independent distributors, system integrators and value-added resellers. Our sales force has direct relationships with our customers and end users which generates demand for our products, with a large portion of our sales fulfilled through channel partners. Our direct sales force and channel partner relationships give us extensive reach and distribution capabilities to customers globally.

Global Scale, Manufacturing Footprint and Quality

Our global manufacturing and distribution footprint and worldwide sales force give us significant scale within our addressable markets. We believe our scale, stability and quality make us an attractive strategic partner to our large global customers, and we have been repeatedly recognized by key customers for these attributes. In addition, our ability to leverage our core competencies across our business, coupled with our successful track record of operational efficiencies, has allowed us to improve our margins and cash flows over time while continuing to invest in research and development and acquisitions targeting new products and markets.

Our manufacturing and distribution facilities are strategically located to optimize service levels and product delivery times. We also utilize lower-cost geographies for high labor content products and largely automated plants in higher-cost regions. Over half of our manufacturing employees are in lower-cost geographies such as Mexico, China, India and the Czech Republic. Our dynamic manufacturing and distribution organization allows us to:

- Flex our capacity to meet market demand and expand our market position;
- Deliver high-quality customer solutions;
- Provide high customer service levels due to proximity to the customer; and
- Effectively integrate acquisitions and capitalize on related synergies.

Proven Management Team with Record of Operational Excellence and Successful M&A Integration

We have a strong track record of organically growing market share, establishing leadership positions in new markets, managing cash flows, delivering profitable growth across multiple economic cycles and integrating large and small acquisitions. Our senior management team has extensive experience in connectivity solutions for the communications infrastructure industry.

We have a history of strong operating cash flow and have generated over \$1.5 billion in cumulative operating cash flow over the last three years. Our strong cash flow profile has allowed us to continue to invest in innovative research and development, pursue strategic acquisitions, repay debt and return cash to stockholders. We continuously pursue strategic initiatives aimed at optimizing our resources, reducing manufacturing and distribution costs and lowering our overall cost structure.

Throughout our history, we have successfully complemented our organic growth with strategic acquisitions. We have substantially completed the BNS business integration and we have delivered substantial synergies, completed significant system integrations and re-organized the business. Our management team has effectively integrated other large acquisitions, such as Andrew Corporation in 2007 and Avaya Connectivity Solutions in 2004. We have also executed tuck-in acquisitions, such as Cable Exchange, Airvana, Argus and Alifabs, to help expand our market opportunities and continue to solve our customers' business challenges in multiple growth areas. We have also made strategic minority investments in order to gain access to key technologies or capabilities.

Raw Materials

Our products are manufactured or assembled from both standard components and parts that are unique to our specifications. Our internal manufacturing operations are largely process oriented and we use significant quantities of various raw materials, including aluminum, bimetals, brass, copper, plastics and other polymers, optical fiber and steel, among others. We use significant volumes of copper, aluminum, steel and polymers in manufacturing coaxial and twisted pair cables and antennas. Other parts are produced using processes such as stamping, machining, molding and pressing from metals or plastics. Portions of the requirements for these materials are purchased under supply arrangements where some portion of the unit pricing may be indexed to commodity market prices for these metals. We may occasionally enter forward purchase commitments or otherwise secure availability for specific commodities to mitigate our exposure to price changes for a portion of our anticipated purchases. Certain of the raw materials utilized in our products may only be available from a few suppliers, and we may enter into longer term agreements to secure access to certain key inputs. We may, therefore, encounter availability issues and/or significant price increases.

Our profitability may be materially affected by changes in the market price of our raw materials, most of which are linked to the commodity markets. Prices for aluminum, copper, plastics and certain other polymers derived from oil and natural gas have fluctuated substantially during the past several years. We have adjusted our prices for certain products and may have to adjust prices again. Delays in implementing price increases, failure to achieve market acceptance of price increases, or price reductions in response to a rapid decline in raw material costs, could have a material adverse impact on the results of our operations.

In addition, some of our products are assembled from specialized components and subassemblies manufactured by suppliers. We depend upon sole suppliers for certain key components for some of our products. If these sources could not provide these components in sufficient quantity and quality on a timely and cost efficient basis, it could materially impact our results of operations until another qualified supplier is found. We believe that our supply contracts and our supplier contingency plans mitigate some of this risk.

Environment

We are subject to various federal, state, local and foreign environmental laws and regulations governing, among other things, discharges to air and water, management of regulated materials, handling and disposal of solid and hazardous waste, and investigation and remediation of contaminated sites. In addition, we are or may be subject to laws and regulations regarding the types of substances allowable in certain of our products and the handling of our products at the end of their useful life. See Part I, Item 1A, "Risk Factors" for additional discussion of our risks related to environmental laws and regulations.

Employees

As of December 31, 2017 we had a team of over 20,000 people to serve our customers worldwide. The majority of our employees are located outside of the United States. As a matter of policy, we seek to maintain good relations with our employees at all locations. We are not subject to any collective bargaining agreements in the United States. A significant portion of our international employees are members of unions or subject to workers' councils or similar statutory arrangements. From a companywide perspective, we believe that our relations with our employees and unions or workers' councils are satisfactory, though we have experienced challenges in certain countries and may encounter more such challenges. Historically, periods of labor unrest or work stoppage have not had a material impact on our operations or results.

Available Information

Our website (www.commscope.com) contains frequently updated information about us and our operations. Our filings with the Securities and Exchange Commission (SEC) on Form 10-K, Form 10-Q, Form 8-K and Proxy Statements and all amendments to those reports can be viewed and downloaded free of charge as soon as reasonably practicable after the reports and amendments are electronically filed with or furnished to the SEC by accessing www.commscope.com and clicking on *Company*, *Investor Relations*, *Financial Information* and then clicking on *SEC Filings*. The information contained on or incorporated by reference to our website is not a part of this Annual Report on Form 10-K.

SEC Certifications

The certifications by the Chief Executive Officer and Chief Financial Officer of the Company, required under Section 302 of the Sarbanes-Oxley Act of 2002 (the Sarbanes-Oxley Act), have been filed as exhibits to this Annual Report on Form 10-K.

ITEM 1A. RISK FACTORS

The following is a cautionary discussion of risks, uncertainties and assumptions that we believe are significant to our business. In addition to the factors discussed elsewhere in this Annual Report on Form 10-K, the following are some of the important factors that, individually or in the aggregate, we believe could make our results differ materially from those described in any forward-looking statements. It is impossible to predict or identify all such factors and, as a result, you should not consider the following factors to be a complete discussion of risks, uncertainties and assumptions.

Competitive Risks

Our business is dependent on capital spending for data and communication networks, and reductions in such capital spending could adversely affect our business.

Our performance is dependent on capital spending for constructing, rebuilding, maintaining or upgrading data and communication networks, which can be volatile and difficult to forecast. Capital spending in the communications industry is cyclical and can be curtailed or deferred on short notice. A variety of factors affect the timing and amount of capital spending in the communications industry including: competing technologies; general economic conditions; seasonality of outside deployments; timing and adoption of the global rollout of new technologies; customer specific financial or general market conditions; changes in customer preferences or requirements; availability and cost of capital; governmental regulation; demands for network services; competitive pressures, including pricing pressures; acceptance of new services offered by our customers; industry consolidation; and real or perceived trends or uncertainties in these factors. As a result of these factors, we may not be able to maintain or increase our sales in the future, and our business, financial condition, results of operations and cash flows could be materially and adversely affected.

A substantial portion of our business is derived from a limited number of key customers and channel partners.

Our customer base includes direct customers, original equipment manufacturers (OEMs) and channel partners, which include distributors, system integrators and value-added resellers. We derived 24% of our 2017 consolidated net sales from our top three customers. Our largest customer, Anixter International Inc., accounted for 11% of our 2017 consolidated net sales. The concentration of our net sales among these key customers subjects us to a variety of risks including:

- lower sales resulting from the loss of one or more of our key customers;
- less efficient operations resulting in higher costs from an inability to accurately forecast and plan for volatile spending patterns of key customers;
- renegotiations of agreements with key customers resulting in materially less favorable terms;
- financial difficulties experienced by one or more of our key customers, resulting in reduced purchases of our products and/or delays or difficulties in collecting accounts receivable balances; and
- reductions in inventory levels held by channel partners and OEMs, which may be unrelated to purchasing trends by end customers.

We generally have no minimum purchase commitments with any of our distributors, system integrators, value-added resellers, wireless operators or OEM customers, and our contracts with these parties do not prohibit them from purchasing or offering products or services that compete with ours. Although we maintain long-term relationships with these parties and have not historically lost key customers, we have experienced variability in the level of purchases by our key customers. Any significant reduction in sales to these customers, including as a result of the inability or unwillingness of these customers to continue purchasing our products, could materially and adversely affect our business, financial condition, results of operations and cash flows.

We face competitive pressures with respect to all of our major product groups.

Competition in our industry depends on a number of factors, including innovative product and service solution offerings, the ability to adapt to changing markets and customer requirements, quality and timing of the introduction of new products and services, customer service, pricing, and speed of delivery. In each of our major product groups, we compete with a substantial number of foreign and domestic companies, some of which have greater financial, technical, marketing and other resources or lower operating costs. They may also have broader product lines and market focus. This gives many of these enterprises a competitive advantage to withstand any significant reduction in capital spending by customers in our markets over the long term. Further, our industry is consolidating, and the combination of any of our competitors could further increase these advantages and result in competitors with broader market presence.

Some competitors may also be able to bundle their products and services together to meet the needs of a particular customer and may be capable of delivering more complete solutions than we are able to provide which may cause us to lose sales opportunities and revenue. Competitors' actions, such as price reductions or the introduction of new innovative products and services, and the use of exclusively price driven auctions by customers have caused lost sales opportunities in the past and may cause us to lose sales opportunities in the future. The rapid technological changes occurring in the communications industry could also lead to the entry of new competitors against whom we may not be able to compete successfully. In addition, if any of our competitors' products or technologies were to become the industry standard, our business would be negatively affected. Changes in trade policies could decrease the price competitiveness of our products and/or increase our operating costs. Specifically, the renegotiation or cancellation of free trade agreements with countries in which we operate internationally, including the North American Free Trade Agreement, could negatively impact us.

We cannot assure you that we will continue to compete successfully with our existing competitors or with new competitors. If we are unable to compete in any of our markets at the same level as we have in the past or are forced to reduce the prices of our products in order to continue to be competitive, our operating results, financial condition and cash flows could be materially and adversely affected.

Changes to the regulatory environment in which our customers operate may negatively impact our business.

The telecommunications and cable television industries are subject to significant and changing federal and state regulation, both in the United States (U.S.) and other countries. We have benefited from government programs that encourage spending on initiatives that utilize our products. Changes to the way in which internet service providers are regulated, changes in government programs in our industry or uncertainty regarding future changes could adversely impact our customers' decisions regarding capital spending, which could decrease demand for our products.

Operational Risks

Our future success depends on our ability to anticipate and adapt to changes in technology and customer preferences and develop, implement and market innovative solutions.

Many of our markets are characterized by advances in information processing and communications capabilities that require increased transmission speeds and greater bandwidth. These advances require significant investments in research and development in order to improve the capabilities of our products and services and develop new offerings or solutions that will meet the needs of our customers. There can be no assurance that our investments in research and development will yield marketable product innovations.

We may not be successful in our ongoing innovation efforts if, among other things, our products and services are not cost effective; brought to market in a timely manner; compliant with evolving industry standards; accepted in the market; or recognized as meeting customer requirements. We could experience a material adverse effect on our results of operations and financial condition if we are not successful in our ongoing innovation efforts.

We must also anticipate and respond to customer preferences by developing processes to understand trends and expanding investment in our digital platform. Failure to continually respond to changing customer preferences, maintain a positive customer experience or maintain an adequate digital platform could have a material adverse impact on our business through lost sales opportunities.

As our products become more complex and customer preferences continue to change, we may encounter difficulties in meeting customer performance, service and delivery expectations, which could have a material adverse effect on our results of operations, financial condition and cash flows.

If we do not stay current with product life cycle developments, our business may suffer.

A significant portion of our revenues is dependent on the commercial deployment of technologies based on 3G and 4G wireless communications equipment and products. If we are not able to support our customers in an effective and cost-efficient manner as they advance from older generation networks or as they expand the capacity of their networks, our business will suffer. If we do not have competitively priced, market-accepted products available to meet our customers' planned roll-out of 5G wireless communications systems, we may miss a significant opportunity and our business, financial condition and results of operations could be materially and adversely affected.

In addition, a significant portion of our revenue is dependent on the copper enterprise business. We could experience unfavorable financial impacts if this business erodes at a rate faster than our current forecasts and we are unable to gain market acceptance of new or replacement fiber-based solutions for our customers.

If our products, including material purchased from our suppliers, or service offerings have quality or performance issues, our business may suffer.

Our business depends on delivering products and services of consistently high quality. Many of our solutions are highly complex and testing procedures used by us and our customers are limited to evaluating them under likely and foreseeable failure scenarios. For various reasons, once deployed, our products may fail to perform as expected. Performance issues could result from faulty design, defective raw materials or components purchased from suppliers, problems in manufacturing or installation errors. We have experienced such performance issues in the past and remain exposed to such performance issues in the future. In some cases, recall of some or all affected products, product redesigns or additional capital expenditures may be required to correct a defect. In addition, we generally offer warranties on most products, the terms and conditions of which depend upon the product subject to the warranty. In some cases, we indemnify our customers against damages or losses that might arise from certain claims relating to our products and services. Future claims may have a material adverse effect on our business, financial condition, results of operations and cash flows. Any significant or systemic product or service failure could also result in lost future sales as well as reputational damage.

Our business depends on effective management information systems.

We rely on effective management information systems for critical business operations, to support strategic business decisions and to maintain a competitive edge in the marketplace. We rely on our enterprise resource planning systems to support such critical business operations as processing sales orders and invoicing; manufacturing; shipping; inventory control; purchasing and supply chain management; human resources; and financial reporting. We also rely on management information systems to produce information for business decision-making and planning and to support e-commerce activities. Failure to maintain an adequate digital platform to support e-commerce activities could have a material adverse impact on our business through lost sales opportunities.

If we are unable to maintain our management information systems, including our IT infrastructure, to support critical business operations and to produce information for business decision-making activities, we could experience a material adverse impact on our business or an inability to timely and accurately report our financial results.

Cyber-security incidents, including data security breaches, ransomware or computer viruses, could harm our business by exposing us to various liabilities, disrupting our delivery of products and services and damaging our reputation.

We rely extensively on our management information technology systems and those of third parties to operate our business and store proprietary information about our products and intellectual property. Additionally, we and others on our behalf store “personally identifiable information” with respect to employees, vendors, customers and others. As the recent rise in cyber-security incidents around the world indicates, all management information technology systems are vulnerable. Despite the security controls we have in place, our facilities, systems and procedures, and those of our third-party service providers, are at risk to security breaches, acts of vandalism, ransomware, software viruses, misplaced or lost data, programming and/or human errors or other similar events. In particular, unauthorized access to our computer systems or stored data could result in the theft or improper disclosure of proprietary, confidential or sensitive information, the deletion or modification of records or interruptions in our operations. Any such events could subject us to civil and criminal penalties; expose us to liabilities to our customers, employees, vendors, third parties or governmental authorities; allow others to unfairly compete with us; disrupt our delivery of products and services; and have a negative impact on our reputation, all of which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

There has been an increase in the adoption of laws and regulations in the U.S., Europe and elsewhere imposing requirements for the handling of personal data, as well as requirements for remediation actions and financial penalties for noncompliance. In particular, we will be subject to the European Union’s General Data Protection Regulation (GDPR), which is scheduled to go into effect in May 2018. While we expect to be fully compliant, our efforts are also dependent on third parties and we may be unable to ensure full compliance. We employ a variety of security breach countermeasures and security controls that we believe will achieve compliance, but we cannot guarantee that all breach attempts can be successfully thwarted by these measures as the sophistication of attacks increases. Noncompliance with laws and regulations related to cyber-security breaches could have an adverse effect on our business, financial condition, results of operations and cash flows.

If our integrated global manufacturing operations suffer production or shipping delays, we may have difficulty meeting customer demands.

Disruption of our ability to produce at or distribute from our facilities due to failure of our manufacturing infrastructure, information technology outage, labor disturbances, fire, electrical outage, natural disaster, acts of violence or terrorism, shipping interruptions or some other catastrophic event could adversely affect our ability to manufacture products at our other manufacturing facilities in a cost-effective and timely manner, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Capacity constraints with respect to our internal facilities and/or existing or new contract manufacturers could have an adverse impact on our business.

We internally produce, both domestically and internationally, a portion of the components used in our finished products. We also rely on unaffiliated contract manufacturers, both domestically and internationally, to produce certain products or key components of products. If we do not have sufficient production capacity, either through our internal facilities or independent contract manufacturers, or if we cannot ramp up capacity for complex products fast enough to meet customer demand, we may experience lost sales opportunities, lost market share and customer relations problems, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Supply Chain Risks

Our dependence on commodities subjects us to cost volatility and potential availability constraints.

Our profitability may be materially affected by changes in the market price and availability of certain raw materials, most of which are linked to the commodity markets. The principal raw materials and components we purchase are made of metals such as copper, steel, aluminum or brass; plastics and other polymers; and optical fiber. Fabricated copper, steel and aluminum are used in the production of coaxial and twisted pair cables and polymers are used to insulate and protect cables. Prices for copper, steel, aluminum, fluoropolymers and certain other polymers derived from oil and natural gas have experienced significant volatility as a result of changes in the levels of global demand, supply disruptions and other factors. As a result, we have adjusted our prices for certain products and may have to adjust prices again in the future. Delays in implementing price increases or a failure to achieve market acceptance of price increases has in the past and could in the future have a material adverse impact on our results of operations. In an environment of falling commodities prices, we may be unable to sell higher-cost inventory before implementing price decreases, which could have a material adverse impact on our business, financial condition and results of operations.

We are dependent on a limited number of key suppliers for certain raw materials and components.

We are dependent on a limited number of key suppliers for certain of our raw material and component purchases, including certain polymers, copper rod, copper and aluminum tapes, fine aluminum wire, steel wire, optical fiber, circuit boards and other electronic components.

Our key suppliers have experienced in the past, and could experience in the future, production, operational or financial difficulties, or there may be global shortages of certain raw materials or components we use. Our inability to find sufficient sources of supply on reasonable terms could impact our ability to manufacture products in a cost-effective manner, which could have a material adverse effect on our gross margin and results of operations.

We also source many of our components from international markets. Any changes in the laws and policies of the U.S. or other countries affecting trade is a risk to us. To the extent there are unfavorable changes imposed by the U.S. or other countries and/or retaliatory actions taken by trading partners, such as the addition of new tariffs or trade restrictions, we may experience material adverse impacts on earnings.

If our contract manufacturers encounter production, quality, financial or other difficulties, we may experience difficulty in meeting customer demands.

We rely on unaffiliated contract manufacturers, both domestically and internationally, to produce certain products or key components of products. If these contract manufacturers encounter production, quality, financial or other difficulties, including labor disturbances or geopolitical instability, and if acceptable alternative suppliers cannot be identified, we may encounter difficulty in meeting customer demands. Any such difficulties could have a material adverse effect on our business, financial results, results of operations and cash flows.

Strategic Risks

We may not fully realize anticipated benefits from past or future acquisitions or investments in other companies.

We have completed a number of acquisitions and invested in other companies over recent years, including most significantly, the BNS business acquisition from TE Connectivity in 2015. There are significant challenges to integrating an acquired operation into our business, including, but not limited to: successfully managing the operations, manufacturing facilities and technology; integrating the sales organizations; maintaining and increasing the customer base; retaining key employees, suppliers and distributors; integrating management information systems, including enterprise resource planning systems; integrating inventory management and accounting activities; integrating research and development activities; and addressing operating losses that may exist related to individual markets, facilities or product lines. Although we expect to realize strategic, operational and financial benefits as a result of past or future acquisitions and investments, we cannot predict or guarantee whether and to what extent anticipated cost savings, synergies and growth prospects will be achieved.

We anticipate that a portion of any future growth of our business may be accomplished by acquiring existing businesses, products or technologies. However, we may not be able to identify suitable acquisition opportunities or obtain any necessary financing on acceptable terms. We may spend time and money investigating and negotiating with potential acquisition or investment targets but not complete the transaction.

Any future acquisition could involve other risks, including the assumption of additional liabilities and expenses, issuances of debt, incurrence of transaction and integration costs and diversion of management's attention from other business concerns, and such acquisition may be dilutive to our financial results.

We may sell or discontinue one or more of our product lines, as a result of our evaluation of our products and markets.

We periodically evaluate our various product lines and may consider the divestiture or discontinuance of one or more of those product lines. Any such divestiture or discontinuance could adversely affect our results of operations, cash flows and financial position.

Divestitures of product lines have inherent risks, including the expense of selling the product line; the possibility that any anticipated sale will not occur; possible delays in closing any sale; the risk of lower-than-expected proceeds from the sale of the divested business; unexpected costs associated with the separation of the business to be sold from our management information and other operating systems; potential post-closing claims for indemnification; and potential loss of customers. Expected cost savings may also be difficult to achieve or maximize due to a fixed cost structure, and we may experience varying success in the timely reduction of fixed costs or transferring of liabilities previously associated with the divested or discontinued business.

Difficulties may be encountered in the realignment of manufacturing capacity and capabilities among our global manufacturing facilities that could adversely affect our ability to meet customer demand for our products.

We periodically realign manufacturing capacity among our global facilities in order to reduce costs by improving manufacturing efficiency and to strengthen our long-term competitive position. The implementation of these initiatives may include significant shifts of production capacity among facilities.

There are significant risks inherent in the implementation of these initiatives, including our failure to ensure the following: there is adequate inventory on hand or production capacity to meet customer demand while capacity is being shifted among facilities; there is no decrease in product quality as a result of shifting capacity; adequate raw material and other service providers are available to meet the needs at the new production locations; equipment can be successfully removed, transported and re-installed; and adequate supervisory, production and support personnel are available to accommodate the shifted production.

In the event manufacturing realignment initiatives are not successfully implemented, we could experience lost future sales and increased operating costs as well as customer relations problems, any of which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We may need to undertake additional restructuring actions in the future.

We have previously recognized restructuring charges in response to slowdowns in demand for our products and in conjunction with implementation of initiatives to reduce costs and improve efficiency of our operations. Most recently, we have undertaken a number of initiatives to support the BNS integration which included the closure of certain domestic and international manufacturing facilities and various other workforce reductions. As a result of changes in business conditions and other developments, we may need to initiate additional restructuring actions that could result in workforce reductions and restructuring charges, which could be material.

Financial Risks

Our substantial indebtedness could adversely affect our ability to raise additional capital to fund our operations, limit our ability to react to changes in the economy or our industry, expose us to interest rate risk to the extent of our variable rate debt and prevent us from meeting our obligations with respect to our indebtedness.

As of December 31, 2017, we had approximately \$4.4 billion of indebtedness on a consolidated basis. See Note 6 in the Notes to the Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K for additional details of our indebtedness. We had no outstanding loans under our revolving credit facility and approximately \$425.4 million in borrowing capacity. Our ability to borrow under our revolving credit facility depends, in part, on inventory, accounts receivable and other assets that fluctuate from time to time and may further depend on lenders' discretionary ability to impose reserves and availability blocks.

Our substantial indebtedness could have important consequences. For example, it could:

- limit our ability to obtain additional financing for working capital, capital expenditures, acquisitions, general corporate purposes or other purposes;
- require us to dedicate a substantial portion of our annual cash flow for the next several years to the payment of interest on our indebtedness;
- expose us to the risk of increased interest rates as the interest cost on a significant portion of our indebtedness is subject to changes in interest rates;
- place us at a competitive disadvantage compared to certain of our competitors who have less debt;
- hinder our ability to adjust rapidly to changing market conditions;
- limit our ability to secure adequate bank financing in the future with reasonable terms and conditions; and
- increase our vulnerability to and limit our flexibility in planning for, or reacting to, a potential downturn in general economic conditions or in one or more of our businesses.

In addition, the indentures and credit agreements governing our indebtedness contain affirmative and negative covenants that limit our ability to engage in activities that may be in our long-term best interests. Our failure to comply with those covenants could result in an event of default which, if not cured or waived, could result in the acceleration of all of our debts.

Despite current indebtedness levels and restrictive covenants, we may incur additional indebtedness that could further exacerbate the risks associated with our substantial financial leverage.

We may incur significant additional indebtedness in the future under the agreements governing our indebtedness. Although the indentures and the credit agreements governing our indebtedness contain restrictions on the incurrence of additional indebtedness, these restrictions are subject to a number of thresholds, qualifications and exceptions, and the additional indebtedness incurred in compliance with these restrictions could be substantial. Additionally, these restrictions permit us to incur obligations that, although preferential to our common stock in terms of payment, do not constitute indebtedness.

In addition, if new debt is added or we buy back stock or pay dividends, the risks we face as a result of our leverage would increase.

To service our indebtedness, we will require a significant amount of cash and our ability to generate cash depends on many factors beyond our control.

Our operations are conducted through our global subsidiaries and our ability to make cash payments on our indebtedness will depend on the earnings and the distribution of funds from our subsidiaries. Certain of our subsidiaries may have limitations or restrictions on paying dividends and otherwise transferring assets to us. Our ability to make cash payments on and to refinance our indebtedness will depend upon our financial condition and operating performance, which are subject to prevailing economic and competitive conditions and to financial, business, legislative, regulatory and other factors beyond our control. We might not be able to maintain a level of cash flows from operating activities or transfer sufficient funds from our subsidiaries to permit us to pay the principal, premium, if any, and interest on our indebtedness.

If we are unable to generate sufficient cash flow or are otherwise unable to obtain funds necessary to meet required payments of principal, premium, if any, and interest on our indebtedness or if we fail to comply with the various covenants in the instruments governing our indebtedness and we are unable to obtain waivers from the required lenders, we could be in default under the terms of the agreements governing such indebtedness. In the event of such default, the holders of our indebtedness could elect to declare all the funds borrowed to be due and payable, together with accrued and unpaid interest. The lenders under our revolving credit facility could elect to terminate their commitments, cease making further loans and institute foreclosure proceedings against our assets. As a result, we could be forced into bankruptcy or liquidation.

We may need to recognize additional impairment charges related to goodwill, identified intangible assets and fixed assets.

We have substantial balances of goodwill and identified intangible assets. We are required to test goodwill for possible impairment on the same date each year and on an interim basis if there are indicators of a possible impairment. We are also required to evaluate identified intangible assets and fixed assets for impairment if there are indicators of a possible impairment.

In the past, due to revisions in financial performance outlooks or deterioration in certain markets, we have recognized significant impairment charges on our goodwill, identified intangible assets and fixed assets. In the future, we may determine, again, that one or more of our long-lived assets is impaired and additional impairment charges may be recognized that could have a material adverse effect on our financial condition and results of operations.

We may experience significant variability in our quarterly or annual effective income tax rate.

We have a large and complex international tax profile and a significant level of foreign tax credit carryforwards in the U.S. and other carryforwards in various jurisdictions. Variability in the mix and profitability of domestic and international activities, identification and resolution of various tax uncertainties and the inability to realize foreign tax credits and other carryforwards included in deferred tax assets, among other matters, have impacted our effective income tax rate in the past and may impact our effective income tax rate in the future. The U.S. tax legislation enacted in late 2017 is complex and subject to future interpretation and regulations. Determining the ultimate impact on us will take time and require management judgment. In addition to the U.S. legislation, tax law changes in certain other countries have also impacted our effective income tax rate in the past and may impact our effective tax rate in the future. A significant increase in our quarterly or annual effective income tax rate could have a material adverse impact on our results of operations.

We are commonly audited by various tax authorities, and some jurisdictions, both in the U.S. and abroad, have become more aggressive in their approach to audits and their enforcement of their applicable tax laws. In the ordinary course of our business, there are many transactions and calculations where the ultimate tax determination is uncertain. Significant judgment is required in determining our worldwide provision for income taxes. Although we believe our tax estimates are reasonable, the final determination of tax audits and any related litigation could be materially different from our historical income tax provisions and accruals. The results of an audit or litigation could have a material effect on our financial statements in the period or periods for which that determination is made and on our overall effective income tax rate.

Labor Related Risks

We may not be able to attract and retain key employees.

Our business depends upon our continued ability to hire and retain key employees. Effective succession planning is important to our long-term success. We depend on our senior management team and other key employees for strategic success. Some of our key employees have retired, announced their decision to retire or are at or near retirement age. Failure to ensure effective transfer of knowledge and smooth transitions involving key employees could hinder our strategic planning and execution.

Key employees include individuals in our sales force, operations management, engineers and skilled production workers at our operations around the world. Competition for skilled personnel and highly qualified managers in the industries in which we operate is intense. Our growth by acquisitions creates challenges in retaining employees. As the corporate culture evolves to incorporate new workforces, some employees may not find the new culture appealing. In addition, the pace of integration may cause retention issues with our workforce due to integration fatigue. Difficulties in obtaining or retaining employees with the necessary management, technical and financial skills needed to achieve our business objectives may have a material adverse effect on our business, financial condition and results of operations.

As our workforce ages, we are challenged to find and attract a younger population to replace them. Younger generations are motivated by progression and opportunity which may be limited by our current employee population. Our growth potential may be limited if we fail to attract and retain competent employees or we are unable to sustain necessary employment levels long-term.

Labor unrest could have a material adverse effect on our business, results of operations and financial condition.

While none of our U.S. employees are represented by unions, a significant part of our international employees are members of unions or subject to workers' councils or similar statutory arrangements. In addition, many of our direct and indirect customers and vendors have unionized workforces. Strikes, work stoppages or slowdowns experienced by us at our international locations or experienced by our customers or vendors could have a negative impact on us. Organizations responsible for shipping our products may also be impacted by labor disruptions. Any interruption in the delivery of our products could harm our reputation with our customers, reduce demand for our products, increase costs and have a material adverse effect on us.

We have obligations under our defined benefit employee benefit plans and may be required to make plan contributions in excess of current estimates.

At December 31, 2017, our net liability for pension and other postretirement benefits was \$15.8 million (benefit obligations of \$403.3 million and plan assets of \$387.5 million). See Note 10 in the Notes to the Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K. Significant declines in the valuation of the assets and/or increases in the liabilities related to these obligations as a result of changes in actuarial estimates, asset performance, interest rates or benefit changes, among other assumptions, could have a material adverse impact on our financial position and/or results of operations.

The amounts and timing of the contributions we expect to make to our defined benefit plans reflect a number of actuarial estimates and other assumptions. The actual amounts and timing of these contributions may differ materially from those presented in this Annual Report on Form 10-K. If we elect to terminate one or more of these plans and settle the obligation through the purchase of annuities, we could incur a charge and/or be required to make additional contributions and such amounts could be material.

International Risks

Our significant international operations expose us to economic, political and other risks.

We have significant international sales, manufacturing and distribution operations. Our major international manufacturing and/or distribution facilities are located in Australia, Belgium, China, the Czech Republic, Germany, India, Ireland, Mexico, Singapore and the United Kingdom (U.K.). For the years ended December 31, 2017, 2016 and 2015, international sales represented approximately 46%, 46% and 51%, respectively, of our consolidated net sales. In general, our international sales have lower gross margin percentages than our domestic sales. To the extent international sales represent a greater percentage of our revenue, our overall gross margin percentages may decline.

Our international sales, manufacturing and distribution operations are subject to the risks inherent in operating abroad, including, but not limited to, risks with respect to currency exchange rate fluctuations; economic and political destabilization; restrictive actions by foreign governments; wage inflation; nationalizations; the laws and policies of the U.S affecting trade, anti-bribery, foreign investment and loans; foreign tax laws, including the ability to recover amounts paid as value-added and similar taxes; potential restrictions on the repatriation of cash; reduced protection of intellectual property; longer customer payment cycles; compliance with local laws and regulations; armed conflict; regional violence; terrorism; shipping interruptions; and major health concerns (such as infectious diseases). A significant portion of our products sold in the U.S. are manufactured outside the U.S. We utilize lower-cost geographies for high labor content products while investing in largely automated plants in higher-cost regions close to customers. Most of our manufacturing employees are located in lower-cost geographies such as Mexico, China, India and the Czech Republic. To the extent there are changes in U.S. trade policies, such as significant increases in tariffs or duties for goods brought into the U.S., our competitive position may be adversely impacted and the resulting effect on our earnings could be material.

Risks related to fluctuations in foreign currency rates can impact our sales, results of operations, cash flows and financial position. Our foreign currency risk exposure is mainly concentrated in Chinese yuan, euro, Czech koruna, Australian dollar, Indian rupee, Mexican peso and British pound. We manage our foreign currency rate risks through regular operating and financing activities and periodically use derivative financial instruments such as foreign exchange forward contracts. There can be no assurance that our risk management strategies will be effective or that the counterparties to our derivative contracts will be able to perform. In addition, foreign currency rates in many of the countries in which we operate have at times been extremely volatile and unpredictable. We may choose not to hedge or determine we are unable to effectively hedge the risks associated with this volatility. In such cases, we may experience declines in sales and adverse impacts on earnings and such changes could be material.

Our international operations expose us to increased challenges in complying with anti-corruption laws and regulations of the U.S. government and various other international jurisdictions.

We are required to comply with the laws and regulations of the U.S. government and various other international jurisdictions, and our failure to comply with these rules and regulations may expose us to significant liabilities. These laws and regulations may apply to companies, individual directors, officers, employees and agents, and may restrict our operations, trade practices, investment decisions and partnering activities. In particular, we are subject to U.S. and foreign anti-corruption laws and regulations, such as the U.S. Foreign Corrupt Practices Act (FCPA) and the UK Anti-Bribery Act. Violations of these legal requirements are punishable by criminal fines and imprisonment, civil penalties, disgorgement of profits, injunctions, debarment from government contracts as well as other remedial measures. We have established policies and procedures designed to assist us and our personnel in complying with applicable U.S. and international laws and regulations. However, our employees, subcontractors or channel partners could take actions that violate these requirements. In addition, some of the international jurisdictions in which we operate have elevated levels of corruption. As a result, we are exposed to an increased risk of violating anti-corruption laws. Violation of anti-corruption laws could adversely affect our reputation, business, financial condition, results of operations and cash flows and such effects could be material.

We are subject to governmental export and import controls that could subject us to liability or impair our ability to compete in international markets.

Certain of our products, including purchased components of such products, are subject to export controls and may be exported only with the required export license or through an export license exception. In addition, we are required to comply with certain U.S. and foreign sanctions and embargos. If we were to fail to comply with applicable export licensing, customs regulations, economic sanctions and other laws, we could be subject to substantial civil and criminal penalties, including fines for us, the incarceration of responsible employees and managers, and the possible loss of export or import privileges. In addition, if our distributors fail to obtain appropriate import, export or re-export licenses or permits, we may also be adversely affected through reputational harm and penalties. Obtaining the necessary export license for a particular sale may be time-consuming and may result in the delay or loss of sales opportunities. Furthermore, export control laws and economic sanctions prohibit the shipment of certain products to embargoed or sanctioned countries, governments and persons. While we train our employees to comply with these regulations, we cannot assure that a violation will not occur, whether knowingly or inadvertently. Any such shipment could have negative consequences including government investigations, penalties, fines, civil and criminal sanctions, and reputational harm. Any change in export or import regulations, economic sanctions or related legislation, shift in the enforcement or scope of existing regulations, or change in the countries, governments, persons or technologies targeted by such regulations, could result in our decreased ability to export or sell our products to existing or potential customers with international operations. Any decreased use of our products or limitation on our ability to export or sell our products could adversely affect our business, financial condition, results of operations and cash flows and such effects could be material.

Litigation and Regulatory Risks

We may incur costs and may not be successful in protecting our intellectual property and in defending claims that we are infringing on the intellectual property of others.

We may encounter difficulties and significant costs in protecting our intellectual property rights or obtaining rights to additional intellectual property to permit us to continue or expand our business. Other companies, including some of our largest competitors, hold intellectual property rights in our industry and the intellectual property rights of others could inhibit our ability to introduce new products unless we secure necessary licenses on commercially reasonable terms.

In the past, we have initiated litigation in order to enforce patents issued or licensed to us or to determine the scope and/or validity of a third party's patent or other proprietary rights and we may initiate similar litigation in the future. We also have been and may in the future be subject to lawsuits by third parties seeking to enforce their own intellectual property rights, including against certain of the products or intellectual property that we have acquired through acquisitions. Any such litigation, regardless of outcome, could be costly and could subject us to significant liabilities or require us to cease using proprietary third party technology and, consequently, could have a material adverse effect on our results of operations, financial condition and cash flows. Such litigation can also be a significant distraction to management.

In certain markets, we may be required to address counterfeit versions of our products. We may incur significant costs in pursuing the originators of such counterfeit products and, if we are unsuccessful in eliminating them from the market, we may experience a reduction in the value of our products and/or a reduction in our net sales.

Compliance with current and future environmental laws and potential environmental liabilities may have a material adverse impact on our business, financial condition and results of operations.

We are subject to various federal, state, local and foreign environmental laws and regulations governing, among other things, discharges to air and water, management of regulated materials, handling and disposal of solid and hazardous waste, and investigation and remediation of contaminated sites. In addition, we are subject to laws and regulations regarding the types of substances allowable in certain of our products and the handling of our products at the end of their useful life. Because of the nature of our business, we have incurred and will continue to incur costs relating to compliance with or liability under these environmental laws and regulations and these costs could be material. In addition, new laws and regulations, new or different interpretations of existing laws and regulations, the discovery of previously unknown contamination or the imposition of new remediation or discharge requirements, could require us to incur costs or become the basis for new or increased liabilities that could have a material adverse effect on our financial condition.

Efforts to regulate emissions of greenhouse gases (GHGs), such as carbon dioxide, are underway in the U.S. and other countries which could increase the cost of raw materials, production processes and transportation of our products. If we are unable to comply with such regulations or sufficiently increase prices or otherwise reduce costs to offset the increased costs of compliance, GHG regulation could have a material adverse effect on our business, financial condition, results of operations and cash flow.

Certain environmental laws impose strict and in some circumstances joint and several liability on current or former owners or operators of a contaminated property, as well as companies that generated, disposed of or arranged for the disposal of hazardous substances at a contaminated property, for the costs of investigation and remediation of the contaminated property. Our present and past facilities have been in operation for many years and over that time, in the course of those operations, hazardous substances and wastes have been used, generated and occasionally disposed of at such facilities, and we have disposed of waste products either directly or through third parties at numerous disposal sites. Consequently, it has been necessary to undertake investigation and remediation projects at certain sites and we have been and may in the future be held responsible for a portion of the investigation and clean-up costs at these sites and our share of those costs may be material.

Stockholder Equity Risks

We do not intend to pay dividends on our common stock and, consequently, the ability of investors to achieve a return on their investment will depend on appreciation in the price of our common stock.

We do not intend to declare and pay dividends on our common stock for the foreseeable future. The payment of future dividends will be at the discretion of our Board of Directors; however, the indentures and the credit agreements governing our indebtedness place limitations on our ability to pay dividends. We currently intend to invest our future earnings, if any, to fund our growth and reduce our debt and our Board of Directors may choose to provide returns to our stockholders through share repurchases. The success of an investment in our common stock will largely depend upon future appreciation in value, and there can be no guarantee that our common stock will appreciate in value.

Provisions of our certificate of incorporation and bylaws and Delaware law might discourage, delay or prevent a change of control of our company or changes in our management and, as a result, depress the trading price of our common stock.

Our certificate of incorporation and bylaws contain provisions that could discourage, delay or prevent a change in control of our company or changes in our management that the stockholders of our company may deem advantageous. These provisions:

- authorize 1,300,000,000 shares of common stock, which, to the extent unissued, could be issued by the Board of Directors, without stockholder approval, to increase the number of outstanding shares and to discourage a takeover attempt;
- authorize the issuance, without stockholder approval, of blank check preferred stock that our Board of Directors could issue to increase the number of outstanding shares and to discourage a takeover attempt;

- grant to the Board of Directors the sole power to set the number of directors and to fill any vacancy on the Board of Directors;
- limit the ability of stockholders to remove directors only “for cause” and require any such removal to be approved by holders of at least three-quarters of the outstanding shares of common stock;
- prohibit our stockholders from calling a special meeting of stockholders;
- prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- provide that the Board of Directors is expressly authorized to adopt, or to alter or repeal our bylaws; establish advance notice and certain information requirements for nominations for election to our Board of Directors or for proposing matters that can be acted upon by stockholders at stockholder meetings;
- establish a classified Board of Directors, with three staggered terms; and
- require the approval of holders of at least three-quarters of the outstanding shares of common stock to amend the bylaws and certain provisions of the certificate of incorporation.

These anti-takeover defenses could discourage, delay or prevent a transaction involving a change in control of our company and may prevent our stockholders from receiving the benefit from any premium to the market price of our common stock offered by a bidder in a takeover context. Even in the absence of a takeover attempt, the existence of these provisions may adversely affect the prevailing market price of our common stock if the provisions are viewed as discouraging takeover attempts in the future. These provisions could also discourage proxy contests and make it more difficult for our stockholders to elect directors of their choosing and cause us to take corporate actions other than those our stockholders may desire.

Our business could be negatively impacted as a result of actions by activist stockholders or others.

Stockholder activism has been increasing in publicly traded companies in recent years and we are subject to the risks associated with such activism. Our business could be negatively affected as a result of stockholder activism, which could cause us to incur significant expense, hinder execution of our business strategy and impact the trading value of our securities. Additionally, stockholder activism could give rise to perceived uncertainties as to our future direction, adversely affect our relationships with key executives and business partners and make it more difficult to attract and retain qualified employees. Any of these impacts could materially and adversely affect our business and operating results.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our facilities are used primarily for manufacturing, distribution and administration. Facilities primarily used for manufacturing may also be used for distribution, engineering, research and development, storage, administration, sales and customer service. Facilities primarily used for administration may also be used for research and development, sales and customer service. As of December 31, 2017, our principal facilities, grouped according to the facility's primary use, were as follows:

Location	Approximate square feet	Principal segments	Owned or leased
Administrative facilities:			
Hickory, NC (1)	84,000	Corporate headquarters	Owned
Joliet, IL (2)	690,000	Corporate	Leased
Shakopee, MN	177,000	CCS	Leased
Lochgelly, United Kingdom (3)	132,000	CMS and CCS	Owned
Richardson, TX (1)	100,000	CMS	Owned
Richardson, TX	75,000	CCS	Leased
Manufacturing and distribution facilities:			
Catawba, NC (1)	1,000,000	CCS	Owned
Claremont, NC (1)	583,000	CCS	Owned
Kessel-Lo, Belgium	554,000	CCS	Owned
Suzhou, China (4)	414,000	CMS	Owned
Suzhou, China (4)	363,000	CCS	Owned
Santa Teresa, NM	334,000	CCS	Leased
Juarez, Mexico	327,000	CCS	Owned
Juarez, Mexico	304,000	CCS	Leased
Goa, India (4)	298,000	CMS	Owned
Brno, Czech Republic	281,000	CCS	Leased
Reynosa, Mexico	279,000	CMS	Owned
Greensboro, NC (1)	196,000	CCS	Owned
Mission, TX	150,000	CMS	Leased
Delicias, Mexico	139,000	CCS	Owned
Campbellfield, Australia	133,000	CMS	Leased
Bray, Ireland	130,000	CCS	Owned
Brno, Czech Republic	120,000	CMS	Leased
Buchdorf, Germany	109,000	CMS	Owned
Berkeley Vale, Australia (5)	99,000	CCS	Owned
Vacant facilities and properties:			
Orland Park, IL (1)(6)	—	CMS	Owned
Sorocaba, Brazil (7)	152,000	CMS	Owned

- (1) Our interest in each of these properties is encumbered by a mortgage or deed of trust lien securing our senior secured credit facilities (see Note 6 in the Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K).
- (2) The former manufacturing portion of the Joliet facility is vacant and is currently being marketed for sublease.
- (3) The former manufacturing portion of the Lochgelly, United Kingdom facility is vacant and is currently being marketed for sale.
- (4) The buildings in these facilities are owned while the land is held under long-term lease agreements.
- (5) The planned closure of the Berkeley Vale, Australia site was announced in 2017 and the site is expected to be marketed for sale in 2018.
- (6) The building at the Orland Park facility was demolished and cleared and the 73 acre parcel is vacant.
- (7) The Sorocaba, Brazil facility is currently being marketed for sale.

We believe that our facilities and equipment generally are well maintained, in good condition and suitable for our purposes and adequate for our present operations. While we currently have excess manufacturing capacity in certain of our facilities, utilization is subject to change based on customer demand. We can give no assurances that we will not have excess manufacturing capacity or encounter capacity constraints over the long term.

ITEM 3. LEGAL PROCEEDINGS

We are either a plaintiff or a defendant in certain pending legal matters in the normal course of business. Management believes none of these legal matters will be material to our business or financial condition upon their final disposition.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR THE REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Stock Price and Dividends

Our common stock is traded on the Nasdaq Global Select Market under the symbol COMM. The following table sets forth the high and low sale prices as reported by Nasdaq for the periods indicated:

	Common Stock Price Range	
	High	Low
2016		
First Quarter	\$ 28.14	\$ 19.37
Second Quarter	\$ 33.09	\$ 26.16
Third Quarter	\$ 32.77	\$ 28.28
Fourth Quarter	\$ 38.00	\$ 29.88
2017		
First Quarter	\$ 42.34	\$ 34.89
Second Quarter	\$ 42.75	\$ 33.35
Third Quarter	\$ 38.47	\$ 31.03
Fourth Quarter	\$ 39.26	\$ 30.95

As of February 5, 2018, all of our outstanding shares of common stock are held by one stockholder of record, Cede & Co., as nominee for the Depository Trust Company. Many brokers, banks and other institutions hold shares of common stock as nominees for beneficial owners that deposit these shares of common stock in participant accounts at the Depository Trust Company.

Although we have paid cash dividends from time to time in the past while we were a privately-held company, we do not currently intend to pay dividends in the foreseeable future. The declaration and payment of any dividends in the future will be determined by our Board of Directors, in its discretion, and will depend on a number of factors, including our earnings, capital requirements, overall financial condition and contractual restrictions, including covenants under our senior notes and senior secured credit facilities, which may limit our ability to pay dividends.

Issuer Purchases of Equity Securities

On August 2, 2017, the Company announced that its Board of Directors had authorized the repurchase of up to \$100.0 million of the Company’s outstanding common stock. The program does not obligate the Company to acquire any particular amount of its common stock, and the program may be extended, modified, suspended or discontinued at any time. The repurchase authorization expires on July 31, 2018.

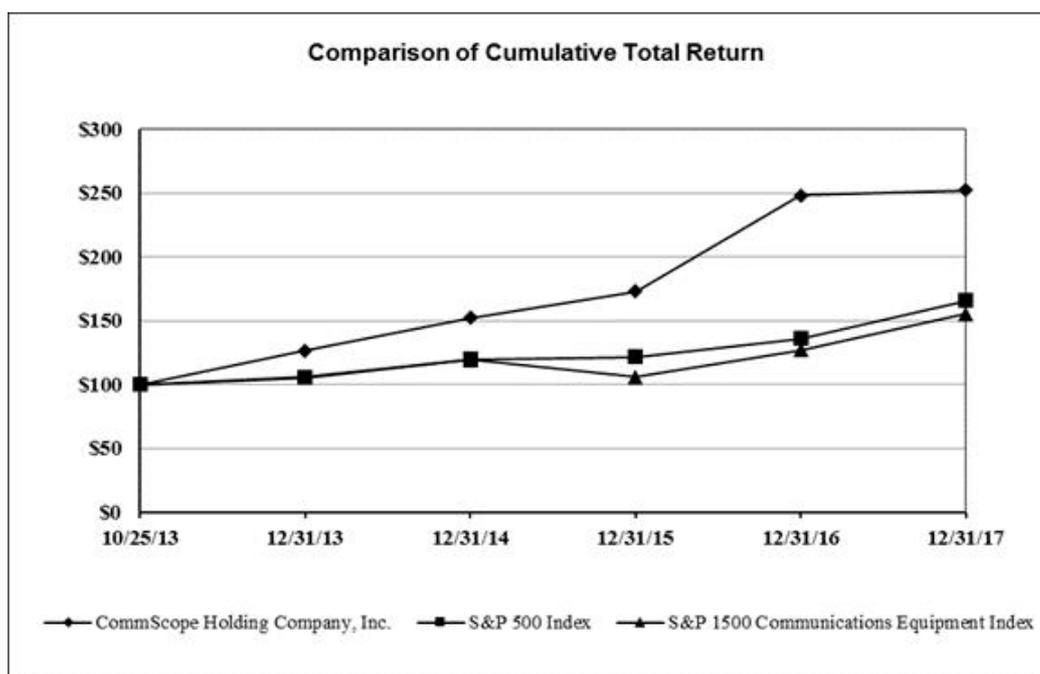
The following table summarizes the stock purchase activity for the three months ended December 31, 2017:

Period	Total Number of Shares Purchased (1)	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Value of Shares that May Yet be Purchased Under the Plans or Programs
October 1, 2017 - October 31, 2017	172	\$ 33.21	—	\$ 25,000,000
November 1, 2017 - November 30, 2017	13,062	\$ 33.81	—	\$ 25,000,000
December 1, 2017 - December 31, 2017	—	\$ —	—	\$ 25,000,000
Total	13,234	\$ 33.80	—	—

(1) The shares purchased were withheld to satisfy the minimum withholding tax obligations related to restricted stock units and performance share units that vested during the period.

Stock Performance Graph

The following graph compares cumulative total return on \$100 invested on October 25, 2013 in each of CommScope's Common Stock, the Standard & Poor's 500 Stock Index (S&P 500 Index) and the Standard & Poor's 1500 Communications Equipment Index (S&P 1500 Communications Equipment). The return of the Standard & Poor's indices is calculated assuming reinvestment of dividends. CommScope has not paid any dividends over this period.



Company / Index	Base Period	INDEXED RETURNS				
	10/25/2013	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017
CommScope Holding Company, Inc.	100	126.28	152.30	172.72	248.17	252.37
S&P 500 Index	100	105.49	119.93	121.58	136.13	165.84
S&P 1500 Communications Equipment	100	105.56	119.17	105.84	126.71	155.16

ITEM 6. SELECTED FINANCIAL DATA

The following table presents our historical selected financial data as of the dates and for the periods indicated. The data for each of the years presented are derived from our audited consolidated financial statements. The information set forth below should be read in conjunction with our audited consolidated financial statements and notes thereto and Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Annual Report.

Five-Year Summary of Selected Financial Data
(In thousands, except per share amounts)

	Year Ended December 31,				
	2017	2016	2015	2014	2013
Results of Operations:					
Net sales	\$ 4,560,582	\$ 4,923,621	\$ 3,807,828	\$ 3,829,614	\$ 3,480,117
Gross profit	1,771,894	2,033,589	1,345,820	1,397,269	1,200,940
Restructuring costs, net	43,782	42,875	29,488	19,267	22,104
Asset impairments	—	38,552	90,784	12,096	45,529
Operating income	477,610	574,750	181,593	577,449	329,714
Net interest expense	(252,838)	(272,010)	(230,533)	(173,981)	(205,492)
Net income (loss)	193,764	222,838	(70,875)	236,772	19,396
Earnings (Loss) Per Share Information:					
Weighted average number of shares outstanding:					
Basic	192,430	192,470	189,876	186,905	160,641
Diluted	196,811	196,459	189,876	191,450	164,013
Earnings (loss) per share:					
Basic	\$ 1.01	\$ 1.16	\$ (0.37)	\$ 1.27	\$ 0.12
Diluted	\$ 0.98	\$ 1.13	\$ (0.37)	\$ 1.24	\$ 0.12
Other Information:					
Net cash generated by operating activities (1)	\$ 586,286	\$ 640,221	\$ 327,115	\$ 394,733	\$ 270,930
Depreciation and amortization	378,012	399,050	303,500	259,504	256,616
Additions to property, plant and equipment	68,721	68,314	56,501	36,935	36,780
Cash dividends per share	\$ —	\$ —	\$ —	\$ —	\$ 3.47
As of December 31,					
	2017	2016	2015	2014	2013
Balance Sheet Data:					
Cash and cash equivalents	\$ 453,977	\$ 428,228	\$ 562,884	\$ 729,321	\$ 346,320
Goodwill and intangible assets	4,522,714	4,567,369	4,838,119	2,712,814	2,872,698
Property, plant and equipment, net	467,289	474,990	528,706	289,371	310,143
Total assets (2)	7,041,666	7,141,986	7,502,631	4,917,058	4,690,800
Working capital	1,220,142	1,135,946	1,319,548	1,351,805	860,042
Long-term debt, including current maturities (2)	4,369,401	4,562,010	5,243,651	2,668,898	2,471,297
Stockholders' equity	1,647,826	1,394,084	1,222,720	1,307,619	1,088,016

(1) As of January 1, 2017, the Company adopted new accounting guidance requiring that excess benefits on equity-based compensation be reported as an operating activity rather than a financing activity and that debt redemption premiums paid be reported as a financing activity rather than an operating activity. The guidance has been applied retrospectively to the prior periods presented.

(2) As of June 30, 2015, the Company adopted new accounting guidance that requires debt issuance costs related to a recognized debt liability be reported as a direct deduction from the carrying amount of that debt liability. The guidance has been applied retrospectively to the prior periods presented.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under "Risk Factors" included in Part I, Item 1A or in other parts of this Annual Report on Form 10-K.

OVERVIEW

We are a global provider of infrastructure solutions for the core, access and edge layers of communication networks. Our solutions and services for wired and wireless networks enable high-bandwidth data, video and voice applications. Our portfolio includes innovative wireless and fiber optic solutions for today's evolving digital lifestyle. Our global leadership position is built upon innovative technology, broad solution offerings, high-quality and cost-effective customer solutions and global manufacturing and distribution scale. Our talented and experienced global team helps customers increase bandwidth; maximize existing capacity; improve network response time and performance; and simplify technology migration. Our solutions are found in some of the largest venues and outdoor spaces; in buildings and data centers of all sizes and complexities; at wireless cell sites; in telecom central offices and cable headends; in fiber-to-the-X (FTTX) deployments; and in airports, trains, and tunnels. Vital networks around the world run on CommScope solutions.

On August 28, 2015, we completed the acquisition of TE Connectivity's Broadband Network Solutions (BNS) business in an all-cash transaction valued at approximately \$3.0 billion. The BNS business provides fiber optic and copper connectivity for wireline and wireless networks and also provides small-cell distributed antenna system (DAS) solutions for the wireless market. Much of the BNS business operated under the TE Connectivity fiscal calendar in 2016, and as a result, the BNS business results include 53 weeks in 2016 compared to 52 weeks in 2017. During the years ended December 31, 2017, 2016 and 2015, we recorded \$48.0 million, \$62.3 million and \$96.9 million, respectively, of integration and transaction costs, primarily related to the BNS acquisition. We expect to incur significantly lower integration costs in 2018.

We report financial performance based on two operating segments: CommScope Connectivity Solutions (CCS) and CommScope Mobility Solutions (CMS). Our CCS segment provides innovative fiber optic and copper cable and connectivity solutions for use in data centers and business enterprise, telecommunications, cable television and residential broadband networks. Our CCS portfolio includes innovative solutions for indoor and outdoor network applications. Indoor network solutions are found in commercial buildings and in the network core. They are primarily delivered through our SYSTIMAX, NETCONNECT and Uniprise brands and offer a complete end-to-end physical layer solution, including optical fiber and twisted pair structured cable solutions, intelligent infrastructure management hardware and software and network rack and cabinet enclosures. Our outdoor network solutions are found in access and edge networks and include a broad portfolio of fiber-to-the-home equipment and headend solutions. Our fiber optic connectivity solutions are primarily comprised of hardened connector systems, fiber distribution hubs and management systems, couplers and splitters, plug and play multiport service terminals, hardened optical terminating enclosures, high density cable assemblies, splices and splice closures. Products from our CCS segment are sold to large multinational companies, primarily through a global network of distributors, system integrators and value-added resellers. Demand for CCS segment products depends primarily on information technology spending by enterprises, such as communications projects in new data centers, buildings or campuses and deployments of FTTX solutions. To deepen our capabilities in supporting the growing market for high-capacity, multi-tenant data centers and hyperscale data centers, in August 2017, we acquired Cable Exchange, a quick-turn supplier of fiber optic and copper assemblies for data, voice and video communications, for \$123.2 million (\$119.7 million net of cash acquired). The acquisition was funded with cash on hand.

Under our CMS segment, primarily through our Andrew brand, we are a global leader in providing the integral building blocks for cellular base station sites and related connectivity; indoor, small cell and distributed antenna wireless systems; and wireless network backhaul planning and optimization products and services. The primary sources of revenue for our CMS segment are (i) product sales of primarily passive transmission devices for the wireless infrastructure market including base station and microwave antennas, hybrid fiber-feeder and power cables, coaxial cable connectors and equipment primarily used by wireless operators, (ii) product sales of active electronic devices and services including filters and tower-mounted amplifiers and (iii) engineering and consulting services and products like DAS that are used to extend and enhance the coverage of wireless networks in areas where signals are difficult to send or receive such as large buildings, urban areas, stadiums and transportation systems. Demand for CMS segment products depends primarily on capital spending by wireless operators to expand their distribution networks or to increase the capacity of their networks.

Our future financial condition and performance will be largely dependent upon: global spending by wireless operators; global spending by business enterprises on information technology; investment by cable operators and communications companies in video and communications infrastructure; overall global business conditions; and our ability to manage costs successfully across our global operations. Our profitability is also affected by the mix and volume of sales among our various product groups and between domestic and international customers and competitive pricing pressures.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our consolidated financial statements have been prepared in conformity with generally accepted accounting principles (GAAP) in the United States (U.S.). The preparation of these financial statements requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. These estimates and their underlying assumptions form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other objective sources. Management bases its estimates on historical experience and on assumptions that are believed to be reasonable under the circumstances and revises its estimates, as appropriate, when changes in events or circumstances indicate that revisions may be necessary.

The following critical accounting policies and estimates reflected in our financial statements are based on management's knowledge of and experience with past and current events and on management's assumptions about future events. While we have generally not experienced significant deviations from our critical estimates in the past, it is reasonably possible that these estimates may ultimately differ materially from actual results. See Note 2 in the Notes to the Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K for a description of all of our significant accounting policies.

Business Combinations

We use the acquisition method of accounting for business combinations which requires assets acquired and liabilities assumed be recorded at their fair values on the acquisition date. Goodwill represents the excess of the purchase price over the fair value of the net assets acquired. The fair values of the assets acquired and liabilities assumed are determined based upon management's valuation and involves making significant estimates and assumptions based on facts and circumstances that existed as of the acquisition date. We use a measurement period following the acquisition date to gather information that existed as of the acquisition date that is needed to determine the fair value of the assets acquired and liabilities assumed. The measurement period ends once all information is obtained, but no later than one year from the acquisition date.

Revenue Recognition

We recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or service has been rendered, the selling price is fixed or determinable and collectability is reasonably assured. The majority of our revenue comes from product sales. Revenue from product sales is recognized when the risks and rewards of ownership have passed to the customer and revenue is measurable. Revenue is not recognized related to products sold to contract manufacturers that the Company anticipates repurchasing in order to complete the sale to the ultimate customer.

Revenue for certain of the Company's products is derived from multiple-element contracts. The value of the revenue elements within these contracts is allocated based on the relative selling price of each element. The relative selling price is determined using vendor-specific objective evidence of selling price or other third party evidence of selling price, if available. If these forms of evidence are unavailable, revenue is allocated among elements based on management's best estimate of the stand-alone selling price of each element.

We record reductions to revenue for anticipated sales returns as well as customer programs and incentive offerings, such as discounts, allowances, rebates and distributor price protection programs. These estimates are based on contract terms, historical experience, inventory levels in the distribution channel and other factors.

Management generally believes it has sufficient historical experience to allow for reasonable and reliable estimation of these reductions to revenue. However, deteriorating market conditions could result in increased sales returns and allowances and potential distributor price protection incentives, resulting in future reductions to revenue. If management does not have sufficient historical experience to make a reasonable estimation of these reductions to revenue, recognition of the revenue is deferred until management believes there is a sufficient basis to recognize such revenue.

Inventory Reserves

We maintain reserves to reduce the value of inventory based on the lower of cost or net realizable value, including allowances for excess and obsolete inventory. These reserves are based on management's assumptions about and analysis of relevant factors including current levels of orders and backlog, forecasted demand, market conditions and new products or innovations that diminish the value of existing inventories. If actual market conditions deteriorate from those anticipated by management, additional allowances for excess and obsolete inventory could be required.

Product Warranty Reserves

We recognize a liability for the estimated claims that may be paid under our customer assurance-type warranty agreements to remedy potential deficiencies of quality or performance of our products. The product warranties extend over periods ranging from one to twenty-five years from the date of sale, depending upon the product subject to the warranty. We record a provision for estimated future warranty claims based upon the historical relationship of warranty claims to sales and specifically identified warranty issues. We base our estimates on historical experience and on assumptions that are believed to be reasonable under the circumstances and revise our estimates, as appropriate, when events or changes in circumstances indicate that revisions may be necessary. Although these estimates are based on management's knowledge of and experience with past and current events and on management's assumptions about future events, it is reasonably possible that they may ultimately differ materially from actual results, including in the case of a significant product failure.

Tax Valuation Allowances, Liabilities for Unrecognized Tax Benefits and Other Tax Matters

In response to tax legislation enacted in the U.S. in late 2017, the Securities and Exchange Commission (SEC) issued guidance to provide companies with transitional relief. As a result, certain income tax amounts presented in our consolidated financial statements as of and for the year ended December 31, 2017 are provisional estimates that may be adjusted as amounts are finalized during 2018.

We establish an income tax valuation allowance when available evidence indicates that it is more likely than not that all or a portion of a deferred tax asset will not be realized. In assessing the need for a valuation allowance, we consider the amounts, character, source and timing of expected future deductions or carryforwards as well as sources of taxable income and tax planning strategies that may enable utilization. We maintain an existing valuation allowance until sufficient positive evidence exists to support its reversal. Changes in the amount or timing of expected future deductions or taxable income may have a material impact on the level of income tax valuation allowances. If we determine that we will not be able to realize all or part of a deferred tax asset in the future, an increase to an income tax valuation allowance would be charged to earnings in the period such determination was made.

We recognize income tax benefits related to particular tax positions only when it is considered more likely than not that the tax position will be sustained if examined on its technical merits by tax authorities. The amount of benefit recognized is the largest amount of tax benefit that is evaluated to be greater than 50% likely to be realized. Considerable judgment is required to evaluate the technical merits of various positions and to evaluate the likely amount of benefit to be realized. Lapses in statutes of limitations, developments in tax laws, regulations and interpretations, and changes in assessments of the likely outcome of uncertain tax positions could have a material impact on the overall tax provision.

We establish deferred tax liabilities for the estimated tax cost associated with foreign earnings that we do not consider permanently reinvested (primarily foreign withholdings and state income taxes). These liabilities are subject to adjustment if foreign earnings previously considered to be permanently reinvested were no longer so considered.

We also establish allowances related to value-added and similar recoverable taxes when it is considered probable that those assets are not recoverable. Changes in the probability of recovery or in the estimates of the amount recoverable are recognized in the period such determination is made and may be material to earnings.

Asset Impairment Reviews

Impairment Reviews of Goodwill

We test goodwill at the reporting unit level for impairment annually as of October 1 and on an interim basis when events occur or circumstances indicate the carrying value may no longer be recoverable. The goodwill impairment test starts with a comparison of the carrying value of a reporting unit to its estimated fair value. We estimate the fair value of a reporting unit through the use of a discounted cash flow (DCF) valuation model. The significant assumptions in the DCF model are the annual revenue growth rate, the annual operating income margin and the discount rate used to determine the present value of the cash flow projections. Among other inputs, the annual revenue growth rate and operating income margin are determined by management using historical performance trends, industry data, insight derived from customers, relevant changes in the reporting unit's underlying business and other market trends that may affect the reporting unit. The discount rate is based on the estimated weighted average cost of capital as of the test date of market participants in the industry in which the reporting unit operates. The assumptions used in the DCF model are subject to significant judgment and uncertainty. Changes in projected revenue growth rates, projected operating income margins or estimated discount rates due to uncertain market conditions, loss of one or more key customers, changes in technology, or other factors, could result in one or more of our reporting units with a significant amount of goodwill failing the goodwill impairment test in the future. It is possible that future impairment reviews may indicate additional impairments of goodwill, which could be material to our results of operations and financial position. Our historical or projected revenues or cash flows may not be indicative of actual future results.

2017 Annual Goodwill Analysis

The annual test of goodwill was performed for each of the reporting units with goodwill balances as of October 1, 2017. The weighted average discount rates used in the 2017 annual test were 9.5% for the CCS reporting units and 10.0% for the CMS reporting units. These discount rates were 0.5% lower than those used in the 2016 annual goodwill impairment tests. Based on the estimated fair values generated by our DCF models, the reporting units passed the annual goodwill impairment test and no impairment charge was deemed necessary. The Company considered the sensitivity to changes in key assumptions for the reporting unit with the lowest level of headroom and determined that a fifty basis point change in the discount rate, long-term operating margin or long-term growth rate would not result in an impairment. If performance is worse than anticipated, future impairment tests could result in impairment charges that could be material.

Definite-Lived Intangible Assets and Other Long-Lived Assets

Management reviews definite-lived intangible assets and other long-lived assets for impairment when events or changes in circumstances indicate that their carrying values may not be fully recoverable. This analysis differs from our goodwill impairment analysis in that an intangible or other long-lived asset impairment is only deemed to have occurred if the sum of the forecasted undiscounted future net cash flows related to the assets being evaluated is less than the carrying value of the assets. If the forecasted net cash flows are less than the carrying value, then the asset is written down to its estimated fair value. Other than certain assets abandoned or disposed of as part of a restructuring action, we did not identify any impairments of definite-lived intangible assets or other long-lived assets in 2017. Changes in the estimates of forecasted net cash flows may result in future asset impairments that could be material to our results of operations.

RESULTS OF OPERATIONS

Comparison of results of operations for the year ended December 31, 2017 with the year ended December 31, 2016

	Year Ended December 31,					
	2017		2016		Dollar Change	% Change
	Amount	% of Net Sales	Amount	% of Net Sales		
	(dollars in millions, except per share amounts)					
Net sales	\$ 4,560.6	100.0%	\$ 4,923.6	100.0%	\$ (363.0)	(7.4)%
Gross profit	1,771.9	38.9	2,033.6	41.3	(261.7)	(12.9)
Operating income	477.6	10.5	574.8	11.7	(97.2)	(16.9)
Non-GAAP adjusted operating income (1)	882.3	19.3	1,051.4	21.4	(169.1)	(16.1)
Net income	193.8	4.2	222.8	4.5	(29.0)	(13.0)
Diluted earnings per share	\$ 0.98		\$ 1.13		\$ (0.15)	(13.3)

(1) See "Reconciliation of Non-GAAP Measures".

Net sales

	Year Ended December 31,				Change	
	2017		2016		\$	%
	(dollars in millions)					
Net sales	\$ 4,560.6	\$ 4,923.6	\$ (363.0)	(7.4)%		
Domestic net sales	2,449.4	2,634.9	(185.5)	(7.0)		
International net sales	2,111.2	2,288.7	(177.5)	(7.8)		

Net sales. Net sales for 2017 were lower across all regions compared to the prior year except the Europe, Middle East and Africa (EMEA) region, with the U.S. and Asia Pacific (APAC) region having the largest declines. Net sales to customers located outside of the U.S. comprised 46% of total net sales for both 2017 and 2016. Foreign exchange rate changes did not significantly impact net sales for 2017 compared to 2016.

From a segment perspective, CCS segment net sales decreased by 5.3% and CMS segment net sales decreased by 10.6% for 2017 compared to the prior year due to lower sales in both domestic and international markets. For further details by segment, see the section titled "Segment Results" below.

Gross profit, SG&A expense and R&D expense

	Year Ended December 31,				Change	
	2017		2016		\$	%
	(dollars in millions)					
Gross profit	\$ 1,771.9	\$ 2,033.6	\$ (261.7)	(12.9)%		
As a percent of sales	38.9%	41.3%				
SG&A expense	794.3	879.5	(85.2)	(9.7)		
As a percent of sales	17.4%	17.9%				
R&D expense	185.2	200.7	(15.5)	(7.7)		
As a percent of sales	4.1%	4.1%				

Gross profit (net sales less cost of sales). The decrease in gross profit for 2017 compared to 2016 was mainly driven by decreases in sales volume, reductions in price, unfavorable geographic and product mix and higher material costs. This decrease was partially offset by the favorable impact of cost reduction initiatives.

Selling, general and administrative expense. Selling, general and administrative (SG&A) expense for 2017 was lower than 2016 due primarily to lower incentive compensation expense and benefits from cost reduction initiatives. Despite lower net sales, SG&A expense as a percentage of sales decreased from 2016 as a result of these lower costs.

Research and development. Research and development (R&D) expense decreased for 2017 compared to 2016 primarily as a result of lower incentive compensation expense. R&D expense as a percentage of sales remained unchanged from 2016. R&D activities generally relate to ensuring that our products are capable of meeting the evolving technological needs of our customers, bringing new products to market and modifying existing products to better serve our customers.

Amortization of purchased intangible assets, Restructuring costs and Asset impairments

	Year Ended December 31,		Change	
	2017	2016	\$	%
	(dollars in millions)			
Amortization of purchased intangible assets	\$ 271.0	\$ 297.2	\$ (26.2)	(8.8)%
Restructuring costs, net	43.8	42.9	0.9	2.1
Asset impairments	—	38.6	(38.6)	(100.0)

Amortization of purchased intangible assets. The amortization of purchased intangible assets was lower for 2017 compared to 2016 primarily because certain of our intangible assets became fully amortized. This was partially offset by the amortization of intangible assets related to the Cable Exchange acquisition.

Restructuring costs, net. The restructuring costs for 2017 and 2016 were primarily related to the continuing integration of the BNS acquisition. We expect to incur additional pretax costs of up to \$2.0 million to complete actions announced to date. We paid \$44.1 million of restructuring costs during 2017 and expect to pay an additional \$26.5 million in 2018 related to restructuring actions that have been initiated. In addition, we expect to pay \$7.5 million between 2019 and 2022 related to restructuring actions that have been initiated. We expect that additional restructuring actions will be identified and the resulting charges and cash requirements may be material.

Asset impairments. We did not record any asset impairment charges during 2017. During 2016, we recorded impairment charges of \$15.0 million within the CCS segment due to the revised business plan for a product line that indicated its intangible assets would not be recoverable. Also during 2016, we recorded impairment charges of \$8.3 million related to certain long-lived assets acquired with the BNS business that were no longer expected to be utilized in operations within the CCS segment. In addition to these intangible asset and long-lived asset impairment charges, 2016 included a \$15.3 million goodwill impairment charge in the CCS segment as a result of the impairment analysis required by the change in reportable segments.

Net interest expense, Other expense, net and Income taxes

	Year Ended December 31,		Change	
	2017	2016	\$	%
	(dollars in millions)			
Net interest expense	\$ (252.8)	\$ (272.0)	\$ 19.2	(7.1)%
Other expense, net	(15.0)	(30.2)	15.2	(50.3)
Income tax expense	(16.0)	(49.7)	33.7	(67.8)

Net interest expense. The decrease in net interest expense for 2017 as compared to 2016 resulted primarily from decreases in our long-term debt due to our debt redemptions and repayments in 2017 and 2016. Our average long-term debt outstanding decreased by more than \$400.0 million for 2017 as compared to 2016. During 2017, the reduction in interest expense was offset partially by the write-off of \$14.1 million of debt issuance costs and original issue discount in connection with the redemption of \$500.0 million of the 4.375% senior secured notes due 2020 (the 2020 Notes) and the prepayment of \$460.0 million of senior secured term loans. The redemption of the 2020 Notes and the prepayment of the senior secured term loans were substantially funded by the issuance of \$750.0 million of new 5.00% senior notes due 2027 (the 2027 Notes) in March 2017.

During 2016, we repaid \$150.0 million of our senior secured term loan due in 2018 and voluntarily redeemed \$536.6 million of the 6.625%/7.375% senior payment-in-kind toggle notes (the senior PIK toggle notes). In connection with the repayment and redemption, we wrote off \$7.1 million of debt issuance costs and original issue discount to interest expense during 2016.

Our weighted average effective interest rate on outstanding borrowings, including the amortization of debt issuance costs and original issue discount, was 5.45% at December 31, 2017 and 5.24% at December 31, 2016.

Other expense, net. In connection with the redemption of the 2020 Notes during 2017, we paid a redemption premium of \$14.8 million which was included in other expense, net. In May 2017, we amended the senior secured loan due December 2022 (the 2022 Term Loan) to reduce the interest rate margin, and in connection with the amendment, we incurred debt modification costs of \$1.1 million which were included in other expense, net for 2017. In connection with the debt redeemed or repaid during 2016, we incurred redemption premiums of \$17.7 million and other fees of \$1.2 million which were included in other expense, net.

Foreign exchange losses of \$8.7 million were included in other expense, net for 2017 compared to losses of \$9.5 million for 2016.

During 2017, we sold the remainder of our investment in Hydrogenics Corporation (Hydrogenics) resulting in pretax gains of \$9.0 million which were recorded in other expense, net. During 2016, sales of Hydrogenics shares resulted in pretax gains of \$1.2 million.

Income taxes. Our effective income tax rate of 7.6% for 2017 reflects the impact of U.S. tax legislation enacted in December 2017. See Note 11 in the Notes to the Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K for further discussion of the impact of the U.S. tax legislation. Our effective income tax rate was also favorably affected by changes in tax legislation in certain other jurisdictions and a reduction in tax expense related to the expiration of statutes of limitations on various uncertain tax positions. The effective tax rate was also favorably affected by \$14.4 million of excess tax benefits related to equity-based compensation awards for 2017. Such benefits, which were previously reflected in additional paid-in capital, are now recognized in income tax expense as a result of the adoption of Accounting Standards Update (ASU) No. 2016-09, *Improvements to Employee Share-Based Payment Accounting*. See the discussion under Recent Accounting Pronouncements in Note 2 to the Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K for further information regarding the adoption of this new accounting guidance.

Our effective income tax rate of 18.2% for 2016 was lower than the statutory rate of 35% primarily due to a reduction in tax expense related to the release of valuation allowances related to certain federal tax credit carryforwards and certain other deferred tax assets. The effective income tax rate was also favorably affected by the reduction of reserves for uncertain tax positions and earnings in foreign jurisdictions that we do not plan to repatriate. These foreign earnings were generally taxed at rates lower than the U.S. Offsetting these decreases in 2016 was the effect of the provision for state income taxes as well as the goodwill impairment charge for which only partial tax benefits were recorded.

Segment Results

	Year Ended December 31,					
	2017		2016		Dollar Change	% Change
	Amount	% of Net Sales	Amount	% of Net Sales		
(dollars in millions)						
Net sales by segment:						
CCS	\$ 2,809.8	61.6 %	\$ 2,965.5	60.2 %	\$ (155.7)	(5.3) %
CMS	1,750.8	38.4	1,958.1	39.8	(207.3)	(10.6)
Consolidated net sales	<u>\$ 4,560.6</u>	100.0 %	<u>\$ 4,923.6</u>	100.0 %	<u>\$ (363.0)</u>	(7.4) %
Operating income by segment:						
CCS	\$ 242.0	8.6 %	\$ 291.2	9.8 %	\$ (49.2)	(16.9) %
CMS	235.6	13.5	283.6	14.5	(48.0)	(16.9)
Consolidated operating income	<u>\$ 477.6</u>	10.5 %	<u>\$ 574.8</u>	11.7 %	<u>\$ (97.2)</u>	(16.9) %
Non-GAAP adjusted operating income by segment:						
CCS	\$ 526.3	18.7 %	\$ 632.3	21.3 %	\$ (106.0)	(16.8) %
CMS	356.0	20.3	419.1	21.4	(63.1)	(15.1)
Non-GAAP consolidated adjusted operating income (1)	<u>\$ 882.3</u>	19.3 %	<u>\$ 1,051.4</u>	21.4 %	<u>\$ (169.1)</u>	(16.1) %

(1) See "Reconciliation of Non-GAAP Measures".

CommScope Connectivity Solutions Segment

CCS segment net sales were lower in 2017 compared to 2016 in all regions except the EMEA region. The decrease was driven by the U.S. and the APAC region as a result of a slowdown in the rollout of new projects by certain North American service providers, continued weakness in demand for our indoor network products, and certain large projects in the APAC region in 2016 that did not recur in 2017. In addition, we experienced BNS integration issues early in 2017 that negatively affected customer service levels and order rates. Incremental sales related to the Cable Exchange acquisition completed in August 2017 were not material to the CCS segment for 2017. Foreign exchange rate changes did not significantly impact segment sales for 2017 compared to 2016.

CCS segment operating income and non-GAAP adjusted operating income decreased for 2017 compared to 2016 primarily due to lower sales volumes, price reductions, unfavorable geographic and product mix and higher material costs. These decreases were partially offset by the favorable impact of cost reduction initiatives and lower incentive compensation. The decrease in CCS segment operating income was also partially offset by lower intangible asset amortization, lower impairment charges and lower integration and transaction costs during 2017 compared to 2016. The impacts of intangible asset amortization, impairment charges and integration and transaction costs are excluded from the calculation of non-GAAP adjusted operating income. See "Reconciliation of Non-GAAP Measures."

We expect demand for our indoor network CCS products to be driven by global information technology spending and spending in core networks as the ongoing need for bandwidth and intelligence in the network continues to create demand for high-performance connectivity solutions. We expect demand for our outdoor network CCS products to be driven by global deployment of fiber-optic solutions for FTTX applications, new services, competitive dynamics in the access market, ongoing maintenance requirements of cable networks and residential construction market activity in North America. Spending patterns by service providers can be volatile and can shift between wireless and wireline. Uncertain global economic conditions, variability in the levels of commercial and residential construction activity, construction permitting and approvals, consolidation among service providers, uncertain levels of information technology spending and reductions in the levels of distributor inventories may negatively affect demand for our products. The increasing demand for fiber solutions is expected to be somewhat offset by decelerating demand for copper solutions in networks. We expect a return to growth in North America in 2018.

CommScope Mobility Solutions Segment

The CMS segment experienced a decrease in net sales for 2017 compared to 2016 in all major regions, with the decrease being most pronounced in the U.S. and the APAC region. While CMS segment net sales benefited from increased spending by certain domestic operators in the first quarter of 2017, we saw a slowdown in their spending during the remainder of 2017. The decline in sales of our CMS products in the APAC region was primarily due to certain large projects in 2016 that did not recur during 2017. Foreign exchange rate changes did not significantly impact segment sales for 2017 compared to 2016.

CMS segment operating income and non-GAAP adjusted operating income decreased for 2017 compared to 2016 primarily due to lower sales volumes, price reductions and unfavorable geographic mix, partially offset by lower incentive compensation. The decrease in CMS segment operating income for 2017 compared to 2016 was partially offset by lower intangible amortization and restructuring costs. Non-GAAP adjusted operating income excludes the impacts of intangible amortization and restructuring costs. See "Reconciliation of Non-GAAP Measures."

Our sales to wireless operators are volatile. We expect longer-term demand for our CMS products to be positively affected by wireless coverage and capacity expansion in emerging markets and growth in mobile data services and network capacity requirements in developed markets. In addition, we expect demand for our CMS products to be favorably affected by government initiatives to promote the expansion of wireless networks (e.g., FirstNet) over the next few years. We also expect longer-term demand for our CMS products to be positively affected by the introduction of 5G technology. In preparation for 5G networks, we continue to invest heavily in R&D, support customer trials and participate in industry forums to help shape 5G standards. Uncertainty in the global economy or a particular region or consolidation among wireless operators may slow the growth or cause a decline in capital spending by wireless operators and negatively impact our net sales. We expect a return to growth in North America in 2018 particularly in the second half of the year.

Comparison of results of operations for the year ended December 31, 2016 with the year ended December 31, 2015

	Year Ended December 31,					
	2016		2015		Dollar Change	% Change
	Amount	% of Net Sales	Amount	% of Net Sales		
	(dollars in millions, except per share amounts)					
Net sales	\$ 4,923.6	100.0%	\$ 3,807.8	100.0%	\$ 1,115.8	29.3%
Gross profit	2,033.6	41.3	1,345.8	35.3	687.8	51.1
Operating income	574.8	11.7	181.6	4.8	393.2	216.5
Non-GAAP adjusted operating income (1)	1,051.4	21.4	729.8	19.2	321.6	44.1
Net income (loss)	222.8	4.5	(70.9)	(1.9)	293.7	NM
Diluted earnings (loss) per share	\$ 1.13		\$ (0.37)		\$ 1.50	NM

(1) See "Reconciliation of Non-GAAP Measures".

NM - Not meaningful

Net sales

	Year Ended December 31,		Change	
	2016	2015	\$	%
	(dollars in millions)			
Net sales	\$ 4,923.6	\$ 3,807.8	\$ 1,115.8	29.3%
Domestic net sales	2,634.9	1,869.4	765.5	40.9
International net sales	2,288.7	1,938.4	350.3	18.1

Net sales. Net sales for 2016 included \$1.24 billion of incremental net sales attributable to the BNS acquisition, which reflects the additional eight months that the BNS business was owned in 2016 compared to 2015. Legacy CommScope net sales for 2016 compared to the prior year were down \$0.12 billion, or 3.8%, reflecting decreases across all major geographical regions except the U.S. Net sales to customers located outside the U.S. comprised 46% of total net sales for 2016 compared to 51% for 2015. Foreign exchange rate changes had a negative impact of approximately 1% on net sales for 2016 compared to 2015.

From a segment perspective, net sales from the CCS segment increased 61.0% in 2016 compared to 2015 as a result of the BNS acquisition. In addition to the incremental eight months of net sales included in 2016 compared with 2015, BNS net sales for 2016 also included 53 weeks in the fiscal year. Excluding the incremental net sales related to the BNS acquisition, net sales from the CCS segment decreased by 6.4% in 2016 due to lower sales in international markets. Net sales in 2016 from the CMS segment decreased slightly compared to the prior year despite the addition of incremental net sales as a result of the BNS acquisition. For further details by segment, see the section titled “Segment Results” below.

Gross profit, SG&A expense and R&D expense

	Year Ended December 31,		Change	
	2016	2015	\$	%
	(dollars in millions)			
Gross profit	\$ 2,033.6	\$ 1,345.8	\$ 687.8	51.1%
As a percent of sales	41.3%	35.3%		
SG&A expense	879.5	687.4	192.1	27.9
As a percent of sales	17.9%	18.1%		
R&D expense	200.7	136.0	64.7	47.6
As a percent of sales	4.1%	3.6%		

Gross profit (net sales less cost of sales). Gross profit for 2016 included \$651.6 million of incremental gross profit related to the BNS acquisition. This reflects the additional eight months that the BNS business was owned in 2016 compared to 2015 as well as the negative impact of the purchase accounting adjustments of \$81.6 million that were incurred in 2015, primarily related to the mark-up of inventory to its estimated fair value less the estimated costs associated with its sale. The increase in gross margin percentage reflected favorable changes in geographic and product mix and benefits from cost reduction initiatives as well as the impact of the purchase accounting adjustments on 2015 gross margin percentage.

Selling, general and administrative expense. SG&A expense for 2016 increased compared to the prior year primarily due to incremental SG&A costs from the acquired BNS business and higher variable cash compensation expense partially offset by a decline in integration and transaction costs, lower bad debt expense and the benefit of cost reduction initiatives. SG&A expense as a percent of sales in 2016 remained in line with 2015. Excluding the impact of integration and transaction costs, SG&A as a percentage of sales increased to 16.6% in 2016 from 15.5% in 2015 primarily due to the higher cost structure of the BNS business compared to the legacy CommScope business.

Research and development. R&D expense increased in 2016 compared to the prior year primarily as a result of the incremental R&D costs from the BNS and Airvana acquisitions, both of which were acquired in the second half of 2015 and have historically made significant investments in R&D activities. Excluding the impact of the BNS and Airvana acquisitions, R&D expense and R&D expense as a percentage of net sales increased slightly in 2016 compared to 2015 primarily due to higher variable cash compensation expense.

Amortization of purchased intangible assets, Restructuring costs and Asset impairments

	Year Ended December 31,		Change	
	2016	2015	\$	%
	(dollars in millions)			
Amortization of purchased intangible assets	\$ 297.2	\$ 220.6	\$ 76.6	34.7%
Restructuring costs, net	42.9	29.5	13.4	45.4
Asset impairments	38.6	90.8	(52.2)	(57.5)

Amortization of purchased intangible assets. The amortization of purchased intangible assets was higher in 2016 compared to the prior year primarily due to the additional amortization resulting from a full year of amortization related to the BNS acquisition.

Restructuring costs, net. The restructuring costs in 2016 were primarily related to the integration of BNS. The restructuring costs in 2015 were also primarily related to the integration of BNS but also included costs from the first half of the year related to our efforts to realign and lower our overall cost structure.

Asset impairments. During 2016 we recorded impairment charges of \$15.0 million within the CCS segment due to the revised outlook for certain product lines that indicated their intangible assets would not be recoverable. Also during 2016, we recorded impairment charges of \$8.3 million related to certain long-lived assets acquired with the BNS business no longer expected to be utilized in operations in the CCS segment. In addition, we recorded a \$15.3 million goodwill impairment charge as of January 1, 2016 in the CCS segment as a result of the change in reportable segments.

During 2015 we recorded goodwill impairment charges of \$74.4 million in the CMS segment, primarily as a result of lower projected future operating results for a certain reporting unit. Also during 2015, we determined that certain intangible assets in the CCS segment were no longer recoverable and recorded a \$5.5 million impairment charge. In addition, we determined during 2015 that a note receivable related to a previous divestiture was impaired and recorded a \$10.9 million charge in the CCS segment.

Net interest expense, Other expense, net and Income taxes

	Year Ended December 31,		Change	
	2016	2015	\$	%
	(dollars in millions)			
Net interest expense	\$ (272.0)	\$ (230.5)	\$ (41.5)	18.0%
Other expense, net	(30.2)	(13.1)	(17.1)	130.5
Income tax expense	(49.7)	(8.9)	(40.8)	458.4

Net interest expense. The increase in net interest expense in 2016 compared to 2015 was driven by increases in our long-term debt. In June 2015, we issued \$1.5 billion of 6.0% senior notes due 2025 (the 2025 Notes) and \$500.0 million of the 2020 Notes, and we entered into the 2022 Term Loan. The proceeds from the 2025 Notes and the 2022 Term Loan were used to fund, in part, the BNS acquisition. The proceeds from the 2020 Notes were used to repay a portion of our existing term loans. We incurred \$67.0 million of incremental interest expense in 2016 as a result of the acquisition-related debt. In connection with various debt repayments and redemptions, we wrote off \$7.1 million and \$6.7 million of debt issuance costs and original debt discount in 2016 and 2015, respectively. These increases in interest expense were partially offset by reductions in interest expense resulting from the debt repayments and redemptions as well as the 2016 amendment of our 2022 Term Loan to lower the margin on the interest rate from 3.00% to 2.50%.

Our weighted average effective interest rate on outstanding borrowings, including the amortization of debt issuance costs and original issue discount was 5.24% as of December 31, 2016 and 5.50% as of December 31, 2015.

Other expense, net. In connection with the debt redeemed or repaid during 2016, we incurred redemption premiums of \$17.7 million and other fees of \$1.2 million, both of which were included in other expense, net. Foreign exchange losses of \$9.5 million were included in other expense, net for 2016 compared to losses of \$15.1 million for 2015.

During 2016 and 2015, we sold portions of our investment in Hydrogenics that resulted in pretax gains of \$1.2 million and \$2.7 million, respectively, which were recorded in other expense, net.

Income taxes. Our effective income tax rate of 18.2% for 2016 was lower than the statutory rate of 35% primarily due to a reduction in tax expense related to the release of valuation allowances related to certain federal tax credit carryforwards and certain other deferred tax assets. The effective income tax rate was also favorably affected by the reduction of reserves for uncertain tax positions and earnings in foreign jurisdictions that we do not plan to repatriate. These foreign earnings are generally taxed at rates lower than the U.S. Offsetting these decreases in 2016 was the effect of the provision for state income taxes as well as the goodwill impairment charge for which only partial tax benefits were recorded.

Our effective income tax rate for 2015 was negatively impacted by tax valuation allowances related to federal tax credit carryforwards, impairment charges for which minimal tax benefits were recorded and losses in certain jurisdictions where we did not recognize tax benefits due to the likelihood of them not being realizable. These negative impacts were partially offset by the favorable effects of earnings in foreign jurisdictions, lower levels of planned repatriation as a result of funds used outside the U.S. for a portion of the BNS purchase price, benefits recognized from adjustments related to prior years' tax returns and a reduction in tax expense related to uncertain tax positions.

Segment Results

	Year Ended December 31,					
	2016		2015		Dollar Change	% Change
	Amount	% of Net Sales	Amount	% of Net Sales		
(dollars in millions)						
Net sales by segment:						
CCS	\$ 2,965.5	60.2 %	\$ 1,841.7	48.4 %	\$ 1,123.8	61.0 %
CMS	1,958.1	39.8	1,966.1	51.6	(8.0)	(0.4)
Consolidated net sales	<u>\$ 4,923.6</u>	100.0 %	<u>\$ 3,807.8</u>	100.0 %	<u>\$ 1,115.8</u>	29.3 %
Operating income by segment:						
CCS	\$ 291.2	9.8 %	\$ 16.1	0.9 %	\$ 275.1	1,708.7 %
CMS	283.6	14.5	165.5	8.4	118.1	71.4
Consolidated operating income	<u>\$ 574.8</u>	11.7 %	<u>\$ 181.6</u>	4.8 %	<u>\$ 393.2</u>	216.5 %
Non-GAAP adjusted operating income by segment:						
CCS	\$ 632.3	21.3 %	\$ 349.9	19.0 %	\$ 282.4	80.7 %
CMS	419.1	21.4	379.9	19.3	39.2	10.3
Non-GAAP consolidated adjusted operating income (1)	<u>\$ 1,051.4</u>	21.4 %	<u>\$ 729.8</u>	19.2 %	<u>\$ 321.6</u>	44.1 %

(1) See "Reconciliation of Non-GAAP Measures".

CommScope Connectivity Solutions Segment

CCS segment net sales for 2016 were higher than the prior year in all major geographical regions as a result of the BNS acquisition. CCS segment 2016 net sales included incremental net sales from the BNS acquisition of \$1.21 billion. Legacy CommScope net sales in the CCS segment decreased across all major geographical regions except the U.S. compared to 2015. The decrease was primarily due to lower sales of indoor network solutions. Foreign exchange rate changes had a negative impact on legacy CommScope CCS segment net sales of approximately 1% in 2016 compared to 2015.

CCS segment operating income and non-GAAP adjusted operating income increased for 2016 compared to the prior year primarily due to the acquisition of the BNS business. In addition, the CCS segment also benefited from cost savings initiatives in 2016 partially offset by higher variable cash compensation costs. CCS segment operating income for 2016 included asset impairment charges of \$38.6 million which were excluded from the calculation of non-GAAP adjusted operating income. CCS operating income for 2015 included an asset impairment charge of \$16.4 million, purchase accounting adjustments related to the BNS acquisition of \$78.2 million and higher integration and transactions costs, all of which were excluded from the calculation of non-GAAP adjusted operating income.

CommScope Mobility Solutions Segment

The CMS segment experienced a slight decrease in net sales for 2016 compared to the prior year, with incremental net sales from the BNS acquisition of \$31.1 million. Legacy CommScope CMS segment net sales for 2016 decreased across all major geographical regions except the U.S., which benefited from an increase in spending by certain domestic operators. Foreign exchange rate changes had a negative impact of approximately 1% on legacy CommScope CMS segment net sales for 2016 compared to the prior year.

CMS segment operating income increased for 2016 primarily due to the unfavorable impact of the \$74.4 million goodwill impairment charge recorded in the prior year, which was excluded from the calculation of non-GAAP adjusted operating income. CMS segment operating income and non-GAAP adjusted operating income also increased in 2016 compared to 2015 due to more favorable geographic and product mix, partially offset by the effect of lower sales volumes, higher variable cash compensation costs and increased R&D spending.

Liquidity and Capital Resources

The following table summarizes certain key measures of our liquidity and capital resources:

	December 31,		Dollar Change	% Change
	2017	2016		
	(dollars in millions)			
Cash and cash equivalents	\$ 454.0	\$ 428.2	\$ 25.8	6.0 %
Working capital (1), excluding cash and cash equivalents and current portion of long-term debt	766.2	720.2	46.0	6.4
Availability under revolving credit facility	425.4	441.1	(15.7)	(3.6)
Long-term debt, including current portion	4,369.4	4,562.0	(192.6)	(4.2)
Total capitalization (2)	6,017.2	5,956.1	61.1	1.0
Long-term debt, including current portion, as a percentage of total capitalization	72.6%	76.6%		

(1) Working capital consists of current assets of \$1,943.9 million less current liabilities of \$723.7 million as of December 31, 2017 and current assets of \$1,993.8 million less current liabilities of \$857.8 million as of December 31, 2016.

(2) Total capitalization includes long-term debt, including the current portion, and stockholders' equity.

Our principal sources of liquidity on a short-term basis are cash and cash equivalents, cash flows provided by operations and availability under credit facilities. Refer to Note 6 in the Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K for information regarding the terms of our credit facilities. On a long-term basis, our potential sources of liquidity also include raising capital through the issuance of debt and/or equity. The primary uses of liquidity include debt service requirements (including voluntary debt repayments or redemptions), funding working capital requirements, funding acquisitions, paying acquisition integration costs, capital expenditures, paying restructuring costs, income tax payments, funding pension and other postretirement obligations, prepayments under supply agreements and potential stock repurchases. We believe that our existing cash, cash equivalents and cash flows from operations, combined with availability under our revolving credit facility, will be sufficient to meet our presently anticipated future cash needs. We may experience volatility in cash flows between periods due to, among other reasons, variability in the timing of vendor payments and customer receipts. We may, from time to time, borrow under our revolving credit facility or issue securities, if market conditions are favorable, to meet future cash needs or to reduce our borrowing costs.

Although there are no financial maintenance covenants under the terms of our senior notes, there is a limitation, among other limitations, on certain future borrowings based on an adjusted leverage ratio or a fixed charge coverage ratio. These ratios are based on financial measures similar to adjusted EBITDA as presented in the "Reconciliation of Non-GAAP Measures" section below, but also give pro forma effect to certain events, including acquisitions and savings from cost reduction initiatives such as facility closures and headcount reductions. For the year ended December 31, 2017, our pro forma adjusted EBITDA, as measured pursuant to indentures governing our notes, was \$990.7 million, which included the impact of the Cable Exchange acquisition and savings from announced cost reduction initiatives (combined total of \$26.8 million) so that the impact of the acquisition and cost reduction initiatives is fully reflected in the twelve-month period used in the calculation of the ratios. In addition to limitations under these indentures, our senior secured credit facilities contain customary negative covenants. We believe we were in compliance with the covenants under our indentures and senior secured credit facilities at December 31, 2017.

Cash and cash equivalents increased during 2017 due to \$586.3 million of cash generated from operations largely offset by \$210.0 million used for voluntary net repayments of our debt, the repurchase of \$175.0 million of our common stock, \$105.2 million used to acquire Cable Exchange and \$68.7 million used for capital expenditures. As of December 31, 2017, approximately 72% of our cash and cash equivalents were held outside the U.S.

Working capital, excluding cash and cash equivalents and the current portion of long-term debt, increased as of December 31, 2017 compared to December 31, 2016 primarily because of lower accrued compensation balances and a reduction of income tax payable due to the timing of certain international tax payments. The net increase in total capitalization as of December 31, 2017 compared to December 31, 2016 primarily reflected current year earnings and foreign currency translation gains, partially offset by stock repurchases.

Cash Flow Overview

Comparison for the year ended December 31, 2017 with the year ended December 31, 2016

	Year Ended December 31,		Dollar Change	% Change
	2017	2016		
	(dollars in millions)			
Net cash generated by operating activities	\$ 586.3	\$ 640.2	\$ (53.9)	(8.4) %
Net cash used in investing activities	(166.2)	(54.6)	(111.6)	NM
Net cash used in financing activities	(413.6)	(708.4)	294.8	NM

NM - Not meaningful

Operating Activities

During 2017, we generated \$586.3 million of cash through operating activities compared to \$640.2 million during 2016. The lower level of cash generation was primarily due to the prior year benefit generated from the extension of vendor payment terms as well as higher 2016 incentive compensation which was paid in 2017 and lower operating performance in 2017 compared to 2016. These declines were partially offset by higher cash flow from accounts receivable due to changes in the timing of sales and collections as well as approximately \$60.0 million of customer payments received in late 2017 that were not due until 2018. In addition, we paid lower cash taxes and cash interest during 2017 than in 2016.

Investing Activities

During 2017, we acquired Cable Exchange and paid \$105.2 million, net of cash acquired, using cash on hand. We recorded a noncurrent liability for the remaining \$14.5 million of payments due to the sellers. During 2016, we received adjustments to the BNS acquisition purchase price of \$7.1 million and paid \$1.0 million as a final payment on a previous acquisition.

Investment in property, plant and equipment during 2017 was \$68.7 million compared with \$68.3 million for the prior year. The investment in property, plant and equipment was primarily related to supporting improvements in manufacturing operations, including expanding production capacity and investing in information technology, including software developed for internal use.

During 2017, we received proceeds of \$9.9 million related to the sale of the remainder of our investment in Hydrogenics. During 2016, we received \$1.3 million in proceeds related to the sale of a portion of that investment.

During 2017, we paid \$7.6 million to settle a net investment hedge that we entered into in 2017 for the purpose of mitigating a portion of the foreign currency risk on the euro net investment in a foreign subsidiary. As of December 31, 2017, we had entered into another net investment hedge intended to mitigate the same risk with an outstanding maturity of twelve months.

During 2017 and 2016, we sold properties no longer being utilized for \$5.0 million and \$3.7 million, respectively.

Financing Activities

In March 2017, we issued the 2027 Notes for \$750.0 million and the proceeds, together with cash on hand, were used to (i) redeem all \$500.0 million of the outstanding 2020 Notes, (ii) repay a portion of the outstanding borrowings under our senior secured term loans, including the \$111.9 million of outstanding principal on our senior secured term loan due 2018 and \$138.1 million of outstanding principal on the 2022 Term Loan, and (iii) pay related fees and expenses. We paid a \$14.8 million premium to redeem the 2020 Notes and paid \$7.2 million in debt issuance costs related to the 2027 Notes.

During 2017, we amended the 2022 Term Loan to reduce the interest rate margin by 50 basis points which resulted in the repayment of \$30.4 million to certain lenders under the senior secured credit facilities and the receipt of \$30.4 million in proceeds from the new lenders and existing lenders who increased their positions. We also paid \$1.1 million in debt modification costs related to this amendment.

In addition to the above activities, we voluntarily repaid \$210.0 million of the 2022 Term Loan during 2017. We expect to voluntarily repay additional debt and may repurchase certain of our senior notes if market conditions are favorable and the applicable indenture and the credit agreements governing the senior secured credit facilities permit such repayment or repurchase. We may also refinance portions of our existing debt to reduce interest rates, extend the term or adjust the total amount of fixed or floating-rate debt.

As of December 31, 2017, we had no outstanding borrowings under our revolving credit facility and the remaining availability was \$425.4 million, reflecting a borrowing base of \$452.4 million reduced by \$27.0 million of letters of credit issued under the revolving credit facility.

During the first half of the year, we paid cash of \$100.0 million to repurchase stock under the stock repurchase program authorized by our Board of Directors in February 2017. We had no remaining authorization under this stock repurchase program as of December 31, 2017. In August 2017, our Board of Directors approved a new stock repurchase plan of up to \$100.0 million. We paid cash of \$75.0 million to repurchase stock under this plan during 2017. We had \$25.0 million remaining authorized under this stock repurchase program as of December 31, 2017. The repurchase authorization under this plan expires on July 31, 2018.

During 2017, we received proceeds of \$9.9 million related to the exercise of stock options. Also during 2017, employees surrendered 411,932 shares of our common stock to satisfy their tax withholding requirements on vested restricted stock units and performance share units, which reduced cash flows by \$15.4 million.

During 2016, we voluntarily redeemed the remaining \$536.6 million of our senior PIK toggle notes and made mandatory debt repayments of \$12.5 million on the 2022 Term Loan. In connection with the debt redeemed or repaid in 2016, we paid redemption premiums of \$17.7 million and other fees of \$1.2 million. Also during 2016, we received proceeds of \$16.8 million related to the exercise of stock options and employees surrendered 143,000 shares of our common stock to satisfy their tax withholding requirements on vested restricted stock units, which reduced cash flows by \$3.9 million.

Comparison for the year ended December 31, 2016 with the year ended December 31, 2015

	Year Ended December 31,		Dollar Change	% Change
	2016	2015		
	(dollars in millions)			
Net cash generated by operating activities	\$ 640.2	\$ 327.1	\$ 313.1	95.7 %
Net cash used in investing activities	(54.6)	(3,050.6)	2,996.0	NM
Net cash generated by (used in) financing activities	(708.4)	2,578.1	(3,286.5)	NM

NM - Not meaningful

Operating Activities

During 2016, we generated \$640.2 million of cash through operating activities compared to \$327.1 million during 2015. The improvement was primarily due to higher adjusted operating income in 2016 as a result of the BNS acquisition. In addition, we benefited from initiatives to improve payment terms with vendors in 2016, lower variable cash compensation payments than in the prior year and lower payments of integration and transaction costs in 2016 compared to 2015. Cash paid for interest was \$53.4 million higher for 2016 than in the prior year primarily as a result of the incremental debt incurred to finance the acquisition of the BNS business. Cash paid for taxes was \$26.4 million higher for 2016 compared to 2015.

Investing Activities

Investment in property, plant and equipment during 2016 was \$68.3 million, of which \$6.1 million was related to capital spending to support the integration of the BNS business. During 2015, investment in property, plant and equipment was \$56.5 million, of which \$12.7 million was related to capital spending to support the integration of the BNS business. The investment in property, plant and equipment was primarily related to supporting improvements in manufacturing operations, including expanding production capacity, and investing in information technology (including software developed for internal use).

During 2016, we sold a facility that was no longer being utilized for \$3.7 million.

During 2016, we received \$7.1 million in net settlements for working capital, pension and other adjustments related to the BNS acquisition. Also during 2016, we paid the final \$1.0 million in purchase price payable related to the Airvana acquisition.

During 2015, we acquired the BNS business and paid \$2,957.5 million, net of cash acquired, using a combination of cash on hand and proceeds from the issuance of long-term debt. Also in 2015, we acquired Airvana and paid \$43.5 million, net of cash acquired, using cash on hand.

Financing Activities

During 2016, we voluntarily redeemed the remaining \$536.6 million of our senior PIK toggle notes. We also made a voluntary debt payment of \$150.0 million on our senior secured term loan due 2018 (2018 Term Loan) as well as mandatory debt repayments of \$12.5 million on our 2022 Term Loan. Also in 2016, in connection with the amendment of our 2022 Term Loan to reduce our interest rate, we recorded debt repayments and offsetting debt proceeds of \$19.8 million. In connection with the debt redeemed or repaid in 2016, we paid redemption premiums of \$17.7 million and other fees of \$1.2 million.

As of December 31, 2016, we had no outstanding borrowings under our revolving credit facility and availability of \$441.1 million, reflecting a borrowing base of \$466.1 million reduced by \$25.0 million of letters of credit issued under the revolving credit facility.

During 2016, we received proceeds of \$16.8 million related to the exercise of stock options. Also during 2016, employees surrendered 143,000 shares of our common stock to satisfy their tax withholding requirements on vested restricted stock units, which reduced cash flows by \$3.9 million.

During 2015, we received \$500.0 million from the issuance of the 2020 Notes which was used, together with cash on hand, to repay \$500.0 million of our existing term loans and to pay the fees, costs and expenses related to the issuance. In addition, we issued \$1.5 billion of 2025 Notes and borrowed \$1.25 billion under the 2022 Term Loan. The proceeds from the 2025 Notes and the 2022 Term Loan were used to fund a substantial portion of the BNS acquisition. In connection with these financing transactions and an amendment of our revolving credit facility, we incurred \$74.3 million of debt issuance costs. Also during 2015, we made a mandatory debt repayment of \$3.1 million on the 2022 Term Loan and a voluntary repayment of \$100.0 million on the 2018 Term Loan. We also voluntarily repurchased \$13.4 million of our senior PIK toggle notes and paid a \$0.3 million premium related to the repurchase. During 2015, we received proceeds of \$25.6 million related to the exercise of stock options. Also during 2015, employees surrendered 24,656 shares of our common stock to satisfy their tax withholding requirements on vested restricted stock units, which reduced cash flows by \$0.7 million.

Reconciliation of Non-GAAP Measures

We believe that presenting certain non-GAAP financial measures enhances an investor's understanding of our financial performance. We further believe that these financial measures are useful in assessing our operating performance from period to period by excluding certain items that we believe are not representative of our core business. We also use certain of these financial measures for business planning purposes and in measuring our performance relative to that of our competitors. We believe these financial measures are commonly used by investors to evaluate our performance and that of our competitors. However, our use of the terms non-GAAP adjusted operating income and non-GAAP adjusted EBITDA may vary from that of others in our industry. These financial measures should not be considered as alternatives to operating income (loss), net income (loss) or any other performance measures derived in accordance with U.S. GAAP as measures of operating performance, operating cash flows or liquidity.

Consolidated

	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Operating income	\$ 477.6	\$ 574.8	\$ 181.6
Adjustments:			
Amortization of purchased intangible assets	271.0	297.2	220.6
Restructuring costs, net	43.8	42.9	29.5
Equity-based compensation	41.9	35.0	28.7
Asset impairments	—	38.6	90.8
Integration and transaction costs (a)	48.0	62.3	96.9
Purchase accounting adjustments (b)	—	0.6	81.7
Non-GAAP adjusted operating income	\$ 882.3	\$ 1,051.4	\$ 729.8
Depreciation	81.7	80.5	60.6
Non-GAAP adjusted EBITDA	\$ 963.9	\$ 1,131.8	\$ 790.3

(a) Reflects integration costs related to the acquisition of the BNS business, transaction costs related to potential and consummated acquisitions and costs related to secondary stock offerings.

(b) Reflects non-cash charges resulting from the application of acquisition accounting.

CCS Segment

	Year Ended December 31,		
	2017	2016	2015
Operating income	\$ 242.0	\$ 291.2	\$ 16.1
Adjustments:		(in millions)	
Amortization of purchased intangible assets	175.5	195.9	124.0
Restructuring costs, net	36.6	27.1	16.9
Equity-based compensation	24.4	19.8	16.1
Asset impairments	—	38.6	16.3
Integration and transaction costs	47.9	59.1	82.3
Purchase accounting adjustments	—	0.6	78.2
Non-GAAP adjusted operating income	<u>\$ 526.3</u>	<u>\$ 632.3</u>	<u>\$ 349.9</u>

CMS Segment

	Year Ended December 31,		
	2017	2016	2015
Operating income	\$ 235.6	\$ 283.6	\$ 165.5
Adjustments:		(in millions)	
Amortization of purchased intangible assets	95.5	101.3	96.6
Restructuring costs, net	7.2	15.8	12.6
Equity-based compensation	17.5	15.2	12.6
Asset impairments	—	—	74.4
Integration and transaction costs	0.2	3.3	14.6
Purchase accounting adjustments	—	—	3.6
Non-GAAP adjusted operating income	<u>\$ 356.0</u>	<u>\$ 419.1</u>	<u>\$ 379.9</u>

Note: Components may not sum to total due to rounding

Contractual Obligations

The following table summarizes our contractual obligations as of December 31, 2017:

Contractual Obligations	Total Payments Due	Amount of Payments Due per Period			
		2018	2019-2020 (in millions)	2021-2022	Thereafter
Long-term debt, including current maturities (a)	\$ 4,436.3	\$ —	\$ —	\$ 1,536.3	\$ 2,900.0
Interest on long-term debt (a)(b)	1,516.5	226.8	452.9	402.1	434.7
Operating leases	112.1	34.5	42.4	24.4	10.8
Purchase obligations and other supplier agreements (c)	37.6	23.1	14.5	—	—
Pension and other postretirement benefit liabilities (d)	11.2	7.0	1.4	1.1	1.7
Restructuring costs, net (e)	25.6	22.0	3.1	0.5	—
Unrecognized tax benefits (f)	—	—	—	—	—
Tax repatriation payment (g)	25.1	2.2	4.4	6.2	12.3
Total contractual obligations	\$ 6,164.4	\$ 315.6	\$ 518.7	\$ 1,970.6	\$ 3,359.5

- (a) No prepayment or redemption of any of our long-term debt balances has been assumed. Refer to Note 6 in the Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K for information regarding the terms of our long-term debt agreements.
- (b) Interest on long-term debt excludes the amortization of deferred financing fees and original issue discount. Interest on variable rate debt is estimated based upon rates in effect as of December 31, 2017.
- (c) Purchase obligations and other supplier agreements include payments of \$5.6 million in 2018 for minimum amounts owed under take-or-pay or requirements contracts. Amounts covered by open purchase orders are excluded as there is no contractual obligation until goods or services are received. This item also includes \$17.5 million in payments in 2018 to a supplier for access to certain goods over multiple years and \$14.5 million of payments in 2019 and 2020 related to the acquisition of Cable Exchange.
- (d) Amounts reflect expected contributions related to payments under the postretirement benefit plans through 2027 and expected pension contributions of \$6.0 million in 2018 (see Note 10 in the Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K).
- (e) Future restructuring payments exclude payments due under lease arrangements which are included in operating leases above.
- (f) Due to the uncertainty in predicting the timing of tax payments related to our unrecognized tax benefits, \$46.3 million has been excluded from the presentation. We anticipate a reduction of up to \$28.0 million of unrecognized tax benefits during the next twelve months (see Note 11 in the Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K).
- (g) Amounts reflect the one-time tax repatriation obligation to be paid in installments over eight years under the Tax Cuts and Jobs Act (see Note 11 in the Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K).

Recent Accounting Pronouncements

Adopted in 2017

We adopted ASU No. 2016-09, *Improvements to Employee Share-Based Payment Accounting*, on January 1, 2017. The new standard simplifies several aspects of the accounting for employee equity-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities and classification on the statement of cash flows. Beginning January 1, 2017, we recognized all excess tax benefits in income tax expense. An income tax benefit of \$14.4 million was recognized for the year ended December 31, 2017 under ASU No. 2016-09. We recognized a \$0.2 million, net of tax, cumulative effect adjustment to retained earnings (accumulated deficit) as a result of our election to change our accounting policy to account for forfeitures as they occur. The impact of the adoption of ASU No. 2016-09 to the Consolidated Statements of Cash Flows was to present excess tax benefits or deficiencies as an operating activity rather than as a financing activity. We elected to present the impact on the Consolidated Statements of Cash Flows retrospectively; therefore, the Consolidated Statement of Cash Flows for the years ended December 31, 2016 and 2015 reflect an increase to both net cash generated by operating activities and net cash used in financing activities of \$15.0 million and \$24.8 million, respectively.

We also adopted ASU No. 2016-15, *Cash Flow Classification of Certain Cash Receipts and Cash Payments*, as of January 1, 2017. This guidance amends or clarifies guidance on classification of certain transactions in the statement of cash flows, including debt extinguishment costs and contingent consideration payments after a business combination. During the year ended December 31, 2017, the impact of adoption on our Consolidated Statements of Cash Flows was to present \$14.8 million of debt redemption premium paid as a financing activity rather than as an operating activity. The provisions of this new standard are required to be applied retrospectively; therefore, the Consolidated Statement of Cash Flows for the years ended December 31, 2016 and 2015 reflect the payments of \$19.0 million and \$0.3 million, respectively, of debt redemption premiums and other financing costs as a financing activity rather than as an operating activity.

Issued but Not Adopted

In March 2017, the Financial Accounting Standards Board (FASB) issued ASU No. 2017-07, *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*, which requires an employer to report the service cost component in the same line item as other compensation costs arising from services rendered by the employee and requires the other components of net benefit cost to be reported outside the subtotal of operating income. ASU No. 2017-07 is effective for us as of January 1, 2018 and must be applied retrospectively. We believe the application of this new guidance will result in a reduction of operating income and a reduction of other expense, net in 2018. For the years ended December 31, 2017, 2016 and 2015, the reclassification between operating income and other expense, net would have been \$5.6 million, \$7.1 million and \$12.0 million, respectively. The details on the components of our net periodic benefit cost can be found in Note 10 to the Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K.

In January 2017, the FASB issued ASU No. 2017-04, *Simplifying the Test of Goodwill Impairment*, which eliminates Step 2 from the goodwill impairment test. Under the new guidance, an entity will perform its annual or interim goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity will recognize a goodwill impairment charge for the excess of the reporting unit's carrying amount over its fair value, up to the amount of goodwill allocated to that reporting unit. ASU No. 2017-04 is effective for us as of January 1, 2020 and early adoption is permitted. We are evaluating the impact of the new guidance on the consolidated financial statements and when it may be adopted.

In June 2016, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Instruments*. The new guidance replaces the current incurred loss method used for determining credit losses on financial assets, including trade receivables, with an expected credit loss method. ASU No. 2016-13 is effective for us as of January 1, 2020 and early adoption is permitted. We are evaluating the impact of the new guidance on the consolidated financial statements and when it may be adopted.

In February 2016, the FASB issued ASU No. 2016-02, *Leases*, which supersedes the current leasing guidance in Topic 840, *Leases*. Under the new guidance, lessees are required to recognize assets and lease liabilities for the rights and obligations created by leased assets previously classified as operating leases. ASU No. 2016-02 is effective for us as of January 1, 2019 and early adoption is permitted. We plan to adopt this new guidance as of January 1, 2019. We are continuing to evaluate the impact of adoption on the consolidated financial statements but we expect the ASU to have a material impact on our Consolidated Balance Sheets as a result of the requirement to recognize right-of-use assets and lease liabilities. Additional information on our commitments under equipment and facility operating leases can be found in Note 13 to the Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K.

In January 2016, the FASB issued ASU No. 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities*, which modifies how entities measure equity investments (except those accounted for under the equity method of accounting) and present changes in the fair value of financial liabilities; simplifies the impairment assessment of equity investments without readily determinable fair values by requiring a qualitative assessment to identify impairment; changes presentation and disclosure requirements; and clarifies that an entity should evaluate the need for a valuation allowance on a deferred tax asset related to available-for-sale securities in combination with the entity's other deferred tax assets. The guidance is effective for us as of January 1, 2018 and, with the exception of certain provisions, early adoption is not permitted. We do not expect the new guidance to have a material impact on our consolidated financial statements.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers*. The standard defines a single comprehensive model of accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. The core principle of the ASU 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. We will be required to adopt the new standard, including subsequently issued clarifying guidance, as of January 1, 2018 using either: (i) full retrospective application to each prior reporting period presented; or (ii) modified retrospective application with the cumulative effect of initially applying the standard recognized at the date of initial application and providing certain additional required disclosures. We will adopt the new accounting model as of January 1, 2018 using the modified retrospective method.

We completed an impact assessment and determined that adoption of the standard will generally result in an acceleration of revenues recognized for certain contracts containing multiple performance obligations. These contract revenues are currently accounted for using the multi-element guidance and are primarily for certain metro cell, DAS and small cell solutions within the CMS segment. These multi-element revenue contracts represented less than 2% of net sales for the year ended December 31, 2017. Based on customer-specific contracts in effect at December 31, 2017, we expect to recognize a cumulative effect adjustment, net of tax, of \$2 million to \$5 million in 2018 that reduces the accumulated deficit on the Consolidated Balance Sheets. This adjustment reflects revenue of \$5 million to \$10 million that would have been recognized in 2018.

We are prepared to make the necessary changes to our accounting policies, processes, internal controls and information systems that are required to meet the new standard's reporting and disclosure requirements.

Off-Balance Sheet Arrangements

We are not a party to any significant off-balance sheet arrangements, except for operating leases. There have not been any material changes to our off-balance sheet arrangements during the year ended December 31, 2017.

Effects of Inflation and Changing Prices

We continually attempt to minimize the effect of inflation on earnings by controlling our operating costs and adjusting our selling prices. The principal raw materials purchased by us (copper, aluminum, steel, plastics and other polymers, bimetal and optical fiber) are subject to changes in market price as they are influenced by commodity markets and other factors. Prices for copper, fluoropolymers and certain other polymers derived from oil and natural gas have, at times, been volatile. As a result, we have adjusted our prices for certain products and may have to adjust prices again in the future. To the extent that we are unable to pass on cost increases to customers without a significant decrease in sales volume or must implement price reductions in response to a rapid decline in raw material costs, these cost changes could have a material adverse impact on the results of our operations.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risks related to changes in interest rates, foreign currency exchange rates and commodity prices. We may utilize derivative financial instruments, among other methods, to hedge some of these exposures. We do not use derivative financial instruments for speculative or trading purposes.

Interest Rate Risk

The table below summarizes the expected interest and principal payments associated with our variable rate debt (the \$886.3 million senior secured term loan and revolving credit facility) as of December 31, 2017. The principal payments presented below are based on scheduled maturities and assume no borrowings under the revolving credit facility. The interest payments presented below assume the interest rates in effect as of December 31, 2017 (see Note 6 in the Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K). The impact of a 1% increase in the interest rate index on projected future interest payments on the variable rate debt is also included in the table below.

	2018	2019	2020	2021	2022	There- after
	(dollars in millions)					
Principal and interest payments on variable rate debt	\$ 31.1	\$ 31.1	\$ 30.4	\$ 29.7	\$ 915.9	\$ —
Average cash interest rate	3.50%	3.50%	3.43%	3.35%	3.35%	—
Impact of 1% increase in interest rate index	\$ 9.2	\$ 9.2	\$ 9.2	\$ 9.2	\$ 9.2	\$ —

We also have \$3.60 billion aggregate principal amount of fixed rate senior notes. The table below summarizes our expected interest and principal payments related to our fixed rate debt at December 31, 2017.

	2018	2019	2020	2021	2022	There- after
	(dollars in millions)					
Principal and interest payments on fixed rate debt	\$ 195.7	\$ 195.7	\$ 195.7	\$ 829.5	\$ 163.3	\$ 3,334.7
Average cash interest rate	5.51%	5.51%	5.51%	5.57%	5.63%	5.44%

Foreign Currency Risk

Approximately 46% of net sales for both 2017 and 2016 were to customers located outside the U.S. Significant changes in foreign currency exchange rates could adversely affect our international sales levels and the related collection of amounts due. In addition, a significant decline in the value of currencies used in certain regions of the world as compared to the U.S. dollar could adversely affect product sales in those regions because our products may become more expensive for those customers to pay for in their local currency. Conversely, significant increases in the value of foreign currencies as compared to the U.S. dollar could adversely affect profitability as certain product costs increase relative to a U.S. dollar-denominated sales price. The foreign currencies to which we have the greatest exposure include the Chinese yuan, euro, Czech koruna, Australian dollar, Indian rupee, Mexican peso and British pound. Local manufacturing provides a partial natural hedge and we continue to evaluate additional alternatives to help us reasonably manage the market risk related to foreign currency exposures.

We use derivative instruments such as forward exchange contracts to manage the risk of fluctuations in the value of certain foreign currencies. At December 31, 2017, we had foreign exchange contracts with a net unrealized gain of \$8.5 million, with maturities of up to twelve months and aggregate notional value of \$422 million (based on exchange rates as of December 31, 2017). These contracts are not designated as hedges for accounting purposes and are marked to market each period through earnings and, as such, there were no unrecognized gains or losses as of December 31, 2017 or 2016. In addition, we hold certain foreign exchange forward contracts designated as net investment hedges to mitigate a portion of the foreign currency risk on our euro net investment in a foreign subsidiary. At December 31, 2017, we held a designated forward contract with a notional value of \$30 million and a maturity of twelve months. Our derivative instruments are not leveraged and are not held for trading or speculation. See Note 7 in the Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K for further discussion of these contracts. We continuously evaluate the amount and type of derivative instruments utilized to manage the market risk related to foreign currency exposures.

Commodity Price Risk

Materials account for a large portion of our cost of sales. These materials, such as copper, aluminum, steel, plastics and other polymers, bimetals and optical fiber, are subject to changes in market price as they are influenced by commodity markets and supply and demand levels, among other factors. Management attempts to mitigate these risks through effective requirements planning and by working closely with key suppliers to obtain the best possible pricing and delivery terms. We may also enter into agreements with certain suppliers to guarantee our access to certain key components. As of December 31, 2017, we had forward purchase commitments outstanding under take-or-pay contracts for certain metals of approximately \$5.6 million that we expect to consume in the normal course of operations through the first quarter of 2018. We continuously evaluate the amount and type of derivative instruments utilized to manage commodity price risk.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of CommScope Holding Company, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of CommScope Holding Company, Inc. (the Company) as of December 31, 2017 and 2016, and the related consolidated statements of operations and comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2017, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the consolidated financial position of the Company at December 31, 2017 and 2016, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 14, 2018 expressed an unqualified opinion thereon.

Adoption of New Accounting Standards

As discussed in Note 2 to the financial statements, the Company changed its method of accounting for share-based payments and classification of certain amounts in the cash flow statement.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2008.
Charlotte, North Carolina
February 14, 2018

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of CommScope Holding Company, Inc.

Opinion on Internal Control over Financial Reporting

We have audited CommScope Holding Company, Inc.'s internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, CommScope Holding Company, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2017 and 2016, and the related consolidated statements of operations and comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2017, and the related notes, of the Company and our report dated February 14, 2018 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Charlotte, North Carolina
February 14, 2018

CommScope Holding Company, Inc.
Consolidated Statements of Operations
and Comprehensive Income (Loss)
(In thousands, except per share amounts)

	Year Ended December 31,		
	2017	2016	2015
Net sales	\$ 4,560,582	\$ 4,923,621	\$ 3,807,828
Operating costs and expenses:			
Cost of sales	2,788,688	2,890,032	2,462,008
Selling, general and administrative	794,291	879,495	687,389
Research and development	185,222	200,715	135,964
Amortization of purchased intangible assets	270,989	297,202	220,602
Restructuring costs, net	43,782	42,875	29,488
Asset impairments	—	38,552	90,784
Total operating costs and expenses	<u>4,082,972</u>	<u>4,348,871</u>	<u>3,626,235</u>
Operating income	477,610	574,750	181,593
Other expense, net	(15,040)	(30,171)	(13,061)
Interest expense	(257,059)	(277,534)	(234,661)
Interest income	4,221	5,524	4,128
Income (loss) before income taxes	209,732	272,569	(62,001)
Income tax expense	(15,968)	(49,731)	(8,874)
Net income (loss)	<u>\$ 193,764</u>	<u>\$ 222,838</u>	<u>\$ (70,875)</u>
Earnings (loss) per share:			
Basic	\$ 1.01	\$ 1.16	\$ (0.37)
Diluted	\$ 0.98	\$ 1.13	\$ (0.37)
Weighted average shares outstanding:			
Basic	192,430	192,470	189,876
Diluted	196,811	196,459	189,876
Comprehensive income (loss):			
Net income (loss)	\$ 193,764	\$ 222,838	\$ (70,875)
Other comprehensive income (loss), net of tax:			
Foreign currency translation gain (loss)	201,378	(93,528)	(80,137)
Defined benefit plans:			
Change in unrecognized actuarial gain (loss)	6,876	(16,002)	3,571
Change in unrecognized net prior service cost (credit)	(2,255)	96	(6,181)
Loss on net investment hedge	(4,981)	—	—
Available-for-sale securities	(2,508)	(4,001)	(5,383)
Total other comprehensive income (loss), net of tax	<u>198,510</u>	<u>(113,435)</u>	<u>(88,130)</u>
Total comprehensive income (loss)	<u>\$ 392,274</u>	<u>\$ 109,403</u>	<u>\$ (159,005)</u>

See notes to consolidated financial statements.

CommScope Holding Company, Inc.
Consolidated Balance Sheets
(In thousands, except share amounts)

	December 31,	
	2017	2016
Assets		
Cash and cash equivalents	\$ 453,977	\$ 428,228
Accounts receivable, less allowance for doubtful accounts of \$13,976 and \$17,211, respectively	898,829	952,367
Inventories, net	444,941	473,267
Prepaid expenses and other current assets	146,112	139,902
Total current assets	1,943,859	1,993,764
Property, plant and equipment, net of accumulated depreciation of \$390,389 and \$303,734, respectively	467,289	474,990
Goodwill	2,886,630	2,768,304
Other intangible assets, net	1,636,084	1,799,065
Other noncurrent assets	107,804	105,863
Total assets	\$ 7,041,666	\$ 7,141,986
Liabilities and Stockholders' Equity		
Accounts payable	\$ 436,737	\$ 415,921
Other accrued liabilities	286,980	429,397
Current portion of long-term debt	—	12,500
Total current liabilities	723,717	857,818
Long-term debt	4,369,401	4,549,510
Deferred income taxes	134,241	199,121
Pension and other postretirement benefit liabilities	25,140	31,671
Other noncurrent liabilities	141,341	109,782
Total liabilities	5,393,840	5,747,902
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, \$.01 par value: Authorized shares: 200,000,000; Issued and outstanding shares: None	—	—
Common stock, \$.01 par value: Authorized shares: 1,300,000,000; Issued and outstanding shares: 190,906,110 and 193,837,437, respectively	1,972	1,950
Additional paid-in capital	2,334,071	2,282,014
Retained earnings (accumulated deficit)	(395,998)	(589,556)
Accumulated other comprehensive loss	(86,603)	(285,113)
Treasury stock, at cost: 6,336,144 shares and 1,129,222 shares, respectively	(205,616)	(15,211)
Total stockholders' equity	1,647,826	1,394,084
Total liabilities and stockholders' equity	\$ 7,041,666	\$ 7,141,986

See notes to consolidated financial statements.

CommScope Holding Company, Inc.
Consolidated Statements of Cash Flows
(In thousands)

	Year Ended December 31,		
	2017	2016	2015
Operating Activities:			
Net income (loss)	\$ 193,764	\$ 222,838	\$ (70,875)
Adjustments to reconcile net income (loss) to net cash generated by operating activities:			
Depreciation and amortization	378,012	399,053	303,500
Equity-based compensation	41,850	35,006	28,665
Deferred income taxes	(71,475)	(100,878)	(101,826)
Asset impairments	—	38,552	90,784
Changes in assets and liabilities:			
Accounts receivable	96,745	(100,867)	(6,984)
Inventories	53,658	(31,996)	162,164
Prepaid expenses and other current assets	(1,273)	14,273	(65,271)
Accounts payable and other accrued liabilities	(154,691)	191,405	6,921
Other noncurrent liabilities	14,644	(35,950)	(13,320)
Other noncurrent assets	(8,418)	(1,834)	(11,966)
Other	43,470	10,619	5,323
Net cash generated by operating activities	586,286	640,221	327,115
Investing Activities:			
Additions to property, plant and equipment	(68,721)	(68,314)	(56,501)
Proceeds from sale of property, plant and equipment	5,424	4,084	3,417
Cash paid for acquisitions, including purchase price adjustments, net of cash acquired	(105,249)	6,098	(3,000,991)
Proceeds from sale of businesses and long-term investments	9,898	1,292	2,817
Payments upon settlement of net investment hedge	(7,558)	—	—
Other	—	2,253	646
Net cash used in investing activities	(166,206)	(54,587)	(3,050,612)
Financing Activities:			
Long-term debt repaid	(990,379)	(718,914)	(619,056)
Long-term debt proceeds	780,379	19,764	3,246,875
Debt issuance and modification costs	(8,363)	(4,318)	(74,319)
Debt extinguishment costs	(14,800)	(17,779)	(301)
Cash paid for repurchase of common stock	(175,000)	—	—
Proceeds from the issuance of common shares under equity-based compensation plans	9,949	16,756	25,570
Tax withholding payments for vested equity-based compensation awards	(15,405)	(3,878)	(698)
Net cash generated by (used in) financing activities	(413,619)	(708,369)	2,578,071
Effect of exchange rate changes on cash and cash equivalents	19,288	(11,921)	(21,011)
Change in cash and cash equivalents	25,749	(134,656)	(166,437)
Cash and cash equivalents at beginning of period	428,228	562,884	729,321
Cash and cash equivalents at end of period	<u>\$ 453,977</u>	<u>\$ 428,228</u>	<u>\$ 562,884</u>

See notes to consolidated financial statements.

CommScope Holding Company, Inc.
Consolidated Statements of Stockholders' Equity
(In thousands, except share amounts)

	Year Ended December 31,		
	2017	2016	2015
Number of common shares outstanding:			
Balance at beginning of period	193,837,437	191,368,727	187,831,389
Issuance of shares under equity-based compensation plans	2,275,595	2,611,710	3,561,994
Shares surrendered under equity-based compensation plans	(411,932)	(143,000)	(24,656)
Repurchase of common stock	(4,794,990)	—	—
Balance at end of period	<u>190,906,110</u>	<u>193,837,437</u>	<u>191,368,727</u>
Common stock:			
Balance at beginning of period	\$ 1,950	\$ 1,923	\$ 1,888
Issuance of shares under equity-based compensation plans	22	27	35
Balance at end of period	<u>\$ 1,972</u>	<u>\$ 1,950</u>	<u>\$ 1,923</u>
Additional paid-in capital:			
Balance at beginning of period	\$ 2,282,014	\$ 2,216,202	\$ 2,141,433
Issuance of shares under equity-based compensation plans	9,927	16,729	25,570
Equity-based compensation	41,835	34,756	25,087
Cumulative effect of change in accounting principle	295	—	—
Tax benefit from shares issued under equity-based compensation plans	—	14,327	24,112
Balance at end of period	<u>\$ 2,334,071</u>	<u>\$ 2,282,014</u>	<u>\$ 2,216,202</u>
Retained earnings (accumulated deficit):			
Balance at beginning of period	\$ (589,556)	\$ (812,394)	\$ (741,519)
Net income (loss)	193,764	222,838	(70,875)
Cumulative effect of change in accounting principle	(206)	—	—
Balance at end of period	<u>\$ (395,998)</u>	<u>\$ (589,556)</u>	<u>\$ (812,394)</u>
Accumulated other comprehensive loss:			
Balance at beginning of period	\$ (285,113)	\$ (171,678)	\$ (83,548)
Other comprehensive income (loss), net of tax	198,510	(113,435)	(88,130)
Balance at end of period	<u>\$ (86,603)</u>	<u>\$ (285,113)</u>	<u>\$ (171,678)</u>
Treasury stock, at cost:			
Balance at beginning of period	\$ (15,211)	\$ (11,333)	\$ (10,635)
Net shares surrendered under equity-based compensation plans	(15,405)	(3,878)	(698)
Repurchase of common stock	(175,000)	—	—
Balance at end of period	<u>\$ (205,616)</u>	<u>\$ (15,211)</u>	<u>\$ (11,333)</u>
Total stockholders' equity	<u>\$ 1,647,826</u>	<u>\$ 1,394,084</u>	<u>\$ 1,222,720</u>

See notes to consolidated financial statements.

1. BACKGROUND AND DESCRIPTION OF THE BUSINESS

CommScope Holding Company, Inc., along with its direct and indirect subsidiaries (CommScope or the Company), is a global provider of infrastructure solutions for the core, access and edge layers of communication networks. The Company's solutions and services for wired and wireless networks enable high-bandwidth data, video and voice applications. CommScope's global leadership position is built upon innovative technology, broad solution offerings, high-quality and cost-effective customer solutions, and global manufacturing and distribution scale.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Consolidation

The accompanying consolidated financial statements include CommScope Holding Company, Inc., along with its direct and indirect subsidiaries. All intercompany accounts and transactions are eliminated in consolidation.

Prior to January 1, 2017, the Company consolidated the operating results of the Broadband Network Solutions (BNS) business acquired from TE Connectivity based on the BNS fiscal reporting calendar that resulted in a reporting lag of one day for the year ended December 31, 2016. The BNS business results included 52 weeks for the year ended December 31, 2017 compared to 53 weeks for the year ended December 31, 2016. Effective January 1, 2017, the reporting lag was eliminated as a result of system conversions that were part of the BNS integration. The elimination of the reporting lag represents a change in accounting principle which the Company believes to be preferable because it provides more current information to the users of its financial statements. The Company determined that it was impracticable to apply the effects of the lag elimination to financial reporting periods prior to January 1, 2017. The cumulative effect of not retroactively applying this change in accounting, however, was immaterial as of January 1, 2017. Therefore, the Company reported the cumulative effect of the change in accounting principle in net income for the year ended December 31, 2017 and did not retrospectively apply the effects of this change to prior periods.

Certain prior year amounts have been reclassified to conform to the current year presentation.

Use of Estimates in the Preparation of the Financial Statements

The preparation of the accompanying consolidated financial statements in conformity with accounting principles generally accepted in the United States (U.S.) requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. These estimates and their underlying assumptions form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other objective sources. The Company bases its estimates on historical experience and on assumptions that are believed to be reasonable under the circumstances and revises its estimates, as appropriate, when events or changes in circumstances indicate that revisions may be necessary. Significant accounting estimates reflected in the Company's financial statements include the allowance for doubtful accounts; reserves for sales returns, discounts, allowances, rebates and distributor price protection programs; inventory excess and obsolescence reserves; product warranty reserves and other contingent liabilities; tax valuation allowances; liabilities for unrecognized tax benefits; effects of the 2017 Tax Cuts and Jobs Act; purchase price allocations; impairment reviews for investments, fixed assets, goodwill and other intangibles; and pension and other postretirement benefit costs and liabilities. Although these estimates are based on management's knowledge of and experience with past and current events and on management's assumptions about future events, it is at least reasonably possible that they may ultimately differ materially from actual results.

Cash and Cash Equivalents

Cash and cash equivalents represent deposits in banks and cash invested temporarily in various instruments with a maturity of three months or less at the time of purchase.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are stated at the amount owed by the customer, net of allowances for estimated doubtful accounts, discounts, returns and rebates. The Company maintains allowances for doubtful accounts for estimated losses expected to result from the inability of its customers to make required payments. These estimates are based on management's evaluation of the ability of customers to make payments, focusing on historical experience, known customer financial difficulties and the age of receivable balances. Accounts receivable are charged to the allowance when determined to be no longer collectible.

Inventories

Inventories are stated at the lower of cost or net realizable value. Inventory cost is determined on a first-in, first-out (FIFO) basis. Costs such as idle facility expense, excessive scrap and re-handling costs are expensed as incurred. The Company maintains reserves to reduce the value of inventory to the lower of cost or net realizable value, including reserves for excess and obsolete inventory.

Long-Lived Assets

Property, Plant and Equipment

Property, plant and equipment are stated at cost. Upon application of acquisition accounting, property, plant and equipment are measured at estimated fair value as of the acquisition date to establish a new historical cost basis. Provisions for depreciation are based on estimated useful lives of the assets using the straight-line method. Useful lives generally range from 10 to 35 years for buildings and improvements and 3 to 10 years for machinery and equipment. Expenditures for repairs and maintenance are expensed as incurred. Assets that management intends to dispose of and that meet held for sale criteria are carried at the lower of the carrying value or fair value less costs to sell.

Goodwill and Other Intangible Assets

Goodwill is assigned to reporting units based on the difference between the purchase price as allocated to the reporting units and the estimated fair value of the identified net assets acquired as allocated to the reporting units. Purchased intangible assets with finite lives are carried at their estimated fair values at the time of acquisition less accumulated amortization and any impairment charges. Amortization is recognized on a straight-line basis over the estimated useful lives of the respective assets (see Note 4).

Asset Impairments

Goodwill is tested for impairment annually or at other times if events have occurred or circumstances exist that indicate the carrying value of the reporting unit may exceed its fair value. Property, plant and equipment and intangible assets with finite lives are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value of the assets may not be recoverable, based on the undiscounted cash flows expected to be derived from the use and ultimate disposition of the assets. Assets identified as impaired are carried at estimated fair value. See Note 4 for discussion of impairment charges. Due to uncertain market conditions, it is possible that future impairment reviews may indicate additional impairments of goodwill, other intangible assets and/or property, plant and equipment, which could result in charges that are material to the Company's results of operations.

Income Taxes

Deferred income taxes reflect the future tax consequences of differences between the financial reporting and tax basis of assets and liabilities. The Company records a valuation allowance, when appropriate, to reduce deferred tax assets to an amount that is more likely than not to be realized.

Tax benefits that result from uncertain tax positions may be recognized only if they are considered more likely than not to be sustainable, based on their technical merits. The amount of benefit to be recognized is the largest amount of tax benefit that is at least 50% likely to be realized.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

In addition, the Company does not provide for U.S. taxes related to the foreign currency remeasurement gains and losses on its long-term intercompany loans with foreign subsidiaries. These loans are not expected to be repaid in the foreseeable future, and the foreign currency gains and losses are therefore recorded to accumulated other comprehensive loss.

Revenue Recognition

Revenue is recognized when persuasive evidence of an arrangement exists, delivery has occurred or service has been rendered, the selling price is fixed or determinable and collectability is reasonably assured. The majority of the Company's revenue comes from product sales. Revenue from product sales is recognized when the risks and rewards of ownership have passed to the customer and revenue is measurable. Revenue is not recognized related to product sold to contract manufacturers that the Company anticipates repurchasing in order to complete the sale to the ultimate customer.

Revenue for certain of the Company's products is derived from multiple-element contracts. The value of the revenue elements within these contracts is allocated based on the relative selling price of each element. The relative selling price is determined using vendor-specific objective evidence of selling price or other third party evidence of selling price, if available. If these forms of evidence are unavailable, revenue is allocated among elements based on management's best estimate of the stand-alone selling price of each element. Revenue is generally recognized upon acceptance by the customer.

For sales to distributors, system integrators and value-added resellers (primarily for the CommScope Connectivity Solutions segment), revenue is recorded at the net amount to be received after deductions for estimated discounts, allowances, returns, rebates and distributor price protection programs. These estimates are determined based upon historical experience, contract terms, inventory levels in the distribution channel and other related factors. Adjustments are recorded when circumstances indicate revisions may be necessary. If management does not have sufficient historical experience to make a reasonable estimation of these reductions to revenue, recognition of the revenue is deferred until management believes there is a sufficient basis to recognize such revenue.

Tax Collected from Customers

Taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction, which are collected by the Company from customers, are excluded from revenue.

Product Warranties

The Company recognizes a liability for the estimated claims that may be paid under its customer assurance-type warranty agreements to remedy potential deficiencies of quality or performance of the Company's products. These product warranties extend over periods ranging from one to twenty-five years from the date of sale, depending upon the product subject to the warranty. The Company records a provision for estimated future warranty claims as cost of sales based upon the historical relationship of warranty claims to sales and specifically identified warranty issues. The Company bases its estimates on assumptions that are believed to be reasonable under the circumstances and revises its estimates, as appropriate, when events or changes in circumstances indicate that revisions may be necessary. Such revisions may be material.

Shipping and Handling Costs

CommScope includes shipping and handling costs billed to customers in net sales and includes the costs incurred to transport product to customers as cost of sales. Certain internal handling costs, which relate to activities to prepare goods for shipment, are recorded in selling, general and administrative expense and were approximately \$62.1 million, \$56.2 million and \$29.3 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Advertising Costs

Advertising costs are expensed in the period in which they are incurred. Advertising expense was \$21.2 million, \$20.0 million and \$13.6 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Research and Development

Research and development (R&D) costs are expensed in the period in which they are incurred. R&D costs include materials and equipment that have no alternative future use, depreciation on equipment and facilities currently used for R&D purposes, personnel costs, contract services and reasonable allocations of indirect costs, if clearly related to an R&D activity. Expenditures in the pre-production phase of an R&D project are recorded as R&D expense. However, costs incurred in the pre-production phase that are associated with output actually used in production are recorded in cost of sales. A project is considered finished with pre-production efforts when management determines that it has achieved acceptable levels of scrap and yield, which vary by project. Expenditures related to ongoing production are recorded in cost of sales.

Derivative Instruments and Hedging Activities

CommScope is exposed to risks resulting from adverse fluctuations in commodity prices, interest rates and foreign currency exchange rates. CommScope's risk management strategy may include the use of derivative financial instruments whenever management determines their use to be reasonable and practical. This strategy does not permit the use of derivative financial instruments for trading or speculation. Derivative contracts not designated as hedging instruments are measured at fair value and are marked to market each period through earnings.

During 2017, the Company began a hedging strategy to designate certain foreign exchange forward contracts as net investment hedges to mitigate a portion of the foreign currency risk on the euro net investment in a foreign subsidiary. Hedge effectiveness is assessed each quarter based on the net investment in the foreign subsidiary designated as the hedged item and the overall changes in the fair value of the designated forward contracts. For hedges that meet the effectiveness requirements, changes in fair value are recorded as a component of other comprehensive income (loss), net of tax. Any change in fair value that is the result of ineffectiveness is recognized immediately in earnings. There was no ineffectiveness recognized in earnings during the year ended December 31, 2017. The Company did not designate any transactions as hedges in the years ended December 31, 2016 or 2015. See Note 7 for further disclosure related to the derivative instruments and hedging activities.

The Company has elected and documented the use of the normal purchases and sales exception for normal purchase and sales contracts that meet the definition of a derivative financial instrument.

Foreign Currency Translation

For the years ended December 31, 2017, 2016 and 2015, approximately 46%, 46% and 51%, respectively, of the Company's net sales were to customers located outside the U.S. A portion of these sales were denominated in currencies other than the U.S. dollar, particularly sales from the Company's foreign subsidiaries. The financial position and results of operations of certain of the Company's foreign subsidiaries are measured using the local currency as the functional currency. Revenues and expenses of these subsidiaries have been translated into U.S. dollars at average exchange rates prevailing during the period. Assets and liabilities of these subsidiaries have been translated at the exchange rates as of the balance sheet date. Translation gains and losses are recorded in accumulated other comprehensive loss.

Aggregate foreign currency gains and losses, such as those resulting from the settlement of receivables or payables, foreign currency contracts and short-term intercompany advances in a currency other than the subsidiary's functional currency, are recorded currently in earnings (included in other expense, net) and resulted in losses of \$8.7 million, \$9.5 million and \$15.1 million during the years ended December 31, 2017, 2016 and 2015, respectively. Foreign currency remeasurement gains and losses related to certain long-term intercompany loans that are not expected to be settled in the foreseeable future and the effective portion of foreign currency contracts designated as net investment hedges are recorded in accumulated other comprehensive loss. See Note 7 for disclosure of foreign currency gains and losses specifically related to foreign currency contracts.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

Equity-Based Compensation

The estimated fair value of stock awards is recognized as expense over the requisite service periods. Forfeitures of stock awards are recognized as they occur. The Company records deferred tax assets related to compensation expense for awards that are expected to result in future tax deductions for the Company, based on the amount of compensation cost recognized and the Company's statutory tax rate in the jurisdiction in which it expects to receive a deduction. Differences between the deferred tax assets recognized for financial reporting purposes and actual tax deductions reported on the Company's income tax return are recorded in the Consolidated Statements of Operations and Comprehensive Income (Loss) within income tax expense.

Earnings (Loss) Per Share

Basic earnings (loss) per share is computed by dividing net income (loss) by the weighted average number of common shares outstanding during the period. Diluted earnings (loss) per share is based on net income (loss) divided by the weighted average number of common shares outstanding plus the dilutive effect of potential common shares outstanding during the period using the treasury stock method. Dilutive potential common shares include outstanding equity-based awards (stock options, restricted stock units and performance share units). Certain outstanding equity-based awards were not included in the computation of diluted earnings (loss) per share because the effect was either antidilutive or the performance condition was not met (1.5 million, 1.0 million and 5.9 million shares for the years ended December 31, 2017, 2016 and 2015, respectively). Antidilutive securities for the year ended December 31, 2015 included 4.3 million shares of equity-based awards which would have been considered dilutive if the Company had not been in a net loss position.

The following table presents the basis for the earnings (loss) per share computations:

	Year Ended December 31,		
	2017	2016	2015
Numerator:			
Net income (loss) for basic and diluted earnings (loss) per share	\$ 193,764	\$ 222,838	\$ (70,875)
Denominator:			
Weighted average common shares outstanding - basic	192,430	192,470	189,876
Dilutive effect of equity-based awards	4,381	3,989	—
Weighted average common shares outstanding - diluted	<u>196,811</u>	<u>196,459</u>	<u>189,876</u>
Earnings (loss) per share:			
Basic	\$ 1.01	\$ 1.16	\$ (0.37)
Diluted	\$ 0.98	\$ 1.13	\$ (0.37)

Business Combinations

The Company uses the acquisition method of accounting for business combinations which requires assets acquired and liabilities assumed to be recognized at their fair values on the acquisition date. Goodwill represents the excess of the purchase price over the fair value of the net assets acquired. The fair values of the assets acquired and liabilities assumed are determined based upon the Company's valuation and involves making significant estimates and assumptions based on facts and circumstances that existed as of the acquisition date. The Company uses a measurement period following the acquisition date to gather information that existed as of the acquisition date that is needed to determine the fair value of the assets acquired and liabilities assumed. The measurement period ends once all information is obtained, but no later than one year from the acquisition date.

Concentrations of Risk

Non-derivative financial instruments used by the Company in the normal course of business include letters of credit and commitments to extend credit, primarily accounts receivable. The Company generally does not require collateral on its accounts receivable. These financial instruments involve risk, including the credit risk of nonperformance by the counterparties to those instruments, and the actual loss may exceed the reserves provided in the Company's balance sheet. See Note 14 for further discussion of customer-related concentrations of risk.

The Company manages its exposures to credit risk associated with accounts receivable using such tools as credit approvals, credit limits and monitoring procedures. CommScope estimates the allowance for doubtful accounts based on the actual payment history and individual circumstances of significant customers as well as the age of receivables. In management's opinion, as of December 31, 2017, the Company did not have significant unreserved risk of credit loss due to the non-performance of customers or other counterparties related to amounts receivable. However, an adverse change in financial condition of a significant customer or group of customers or in the telecommunications industry could materially affect the Company's estimates related to doubtful accounts.

The principal raw materials purchased by CommScope (aluminum, bimetals, copper, optical fiber, plastics and other polymers and steel) are subject to changes in market price as these materials are linked to various commodity markets. The Company attempts to mitigate these risks through effective requirements planning and by working closely with its key suppliers to obtain the best possible pricing and delivery terms.

Recent Accounting Pronouncements

Adopted in 2017

The Company adopted ASU No. 2016-09, *Improvements to Employee Share-Based Payment Accounting*, on January 1, 2017. The new standard simplifies several aspects of the accounting for employee equity-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities and classification on the statement of cash flows. Beginning January 1, 2017, the Company recognized all excess tax benefits in income tax expense. An income tax benefit of \$14.4 million was recognized for the year ended December 31, 2017 under ASU No. 2016-09. The Company recognized a \$0.2 million, net of tax, cumulative effect adjustment to retained earnings (accumulated deficit) as a result of its election to change its accounting policy to account for forfeitures as they occur. The impact of the adoption of ASU No. 2016-09 to the Consolidated Statements of Cash Flows was to present excess tax benefits or deficiencies as an operating activity rather than as a financing activity. The Company elected to present the impact on the Consolidated Statements of Cash Flows retrospectively; therefore, the Consolidated Statement of Cash Flows for the years ended December 31, 2016 and 2015 reflect an increase to both net cash generated by operating activities and net cash used in financing activities of \$15.0 million and \$24.8 million, respectively.

The Company also adopted ASU No. 2016-15, *Cash Flow Classification of Certain Cash Receipts and Cash Payments*, as of January 1, 2017. This guidance amends or clarifies guidance on classification of certain transactions in the statement of cash flows, including debt extinguishment costs and contingent consideration payments after a business combination. During the year ended December 31, 2017, the impact of adoption on the Company's Consolidated Statements of Cash Flows was to present \$14.8 million of debt redemption premium paid as a financing activity rather than as an operating activity. The provisions of this new standard are required to be applied retrospectively; therefore, the Consolidated Statement of Cash Flows for the years ended December 31, 2016 and 2015 reflect the payments of \$19.0 million and \$0.3 million, respectively, of debt redemption premiums and other financing costs as a financing activity rather than as an operating activity.

Issued but Not Adopted

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

In March 2017, the Financial Accounting Standards Board (FASB) issued ASU No. 2017-07, *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*, which requires an employer to report the service cost component in the same line item as other compensation costs arising from services rendered by the employee and requires the other components of net benefit cost to be reported outside the subtotal of operating income. ASU No. 2017-07 is effective for the Company as of January 1, 2018 and must be applied retrospectively. The Company believes that the application of this new guidance will result in a reduction of operating income and a reduction of other expense, net in 2018. For the years ended December 31, 2017, 2016 and 2015, the reclassification between operating income and other expense, net would have been \$5.6 million, \$7.1 million and \$12.0 million, respectively. See Note 10 for details on the components of the Company's annual net periodic benefit cost.

In January 2017, the FASB issued ASU No. 2017-04, *Simplifying the Test of Goodwill Impairment*, which eliminates Step 2 from the goodwill impairment test. Under the new guidance, an entity will perform its annual or interim goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity will recognize a goodwill impairment charge for the excess of the reporting unit's carrying amount over its fair value, up to the amount of goodwill allocated to that reporting unit. ASU No. 2017-04 is effective for the Company as of January 1, 2020 and early adoption is permitted. The Company is evaluating the impact of the new guidance on the consolidated financial statements and when it may be adopted.

In June 2016, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Instruments*. The new guidance replaces the current incurred loss method used for determining credit losses on financial assets, including trade receivables, with an expected credit loss method. ASU No. 2016-13 is effective for the Company as of January 1, 2020 and early adoption is permitted. The Company is evaluating the impact of the new guidance on the consolidated financial statements and when it may be adopted.

In February 2016, the FASB issued ASU No. 2016-02, *Leases*, which supersedes the current leasing guidance in Topic 840, *Leases*. Under the new guidance, lessees are required to recognize assets and lease liabilities for the rights and obligations created by leased assets previously classified as operating leases. ASU No. 2016-02 is effective for the Company as of January 1, 2019 and early adoption is permitted. The Company plans to adopt this new guidance as of January 1, 2019. The Company continues to evaluate the impact of adoption on the consolidated financial statements but expects the ASU to have a material impact on its Consolidated Balance Sheets as a result of the requirement to recognize right-of-use assets and lease liabilities. See Note 13 for more information on the Company's commitments under equipment and facility operating leases.

In January 2016, the FASB issued ASU No. 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities*, which modifies how entities measure equity investments (except those accounted for under the equity method of accounting) and present changes in the fair value of financial liabilities; simplifies the impairment assessment of equity investments without readily determinable fair values by requiring a qualitative assessment to identify impairment; changes presentation and disclosure requirements; and clarifies that an entity should evaluate the need for a valuation allowance on a deferred tax asset related to available-for-sale securities in combination with the entity's other deferred tax assets. The guidance is effective for the Company as of January 1, 2018 and, with the exception of certain provisions, early adoption is not permitted. The Company does not expect the new guidance to have a material impact on the consolidated financial statements.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers*. The standard defines a single comprehensive model of accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. The core principle of the ASU 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. The Company is required to adopt the new standard, including subsequently issued clarifying guidance, as of January 1, 2018 using either: (i) full retrospective application to each prior reporting period presented; or (ii) modified retrospective application with the cumulative effect of initially applying the standard recognized at the date of initial application and providing certain additional required disclosures. The Company plans to adopt the new accounting model as of January 1, 2018 using the modified retrospective method.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The Company has completed an impact assessment and determined that adoption of the standard will generally result in an acceleration of revenues recognized for certain contracts containing multiple performance obligations. These contract revenues are currently accounted for using the multi-element guidance and are primarily for certain metro cell, distributed antenna system (DAS) and small cell solutions within the CommScope Mobility Solutions (CMS) segment. These multi-element revenue contracts represented less than 2% of total net sales for the year ended December 31, 2017. Based on customer-specific contracts in effect at December 31, 2017, the Company expects to recognize a cumulative effect adjustment, net of tax, of \$2 million to \$5 million in 2018 that reduces the accumulated deficit on the Consolidated Balance Sheets. This adjustment reflects revenue of \$5 million to \$10 million that would have been recognized in 2018.

The Company is prepared to make the necessary changes to its accounting policies, processes, internal controls and information systems that are required to meet the new standard's reporting and disclosure requirements in 2018.

3. ACQUISITIONS

Cable Exchange

On August 1, 2017, the Company acquired Cable Exchange for \$123.2 million in an all-cash transaction. The Company paid \$108.7 million (\$105.2 million net of cash acquired) and recorded a \$14.5 million liability for the remaining payments due. Cable Exchange is a quick-turn supplier of fiber optic and copper assemblies for data, voice and video communications. Net sales of Cable Exchange products are included in the CommScope Connectivity Solutions (CCS) segment and were not material to the Consolidated Statements of Operations and Comprehensive Income (Loss) for the year ended December 31, 2017.

The preliminary allocation of the purchase price, based on estimates of the fair values of the assets acquired and liabilities assumed, is as follows (in millions):

	Estimated Fair Value
Cash and cash equivalents	\$ 3.5
Accounts receivable	6.4
Inventory	4.4
Property, plant and equipment	0.9
Goodwill	49.6
Identifiable intangible assets	61.1
Less: Liabilities assumed	(2.7)
Net acquisition cost	\$ 123.2

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The goodwill arising from the purchase price allocation of the Cable Exchange acquisition is believed to result from the Company's reputation in the marketplace and assembled workforce and is expected to be deductible for income tax purposes.

As additional information is obtained, adjustments may be made to the preliminary purchase price allocation. The Company is still finalizing the estimated fair value of certain liabilities assumed.

Broadband Network Solutions

On August 28, 2015, the Company acquired TE Connectivity's BNS business for approximately \$3.0 billion in an all-cash transaction. The BNS business provides fiber optic and copper connectivity for wireline and wireless networks and also provides small-cell DAS solutions for the wireless market. The BNS business is primarily reported in the CCS segment. The following table presents unaudited pro forma consolidated results of operations for CommScope for the year ended December 31, 2015 as though the BNS acquisition had been completed as of January 1, 2014 (in millions, except per share amounts):

Net sales	\$	4,978.4
Net income		46.7
Net income per diluted share		0.24

These pro forma results reflect adjustments for net interest expense for the debt related to the acquisition; depreciation expense for property, plant and equipment that has been adjusted to its estimated fair value; amortization of intangible assets with finite lives identified separate from goodwill; equity-based compensation for equity awards issued to BNS employees; and the related income tax impacts of these adjustments. The pro forma results for the year ended December 31, 2015, exclude \$93.6 million of integration and transaction costs related to the BNS acquisition and \$81.6 million of additional cost of goods sold related to the inventory mark up included in the purchase price allocation as these costs are nonrecurring to the Company.

The BNS amounts included in the pro forma information are based on their historical results prepared on a carve-out basis of accounting and, therefore, may not be indicative of the actual results when operated as part of CommScope. The pro forma adjustments represent management's best estimates based on information available at the time the pro forma information was prepared and may differ from the adjustments that may actually have been required. Accordingly, the pro forma financial information should not be relied upon as being indicative of the results that would have been realized had the acquisition occurred as of the date indicated or that may be achieved in the future.

Airvana

On October 1, 2015, the Company acquired the assets and assumed certain liabilities of Airvana LP (Airvana), a provider of small cell solutions for wireless networks in an all-cash transaction. The Company paid \$45.1 million (\$44.5 million net of cash acquired). Airvana provides 4G LTE and 3G small cell solutions that enable communication and access to information and entertainment in challenging and high-value environments, such as office buildings and public venues. Airvana is reported in the CMS segment.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

4. GOODWILL AND OTHER INTANGIBLE ASSETS

The following table presents details of the Company's intangible assets other than goodwill as of December 31, 2017 and 2016 (in millions):

	2017			2016		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Customer base	\$ 1,930.3	\$ 935.2	\$ 995.1	\$ 1,837.6	\$ 757.7	\$ 1,079.9
Trade names and trademarks	609.7	215.3	\$ 394.4	606.2	179.7	426.5
Patents and technologies	592.0	345.4	\$ 246.6	567.0	274.3	292.7
Non-compete agreements	0.3	0.3	\$ —	0.3	0.3	—
Total intangible assets	\$ 3,132.3	\$ 1,496.2	\$ 1,636.1	\$ 3,011.1	\$ 1,212.0	\$ 1,799.1

There were no intangible asset impairments identified during the year ended December 31, 2017. During the years ended December 31, 2016 and 2015, the Company determined that certain patent and technology intangible assets in the CCS segment were no longer recoverable and recorded pretax charges of \$15.0 million and \$5.5 million, respectively, in asset impairments on the Consolidated Statements of Operations and Comprehensive Income (Loss).

The Company's finite-lived intangible assets are being amortized on a straight-line basis over the weighted-average amortization periods in the following table. The aggregate weighted-average amortization period is 11.8 years.

	Weighted-Average Amortization Period (in years)
Customer base	11.0
Trade names and trademarks	18.8
Patents and technologies	6.8

Amortization expense for intangible assets was \$271.0 million, \$297.2 million and \$220.6 million for the years ended December 31, 2017, 2016 and 2015, respectively. Estimated amortization expense for the next five years is as follows (in millions):

	Estimated Amortization Expense
2018	\$ 265.7
2019	236.7
2020	230.3
2021	210.3
2022	143.5

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The following table presents goodwill by reportable segments (in millions):

	CCS	CMS	Total
Goodwill, gross, as of December 31, 2014	\$ 740.1	\$ 833.1	\$ 1,573.2
Acquisitions and adjustments to purchase price allocations	1,265.1	69.7	1,334.8
Foreign exchange	(18.6)	(3.1)	(21.7)
Goodwill, gross, as of December 31, 2015	1,986.6	899.7	2,886.3
Adjustments to purchase price allocations	107.7	4.4	112.1
Foreign exchange	(16.8)	(2.3)	(19.1)
Goodwill, gross, as of December 31, 2016	2,077.5	901.8	2,979.3
Acquisitions	49.6	—	49.6
Foreign exchange	66.1	2.6	68.7
Goodwill, gross, as of December 31, 2017	\$ 2,193.2	\$ 904.4	\$ 3,097.6
Accumulated impairment charges as of December 31, 2014	\$ (36.2)	\$ (85.1)	\$ (121.3)
Impairment charges for year ended December 31, 2015	—	(74.4)	(74.4)
Accumulated impairment charges as of December 31, 2015	(36.2)	(159.5)	(195.7)
Impairment charges for year ended December 31, 2016	(15.3)	—	(15.3)
Accumulated impairment charges as of December 31, 2016 and 2017	(51.5)	(159.5)	(211.0)
Goodwill, net, as of December 31, 2017	\$ 2,141.7	\$ 744.9	\$ 2,886.6

There were no goodwill impairments identified during the year ended December 31, 2017. A goodwill impairment charge of \$15.3 million was recorded in the CCS segment during the year ended December 31, 2016 as a result of the change in reportable segments and a goodwill impairment charge of \$74.4 million was recorded during the year ended December 31, 2015 primarily due to lower future projected operating results for certain reporting units that are now part of the CMS segment.

5. SUPPLEMENTAL FINANCIAL STATEMENT INFORMATION

Allowance for Doubtful Accounts

Period	Balance at Beginning of Period	Charged to Costs and Expenses	Deductions (1)	Balance at End of Period
Year ended December 31, 2015	\$ 8,797	\$ 12,508	\$ 1,913	\$ 19,392
Year ended December 31, 2016	19,392	(5,986)	(3,805)	17,211
Year ended December 31, 2017	17,211	1,277	4,512	13,976

(1) Uncollectible customer accounts written off, net of recoveries of previously written off customer accounts.

Inventories

	December 31,	
	2017	2016
Raw materials	\$ 126,558	\$ 126,027
Work in process	98,526	135,848
Finished goods	219,857	211,392
	\$ 444,941	\$ 473,267

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

Property, Plant and Equipment

	December 31,	
	2017	2016
Land and land improvements	\$ 54,002	\$ 53,182
Buildings and improvements	217,396	208,515
Machinery and equipment	556,809	480,654
Construction in progress	29,471	36,373
	<u>857,678</u>	<u>778,724</u>
Accumulated depreciation	(390,389)	(303,734)
	<u>\$ 467,289</u>	<u>\$ 474,990</u>

Depreciation expense was \$81.7 million, \$80.5 million and \$60.6 million during the years ended December 31, 2017, 2016 and 2015, respectively. No interest was capitalized during the years ended December 31, 2017, 2016 or 2015.

Other Accrued Liabilities

	December 31,	
	2017	2016
Compensation and employee benefit liabilities	\$ 97,522	\$ 169,923
Deferred revenue	12,611	25,859
Product warranty accrual	16,928	21,631
Accrued interest	23,485	8,586
Restructuring reserve	24,961	30,438
Income taxes payable	16,949	49,984
Value-added taxes payable	11,838	14,885
Accrued professional fees	10,224	10,621
Other	72,462	97,470
	<u>\$ 286,980</u>	<u>\$ 429,397</u>

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

Accumulated Other Comprehensive Loss

The following table presents changes in accumulated other comprehensive income (AOCI), net of tax, and accumulated other comprehensive loss (AOCL), net of tax:

	Year Ended December 31,	
	2017	2016
Foreign currency translation		
Balance at beginning of period	\$ (254,148)	\$ (160,620)
Other comprehensive income (loss)	201,133	(93,840)
Amounts reclassified from AOCL	245	312
Balance at end of period	\$ (52,770)	\$ (254,148)
Defined benefit plan activity		
Balance at beginning of period	\$ (33,473)	\$ (17,567)
Other comprehensive income (loss)	6,047	(13,048)
Amounts reclassified from AOCL	(1,426)	(2,858)
Balance at end of period	\$ (28,852)	\$ (33,473)
Net investment hedge		
Balance at beginning of period	\$ —	\$ —
Other comprehensive loss	(4,981)	—
Balance at end of period	\$ (4,981)	\$ —
Available-for-sale securities		
Balance at beginning of period	\$ 2,508	\$ 6,509
Other comprehensive income (loss)	3,159	(3,262)
Amounts reclassified from AOCI	(5,667)	(739)
Balance at end of period	\$ —	\$ 2,508
Net AOCL at end of period	\$ (86,603)	\$ (285,113)

Amounts reclassified from net AOCL related to foreign currency translation and available-for-sale securities are recorded in other expense, net in the Consolidated Statements of Operations and Comprehensive Income (Loss). Defined benefit plan amounts reclassified from net AOCL are included in the computation of net periodic benefit cost (income) and are primarily recorded in cost of sales and selling, general and administrative expenses in the Consolidated Statements of Operations and Comprehensive Income (Loss).

Cash Flow Information

	Year Ended December 31,		
	2017	2016	2015
Cash paid during the period for:			
Income taxes, net of refunds	\$ 100,929	\$ 148,984	\$ 122,571
Interest	\$ 216,739	\$ 260,773	\$ 207,331

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

6. FINANCING

	December 31,	
	2017	2016
5.00% senior notes due March 2027	\$ 750,000	\$ —
6.00% senior notes due June 2025	1,500,000	1,500,000
5.50% senior notes due June 2024	650,000	650,000
5.00% senior notes due June 2021	650,000	650,000
4.375% senior secured notes due June 2020	—	500,000
Senior secured term loan due December 2022	886,250	1,234,375
Senior secured term loan due January 2018	—	111,875
Senior secured revolving credit facility expires May 2020	—	—
Total face value of debt	<u>\$ 4,436,250</u>	<u>\$ 4,646,250</u>
Less: Original issue discount, net of amortization	(3,389)	(5,857)
Less: Debt issuance costs, net of amortization	(63,460)	(78,383)
Less: Current portion	—	(12,500)
Total long-term debt	<u>\$ 4,369,401</u>	<u>\$ 4,549,510</u>

5.00% Senior Notes Due 2027

In March 2017, CommScope Technologies LLC (CommScope Technologies), a wholly owned subsidiary of the Company, issued \$750.0 million of 5.00% senior notes due March 15, 2027 (the 2027 Notes). Interest is payable on the 2027 Notes semi-annually in arrears on March 15 and September 15 of each year, beginning on September 15, 2017. The Company used the proceeds of the issuance of the 2027 Notes, together with cash on hand, to (i) redeem all of the 4.375% senior secured notes due 2020 (the 2020 Notes), (ii) repay a portion of the outstanding borrowings under its senior secured term loans, including all \$111.9 million of outstanding principal on the senior secured term loan due 2018 (the 2018 Term Loan) and \$138.1 million of outstanding principal on the senior secured term loan due 2022 (the 2022 Term Loan), and (iii) pay related fees and expenses.

CommScope, Inc., a wholly owned subsidiary of the Company, and each of CommScope, Inc.'s existing and future domestic subsidiaries (other than CommScope Technologies) that guarantees the senior secured credit facilities also guarantees the 2027 Notes on a senior unsecured basis, subject to certain exceptions. The 2027 Notes rank senior in right of payment with all of CommScope Technologies' and the guarantors' future subordinated indebtedness and equally in right of payment with all of CommScope Technologies' and the guarantors' existing and future senior indebtedness, including the senior secured credit facilities, the 6.00% senior notes due June 15, 2025 (the 2025 Notes), the 5.50% senior notes due June 15, 2024 (the 2024 Notes) and the 5.00% senior notes due June 15, 2021 (the 2021 Notes). The 2027 Notes and guarantees are effectively junior to all of CommScope Technologies' and the guarantors' existing and future secured indebtedness, including the senior secured credit facilities, to the extent of the value of the assets securing such secured indebtedness. In addition, the 2027 Notes are structurally subordinated to all existing and future liabilities (including trade payables) of CommScope, Inc.'s subsidiaries that do not guarantee the 2027 Notes, including indebtedness incurred by certain of CommScope, Inc.'s non-U.S. subsidiaries under the revolving credit facility.

The 2027 Notes may be redeemed prior to maturity under certain circumstances. Upon certain change of control events, the 2027 Notes may be redeemed at the option of the holders at 101% of their principal amount, plus accrued and unpaid interest. The 2027 Notes may be redeemed on or after March 15, 2022 at the redemption prices specified in the indenture governing the 2027 Notes. Prior to March 15, 2022, the 2027 Notes may be redeemed at a redemption price equal to 100% of the aggregate principal amount of the 2027 Notes to be redeemed, plus a make-whole premium (as specified in the indenture governing the 2027 Notes), plus accrued and unpaid interest. At any time prior to March 15, 2020, CommScope Technologies may also redeem up to 40% of the aggregate principal amount of the 2027 Notes at a redemption price of 105%, plus accrued and unpaid interest, using the proceeds of certain equity offerings.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

In connection with issuing the 2027 Notes, the Company paid \$7.2 million of debt issuance costs during the year ended December 31, 2017, which was recorded as a reduction of the carrying amount of the debt and is being amortized over the term of the notes.

6.00% Senior Notes Due 2025

In June 2015, CommScope Technologies issued \$1.5 billion of the 2025 Notes. Interest is payable on the 2025 Notes semi-annually in arrears on June 15 and December 15 of each year. The Company used the proceeds from the 2025 Notes, together with cash on hand and borrowings under the 2022 Term Loan, to finance the acquisition of the BNS business.

The 2025 Notes are guaranteed on a senior unsecured basis by CommScope, Inc. and each of CommScope, Inc.'s existing and future domestic subsidiaries (other than CommScope Technologies) that guarantees the senior secured credit facilities, subject to certain exceptions, and rank as described above for the 2027 notes.

The 2025 Notes may be redeemed prior to maturity under certain circumstances. Upon certain change of control events, the 2025 Notes may be redeemed at the option of the holders at 101% of their principal amount, plus accrued and unpaid interest. The 2025 Notes may be redeemed on or after June 15, 2020 at the redemption prices specified in the indenture governing the 2025 Notes. Prior to June 15, 2020, the 2025 Notes may be redeemed at a redemption price equal to 100% of the aggregate principal amount to be redeemed, plus a make-whole premium (as specified in the indenture governing the 2025 Notes), plus accrued and unpaid interest. At any time prior to June 15, 2018, under certain circumstances, the Company may also redeem up to 40% of the aggregate principal amount of the 2025 Notes at a redemption price of 106.0%, plus accrued and unpaid interest, using the proceeds of certain equity offerings.

In connection with issuing the 2025 Notes, the Company incurred costs of \$35.9 million during the year ended December 31, 2015, which were recorded as a reduction of the carrying amount of the debt and are being amortized over the term of the 2025 Notes.

5.00% Senior Notes Due 2021 and 5.50% Senior Notes Due 2024

In May 2014, CommScope, Inc., a wholly owned subsidiary of the Company, issued \$650.0 million of the 2021 Notes and \$650.0 million of the 2024 Notes. Interest is payable on the 2021 Notes and the 2024 Notes semi-annually in arrears on June 15 and December 15 of each year.

The 2021 Notes and the 2024 Notes are guaranteed on a senior unsecured basis by each of CommScope, Inc.'s existing and future domestic subsidiaries that guarantees the senior secure credit facilities, subject to certain exceptions, and rank as described above for the 2027 Notes.

The 2021 Notes and the 2024 Notes may be redeemed prior to maturity under certain circumstances. Upon certain change of control events, the 2021 Notes and the 2024 Notes may be redeemed at the option of the holders at 101% of their principal amount, plus accrued and unpaid interest to the date of purchase. The 2021 Notes and the 2024 Notes may be redeemed on or after June 15, 2017 or June 15, 2019, respectively, at the redemption prices specified in the respective indentures governing the 2021 Notes and the 2024 Notes. Prior to June 15, 2019, the 2024 Notes may be redeemed at a redemption price equal to 100% of the aggregate principal amount, plus a make-whole premium (as specified in the indentures governing the 2024 Notes), plus accrued and unpaid interest to the redemption date.

Senior PIK Toggle Notes

In May 2013, the Company issued \$550.0 million of 6.625%/7.375% senior payment-in-kind toggle notes due 2020 (the senior PIK toggle notes) in a private offering. During the year ended December 31, 2015, the Company repurchased \$13.4 million of the senior PIK toggle notes and during the year ended December 31, 2016, the Company voluntarily redeemed the remaining \$536.6 million of the senior PIK toggle notes. The repurchases and redemptions resulted in charges of \$17.7 million and \$0.3 million which are reflected in other expense, net for the years ended December 31, 2016 and 2015, respectively. In connection with the repurchases and redemptions, \$6.1 million and \$0.2 million of debt issuance costs were written off and included in interest expense for the years ended December 31, 2016 and 2015, respectively.

4.375% Senior Secured Notes Due 2020

In June 2015, CommScope, Inc. issued \$500.0 million of the 2020 Notes. In connection with issuing the 2020 Notes, the Company incurred costs of approximately \$8.5 million during the year ended December 31, 2015. The 2020 Notes were redeemed during the year ended December 31, 2017, which resulted in a charge for the redemption premium of \$14.8 million, which is reflected in other expense, net, and the write-off of \$5.8 million of debt issuance costs, which is reflected in interest expense.

Senior Secured Credit Facilities

The Company's asset-based revolving credit facility provides borrowing capacity of up to \$550.0 million, subject to certain limitations. The revolving credit facility expires in May 2020, subject to acceleration under certain circumstances. As of December 31, 2017, the Company had no outstanding borrowings under its revolving credit facility and the Company did not borrow under its revolving credit facility during the year ended December 31, 2017. As of December 31, 2017, the Company had availability of \$425.4 million under its revolving credit facility, after giving effect to borrowing base limitations and outstanding letters of credit.

As of December 31, 2017, the Company had one term loan outstanding under its senior secured credit facilities, the 2022 Term Loan. The Company incurred costs of \$29.7 million during the year ended December 31, 2015 related to the issuance of the 2022 Term Loan. These costs were recorded as a reduction of the carrying amount of the debt and are being amortized over the term of the 2022 Term Loan.

In May 2017, the Company amended the 2022 Term Loan to reduce the interest rate margin. The interest rate is, at the Company's option, either (1) the base rate (as described in the credit agreement, as amended) plus a margin of 1.00% or (2) one-, two-, three- or six-month LIBOR or, if available from all lenders, twelve-month LIBOR (selected at the Company's option) plus a margin of 2.00%. Before the amendment, the margin on the interest rate with respect to base rate loans was 1.50% and with respect to LIBOR loans was 2.50%. The amendment also reduced the 1.75% base rate floor to 1.00% and eliminated the 0.75% LIBOR floor. The amendment resulted in the repayment of \$30.4 million to certain lenders under the senior secured credit facilities and the receipt of \$30.4 million in proceeds from new lenders and existing lenders who increased their positions. In conjunction with the amendment, the Company recorded \$1.1 million of debt modification costs in other expense, net.

During the year ended December 31, 2017, the Company repaid \$348.1 million of the 2022 Term Loan and \$111.9 million of the 2018 Term Loan. In connection with these repayments, \$8.3 million of original issue discount and debt issuance costs were written off and included in interest expense.

During the year ended December 31, 2016, the Company amended the 2022 Term Loan to reduce the margin on the interest rate and recorded an additional \$3.1 million of original issue discount related to this amendment.

During the years ended December 31, 2016 and 2015, the Company voluntarily repaid \$150.0 million and \$605.3 million, respectively, of its senior secured term loans. In connection with these repayments, combined original issue discount and debt issuance costs of \$1.0 million and \$7.9 million were written off and included in interest expense during the years ended December 31, 2016 and 2015, respectively.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The 2022 Term Loan is secured by a first priority lien on certain of the Company's non-current assets in the U.S. and a second priority lien on current assets in the U.S. The asset-based revolving credit facility is secured by a first priority lien on certain of the Company's current assets in the U.S. and several European countries and a second priority lien on the Company's non-current assets in the U.S.

No portion of the 2022 Term Loan was reflected as a current portion of long-term debt as of December 31, 2017 related to the potentially required excess cash flow payment because no such payment is expected to be required. There was no excess cash flow payment required in 2017 related to 2016.

Other Matters

The following table summarizes scheduled maturities of long-term debt as of December 31, 2017 (in millions):

	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>Thereafter</u>
Scheduled maturities of long-term debt	\$ —	\$ —	\$ —	\$ 650.0	\$ 886.3	\$ 2,900.0

The Company's non-guarantor subsidiaries held \$2,587 million, or 37%, of total assets and \$569 million, or 11%, of total liabilities as of December 31, 2017 and accounted for \$1,915 million, or 42%, of net sales for the year ended December 31, 2017. As of December 31, 2016, the non-guarantor subsidiaries held \$2,211 million, or 31%, of total assets and \$615 million, or 11%, of total liabilities. For the year ended December 31, 2016, the non-guarantor subsidiaries accounted for \$2,101 million, or 43%, of net sales. All amounts presented exclude intercompany balances.

The Company is dependent upon the earnings and cash flow of its subsidiaries to make certain payments, including debt and interest payments. Certain subsidiaries may have limitations or restrictions on transferring funds to other subsidiaries that may be necessary to meet those requirements.

The weighted average effective interest rate on outstanding borrowings, including the amortization of debt issuance costs and original issue discount, was 5.45% at December 31, 2017 and 5.24% at December 31, 2016.

7. DERIVATIVES AND HEDGING ACTIVITIES

Derivatives Not Designated As Hedging Instruments

The Company uses forward contracts to hedge a portion of its balance sheet foreign exchange re-measurement risk and to hedge certain planned foreign currency expenditures. As of December 31, 2017, the Company had foreign exchange contracts outstanding with maturities of up to twelve months and aggregate notional values of \$422 million (based on exchange rates as of December 31, 2017). Unrealized gains and losses resulting from these contracts are recognized in other expense, net and partially offset corresponding foreign exchange gains and losses on the balances and expenditures being hedged. These instruments are not held for speculative or trading purposes and are not designated as hedges for hedge accounting and are marked to market each period through earnings.

The following table presents the balance sheet location and fair value of the Company's derivatives not designated as hedging instruments:

	<u>Balance Sheet Location</u>	<u>Fair Value of Asset (Liability)</u>	
		<u>December 31,</u>	
		<u>2017</u>	<u>2016</u>
Foreign currency contracts	Prepaid expenses and other current assets	\$ 9,050	\$ 289
Foreign currency contracts	Other accrued liabilities	(574)	(8,349)
Total derivatives not designated as hedging instruments		<u>\$ 8,476</u>	<u>\$ (8,060)</u>

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The pretax impact of the foreign currency forward contracts, both matured and outstanding, on the Consolidated Statements of Operations and Comprehensive Income (Loss) is as follows:

<u>Foreign Currency Forward Contracts</u>	<u>Location of Gain (Loss)</u>	<u>Gain (Loss) Recognized</u>
Year ended December 31, 2017	Other expense, net	\$ 28,633
Year ended December 31, 2016	Other expense, net	(21,470)
Year ended December 31, 2015	Other expense, net	(14,309)

Derivative Instruments Designated As Net Investment Hedge

During 2017, the Company began a hedging strategy to designate foreign exchange forward contracts as net investment hedges to mitigate a portion of the foreign currency risk on the euro net investment in a foreign subsidiary. As of December 31, 2017, the Company held a designated forward contract with an outstanding maturity of twelve months and an aggregate notional value of \$30.0 million.

Hedge effectiveness is assessed each quarter based on the net investment in the foreign subsidiary designated as the hedged item and the overall changes in the fair value of designated forward contracts. For hedges that meet the effectiveness requirements, changes in fair value are recorded as a component of other comprehensive income (loss), net of tax. Any change in fair value that is the result of ineffectiveness is recognized immediately in earnings. As of December 31, 2017, there was no ineffectiveness on the instrument designated as a net investment hedge.

The following table presents the balance sheet location and fair value of the derivative instrument designated as a net investment hedge:

	<u>Balance Sheet Location</u>	<u>Fair Value of Asset (Liability)</u>	
		<u>December 31,</u>	
		<u>2017</u>	<u>2016</u>
Foreign currency contracts	Prepaid expenses and other current assets	\$ —	\$ —
Foreign currency contracts	Other accrued liabilities	(403)	—
Total derivatives designated as hedging instruments		<u>\$ (403)</u>	<u>\$ —</u>

The after tax impact of the effective portion of forward contracts designated as net investment hedging instruments, both matured and outstanding, on the Consolidated Statements of Operations and Comprehensive Income (Loss) is as follows:

<u>Foreign Currency Forward Contracts</u>	<u>Location of Loss</u>	<u>Effective Portion of Loss Recognized</u>
Year ended December 31, 2017	Other comprehensive income (loss), net of tax	\$ (4,981)
Year ended December 31, 2016	Other comprehensive income (loss), net of tax	—
Year ended December 31, 2015	Other comprehensive income (loss), net of tax	—

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

8. FAIR VALUE MEASUREMENTS

The Company's financial instruments consist primarily of cash and cash equivalents, trade receivables, trade payables, debt instruments and foreign currency contracts. For cash and cash equivalents, trade receivables and trade payables, the carrying amounts of these financial instruments as of December 31, 2017 and December 31, 2016 were considered representative of their fair values due to their short terms to maturity. The fair values of the Company's debt instruments and foreign currency contracts were based on indicative quotes. The fair value of the available-for-sale securities held by the Company as of December 31, 2016 was based on quoted market prices.

Fair value measurements using quoted prices in active markets for identical assets and liabilities fall within Level 1 of the fair value hierarchy, measurements using significant other observable inputs fall within Level 2, and measurements using significant unobservable inputs fall within Level 3.

The carrying amounts, estimated fair values and valuation input levels of the Company's available-for-sale securities, foreign currency contracts and debt instruments as of December 31, 2017 and December 31, 2016, are as follows:

	December 31, 2017		December 31, 2016		Valuation Inputs
	Carrying Amount	Fair Value	Carrying Amount	Fair Value	
Assets:					
Available-for-sale securities	\$ —	\$ —	\$ 5,212	\$ 5,212	Level 1
Foreign currency contracts	9,050	9,050	289	289	Level 2
Liabilities:					
5.00% senior notes due 2027	750,000	753,750	—	—	Level 2
6.00% senior notes due 2025	1,500,000	1,591,800	1,500,000	1,585,350	Level 2
5.50% senior notes due 2024	650,000	676,780	650,000	673,530	Level 2
5.00% senior notes due 2021	650,000	661,375	650,000	669,500	Level 2
4.375% senior secured notes due 2020	—	—	500,000	513,100	Level 2
Senior secured term loan due 2022, at par	886,250	892,343	1,234,375	1,245,145	Level 2
Senior secured term loan due 2018, at par	—	—	111,875	112,364	Level 2
Foreign currency contracts	977	977	8,349	8,349	Level 2

These fair value estimates are based on pertinent information available to management as of the valuation date. Although management is not aware of any factors that would significantly affect these fair value estimates, such amounts have not been comprehensively revalued for purposes of these financial statements since those dates, and current estimates of fair value may differ significantly from the amounts presented.

9. RESTRUCTURING COSTS

Prior to the acquisition of the BNS business in August 2015, the Company initiated restructuring actions to realign and lower its cost structure primarily through workforce reductions and other cost reduction initiatives, including the cessation of manufacturing operations at various facilities. Production capacity from these facilities has been shifted to other existing facilities or unaffiliated suppliers. These actions are referred to as the cost alignment restructuring actions. Following the acquisition of BNS, the Company initiated a series of restructuring actions, which are currently ongoing, to integrate the BNS operations (the BNS integration restructuring actions) to achieve cost synergies. All charges related to these restructuring actions are reported in restructuring costs, net.

The Company's net pretax restructuring charges, by segment, were as follows:

	Year Ended December 31,		
	2017	2016	2015
CCS	\$ 36,551	\$ 27,098	\$ 16,937
CMS	7,231	15,777	12,551
Total	\$ 43,782	\$ 42,875	\$ 29,488

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The costs related to restructuring actions are composed of employee-related costs, lease termination costs and fixed asset related costs. Employee-related costs include the expected severance costs and related benefits as well as one-time severance benefits that are accrued over the remaining period employees are required to work in order to receive such benefits. Lease termination costs relate to the discounted cost that will continue to be incurred for unused leased facilities, net of anticipated sub-lease income. Fixed asset related costs include non-cash impairments and/or fixed asset disposals associated with restructuring actions in addition to the cash costs to uninstall, pack, ship and reinstall manufacturing equipment and the costs to prepare the receiving facility to accommodate relocated equipment. Fixed asset related costs are expensed as incurred. Cash paid is net of proceeds received from the sale of related assets.

As a result of restructuring and consolidation actions, the Company owns unutilized real estate at various facilities in the U.S. and internationally. The Company is attempting to sell or lease this unutilized space. Additional impairment charges may be incurred related to these or other excess assets.

The activity within the liability established for the cost alignment restructuring actions was as follows:

	Employee- Related Costs	Lease Termination Costs	Fixed Asset Related Costs	Total
Balance at December 31, 2014	\$ 3,822	\$ 8,243	\$ —	\$ 12,065
Additional charge recorded	3,024	865	1,828	5,717
Cash paid	(5,773)	(1,738)	(247)	(7,758)
Consideration received	—	—	2,986	2,986
Foreign exchange and other non-cash items	(68)	—	(4,567)	(4,635)
Balance at December 31, 2015	1,005	7,370	—	8,375
Additional charge (credit) recorded	71	298	(203)	166
Cash paid	(769)	(1,618)	—	(2,387)
Consideration received	—	—	3,656	3,656
Foreign exchange and other non-cash items	4	—	(3,453)	(3,449)
Balance at December 31, 2016	311	6,050	—	6,361
Additional charge recorded	86	577	—	663
Cash paid	(463)	(1,298)	—	(1,761)
Foreign exchange and other non-cash items	66	—	—	66
Balance at December 31, 2017	<u>\$ —</u>	<u>\$ 5,329</u>	<u>\$ —</u>	<u>\$ 5,329</u>

The Company has recognized restructuring charges of \$89.6 million since January 2011 for cost alignment restructuring actions. Additional pretax costs of \$0.5 million are expected to be incurred to complete these previously announced initiatives. Cash payments of \$2.1 million are expected in 2018 and \$3.7 million between 2019 and 2022.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The activity within the liability established for the BNS integration restructuring actions was as follows:

	Employee- Related Costs	Lease Termination Costs	Fixed Asset Related Costs	Total
Balance at December 31, 2014	\$ —	\$ —	\$ —	\$ —
Liabilities assumed in BNS acquisition	9,000	—	—	9,000
Additional charge recorded	23,771	—	—	23,771
Cash paid	(3,996)	—	—	(3,996)
Foreign exchange and other non-cash items	(61)	—	—	(61)
Balance at December 31, 2015	28,714	—	—	28,714
Additional charge recorded	35,848	378	6,483	42,709
Cash paid	(31,569)	(256)	(3,079)	(34,904)
Foreign exchange and other non-cash items	(253)	249	(3,404)	(3,408)
Balance at December 31, 2016	32,740	371	—	33,111
Additional charge recorded	33,565	1,352	8,202	43,119
Cash paid	(41,084)	(648)	(582)	(42,314)
Consideration received	—	—	2,699	2,699
Foreign exchange and other non-cash items	367	5	(10,319)	(9,947)
Balance at December 31, 2017	<u>\$ 25,588</u>	<u>\$ 1,080</u>	<u>\$ —</u>	<u>\$ 26,668</u>

In conjunction with the BNS acquisition, the Company assumed a liability of \$9.0 million for BNS employee-related restructuring initiated prior to the acquisition. The BNS integration actions include the announced closures or reduction in activities at various U.S. and international facilities as well as headcount reductions in sales, marketing and administrative functions. The Company has recognized restructuring charges of \$109.6 million since the BNS acquisition for integration actions. Additional pretax costs of \$1.5 million are expected to be incurred to complete the previously announced BNS integration initiatives. Cash payments of \$24.4 million are expected in 2018 with additional payments of \$3.8 million between 2019 and 2021. Future integration actions are expected to be identified and the resulting amounts may be material.

Restructuring reserves related to all actions were included in the Company's Consolidated Balance Sheets as follows:

	December 31,	
	2017	2016
Other accrued liabilities	\$ 24,961	\$ 30,438
Other noncurrent liabilities	7,036	9,034
Total liability	<u>\$ 31,997</u>	<u>\$ 39,472</u>

10. EMPLOYEE BENEFIT PLANS

Defined Contribution Plans

The Company and certain of its subsidiaries have defined contribution retirement savings plans, the most significant of which is a 401(k) plan in the U.S. These plans allow employees meeting certain requirements to contribute a portion of their compensation on a pretax and/or after-tax basis in accordance with guidelines established by the plans and the Internal Revenue Service or other tax authorities. The Company matches a percentage of the employee contributions up to certain limits. During the years ended December 31, 2017, 2016 and 2015, the Company made contributions to defined contribution retirement savings plans of \$25.9 million, \$24.5 million and \$21.7 million, respectively.

The Company maintains noncontributory and contributory deferred compensation plans. During the years ended December 31, 2017, 2016 and 2015, the Company recognized pretax costs of \$2.9 million, \$2.6 million and \$1.4 million, respectively, related to these plans. The liability was \$38.7 million and \$32.5 million as of December 31, 2017 and 2016, respectively.

Pension Plans

The Company sponsors defined benefit pension plans covering certain domestic former employees and certain foreign current and former employees. Included in the defined benefit pension plans are both funded and unfunded plans. The following table summarizes information for the defined benefit pension plans based on a December 31 measurement date:

	U.S. Plans		Non-U.S. Plans	
	2017	2016	2017	2016
Change in benefit obligation:				
Benefit obligation, beginning	\$ 156,522	\$ 159,973	\$ 216,634	\$ 203,117
Service cost	—	—	4,876	5,352
Interest cost	5,929	6,452	5,300	6,096
Plan participants' contributions	—	—	116	115
Adjustments related to BNS acquisition	—	—	—	(7,073)
Actuarial loss (gain)	5,100	966	(2,670)	39,296
Plan amendments	—	—	432	—
Benefits paid, including settlements	(10,822)	(10,869)	(6,583)	(6,861)
Foreign exchange and other	—	—	22,644	(23,408)
Benefit obligation, ending	<u>\$ 156,729</u>	<u>\$ 156,522</u>	<u>\$ 240,749</u>	<u>\$ 216,634</u>
Change in plan assets:				
Fair value of plan assets, beginning	\$ 155,638	\$ 152,661	\$ 196,818	\$ 199,915
Employer and plan participant contributions	260	261	4,990	6,119
Adjustments related to BNS acquisition	—	—	—	38
Return on plan assets	15,912	13,585	9,955	21,683
Benefits paid, including settlements	(10,822)	(10,869)	(6,583)	(6,861)
Foreign exchange and other	—	—	21,332	(24,076)
Fair value of plan assets, ending	<u>\$ 160,988</u>	<u>\$ 155,638</u>	<u>\$ 226,512</u>	<u>\$ 196,818</u>
Funded status, (net asset) or net liability	<u>\$ (4,259)</u>	<u>\$ 884</u>	<u>\$ 14,237</u>	<u>\$ 19,816</u>

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The following table presents the balance sheet location of the Company's pension liabilities and assets:

	December 31,			
	U.S. Plans		Non-U.S. Plans	
	2017	2016	2017	2016
Other accrued liabilities	\$ (260)	\$ (260)	\$ (1,235)	\$ (1,145)
Pension and other postretirement benefit liabilities	(2,152)	(2,242)	(18,176)	(21,603)
Other noncurrent assets	6,671	1,618	5,174	2,932

The accumulated benefit obligation for the Company's U.S. defined benefit pension plans was \$156,729 and \$156,522 as of December 31, 2017 and 2016, respectively and the accumulated benefit obligation for the Company's non-U.S. defined benefit pension plans was \$195,922 and \$175,016 as of December 31, 2017 and 2016, respectively.

The following table summarizes information for the Company's pension plans with an accumulated benefit obligation in excess of plan assets:

	December 31,			
	U.S. Plans		Non-U.S. Plans	
	2017	2016	2017	2016
Projected benefit obligation	\$ 2,412	\$ 2,502	\$ 16,755	\$ 14,467
Accumulated benefit obligation	2,412	2,502	14,683	12,518
Fair value of plan assets	—	—	4,034	3,640

The following table summarizes pretax amounts included in accumulated other comprehensive loss as of December 31, 2017 and 2016:

	U.S. Plans		Non-U.S. Plans	
	2017	2016	2017	2016
Unrecognized net actuarial loss	\$ (26,261)	\$ (30,968)	\$ (28,410)	\$ (32,411)
Unrecognized prior service cost	—	—	(437)	—
Total	\$ (26,261)	\$ (30,968)	\$ (28,847)	\$ (32,411)

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

Actuarial gains and losses are amortized using a corridor approach. The corridor is equal to 10% of the greater of the benefit obligation and the fair value of the assets. Gains and losses in excess of the corridor are generally amortized over the average remaining life of the plan participants. Pretax amounts for net periodic benefit cost and other amounts included in other comprehensive income (loss) for the defined benefit pension plans consisted of the following components:

	Year Ended December 31,					
	U.S. Plans			Non-U.S. Plans		
	2017	2016	2015	2017	2016	2015
Service cost	\$ —	\$ —	\$ —	\$ 4,876	\$ 5,352	\$ 2,271
Interest cost	5,929	6,452	6,498	5,300	6,096	5,988
Recognized actuarial loss	664	923	675	1,523	116	52
Expected return on plan assets	(6,769)	(7,002)	(7,516)	(7,598)	(8,632)	(7,357)
Net periodic benefit cost (income)	(176)	373	(343)	4,101	2,932	954
Changes in plan assets and benefit obligations included in other comprehensive income (loss):						
Change in unrecognized net actuarial loss (gain)	(4,707)	(6,540)	5,735	(4,001)	23,750	(6,867)
Change in unrecognized prior service cost	—	—	—	437	—	—
Total included in other comprehensive income (loss)	(4,707)	(6,540)	5,735	(3,564)	23,750	(6,867)
Total recognized in net periodic benefit cost and included in other comprehensive income (loss)	\$ (4,883)	\$ (6,167)	\$ 5,392	\$ 537	\$ 26,682	\$ (5,913)

Amortization of amounts included in accumulated other comprehensive loss as of December 31, 2017 is expected to increase net periodic benefit cost during 2018 as follows:

	U.S. Plans	Non-U.S. Plans
Amortization of net actuarial loss	\$ 481	\$ 1,236
Amortization of prior service cost	—	41
Total	\$ 481	\$ 1,277

Assumptions

Significant weighted average assumptions used in determining benefit obligations and net periodic benefit cost are as follows:

	U.S. Plans			Non-U.S. Plans		
	2017	2016	2015	2017	2016	2015
Benefit obligations:						
Discount rate	3.50 %	3.94 %	4.19 %	2.23 %	2.38 %	3.52 %
Rate of compensation increase	— %	— %	— %	3.92 %	4.04 %	4.36 %
Net periodic benefit cost:						
Discount rate	3.94 %	4.19 %	3.89 %	2.38 %	3.52 %	3.75 %
Rate of return on plan assets	4.10 %	4.50 %	4.65 %	3.49 %	3.71 %	4.45 %
Rate of compensation increase	— %	— %	— %	4.04 %	4.18 %	4.00 %

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The Company considered the available yields on high-quality fixed-income investments with maturities corresponding to the Company's expected benefit obligations to determine the discount rates at each measurement date.

Plan Assets

In developing the expected rate of return on plan assets, the Company considered the expected long-term rate of return on individual asset classes. Expected return on plan assets is based on the market value of the assets. Substantially all of the U.S. pension assets and a portion of the non-U.S. pension assets are managed by independent investment advisors with an objective of transitioning to a portfolio of fixed income and absolute return investments that matches the durations of the obligations as the funded status of each plan improves. The absolute return investment fund is a diversified portfolio designed to achieve long-term total returns. The remainder of the non-U.S. pension assets is invested with the objective of maximizing return.

Mutual funds classified as Level 1 are valued at net asset value, which is based on the fair value of the funds' underlying securities. Certain mutual funds are classified as Level 2 because a portion of the funds' underlying assets are valued using significant other observable inputs. Other assets are primarily composed of fixed income investments (including insurance and real estate products) and are valued based on the investment's stated rate of return, which approximates market interest rates.

The estimated fair values and the valuation input levels of the Company's plan assets as of December 31, 2017 are as follows:

	U.S. Plans		Non-U.S. Plans	
	Level 1 Fair Value	Level 2 Fair Value	Level 1 Fair Value	Level 2 Fair Value
Mutual funds:				
U.S. equity	\$ 257	\$ —	\$ —	\$ —
International equity	1,934	—	34,704	26,781
U.S. debt	145,967	—	—	—
International debt	10,252	—	31,192	98,789
Absolute return	—	—	—	21,994
Other	2,578	—	6,645	6,407
Total	<u>\$ 160,988</u>	<u>\$ —</u>	<u>\$ 72,541</u>	<u>\$ 153,971</u>

The estimated fair values and the valuation input levels of the Company's plan assets as of December 31, 2016 are as follows:

	U.S. Plans		Non-U.S. Plans	
	Level 1 Fair Value	Level 2 Fair Value	Level 1 Fair Value	Level 2 Fair Value
Mutual funds:				
U.S. equity	\$ 2,693	\$ —	\$ —	\$ —
International equity	1,284	—	30,295	29,618
U.S. debt	142,121	—	—	—
International debt	6,847	—	27,004	81,242
Absolute return	—	—	—	18,727
Other	2,693	—	3,688	6,244
Total	<u>\$ 155,638</u>	<u>\$ —</u>	<u>\$ 60,987</u>	<u>\$ 135,831</u>

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

Expected Cash Flows

The Company expects to contribute \$0.3 million to U.S defined benefit pension plans and \$5.7 million to non-U.S. defined benefit pension plans during 2018.

The following table summarizes projected benefit payments from pension plans through 2027, including benefits attributable to estimated future service (in millions):

	U.S. Plans	Non-U.S. Plans
2018	\$ 10.7	\$ 9.8
2019	10.6	6.1
2020	10.5	6.0
2021	10.4	6.8
2022	10.3	7.9
2023-2027	48.9	48.1

Other Postretirement Benefit Plans

The Company sponsors postretirement health care and life insurance benefit plans that provide benefits to certain former U.S. employees and certain U.S. full-time employees who retire from the Company. The health care plans contain various cost-sharing features such as participant contributions, deductibles, coinsurance and caps, with Medicare as the primary provider of health care benefits for eligible retirees. The Company has amended certain of the plans to terminate benefits by December 31, 2018. The accounting for the remainder of the health care plans anticipates future cost-sharing changes that are consistent with the Company's expressed intent to maintain a consistent level of cost sharing or capped benefits with retirees. There are no plan assets associated with these post-retirement health care and life insurance benefit plans.

The benefit obligation for these plans was \$5.7 million and \$9.6 million as of December 31, 2017 and 2016, respectively. For the year ended December 31, 2017, \$1.0 million was recognized in other accrued liabilities on the Consolidated Balance Sheets and \$4.7 million in pension and other postretirement liabilities on the Consolidated Balance Sheets. For the year ended December 31, 2016, \$1.7 million was recognized in other accrued liabilities and \$7.9 million in pension and other postretirement liabilities. The pretax gains recognized in accumulated other comprehensive loss were \$18.7 million and \$21.7 million for the years ended December 31, 2017 and 2016, respectively, mostly related to unrecognized prior service credits. The net periodic benefit income of \$4.7 million, \$5.1 million and \$10.3 million for the years ended December 31, 2017, 2016 and 2015, respectively, results primarily from the amortization of net actuarial gains and prior service credits. The service cost recognized in each period was immaterial. Amortization of gains included in accumulated other comprehensive loss as of December 31, 2017 is expected to decrease net periodic benefit cost by \$7.5 million during 2018.

11. INCOME TAXES

On December 22, 2017, the U.S. government enacted tax reform legislation (U.S. tax reform) that reduced the corporate income tax rate from 35% to 21% and included a broad range of complex provisions affecting the taxation of businesses. Certain effects of the new legislation would generally require financial statement recognition to be completed in the period of enactment; however, in response to the complexities of this new legislation, the Securities and Exchange Commission (SEC) staff issued Staff Accounting Bulletin No. 118 (SAB 118) to provide companies with transitional relief. Specifically, when the initial accounting for items under the new legislation is incomplete, the guidance allows the recognition of provisional amounts when reasonable estimates can be made or the continued application of the prior tax law if a reasonable estimate of the effect cannot be made. The SEC staff has provided up to one year for companies to finalize the accounting for the effects of this new legislation, and the Company anticipates finalizing its accounting within that period. For the items for which the Company was able to determine a reasonable estimate, the amount is included as a component of income tax expense. The Company will continue to make or refine the calculations as additional analysis is completed and as a more thorough understanding of the new tax law is reached. The changes made could be material to income tax expense.

While accounting for the new U.S. tax legislation is incomplete, the Company has made reasonable estimates for certain provisions and has recognized a \$22.4 million net tax benefit in the 2017 financial statements. This net benefit is primarily comprised of a \$64.2 million provisional deferred tax benefit from revaluing the Company's U.S. deferred tax assets and liabilities to reflect the new U.S. corporate tax rate, partially offset by a \$28.5 million provisional charge for the estimated transition tax and a \$13.3 million charge for estimated taxes on prior year earnings of foreign subsidiaries that the Company expects to repatriate to the U.S.

The Company's estimate of the \$64.2 million deferred tax benefit due to the revaluation of U.S. deferred tax assets and liabilities is a provisional amount under the SEC staff's guidance. Many of the year-end deferred tax balances include estimated timing differences and estimates of events that have not yet occurred such as payments expected to be made during 2018 that are deductible on 2017 tax returns. These deferred tax assets and liabilities are likely to change as the Company finalizes the effect of the tax rate change.

In general, the transition tax in the new legislation results in the taxation of the Company's accumulated foreign earnings and profits (E&P) at a 15.5% rate on liquid assets and 8.0% on the remaining unremitted foreign E&P, both net of foreign tax credits. At this time, the Company has not finished the complex calculations necessary to finalize the amount of the transition tax. The Company believes that the preliminary calculations result in a reasonable estimate of the transition tax and the related foreign tax credit. As such, the Company has recognized \$28.5 million of tax expense for the year ended December 31, 2017. As the Company finalizes the analysis of accumulated foreign E&P, the related foreign taxes paid by entity and the amounts held in cash or other specified assets, the Company will update the provisional estimate of the transition tax. As provided under U.S. tax reform, the Company elected to pay this transition tax over eight years. The current obligation of \$2.1 million is reflected in other accrued liabilities on the Consolidated Balance Sheets with the noncurrent portion included within other noncurrent liabilities on the Consolidated Balance Sheets.

Because prior year foreign earnings are subject to U.S. taxation under the transition tax, the Company intends to repatriate a portion of the foreign earnings that were previously considered indefinitely reinvested in its foreign operations. While not subject to additional U.S. taxation, these earnings may be subject to withholding or similar taxes under foreign law and/or state income taxes. The Company recognized a \$13.3 million deferred tax provision for estimated taxes on prior year earnings of foreign subsidiaries that the Company expects to repatriate to the U.S. As noted above, the Company has not finalized the E&P analysis to determine its transition tax obligation and in conjunction with this analysis is continuing to evaluate foreign E&P which the Company believes are indefinitely reinvested. No additional income taxes have been provided for any additional outside basis difference inherent in these entities, as these amounts continue to be indefinitely reinvested in foreign operations.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

In addition to the reduction in the corporate tax rate, the legislation also establishes new provisions that will affect the Company's 2018 results, including a new provision designed to tax certain income from foreign operations (Global Intangible Low-Tax Income or GILTI); a general elimination of U.S. federal income taxes on dividends from foreign subsidiaries; a new limitation on deductible interest expense; the repeal of the domestic manufacturing deduction; limitations on the deductibility of certain employee compensation; and a deduction for foreign derived intangible income.

While the new legislation generally eliminates U.S. federal income tax on dividends from foreign subsidiaries, it creates a new requirement that certain income earned by foreign subsidiaries must be included currently in U.S. taxable income with new U.S. expense allocation rules (GILTI inclusion). Because of the complexity of the new GILTI tax rules, the Company is continuing to evaluate this provision of the legislation and the application of U.S. GAAP. Under U.S. GAAP, the Company is allowed to make an accounting policy election and treat taxes due from applying the GILTI tax rules either as a current-period expense when they are incurred or factor such amounts into the measurement of deferred taxes. The Company's selection of an accounting policy with respect to the new GILTI rules will depend, in part, on analyzing the Company's global income to determine whether there is an expectation to have future U.S. inclusions in taxable income related to GILTI and its associated impact. The Company has not yet computed a reasonable estimate of the effect of this provision and, therefore, has not made a policy decision regarding whether to record deferred taxes related to GILTI. Accordingly, no adjustment has been made in the financial statements related to GILTI tax.

Changes in tax regulations in non-U.S. jurisdictions resulted in a tax benefit of \$17.1 million, largely related to a deferred tax benefit from revaluing the Company's Belgian deferred tax liabilities resulting from a corporate rate reduction.

Income (loss) before income taxes includes the results from domestic and international operations as follows:

	Year Ended December 31,		
	2017	2016	2015
U.S. companies	\$ 89,214	\$ 2,752	\$ (243,796)
Non-U.S. companies	120,518	269,817	181,795
Income (loss) before income taxes	<u>\$ 209,732</u>	<u>\$ 272,569</u>	<u>\$ (62,001)</u>

The components of income tax expense were as follows:

	Year Ended December 31,		
	2017	2016	2015
Current:			
Federal	\$ 17,015	\$ 37,495	\$ 23,940
Foreign	64,756	104,196	81,123
State	5,672	8,918	5,637
Current income tax expense	<u>87,443</u>	<u>150,609</u>	<u>110,700</u>
Deferred:			
Federal	(65,291)	(76,843)	(81,913)
Foreign	(7,790)	(24,023)	(18,627)
State	1,606	(12)	(1,286)
Deferred income tax expense (benefit)	<u>(71,475)</u>	<u>(100,878)</u>	<u>(101,826)</u>
Total income tax expense	<u>\$ 15,968</u>	<u>\$ 49,731</u>	<u>\$ 8,874</u>

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The reconciliation of income taxes calculated at the statutory U.S. federal income tax rate to the Company's provision for income taxes was as follows:

	<u>Year Ended December 31,</u>		
	<u>2017</u>	<u>2016</u>	<u>2015</u>
Provision for income taxes at federal statutory rate	\$ 73,406	\$ 95,399	\$ (21,700)
State income taxes, net of federal tax effect	7,107	6,211	(608)
Other permanent items	4,530	1,328	1,059
Equity-based compensation	(13,373)	1,449	1,247
U.S. tax reform	(22,358)	—	—
Other changes in tax laws or rates	(17,121)	(379)	(396)
Goodwill related items	—	3,284	25,518
Federal tax credits	(2,497)	(1,600)	(1,645)
Change in unrecognized tax benefits	(8,372)	(11,061)	(2,484)
Foreign dividends and Subpart F income, net of foreign tax credits	8,584	16,848	256
Foreign earnings taxed at other than federal rate	(9,734)	(31,148)	(20,815)
Tax provision adjustments and revisions to prior years' returns	(6,652)	3,412	(5,064)
Change in valuation allowances	2,448	(34,012)	33,505
Total provision for income taxes	<u>\$ 15,968</u>	<u>\$ 49,731</u>	<u>\$ 8,874</u>

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The components of deferred income tax assets and liabilities and the classification of deferred tax balances on the balance sheet were as follows:

	December 31,	
	2017	2016
Deferred tax assets:		
Accounts receivable, inventory and warranty reserves	\$ 40,763	\$ 61,709
Employee benefits	8,442	19,542
Postretirement benefits	3,726	18,461
Restructuring accruals	6,922	9,290
Foreign net operating loss and tax credit carryforwards	65,088	56,122
Federal net operating loss carryforwards	2,024	4,019
Federal tax credit carryforwards	75,856	85,987
State net operating loss and tax credit carryforwards	20,189	17,249
Transaction costs	9,153	14,905
Equity-based compensation	12,223	17,919
Unrecognized tax benefits	10,468	12,721
Other	11,661	30,931
Total deferred tax assets	266,515	348,855
Valuation allowance	(67,956)	(60,136)
Total deferred tax assets, net of valuation allowance	198,559	288,719
Deferred tax liabilities:		
Intangible assets	(234,591)	(388,179)
Property, plant and equipment	(29,073)	(38,825)
Undistributed foreign earnings	(21,415)	(9,848)
Other	(1,785)	(4,110)
Total deferred tax liabilities	(286,864)	(440,962)
Net deferred tax liability	\$ (88,305)	\$ (152,243)
Deferred taxes recognized on the balance sheet:		
Noncurrent deferred tax asset (included with other noncurrent assets)	45,936	46,878
Noncurrent deferred tax liability	(134,241)	(199,121)
Net deferred tax liability	\$ (88,305)	\$ (152,243)

The deferred tax asset for federal tax credit carryforwards as of December 31, 2017 relates to U.S. foreign tax credit carryforwards that expire between 2021 and 2025.

The deferred tax asset for state net operating loss and tax credit carryforwards as of December 31, 2017 includes state net operating loss carryforwards (net of federal tax impact) of \$18.1 million, which begin to expire in 2018, and state tax credit carryforwards (net of federal tax impact) of \$2.1 million which begin to expire in 2018. A valuation allowance of \$12.0 million has been established against these state income tax related deferred tax assets.

The deferred tax assets for foreign net operating loss and tax credit carryforwards as of December 31, 2017 includes foreign net operating loss carryforwards (net of federal tax effects) of \$53.2 million, which will begin to expire in 2018, and foreign tax credit carryforwards (net of federal tax effects) of \$11.9 million, which begin to expire in 2023. Certain of these foreign net operating loss carryforwards are subject to local restrictions limiting their utilization. Valuation allowances of \$51.9 million have been established related to these foreign deferred tax assets.

In addition to the valuation allowances detailed above, the Company has also established a valuation allowance of \$4.0 million against other deferred tax assets.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

As of December 31, 2017, estimated E&P from foreign subsidiaries of \$732.4 million were included in the Company's computation of the provisional transition tax. The Company has a deferred tax liability of \$21.4 million as of December 31, 2017 for the estimated foreign and state tax costs associated with the expected repatriation of the Company's undistributed foreign earnings.

The following table reflects a reconciliation of the beginning and end of period amounts of gross unrecognized tax benefits, excluding interest and penalties:

	Year Ended December 31,		
	2017	2016	2015
Balance at beginning of period	\$ 48,312	\$ 64,085	\$ 68,223
Increase related to prior periods	9,076	742	1,677
Decrease related to prior periods	(722)	(3,416)	(2,094)
Increase related to current periods	1,117	—	914
Decrease related to settlement with taxing authorities	(764)	(22)	—
Decrease related to lapse in statutes of limitations	(10,384)	(16,758)	(4,635)
Increase related to acquisition	—	3,681	—
Balance at end of period	<u>\$ 46,635</u>	<u>\$ 48,312</u>	<u>\$ 64,085</u>

The Company's liability for unrecognized tax benefits that, if recognized, would favorably affect the effective tax rate in future periods was \$39.1 million as of December 31, 2017. The Company operates in numerous jurisdictions worldwide and is subject to routine tax audits on a regular basis. The determination of the Company's unrecognized tax benefits involves significant management judgment regarding interpretation of relevant facts and tax laws in each of these jurisdictions.

Unrecognized tax benefits are reviewed and evaluated on an ongoing basis and may be adjusted for changing facts and circumstances including the lapse of applicable statutes of limitation and closure of tax examinations. Although the timing and outcome of such events are difficult to predict, the Company estimates that the balance of unrecognized tax benefits, excluding the impact of accrued interest and penalties, may be reduced by up to \$28.0 million within the next twelve months.

The Company provides for interest and penalties related to unrecognized tax benefits as income tax expense. As of December 31, 2017 and 2016, the Company had accrued \$9.0 million and \$8.9 million, respectively, for interest and penalties. During the years ended December 31, 2017, 2016 and 2015 the net expense (credit) for interest and penalties recognized through income tax expense was \$0.1 million, \$0.4 million and \$(0.5) million, respectively.

The Company files federal, state and local tax returns with statutes of limitation generally ranging from 3 to 4 years. The Company is generally no longer subject to federal tax examinations for years prior to 2014 or state and local tax examinations for years prior to 2013. Tax returns filed by the Company's significant foreign subsidiaries are generally subject to statutes of limitations of 3 to 7 years and are generally no longer subject to examination for years prior to 2012. In many jurisdictions, tax authorities retain the ability to review prior years' tax returns and to adjust any net operating loss or tax credit carryforwards from these years that are available to be utilized in subsequent periods. During 2017, the Company recognized \$10.4 million related to the lapse of applicable statutes of limitations and the conclusion of various domestic and foreign examinations.

The following table presents income tax expense (benefit) related to amounts presented in other comprehensive income (loss):

	Year Ended December 31,		
	2017	2016	2015
Foreign currency translation	\$ (1,697)	\$ (188)	\$ (5,438)
Defined benefit plans	668	(1,659)	(3,714)
Available-for-sale securities	(1,605)	(2,360)	(3,174)
Total	<u>\$ (2,634)</u>	<u>\$ (4,207)</u>	<u>\$ (12,326)</u>

12. STOCKHOLDERS' EQUITY

Stock Repurchase Program

On February 23, 2017, the Company announced its Board of Directors had authorized the repurchase of up to \$100.0 million of the Company's outstanding common stock. The Company completed this repurchase plan in the first half of the year and repurchased \$100.0 million of its common stock, or approximately 2.5 million shares, at an average cost of \$40.23 per share. The Company had no remaining authorization under this stock repurchase program at December 31, 2017.

On August 3, 2017, the Company announced its Board of Directors had authorized another repurchase of up to \$100.0 million of the Company's outstanding common stock. Under this plan, during the year ended December 31, 2017, the Company repurchased \$75.0 million of its common stock, or approximately 2.3 million shares, at an average cost of \$32.47 per share. The Company has \$25.0 million remaining authorized under this stock repurchase program at December 31, 2017. The repurchase authorization expires on July 31, 2018.

Equity-Based Compensation Plans

The Company's Board of Directors approved the 2013 Long Term Incentive Plan (the 2013 Plan), effective October 24, 2013, authorizing 18.6 million shares for issuance. Awards under the 2013 Plan may include stock, stock options, restricted stock, restricted stock units (RSUs), performance units, performance share units (PSUs), performance-based restricted stock, stock appreciation rights and dividend equivalent rights for employees and non-employee directors of the Company. Approval of the 2013 Plan canceled all shares authorized but not issued under predecessor plans. Awards granted prior to October 24, 2013 remain subject to the provisions of the predecessor plans. As of December 31, 2017, 12.1 million shares were available for future grants under the 2013 Plan.

As of December 31, 2017, \$55.4 million of total unrecognized compensation expense related to non-vested stock options, RSUs and PSUs are expected to be recognized over a remaining weighted average period of 1.3 years. There were no significant capitalized equity-based compensation costs at December 31, 2017.

The following table shows a summary of the equity-based compensation expense included in the Consolidated Statements of Operations and Comprehensive Income (Loss):

	Year Ended December 31,		
	2017	2016	2015
Selling, general and administrative	\$ 31,879	\$ 26,709	\$ 21,829
Cost of sales	5,297	4,665	3,844
Research and development	4,674	3,632	2,992
Total equity-based compensation expense	<u>\$ 41,850</u>	<u>\$ 35,006</u>	<u>\$ 28,665</u>

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

Stock options

Stock options are awards that allow the recipient to purchase shares of the Company's common stock at a fixed price. Stock options are granted at an exercise price equal to the Company's stock price at the date of grant. These awards generally vest over three years following the grant date and have a contractual term of ten years.

The following table summarizes the stock option activity (in thousands, except per share amounts):

	Shares	Weighted Average Option Exercise Price Per Share	Weighted Average Remaining Contractual Term in Years	Aggregate Intrinsic Value
Options outstanding as of December 31, 2016	5,497	\$ 10.33		
Granted	484	\$ 38.00		
Exercised	(1,061)	\$ 9.38		
Forfeited	(88)	\$ 26.14		
Expired	(2)	\$ 33.12		
Options outstanding as of December 31, 2017	<u>4,830</u>	\$ 13.01	4.2	\$ 119,941
Options vested at December 31, 2017	<u>3,968</u>	\$ 8.63	3.3	\$ 115,890
Options unvested at December 31, 2017	862	\$ 33.22	8.5	\$ 4,051

The total intrinsic value of options exercised during the years ended December 31, 2017, 2016 and 2015 was \$31.2 million, \$50.6 million and \$77.0 million, respectively.

The exercise prices of outstanding options at December 31, 2017 were in the following ranges:

	Options Outstanding			Options Exercisable	
	Shares (in thousands)	Weighted Average Remaining Contractual Life (in years)	Weighted Average Exercise Price Per Share	Shares (in thousands)	Weighted Average Exercise Price Per Share
Range of Exercise Prices					
\$2.96 to \$5.74	2,676	2.9	\$ 5.41	2,676	\$ 5.41
\$5.75 to \$22.99	816	2.3	\$ 8.64	816	\$ 8.64
\$23.00 to \$42.32	1,338	8.0	\$ 30.88	476	\$ 26.72
\$2.96 to \$42.32	<u>4,830</u>	4.2	\$ 13.01	<u>3,968</u>	\$ 8.63

The Company uses the Black-Scholes model to estimate the fair value of stock option awards at the date of grant. Key inputs and assumptions used in the model include the grant date fair value of common stock, exercise price of the award, the expected option term, stock price volatility, the risk-free interest rate and the Company's projected dividend yield. The risk-free interest rate reflects the yield on zero-coupon U.S. treasury securities with a term equal to the option's expected term. The expected life represents the period over which the Company's employees are expected to hold their options. Expected volatility is derived based on the historical Company volatility, as well as volatilities from publicly traded companies operating in the Company's industry. The Company's projected dividend yield is zero. The Company believes that the valuation technique and the approach utilized to develop the underlying assumptions are appropriate in estimating the fair values of its stock options. Estimates of fair value are not intended to predict actual future events or the value ultimately realized by employees who receive equity awards. Subsequent events are not indicative of the reasonableness of the original estimates of fair value made by the Company.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The following table presents the weighted average assumptions used to estimate the fair value of stock option awards granted:

	Year Ended December 31,		
	2017	2016	2015
Expected option term (in years)	6.0	6.0	5.6
Risk-free interest rate	2.0%	1.4%	1.6%
Expected volatility	40.0%	50.0%	43.0%
Weighted average exercise price	\$ 38.00	\$ 25.08	\$ 29.38
Weighted average fair value at grant date	\$ 15.72	\$ 12.09	\$ 13.74

Restricted Stock Units

RSUs entitle the holder to shares of common stock after a vesting period that generally ranges from one to three years. The fair value of the awards is determined on the grant date based on the Company's stock price.

The following table summarizes the RSU activity (in thousands, except per share data):

	Restricted Stock Units	Weighted Average Grant Date Fair Value Per Share
Non-vested share units at December 31, 2016	2,519	\$ 26.37
Granted	1,134	\$ 37.90
Vested and shares issued	(1,151)	\$ 26.37
Forfeited	(223)	\$ 29.21
Non-vested share units at December 31, 2017	2,279	\$ 31.83

The weighted average grant date fair value per unit of these awards granted during the years ended December 31, 2017, 2016 and 2015 was \$37.90, \$24.93 and \$31.06, respectively. The total fair value of RSUs that vested during the years ended December 31, 2017, 2016 and 2015 was \$42.9 million, \$13.6 million and \$3.1 million, respectively.

Performance Share Units

PSUs are stock awards in which the number of shares ultimately received by the employee depends on Company performance against specified targets. Such awards typically vest over three years and the number of shares issued can vary from 0% to 150% of the number of PSUs granted, depending on performance. The fair value of each PSU is determined on the date of grant based on the Company's stock price. Over the performance period, the number of shares that are expected to be issued is adjusted upward or downward based upon the probable achievement of performance targets. The ultimate number of shares issued and the related compensation cost recognized is based on the final performance metrics compared to the targets specified in the grants. For PSUs granted in 2017, which had a 2017 earnings-based performance measure, the minimum level performance targets were not met resulting in a negative share performance adjustment.

The following table summarizes the PSU activity (in thousands, except per share data):

	Performance Share Units	Weighted Average Grant Date Fair Value Per Share
Non-vested share units at December 31, 2016	445	\$ 27.20
Granted	200	\$ 38.00
Vested and shares issued	(64)	\$ 30.76
Forfeited	(42)	\$ 26.73
Performance adjustment	(195)	\$ 38.00
Non-vested share units at December 31, 2017	344	\$ 26.75

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The weighted average grant date fair value per unit of these awards granted during the years ended December 31, 2017, 2016 and 2015 was \$38.00, \$25.05 and \$30.76, respectively. The total fair value of PSUs that vested during the year ended December 31, 2017 was \$2.4 million. No PSUs vested during the years ended December 31, 2016 or 2015.

13. COMMITMENTS AND CONTINGENCIES

The Company leases certain equipment and facilities under operating leases expiring at various dates through 2027. Rent expense was \$39.6 million, \$41.1 million and \$30.7 million for the years ended December 31, 2017, 2016 and 2015, respectively. Future minimum rental payments required under operating leases having an initial term in excess of one year at December 31, 2017 are as follows (in millions):

	Operating Leases
2018	\$ 34.5
2019	23.1
2020	19.3
2021	15.7
2022	8.7
Thereafter	10.8
Total minimum lease payments	\$ 112.1

The following table summarizes the activity in the product warranty accrual, included in other accrued liabilities:

	Year Ended December 31,		
	2017	2016	2015
Product warranty accrual, beginning of period	\$ 21,631	\$ 17,964	\$ 17,054
Accrual assumed in BNS acquisition	—	—	1,900
Provision for warranty claims	4,333	10,745	9,298
Warranty claims paid	(9,182)	(7,337)	(10,202)
Foreign exchange	146	259	(86)
Product warranty accrual, end of period	\$ 16,928	\$ 21,631	\$ 17,964

In addition, the Company is subject to various federal, state, local and foreign laws and regulations governing the use, discharge, disposal and remediation of hazardous materials. Compliance with current laws and regulations has not had, and is not expected to have, a materially adverse effect on the Company's financial condition or results of operations.

Legal Proceedings

The Company is either a plaintiff or a defendant in certain pending legal matters in the normal course of business. Management believes none of these legal matters will be material to the Company's business or financial condition upon final disposition.

14. INDUSTRY SEGMENTS, MAJOR CUSTOMERS, RELATED PARTY TRANSACTIONS AND GEOGRAPHIC INFORMATION

Segment Information

The Company reports financial performance based on two operating segments: CommScope Connectivity Solutions and CommScope Mobility Solutions.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The CCS segment provides innovative fiber optic and copper cable and connectivity solutions for use in data centers and business enterprise, telecommunications, cable television and residential broadband networks. The CCS portfolio includes innovative solutions for indoor and outdoor network applications. Indoor network solutions are found in commercial buildings and in the network core, which includes data centers, central offices and cable television headends. These solutions include optical fiber and twisted pair structured cabling solutions, intelligent infrastructure management hardware and software, high-density fiber optic connectivity, fiber management systems, patch cords and panels, pre-terminated fiber connectivity, complete cabling systems and cable assemblies for use in offices and data centers. Outdoor network solutions are found in both local-area and wide-area networks and “last-mile” fiber-to-the-home installations, including deployments of fiber-to-the-node (FTTN), fiber-to-the-premises (FTTP) and fiber-to-the-distribution point (FTTDP) to homes, businesses and cell sites. These solutions support the multichannel video, voice and high-speed data services provided by telecommunications operators and multi-system operators. The Company’s fiber optic connectivity solutions are primarily comprised of hardened connector systems, fiber distribution hubs and management systems, couplers and splitters, plug and play multiport service terminals, hardened optical terminating enclosures, high density cable assemblies, splices and splice closures.

The CMS segment provides the integral building blocks for cellular base station sites and related connectivity; indoor, small cell and distributed antenna wireless systems; and wireless network backhaul planning and optimization products and services. These solutions enable wireless operators to increase spectral efficiency and enhance cellular coverage and capacity in challenging network conditions such as commercial buildings, urban areas, stadiums and transportation systems. The CMS segment focuses on all aspects of the radio access network (RAN) from the macro through the metro, to the indoor layer. Macro cell solutions can be found at wireless tower sites and on rooftops and include base station antennas, microwave antennas, hybrid fiber-feeder and power cables, coaxial cables, connectors and filters. Metro cell solutions can be found on street poles and on other urban, outdoor structures and include radio frequency (RF) delivery and connectivity solutions, equipment housing and concealment. These fully integrated outdoor systems comprise of specialized antennas, filters/combiners, backhaul solutions, intra-system cabling and power distribution, all minimized to fit an urban environment. DAS and small cell indoor solutions allow wireless operators to increase spectral efficiency and thereby extend and enhance cellular coverage and capacity in challenging network conditions.

The following table provides summary financial information by reportable segment (in millions):

	December 31,	
	2017	2016
Identifiable segment-related assets:		
CCS	\$ 4,546.0	\$ 4,507.5
CMS	1,995.8	2,159.4
Total identifiable segment-related assets	6,541.8	6,666.9
Reconciliation to total assets:		
Cash and cash equivalents	454.0	428.2
Deferred income tax assets	45.9	46.9
Total assets	\$ 7,041.7	\$ 7,142.0

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

The Company's measure of segment performance is adjusted operating income. The Company defines adjusted operating income as operating income, adjusted to exclude amortization, restructuring costs, asset impairments, equity-based compensation and other items that the Company believes are useful to exclude in the evaluation of operating performance from period to period because these items are not representative of the Company's core business.

The following table provides net sales, adjusted operating income, depreciation expense and additions to property, plant and equipment by reportable segment (in millions):

	Year Ended December 31,		
	2017	2016	2015
Net sales:			
CCS	\$ 2,809.8	\$ 2,965.5	\$ 1,841.7
CMS	1,750.8	1,958.1	1,966.1
Consolidated net sales	<u>\$ 4,560.6</u>	<u>\$ 4,923.6</u>	<u>\$ 3,807.8</u>
Segment adjusted operating income:			
CCS	\$ 526.3	\$ 632.3	\$ 349.9
CMS	356.0	419.1	379.9
Total adjusted operating income	882.3	1,051.4	729.8
Amortization of intangible assets	(271.0)	(297.2)	(220.6)
Restructuring costs, net	(43.8)	(42.9)	(29.5)
Equity-based compensation	(41.9)	(35.0)	(28.7)
Asset impairments	—	(38.6)	(90.8)
Integration and transaction costs	(48.0)	(62.3)	(96.9)
Purchase accounting adjustments	—	(0.6)	(81.7)
Consolidated operating income	<u>\$ 477.6</u>	<u>\$ 574.8</u>	<u>\$ 181.6</u>
Depreciation expense:			
CCS	\$ 58.5	\$ 54.2	\$ 30.4
CMS	23.2	26.3	30.2
Consolidated depreciation expense	<u>\$ 81.7</u>	<u>\$ 80.5</u>	<u>\$ 60.6</u>
Additions to property, plant and equipment:			
CCS	\$ 45.0	\$ 49.6	\$ 33.0
CMS	23.7	18.7	23.5
Consolidated additions to property, plant and equipment	<u>\$ 68.7</u>	<u>\$ 68.3</u>	<u>\$ 56.5</u>

Customer Information

Net sales to Anixter International Inc. and its affiliates (Anixter) accounted for 11%, 11% and 12% of the Company's total net sales during the years ended December 31, 2017, 2016 and 2015, respectively. Sales to Anixter primarily originate within the CCS segment. Other than Anixter, no direct customer accounted for 10% or more of the Company's total net sales for any of the above periods.

Accounts receivable from Anixter represented approximately 12% of accounts receivable as of both December 31, 2017 and 2016. Other than Anixter, no direct customer accounted for 10% or more of the Company's accounts receivable as of December 31, 2017 or 2016.

Related Party Transactions

There were no material related party transactions for the years ended December 31, 2017, 2016 or 2015.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

Geographic Information

Sales to customers located outside of the U.S. comprised 46%, 46% and 51% of total net sales during the years ended December 31, 2017, 2016 and 2015, respectively. Sales by geographic region, based on the destination of product shipments, were as follows:

	Year Ended December 31,		
	2017	2016	2015
United States	\$ 2,449.4	\$ 2,634.9	\$ 1,869.4
Europe, Middle East and Africa (EMEA)	942.5	933.5	781.7
Asia Pacific (APAC)	828.3	961.0	781.9
Central and Latin America (CALA)	245.6	280.3	275.7
Canada	94.8	113.9	99.1
Consolidated net sales	<u>\$ 4,560.6</u>	<u>\$ 4,923.6</u>	<u>\$ 3,807.8</u>

Long-lived assets, excluding intangible assets, consist substantially of property, plant and equipment. The Company's long-lived assets, excluding intangible assets, located in the U.S., EMEA, APAC and CALA regions represented the following percentages of such long-lived assets: 52%, 21%, 20% and 7%, respectively, as of both December 31, 2017 and December 31, 2016.

CommScope Holding Company, Inc.
Notes to Consolidated Financial Statements-(Continued)
(In thousands, unless otherwise noted)

15. QUARTERLY FINANCIAL DATA (UNAUDITED)

	First Quarter 2017	Second Quarter 2017	Third Quarter 2017	Fourth Quarter 2017
Net sales	\$ 1,137,285	\$ 1,174,090	\$ 1,128,775	\$ 1,120,432
Gross profit	454,826	472,784	429,630	414,654
Operating income (1)(2)	121,351	137,774	126,830	91,655
Net income (3)	33,562	55,464	51,157	53,581
Basic earnings per share	\$ 0.17	\$ 0.29	\$ 0.27	\$ 0.28
Diluted earnings per share	\$ 0.17	\$ 0.28	\$ 0.26	\$ 0.27

	First Quarter 2016	Second Quarter 2016	Third Quarter 2016	Fourth Quarter 2016
Net sales	\$ 1,143,979	\$ 1,306,788	\$ 1,293,948	\$ 1,178,906
Gross profit	447,091	553,759	542,851	489,888
Operating income (1)(2)(4)	90,723	183,872	180,746	119,409
Net income (3)	12,580	61,961	93,831	54,466
Basic earnings per share	\$ 0.07	\$ 0.32	\$ 0.49	\$ 0.28
Diluted earnings per share	\$ 0.06	\$ 0.32	\$ 0.48	\$ 0.28

- (1) Operating income for the first, second, third and fourth quarters in 2017 included charges related to restructuring costs of \$5,388, \$13,773, \$5,360 and \$19,261, respectively. Operating income for the first, second, third and fourth quarters in 2016 included charges related to restructuring costs of \$6,072, \$7,605, \$10,826 and \$18,372, respectively.
- (2) Operating income for the first, second, third and fourth quarters in 2017 included charges related to integration and transaction costs of \$13,485, \$12,684, \$12,093 and \$9,784, respectively. Operating income for the first, second, third and fourth quarters in 2016 included charges related to integration and transaction costs of \$15,867, \$14,473, \$14,738 and \$17,232, respectively.
- (3) Net income for the fourth quarter in 2017 included a benefit of \$22,358 for the estimated impact of U.S. tax legislation enacted in December 2017 and a benefit of \$16,740 related to tax law changes in certain foreign jurisdictions. Net income for the fourth quarter in 2016 included a reversal of a tax valuation allowance of \$24,543.
- (4) Operating income for the first, third and fourth quarters in 2016 included charges related to asset impairments of \$15,293, \$7,375 and \$15,884, respectively.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of the Chief Executive Officer (CEO) and Chief Financial Officer (CFO), evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the Exchange Act)) as of the end of the period covered by this report.

Based on this evaluation, our CEO and CFO have concluded that, as of the end of the period covered by this report, these disclosure controls and procedures were effective and operating to provide reasonable assurance that information that we are required to disclose in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission, and that such information is accumulated and communicated to our management, including our CEO and CFO, as appropriate, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

The management of CommScope is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act, as a process designed by, or under the supervision of, the company's principal executive and principal financial officers and effected by the company's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the consolidated financial statements.

CommScope's management assessed the effectiveness of CommScope's internal control over financial reporting as of December 31, 2017. In making this assessment, CommScope's management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control – Integrated Framework (2013). Based on this assessment, management concluded that, as of December 31, 2017, CommScope's internal control over financial reporting is effective based on the COSO internal control criteria.

CommScope's independent registered public accounting firm, Ernst & Young LLP, has issued an attestation report on the effectiveness of CommScope's internal control over financial reporting, which is included herein.

Changes in Internal Control over Financial Reporting

During the quarter ended December 31, 2017, the Company completed the migration of substantially all of the remaining operations of the BNS business from TE Connectivity Ltd.'s systems to the Company's existing systems and controls structure. Except for the completion of this system migration, there have been no changes in the Company's internal controls over financial reporting during the quarter ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Inherent Limitations of Disclosure Controls and Internal Control over Financial Reporting

Because of their inherent limitations, our disclosure controls and procedures and our internal control over financial reporting may not prevent material errors or fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. The effectiveness of our disclosure controls and procedures and our internal control over financial reporting is subject to risks, including that the controls may become inadequate because of changes in conditions or that the degree of compliance with our policies or procedures may deteriorate.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information responsive to this item is incorporated herein by reference to our Proxy Statement for our 2018 annual meeting of stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Code of Ethics for Principal Executive and Senior Financial and Accounting Officers

We have adopted the CommScope Holding Company, Inc. Code of Ethics for Principal Executive and Senior Financial and Accounting Officers (the Senior Officer Code of Ethics), a code of ethics that applies to our Chief Executive Officer, Chief Financial Officer and Corporate Controller. The Senior Officer Code of Ethics is publicly available on our web site at www.commscope.com. If we make an amendment to, or grant a waiver from, a provision of the Senior Officer Code of Ethics, we will disclose the nature of such waiver or amendment on our web site.

ITEM 11. EXECUTIVE COMPENSATION

The information responsive to this item is incorporated herein by reference to our Proxy Statement for our 2018 annual meeting of stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information responsive to this item is incorporated herein by reference to our Proxy Statement for our 2018 annual meeting of stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information responsive to this item is incorporated herein by reference to our Proxy Statement for our 2018 annual meeting of stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information responsive to this item is incorporated herein by reference to our Proxy Statement for our 2018 annual meeting of stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Documents Filed as Part of this Report:

1. *Audited Consolidated Financial Statements*

The following consolidated financial statements of CommScope Holding Company, Inc. are included under Part II, Item 8:

Reports of Independent Registered Public Accounting Firm

Consolidated Statements of Operations and Comprehensive Income (Loss) for the Years Ended December 31, 2017, 2016 and 2015

Consolidated Balance Sheets as of December 31, 2017 and 2016

Consolidated Statements of Cash Flows for the Years Ended December 31, 2017, 2016 and 2015

Consolidated Statements of Stockholders' Equity for the Years Ended December 31, 2017, 2016 and 2015

Notes to Consolidated Financial Statements

2. *Financial Statement Schedules*

All schedules are omitted because they are not applicable or the required information is shown in the financial statements or notes thereto.

3. *List of Exhibits.* See Index of Exhibits included herein.

Index of Exhibits

<u>Exhibit No.</u>	<u>Description</u>
* 2.1	<u>Stock and Asset Purchase Agreement, dated January 27, 2015, by and among CommScope Holding Company, Inc., CommScope, Inc. and TE Connectivity Ltd. (Incorporated by reference to Exhibit 2.1 of the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on January 28, 2015).</u>
* 3.1	<u>Amended and Restated Certificate of Incorporation of CommScope Holding Company, Inc. (Incorporated by reference to Exhibit 3.1 of the Registrant's Form 10-Q (File No. 001-36146), filed with the SEC on November 7, 2013).</u>
* 3.2	<u>Fourth Amended and Restated By-Laws of CommScope Holding Company, Inc. (as adopted December 13, 2016).(Incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on December 14, 2016).</u>
* 4.1	<u>Indenture governing the 5.000% Senior Notes due 2021 by and among CommScope, Inc. as Issuer, the subsidiary guarantors named therein and Wilmington Trust, National Association, as trustee, dated as of May 30, 2014, (including form of 5.000% Senior Note due 2021) (Incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on June 2, 2014).</u>
* 4.2	<u>Indenture governing the 5.500% Senior Notes due 2024 by and among CommScope, Inc. as Issuer, the subsidiary guarantors named therein and Wilmington Trust, National Association, as trustee, dated as of May 30, 2014, (including form of 5.500% Senior Note due 2024) (Incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on June 2, 2014).</u>
* 4.3	<u>Indenture governing the 6.000% Senior Notes due 2025 by and between the CommScope Technologies Finance LLC and Wilmington Trust, National Association, as trustee, dated as of June 11, 2015 (including form of 6.000% Senior Note due 2025) (Incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on June 12, 2015).</u>
* 4.4	<u>First Supplemental Indenture, dated August 28, 2015, by and among CommScope Technologies LLC, the Guarantors party thereto and Wilmington Trust, National Association, as trustee (Incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on August 28, 2015).</u>
* 4.5	<u>Indenture governing the 5.000% Senior Notes due 2027, by and among CommScope Technologies LLC, the guarantors named therein and Wilmington Trust, National Association, as trustee and as collateral agent, dated as of March 13, 2017, (including form of 5.000% Senior Note due 2027) (Incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on March 13, 2017).</u>
* 10.1	<u>Revolving Credit and Guaranty Agreement, dated as of January 14, 2011, by and among Cedar I Holding Company, Inc. (now CommScope Holding Company, Inc.), CommScope, Inc., as Parent Borrower, the U.S. Co-Borrowers and European Co-Borrowers named therein, the guarantors named therein, the Lenders from time to time party thereto, J.P. Morgan Securities LLC, as Lead Arranger and Bookrunner, JPMorgan Chase Bank, N.A., as US Administrative Agent, and J.P. Morgan Europe Limited, as European Administrative Agent and the Senior Managing Agents and Documentation Agents named therein (the Revolving Credit Facility) (Incorporated by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>

<u>Exhibit No.</u>	<u>Description</u>
* 10.2	<u>Amendment No. 1 to the Revolving Credit Facility, dated as of March 9, 2012, among CommScope, Inc., as Parent Borrower, the U.S. Borrowers, European Co-Borrowers and Guarantors named therein, the Lenders party thereto, JPMorgan Chase Bank, N.A., as U.S. Administrative Agent, and J.P. Morgan Europe Limited, as European Administrative Agent (Incorporated by reference to Exhibit 10.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.3	<u>Amendment No. 2 to the Revolving Credit Facility, dated as of May 21, 2015, among CommScope, Inc., as Parent Borrower, CommScope Holding Company, Inc., as Holdings, the US Co-Borrowers and European Co-Borrowers named therein, the Lenders party thereto, JPMorgan Chase Bank, N.A., as U.S. Administrative Agent, and J.P. Morgan Europe Limited, as European Administrative Agent (Incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36146), originally filed with the SEC on May 22, 2015).</u>
* 10.4	<u>Revolving Credit Facility Pledge and Security Agreement, dated as of January 14, 2011, among CommScope, Inc. (as successor by merger to Cedar I Merger Sub, Inc.) and the additional Grantors party thereto, in favor of JPMorgan Chase Bank, N.A., as collateral agent and as administrative agent for the Secured Parties referred to therein (Incorporated by reference to Exhibit 10.3 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.5	<u>Patent Security Agreement, dated as of January 14, 2011, made by Allen Telecom LLC, Andrew LLC and CommScope, Inc. of North Carolina in favor of JPMorgan Chase Bank, N.A., as Collateral Agent (Incorporated by reference to Exhibit 10.4 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.6	<u>Trademark Security Agreement, dated as of January 14, 2011, made by Allen Telecom LLC, Andrew LLC and CommScope, Inc. of North Carolina in favor of JPMorgan Chase Bank, N.A., as Collateral Agent (Incorporated by reference to Exhibit 10.5 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.7	<u>Copyright Security Agreement, dated as of January 14, 2011, made by Allen Telecom LLC, Andrew LLC and CommScope, Inc. of North Carolina in favor of JPMorgan Chase Bank, N.A., as Collateral Agent (Incorporated by reference to Exhibit 10.6 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.8	<u>Credit Agreement, dated as of January 14, 2011, among CommScope, Inc. (as successor by merger to Cedar I Merger Sub, Inc.), as Borrower, CommScope Holding Company, Inc. (as successor by merger to Cedar I Holding Company, Inc.), the Lenders from time to time party thereto, JPMorgan Chase Bank, N.A. as Administrative Agent and Collateral Agent and J.P. Morgan Securities LLC as Arranger and Sole Bookrunner (Incorporated by reference to Exhibit 10.7 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.8.1	<u>Amendment Agreement, dated as of March 7, 2012, among CommScope, Inc., as Borrower, CommScope Holding Company, Inc., the subsidiary guarantors party thereto, the Lenders from time to time party thereto, JPMorgan Chase Bank, N.A. as Administrative Agent and Collateral Agent and J.P. Morgan Securities LLC as Arranger and Sole Bookrunner (Incorporated by reference to Exhibit 10.8 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.8.2	<u>Amendment Agreement, dated as of March 8, 2013, among CommScope, Inc., as Borrower, CommScope Holding Company, Inc., the subsidiary guarantors party thereto, the Lenders from time to time party thereto, JPMorgan Chase Bank, N.A. as Administrative Agent and Collateral Agent, J.P. Morgan Securities LLC and Deutsche Bank Trust Company Americas, as syndication agent (Incorporated by reference to Exhibit 10.9 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>

<u>Exhibit No.</u>	<u>Description</u>
* 10.8.3	<u>Amendment No. 3, dated as of December 3, 2013, to the Credit Agreement, dated as of January 14, 2011, among CommScope, Inc., as Borrower, CommScope Holding Company, Inc., the subsidiary guarantors named therein, the several banks and other financial institutions or entities from time to time parties thereto as Lenders, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent and the other agents and arrangers party thereto. (Incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on December 3, 2013).</u>
* 10.8.4	<u>Amendment Agreement, dated as of October 31, 2016, to the Credit Agreement, dated as of January 11, 2011, among CommScope, Inc., as Borrower, CommScope Holding Company, Inc., as Holdings, the several banks and other financial institutions or entities from time to time parties thereto as Lenders, JPMorgan Chase Bank, N.A., as Administrative Agent and the other agents and arrangers party thereto. (Incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on October 31, 2016).</u>
* 10.8.5	<u>Amendment Agreement, dated as of May 31, 2017, to the Credit Agreement, dated as of January 11, 2011, among CommScope, Inc., as Borrower, CommScope Holding Company, Inc., as Holdings, the several banks and other financial institutions or entities from time to time parties thereto as Lenders, JPMorgan Chase Bank, N.A., as Administrative Agent and the other agents and arrangers party thereto. (Incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on May 31, 2017).</u>
* 10.9	<u>Term Loan Credit Facility Pledge and Security Agreement, dated as of January 14, 2011, among CommScope, Inc. (as successor by merger to Cedar I Merger Sub, Inc.) and the additional Grantors party thereto, in favor of JPMorgan Chase Bank, N.A., as collateral agent and as administrative agent for the Secured Parties referred to therein (Incorporated by reference to Exhibit 10.10 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.10	<u>Patent Security Agreement, dated as of January 14, 2011, made by Allen Telecom LLC, Andrew LLC and CommScope, Inc. of North Carolina in favor of JPMorgan Chase Bank, N.A., as Collateral Agent (Incorporated by reference to Exhibit 10.11 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.11	<u>Trademark Security Agreement, dated as of January 14, 2011, made by Allen Telecom LLC, Andrew LLC and CommScope, Inc. of North Carolina in favor of JPMorgan Chase Bank, N.A., as Collateral Agent (Incorporated by reference to Exhibit 10.12 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.12	<u>Copyright Security Agreement, dated as of January 14, 2011, made by Allen Telecom LLC, Andrew LLC and CommScope, Inc. of North Carolina in favor of JPMorgan Chase Bank, N.A., as Collateral Agent (Incorporated by reference to Exhibit 10.13 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.13	<u>Holdings Guaranty, dated as of January 14, 2011, by CommScope Holding Company, Inc. in favor of the Secured Parties referred to therein (Incorporated by reference to Exhibit 10.14 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.14	<u>Subsidiary Guaranty, dated as of January 14, 2011, from the Subsidiary Guarantors named therein in favor of the Secured Parties referred to therein (Incorporated by reference to Exhibit 10.15 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>

<u>Exhibit No.</u>	<u>Description</u>
* 10.15	<u>Intercreditor Agreement, dated as of January 14, 2011, by and among CommScope Inc., CommScope Holding Company, Inc., certain Subsidiaries party thereto as a Guarantor, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent for the holders of Revolving Credit Obligations, and JPMorgan Chase Bank, N.A., as administrative agent and collateral agent for the holders of Initial Fixed Asset Obligations (Incorporated by reference to Exhibit 10.16 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), originally filed with the SEC on August 2, 2013).</u>
* 10.16	<u>Incremental Joinder Agreement, dated August 28, 2015, by and among CommScope, Inc., as Borrower, CommScope Holding Company, Inc., as Holdings, the Subsidiary Guarantors party thereto, the lenders party thereto, JPMorgan Chase Bank, N.A. as Administrative Agent and Collateral Agent, and JPMorgan Chase Bank, N.A., as Escrow Administrative Agent (Incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on August 28, 2015).</u>
* 10.17	<u>Notes Pledge and Security Agreement, dated as of June 11, 2015, among CommScope, Inc., as a Grantor and the additional Grantors party thereto, in favor of Wilmington Trust, National Association, as collateral agent under the Indenture referred to therein (Incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on June 12, 2015).</u>
* 10.18	<u>Amended and Restated Employment Agreement between Frank M. Drendel and CommScope, Inc., dated January 14, 2011, as amended on September 12, 2013 (Incorporated by reference to Exhibit 10.18 of Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), filed with the SEC on September 12, 2013).</u>
* 10.19	<u>Employment Agreement between Randall W. Crenshaw and CommScope, Inc., dated January 14, 2011, as amended on September 12, 2013 (Incorporated by reference to Exhibit 10.19 of Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), filed with the SEC on September 12, 2013).</u>
* 10.20	<u>Employment Agreement between Marvin S. Edwards, Jr. and CommScope, Inc., dated January 14, 2011, as amended on September 12, 2013 (Incorporated by reference to Exhibit 10.20 of Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), filed with the SEC on September 12, 2013).</u>
* 10.21	<u>Employment Agreement between Mark A. Olson and CommScope, Inc., dated January 21, 2014 (Incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36146), filed with the SEC on January 23, 2014).</u>
* 10.22	<u>Form of Amended and Restated Severance Protection Agreement between CommScope, Inc. and certain executive officers (Incorporated by reference to Exhibit 10.21 of Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), filed with the SEC on September 12, 2013).</u>
* 10.23	<u>Form of Amendment to Severance Protection Agreement between CommScope, Inc. and certain executive officers, effective June 3, 2016 (Incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36146), filed with the SEC on July 28, 2016).</u>
* 10.24	<u>Form of Indemnification Agreement (Incorporated by reference to Exhibit 10.22 of Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), filed with the SEC on September 12, 2013).</u>
* 10.25	<u>Amended and Restated CommScope, Inc. 2006 Long Term Incentive Plan (as amended and restated effective February 28, 2007) (Incorporated by reference to Exhibit 10.25 of Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), filed with the SEC on September 12, 2013).</u>

<u>Exhibit No.</u>	<u>Description</u>
* 10.26	<u>Amended and Restated CommScope Holding Company, Inc. 2011 Incentive Plan (as amended and restated effective February 19, 2013) (Incorporated by reference to Exhibit 10.26 of Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), filed with the SEC on September 12, 2013).</u>
* 10.27	<u>Forms of Nonqualified Stock Option Certificate under the Amended and Restated CommScope Holding Company, Inc. 2011 Incentive Plan (Incorporated by reference to Exhibit 10.31 of Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), filed with the SEC on September 12, 2013).</u>
* 10.28	<u>CommScope Holding Company, Inc. Amended and Restated 2013 Long-Term Incentive Plan (as amended and restated effective February 21, 2017) (Incorporated by reference to Exhibit 10.28 of the Registrant's Annual Report on Form 10-K (File No. 001-36146), filed with the SEC on February 23, 2017).</u>
* 10.29	<u>Form of Restricted Stock Unit Award Certificate under the CommScope Holding Company, Inc. 2013 Long-Term Incentive Plan (Incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36146), filed with the SEC on April 30, 2015).</u>
* 10.30	<u>Form of Performance Share Unit Award Certificate under the CommScope Holding Company, Inc. 2013 Long-Term Incentive Plan (Incorporated by reference to Exhibit 10.3 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36146), filed with the SEC on April 30, 2015).</u>
* 10.31	<u>Form of Non-Qualified Stock Option Certificate under the CommScope Holding Company, Inc. 2013 Long-Term Incentive Plan (Incorporated by reference to Exhibit 10.4 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36146), filed with the SEC on April 30, 2015).</u>
* 10.32	<u>CommScope Holding Company, Inc. Amendment to Outstanding Options, effective March 7, 2016 (Incorporated by reference to Exhibit 10.5 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36146), filed with the SEC on April 28, 2016).</u>
* 10.33	<u>Form of Restricted Stock Unit Award Certificate under the CommScope Holding Company, Inc. 2013 Long-Term Incentive Plan (for grants in 2016 and later) (Incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36146), filed with the SEC on April 28, 2016).</u>
* 10.34	<u>Form of Performance Share Unit Award Certificate under the CommScope Holding Company, Inc. 2013 Long-Term Incentive Plan (for grants in 2016 and later) (Incorporated by reference to Exhibit 10.3 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36146), filed with the SEC on April 28, 2016).</u>
* 10.35	<u>Form of Non-Qualified Stock Option Certificate under the CommScope Holding Company, Inc. 2013 Long-Term Incentive Plan (for grants in 2016 and later) (Incorporated by reference to Exhibit 10.4 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36146), filed with the SEC on April 28, 2016).</u>
* 10.36	<u>CommScope Holding Company, Inc. Annual Incentive Plan, as amended February 17, 2016 (Incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36146), filed with the SEC on April 28, 2016).</u>
* 10.37	<u>Amended and Restated CommScope, Inc. Supplemental Executive Retirement Plan (as amended and restated effective April 9, 2009) (Incorporated by reference to Exhibit 10.30 of Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), filed with the SEC on September 12, 2013).</u>
* 10.38	<u>First Amendment, dated January 12, 2011, to Amended and Restated CommScope, Inc. Supplemental Executive Retirement Plan (Incorporated by reference to Exhibit 10.32 of Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-190354), filed with the SEC on September 12, 2013).</u>

Exhibit No.	Description
** 10.39	CommScope Holding Company, Inc. Non-Employee Director Compensation Plan, as amended on November 28, 2017.
* 10.40	Form of Restricted Stock Unit Award Certificate under the CommScope Holding Company, Inc. Non-Employee Director Compensation Plan, which is operated as a subplan of the CommScope Holding Company, Inc. 2013 Long-Term Incentive Plan (Incorporated by reference to Exhibit 10.34 of the Registrant's Annual Report on Form 10-K (File No. 001-36146), filed with the SEC on February 20, 2014).
* 10.41	CommScope Holding Company, Inc. Deferred Compensation Plan (as amended and restated effective January 1, 2017) ((Incorporated by reference to Exhibit 10.41 of the Registrant's Annual Report on Form 10-K (File No. 001-36146), filed with the SEC on February 23, 2017).
* 18.1	Preferability Letter from Ernst & Young LLP, Independent Registered Public Accounting Firm (Incorporated by Reference to Exhibit 18.1 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36146), filed with the SEC on May 4, 2017).
** 21.1	List of Subsidiaries
** 23.1	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm
** 31.1	Certification of Principal Executive Officer pursuant to Rule 13a-14(a).
** 31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a).
± 32.1	Certification of Principal Executive Officer and Principal Financial Officer Pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (furnished pursuant to Item 601(b)(32)(ii) of Regulation S-K).
† 101.INS	XBRL Instance Document, furnished herewith
† 101.SCH	XBRL Schema Document, furnished herewith
† 101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
† 101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
† 101.LAB	XBRL Taxonomy Extension Label Linkbase Document
† 101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
* 101	Previously filed
** 101	Filed herewith
† 101	In accordance with Rule 406T of Regulation S-T, the information in these exhibits is furnished and deemed not filed or part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, is deemed not filed for purposes of Section 18 of the Exchange Act of 1934, and otherwise is not subject to liability under these sections.
± 101	In accordance with Item 601(b)(32)(ii) of Regulation S-K and SEC Release No. 33-8238 and 34-47986, Final Rule: Management's Reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports, the certification furnished in Exhibit 32.1 hereto is deemed to accompany this Form 10-K and will not be deemed "filed" for purposes of Section 18 of the Exchange Act. Such certification will not be deemed to be incorporated by reference into any filings under the Securities Act or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.

SIGNATURES

Pursuant to the requirements of Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

COMMSCOPE HOLDING COMPANY, INC

DATE: February 14, 2018

BY: /s/ MARVIN S. EDWARDS, JR.

Marvin S. Edwards, Jr.

President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this Annual Report on Form 10-K has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ MARVIN S. EDWARDS, JR.</u> Marvin S. Edwards, Jr.	President, Chief Executive Officer and Director (Principal Executive Officer)	February 14, 2018
<u>/s/ MARK A. OLSON</u> Mark A. Olson	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 14, 2018
<u>/s/ ROBERT W. GRANOW</u> Robert W. Granow	Senior Vice President, Corporate Controller and Principal Accounting Officer	February 14, 2018
<u>/s/ FRANK M. DRENDEL</u> Frank M. Drendel	Director and Chairman of the Board	February 14, 2018
<u>/s/ AUSTIN A. ADAMS</u> Austin A. Adams	Director	February 14, 2018
<u>/s/ STEPHEN C. GRAY</u> Stephen C. Gray	Director	February 14, 2018
<u>/s/ L. WILLIAM KRAUSE</u> L. William Krause	Director	February 14, 2018
<u>/s/ JOANNE M. MAGUIRE</u> Joanne M. Maguire	Director	February 14, 2018
<u>/s/ THOMAS J. MANNING</u> Thomas J. Manning	Director	February 14, 2018
<u>/s/ CLAUDIUS E. WATTS IV</u> Claudius E. Watts IV	Director	February 14, 2018
<u>/s/ TIMOTHY T. YATES</u> Timothy T. Yates	Director	February 14, 2018

**COMMSCOPE HOLDING COMPANY, INC.
NON-EMPLOYEE DIRECTOR COMPENSATION PLAN**

Amended November 28, 2017

**COMMSCOPE HOLDING COMPANY, INC.
NON-EMPLOYEE DIRECTOR COMPENSATION PLAN**

**ARTICLE 1
PURPOSE**

1.1. **BACKGROUND.** The Plan is considered to be and shall be operated as a subplan of the LTIP. The Plan was amended September 9, 2015, to, among other things, change the date of the Annual Stock Grant under Article 6, and was further amended on November 28, 2017 to contemplate potential Supplemental Cash Retainers for additional board positions.

1.2. **PURPOSE.** The purpose of the Plan is to attract, retain and compensate highly-qualified individuals who are not employees of the Company or any of its Affiliates for service as members of the Board by providing them with competitive compensation and an equity interest in the Company. The Company intends that the Plan will benefit the Company and its stockholders by allowing Non-Employee Directors to have a personal financial stake in the Company through an ownership interest in the Company's Stock and will closely associate the interests of Non-Employee Directors with that of the Company's stockholders.

1.3. **ELIGIBILITY.** Non-Employee Directors of the Company who are Eligible Participants, as defined below, shall automatically be participants in the Plan.

**ARTICLE 2
DEFINITIONS**

2.1. **DEFINITIONS.** Capitalized terms used herein and not otherwise defined shall have the meanings given such terms in the LTIP. Unless the context clearly indicates otherwise, the following terms shall have the following meanings:

- (a) "Annual Meeting Date" means the date on which an annual meeting of the Company's stockholders is held.
- (b) "Annual Stock Retainer" means with respect to each Non-Employee Director for each Plan Year, the dollar value to be delivered in the form of annual stock awards under the Plan, as set forth on Schedule I hereto and as may be amended from time to time by the Committee.
- (c) "Basic Cash Retainer" means the annual cash retainer (excluding any Supplemental Cash Retainer, Meeting Fees (if any) and expenses) payable by the Company to a Non-Employee Director pursuant to Section 5.1 hereof for service as a director of the Company, as set forth on Schedule I hereto and as may be amended from time to time by the Committee.
- (d) "Board" means the Board of Directors of the Company.
- (e) "Committee" means the Compensation Committee of the Board.
- (f) "Company" means CommScope Holding Company, Inc., a Delaware corporation, or any successor corporation.

- (g) “Effective Date” of the Plan means October 25, 2013.
- (h) “Eligible Participant” means any person who is a Non-Employee Director on the Effective Date or becomes a Non-Employee Director while this Plan is in effect.
- (i) “Equity Award” means stock options, stock awards, restricted stock, restricted stock units, stock appreciation rights, or other awards based on or derived from the Stock which are authorized under the LTIP for awards to Non-Employee Directors.
- (j) “LTIP” means the CommScope Holding Company, Inc. 2013 Long-Term Incentive Plan, and any subsequent equity compensation plan approved by the stockholders and designated by the Board as the LTIP for purposes of this Plan.
- (k) “Meeting Fees” means fees for attending a meeting of the Board or one of its Committees as set forth in Section 5.3 hereof.
- (l) “Non-Employee Director” means a director of the Company who is not an employee of the Company or any of its Affiliates; provided, that, for the avoidance of doubt, “operating executives” of the Principal Stockholder shall be deemed “Non-Employee Directors” under this Plan.
- (m) “Plan” means this CommScope Holding Company, Inc. Non-Employee Director Compensation Plan, as amended from time to time.
- (n) “Plan Year(s)” means the approximate twelve-month periods between Annual Meeting Dates, which, for purposes of the Plan, are the periods for which annual retainers are earned.
- (o) “Supplemental Cash Retainer” means the supplemental annual cash retainer (excluding Basic Cash Retainer, Meeting Fees (if any) and expenses) payable by the Company to a Non-Employee Director pursuant to Section 5.2 hereof for service as Chairman of the Board, Lead Director, or as a chair or member of a committee of the Board, as set forth on Schedule I hereto and as may be amended from time to time by the Committee.

ARTICLE 3 ADMINISTRATION

3.1. ADMINISTRATION. The Plan shall be administered by the Committee. Subject to the provisions of the Plan, the Committee shall be authorized to interpret the Plan, to establish, amend and rescind any rules and regulations relating to the Plan, and to make all other determinations necessary or advisable for the administration of the Plan. The Committee’s interpretation of the Plan, and all actions taken and determinations made by the Committee pursuant to the powers vested in it hereunder, shall be conclusive and binding upon all parties concerned including the Company, its stockholders and persons granted awards under the Plan. The Committee may appoint a plan administrator to carry out the ministerial functions of the Plan, but the administrator shall have no other authority or powers of the Committee.

3.2. RELIANCE. In administering the Plan, the Committee may rely upon any information furnished by the Company, its public accountants and other experts. No individual will have personal

liability by reason of anything done or omitted to be done by the Company or the Committee in connection with the Plan. This limitation of liability shall not be exclusive of any other limitation of liability to which any such person may be entitled under the Company's articles of incorporation or otherwise.

ARTICLE 4 SHARES

4.1. SOURCE OF SHARES FOR THE PLAN. Equity Awards that may be issued pursuant to the Plan shall be issued under the LTIP, subject to all of the terms and conditions of the LTIP. The terms contained in the LTIP are incorporated into and made a part of this Plan with respect to Equity Awards granted pursuant hereto, and any such awards shall be governed by and construed in accordance with the LTIP. In the event of any actual or alleged conflict between the provisions of the LTIP and the provisions of this Plan, the provisions of the LTIP shall be controlling and determinative. This Plan does not constitute a separate source of shares for the grant of the Equity Awards described herein.

ARTICLE 5 CASH COMPENSATION

5.1. BASIC CASH RETAINER. Each Eligible Participant shall be paid a Basic Cash Retainer for service as a director during each Plan Year, payable in quarterly installments in advance. The amount of the Basic Cash Retainer is set forth on Schedule I, which may be amended from time to time by the Committee. Each person who first becomes an Eligible Participant on a date other than an Annual Meeting Date shall be paid a pro rata amount of the Basic Cash Retainer for that Plan Year to reflect the actual number of days such Person will serve on the Board in the Plan Year (a "Prorated Basic Cash Retainer"). The first installment of a Prorated Basic Cash Retainer shall be paid on or about the first day that such Person becomes an Eligible Participant and shall be a pro rata amount of the Basic Cash Retainer for that fiscal quarter to reflect the actual number of days such Person will serve on the Board in that fiscal quarter, with normal quarterly installments to follow for the remainder of the Plan Year, as described above.

5.2. SUPPLEMENTAL CASH RETAINER. The Chairman of the Board, Lead Director, and chairs and members of committees of the Board may be paid a Supplemental Cash Retainer during a Plan Year, payable in quarterly installments in advance at the same times as installments of the Basic Cash Retainer are paid. The amount of the Supplemental Cash Retainer, if any, for each eligible position, is set forth on Schedule I, which may be amended from time to time by the Committee, and may be different for the eligible positions. A pro rata portion of the Supplemental Cash Retainer (a "Prorated Supplemental Cash Retainer") will be paid to any Eligible Participant who is elected or appointed by the Board to a position eligible for a Supplemental Cash Retainer on a date other than an Annual Meeting Date, to reflect the actual number of days such Person will serve in such capacity during the Plan Year. The first installment of a Prorated Supplemental Cash Retainer shall be paid on or about the first day that such Eligible Participant is elected or appointed to such position and shall be a pro rata amount of the Supplemental Cash Retainer for that fiscal quarter to reflect the actual number of days such Person will serve in such position in that fiscal quarter, with normal quarterly installments to follow for the remainder of the Plan Year, as described above. If an Eligible Participant who is in a position eligible for a Supplemental Cash Retainer is elected or appointed by the Board to a different eligible position on a date other than an Annual Meeting Date and such new position is entitled to a higher Supplemental Cash Retainer than the Eligible Participant was receiving prior to such change in position, such Person shall receive a Prorated Supplemental Cash Retainer based upon the difference between the higher Supplemental Cash Retainer and the lower Supplemental Cash Retainer for such partial period.

5.3. MEETING FEES. Unless otherwise determined by the Committee and set forth on Schedule I, as amended from time to time by the Committee, Eligible Participants shall not be paid a fee for meetings of the Board or a committee thereof in which he or she participates. For purposes of this provision, in the event the Committee decides to provide for meeting fees, casual or unscheduled conferences among directors shall not constitute an official meeting.

5.4. EXPENSE REIMBURSEMENT. All Eligible Participants shall be reimbursed for reasonable travel and out-of-pocket expenses in connection with attendance at meetings of the Board and its committees, or other Company functions at which the Chief Executive Officer requests the director to participate.

ARTICLE 6 EQUITY COMPENSATION

6.1. STOCK AWARDS. Subject to share availability under the LTIP, each Eligible Participant shall be granted an award of Restricted Stock Units on the day that he or she first becomes an Eligible Participant (“Initial Stock Grant”). Each person who first becomes an Eligible Participant on a date other than an Annual Meeting Date shall receive a pro rata amount of the Initial Stock Grant to reflect the actual number of months remaining between the date such person first becomes an Eligible Participant and the next anniversary of the Annual Meeting Date. In addition to the Initial Stock Grant, subject to share availability under the LTIP, each Eligible Participant in service on an Annual Meeting Date will receive an award of Restricted Stock Units on such date (“Annual Stock Grant” and collectively with the Initial Stock Grant, the “Stock Grants”). Notwithstanding the foregoing, any Eligible Participant who first becomes an Eligible Participant on an Annual Meeting Date will not receive the Initial Stock Grant (but will receive the Annual Stock Grant). The Stock Grants shall have the following terms and conditions:

(a) Number of Initial Stock Grants. The number of shares in the Initial Stock Grant to an Eligible Participant shall be determined by multiplying the Proration Factor (as defined below) by the amount determined by (A) dividing the Annual Stock Retainer as in effect for that Plan Year, by the Fair Market Value of the Stock on the Grant Date, and (B) rounding to the nearest whole number. The Proration Factor is a fraction, the numerator of which is the number of full months between the Grant Date and the next anniversary of the most recent Annual Meeting Date, and the denominator of which is 12.

(b) Number of Annual Stock Grants. The number of shares in the Annual Stock Grant to an Eligible Participant shall be determined by (A) dividing the Annual Stock Retainer as in effect for that Plan Year, by the Fair Market Value of the Stock on the Grant Date, and (B) rounding to the nearest whole number.

(c) Vesting. The Stock Grants shall vest on the first anniversary of the Grant Date, subject to the Non-Employee Director’s Continuous Service on each vesting date.

(d) Other Plan Conditions. To the extent not specified herein, the Stock Grants shall be subject to the terms and conditions of the LTIP.

6.2. ADJUSTMENTS. For the avoidance of doubt, the adjustment provisions of the LTIP (along with all of the other provisions of the LTIP) shall apply with respect to all Equity Awards granted pursuant to this Plan.

6.3. AWARD AGREEMENTS. All Equity Awards granted pursuant to this Plan shall be evidenced by an Award Certificate, which shall include such provisions, not inconsistent with the Plan or the LTIP, as may be specified by the Committee.

**ARTICLE 7
AMENDMENT, MODIFICATION AND TERMINATION**

7.1. AMENDMENT, MODIFICATION AND TERMINATION. The Committee may, at any time and from time to time, amend, modify or terminate the Plan without stockholder approval; provided, however, that if an amendment to the Plan would, in the reasonable opinion of the Committee, require stockholder approval under applicable laws, policies or regulations or the applicable listing or other requirements of a securities exchange on which the Stock is listed or traded, then such amendment shall be subject to stockholder approval; and provided further, that the Committee may condition any other amendment or modification on the approval of stockholders of the Company for any reason. Modification of Equity Awards granted under this Plan shall be subject to the provisions of the LTIP.

**ARTICLE 8
GENERAL PROVISIONS**

8.1. DURATION OF THE PLAN. The Plan shall remain in effect until terminated by the Board or the Committee or the earlier termination or expiration of the LTIP, including any successor plans.

8.2. EXPENSES OF THE PLAN. The expenses of administering the Plan shall be borne by the Company.

The foregoing is hereby acknowledged as being the CommScope Holding Company, Inc. Non-Employee Director Compensation Plan, adopted by the Board to be effective as of October 25, 2013, as amended September 9, 2015, and November 28, 2017.

COMMSCOPE HOLDING COMPANY, INC.

By: /s/ Frank B. Wyatt, II
Its: Senior Vice President

SCHEDULE I

NON-EMPLOYEE DIRECTOR COMPENSATION SCHEDULE

The following shall be effective November 9, 2017, and shall remain in effect until changed by the Committee:

Basic Cash Retainer, Supplemental Cash Retainer and Annual Stock Retainer:

Basic Cash Retainer	\$80,000
Supplemental Cash Retainer	
Lead Independent Director	\$30,000
Audit Committee Chair*	\$30,000
Audit Committee Member	\$15,000
Compensation Committee Chair*	\$20,000
Compensation Committee Member	\$10,000
Nominating Committee Chair*	\$15,000
Nominating Committee Member	\$10,000
Annual Stock Retainer (FMV)	\$160,000

*In lieu of (and not in addition to) the Supplemental Cash Retainer as a member of such committee.

The Chairman of the Board shall not receive a Supplemental Cash Retainer.

Meeting Fees:

No additional fees for attendance at meetings.

Subsidiaries of the Registrant

CommScope, Inc.	Delaware (USA)
CommScope, Inc. of North Carolina	North Carolina (USA)
CommScope Technologies LLC	Delaware (USA)
CommScope Holdings Luxembourg S.a.r.l.	Luxembourg
CommScope Holdings Luxembourg II S.a.r.l.	Luxembourg
CS Netherlands C.V.	Netherlands
CommScope Netherlands B.V.	Netherlands
CommScope Asia Holdings B.V.	Netherlands
CommScope Asia (Suzhou) Technologies Co., Ltd.	China
CommScope EMEA Limited	Ireland
CommScope Connectivity Belgium BVBA	Belgium
CommScope Technologies AG	Switzerland
CommScope Connectivity LLC	Minnesota (USA)
CommScope Connectivity Solutions LLC	Minnesota (USA)
Allen Telecom LLC	Delaware (USA)
CommScope Holdings (Germany) GmbH & Co. KG	Germany
Andrew Wireless Systems GmbH	Germany
CommScope Mauritius International Holdings Ltd.	Mauritius
CommScope Telecommunications (China) Co., Ltd.	China

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-3 No. 333-202490) and related Prospectus of CommScope Holding Company, Inc. and the Registration Statement (Form S-8 No. 333-191959) pertaining to the CommScope Holding Company, Inc. 2013 Long-Term Incentive Plan, the Amended and Restated CommScope Holding Company, Inc. 2011 Incentive Plan, the Amended and Restated CommScope, Inc. 2006 Long-Term Incentive Plan, the Amended and Restated CommScope, Inc. 1997 Long-Term Incentive Plan, the Andrew Corporation Management Incentive Program, and the Options Granted to Non-Employee Directors Outside of a Plan of our reports dated February 14, 2018, with respect to the consolidated financial statements of CommScope Holding Company, Inc. and the effectiveness of internal control over financial reporting of CommScope Holding Company, Inc., included in this Annual Report (Form 10-K) for the year ended December 31, 2017.

/s/ Ernst & Young LLP

Charlotte, North Carolina
February 14, 2018

MANAGEMENT CERTIFICATION

I, Marvin S. Edwards, Jr., certify that:

1. I have reviewed this annual report on Form 10-K of CommScope Holding Company, 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.

Dated: February 14, 2018

/s/ Marvin S. Edwards, Jr.

Name: Marvin S. Edwards, Jr.

Title: President, Chief Executive Officer and Director
(Principal Executive Officer)

MANAGEMENT CERTIFICATION

I, Mark A. Olson, certify that:

1. I have reviewed this annual report on Form 10-K of CommScope Holding Company, 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.

Dated: February 14, 2018

/s/ Mark A. Olson

Name: Mark A. Olson

Title: Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

**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 Annual Report of CommScope Holding Company, Inc. (the "Company") on Form 10-K for the year ended December 31, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), we, Marvin S. Edwards, Jr., President, Chief Executive Officer and Director of the Company, and Mark A. Olson, Executive Vice President and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350 as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

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.

Dated: February 14, 2018

/s/ Marvin S. Edwards, Jr.

Marvin S. Edwards, Jr.
President, Chief Executive Officer and Director
(Principal Executive Officer)

/s/ Mark A. Olson

Mark A. Olson
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)