CommScope Holding Company, Inc. Form 10-K February 23, 2017

**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, 2016

OR

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

For the transition period from to

Commission file number: 001-36146

CommScope Holding Company, Inc.

(Exact name of registrant as specified in its charter)

Delaware 27-4332098 (State or other jurisdiction of (I.R.S. Employer

incorporation or organization) Identification No.)

1100 CommScope Place, SE 28602 (828) 324-2200

Hickory, North Carolina (Zip Code) (Telephone number)

(Address of principal executive offices) Securities registered pursuant to Section 12(b) of the Act:

Title of each class
Common Stock, par value \$.01 per share
Name of each exchange on which registered
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, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

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

Indicate by check mark whether the registrant is a shell company (as defined in Exchange Act

Rule 12b-2). Yes

No

The aggregate market value of the shares of Common Stock held by non-affiliates of the registrant was approximately \$4,955 million as of June 30, 2016. For purposes of this computation, shares held by affiliates and by directors and officers of the registrant have been excluded.

As of February 6, 2017 there were 193,946,169 shares of the registrant's Common Stock outstanding.

Documents Incorporated by Reference

Portions of the Registrant's Proxy Statement for the 2017 Annual Meeting of Stockholders are incorporated by reference in Part III hereof.

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# CommScope Holding Company, Inc.

Form 10-K

December 31, 2016

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### PART I

Unless the context otherwise requires, references to "CommScope Holding Company, Inc.," "CommScope," "the Company," "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," "confusion designed to," "foreseeable future," "believe," "think," "scheduled," "outlook," "target," "guidance" and similar expressions. For 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. During 2016, CommScope celebrated its 40<sup>th</sup> anniversary serving the needs of communication 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 latency (i.e., 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 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 25,000 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 and thousands of enterprise customers, including many Fortune 500 enterprises, and leading multi-system operators (MSOs). We have long-standing, direct relationships with our customers and serve them through a direct sales force and a global network of channel partners.

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. Our results include net sales generated by the BNS business of approximately \$1.8 billion and \$0.5 billion for the years ended December 31, 2016 and 2015, respectively.

During 2016, The Carlyle Group (Carlyle) sold the remaining portion of its ownership of our Company and no longer holds any stock in CommScope.

As of January 1, 2016, we reorganized our internal management and reporting structure as part of the integration of the BNS acquisition. The reorganization changed the information regularly reviewed by our chief operating decision maker for purposes of allocating resources and assessing performance. As a result, we are reporting financial performance for 2016 based on these operating segments: CommScope Connectivity Solutions (CCS) and CommScope Mobility Solutions (CMS). Prior to this change, we operated and reported based on the following operating segments: Wireless, Enterprise, Broadband and BNS. Prior period amounts have been revised to conform to the 2016 presentation.

For the year ended December 31, 2016, our revenues were \$4.92 billion and our net income was \$222.8 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 provides solutions for the core, access and edge layers of telecommunications 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 or wiring center to cell sites, commercial buildings 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 2016 revenue, global leadership position and solutions offerings for our two segments:

2016 Revenue	A global leader in connectivity and	Mobility Solutions (CMS) \$1,958 million
Global Leadership Position		A global leader in merchant radio frequency (RF) wireless network connectivity, distributed antenna systems (DAS) solutions and distributed radio (small cell) solutions
	• High density fiber connectivity (optical distribution frames, shelves/panels, modules, trunks, jumpers/arrays and cable)	
Network CORE	Pre-terminated fiber/copper connectivity	
	Automated infrastructure management	
	<ul><li>Fiber optic raceways, closures and sealing systems</li><li>High-capacity fiber and apparatus</li></ul>	ng
Network ACCESS	Plug and Play hardened connector  systems for harsh environments	• Macro, metro and small cell solutions
		Specialized antenna systems
	• Fiber optics and copper closures and sealing systems	• Factory-assembled tower-top solutions
	Fiber optic and coaxial cabling systems	Backhaul antennas and power solutions
	• Fiber distribution hubs and management systems	Metro cell concealment solutions
	Broadband MSO solutions	
Network	apparatus	Metro cell concealment solutions
EDGE		• Active DAS and small cell solutions

- Coaxial and structured copper cabling systems and apparatus
- Campus network fiber cabling systems
- Physical layer maintenance
- Automated infrastructure management
- Intelligent building infrastructure

- Antennas and filters
- Coax and powered fiber cabling systems
- 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. MSOs 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 2017 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. 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.
- 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). 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. Densification includes enhanced sectorization at macro cell sites, building new metro-level or small-cell sites and establishing better in-building coverage. The Company expects that densification will require significant fiber connectivity between wireless cell sites.
- 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 latency, 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, spectrum reuse, offloading traffic into Wi-Fi and utilization of unlicensed spectrum—especially inside

buildings.

### FTTX 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-to-the-node (FTTN), fiber-to-the-premises (FTTP) and fiber-to-the-distribution point (FTTdP) to build next generation networks. These networks use the capabilities of fiber to enable consumers access to content at higher speeds with improved 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 coming deployments of outdoor small cells and fixed wireless broadband to the home, these same service providers are hoping to utilize this common physical layer infrastructure to provide connectivity to these wireless access points. FTTX deployments in North America are expected to remain one of the largest growth drivers for the industry over the next few years.

### 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. While enterprises continue to need copper connectivity to power edge devices, enterprises are deploying fiber more extensively in both corporate facilities and in data centers. Over the longer term, we expect the ongoing 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. In addition, new hyperscale cloud service providers now offer cloud data center services as a replacement to in-house corporate data centers.

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 before 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 uses for 5G are expected to include:

- oEnhanced mobile broadband—to support significant improvement in data rates and user experience,
- oIoT and M2M communications to support the expected billions of connections between machines as well as short bursts of information to other systems and
- o 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 latency of the network. As operators transition toward 5G, they must also manage 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. 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 an important 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 are emerging 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) solutions. Small cells are self-contained radio units that generally provide single frequency and single-provider service 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 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 2017 priorities are to:

#### Become a Preferred Partner to Our Customers

We plan to expand our industry leadership positions in fiber and wireless by developing 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 consistent with their evolving needs, thereby enhancing our position as a strategic partner. With the addition of the robust fiber portfolio of the BNS business, we have broadened our range of solutions.
- Making strategic acquisitions. We will continue our disciplined approach to evaluating, executing and 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.

### Complete the Integration of BNS and CommScope

We have successfully completed the first full year of our three-year BNS integration plan. During 2016, we established a new organizational structure, streamlined manufacturing and distribution facilities, delivered significant synergies and completed the North American phase of system integrations. During 2017, we expect to execute system integrations outside of North America and optimize our new organizational structure and continue to streamline our manufacturing and distribution operations.

### 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 lowering 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, reduce our indebtedness and make strategic acquisitions. We may also consider

returning capital to stockholders through stock repurchases.

### **Operating Segments**

On January 1, 2016, we reorganized our internal management and reporting structure as part of integrating the BNS acquisition. The reorganization changed the information regularly reviewed by our chief operating decision maker to allocate resources and assess performance. We are reporting financial performance based on these operating segments: CCS and CMS. Prior to this change, we operated and reported based on the following operating segments: Wireless, Enterprise, Broadband and BNS. Our consolidated results include the impact of the BNS business subsequent to the acquisition date of August 28, 2015.

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

Year Ended
December 31,
2016 2015 2014

CCS 60.2 % 48.4 % 35.5 %

CMS 39.8 51.6 64.5

Total 100.0% 100.0% 100.0%

CommScope Connectivity Solutions Segment (CCS)

The CCS segment provides connectivity and network intelligence 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 and include coaxial cabling, fiber optic cable and connectivity solutions, including a robust portfolio of fiber optic connectors and fiber management systems. 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. Our global network of partners offers customers custom, turnkey network solutions that are tailored to each customer's unique requirements.

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, AMP NETCONNECT and Uniprise brands, include optical fiber and twisted pair structured cable solutions, intelligent infrastructure software and network rack and cabinet enclosures.

Our data center, central office and headend solutions include a robust portfolio of fiber optic connectors. We also offer fiber management systems, patch cords and panels, 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 and headend solutions for these customers. 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. These products are used in both local-area and wide-area networks and "last-mile" FTTH installations, including deployments of FTTN, FTTP, and 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 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. We have a broad, technologically-advanced FTTX portfolio which we believe positions us to capitalize on the expected growth in fiber networks.

### CommScope Mobility Solutions Segment (CMS)

The CMS segment provides merchant RF wireless network solutions, as well as metro cell, DAS and small cell solutions. Our macro cell site solutions can be found at wireless tower sites and on rooftops. Macro cell site applications represent approximately three-quarters of our CMS segment net sales. Our metro cell solutions can be found on street poles and on other urban structures. 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 and 4G 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 latency 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. We have expanded our portfolio of wireless solutions through the 2015 acquisition of operations of Airvana LP (Airvana), a leader in small cell solutions. This acquisition expanded our leadership and capabilities in providing indoor wireless capacity and coverage. The combination of Airvana's 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 added production capacity during 2016 to meet increased customer demand. 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 over \$200 million in research and development during 2016 and expect to continue with substantial investments in future years. We intend to focus our major research and development activities on high-growth opportunities such as FTTX, base-station antennas, metro cell and small cell wireless deployment and data centers. We are also in the process of developing solutions that support the convergence of wireline and wireless networks in preparation for 5G. Many 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 and thousands of enterprise customers, including many Fortune 500 enterprises, and leading cable television providers or MSOs, which we serve both directly and indirectly. Major customers and distributors include companies such as Anixter International Inc., Verizon Communications Inc., Graybar Electric Company, Inc., Comcast Corporation, Wesco International Inc., Charter Communications, Inc., Ericsson, Inc., T-Mobile, Talley Inc. and AT&T Inc. Other global customers include Vodafone Group, Plc, America Movil, S.A.B. de C.V, Deutsche Telekom AG and NBN Co. Limited. We support our global sales organization with regional service centers in locations around the world.

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. Direct sales to our top three CMS segment operator customers represented 17% and 14% of our consolidated net sales for the years ended December 31, 2016 and 2015, respectively. Sales to our top three OEM customers represented 5% and 6% of our consolidated net sales for the years ended December 31, 2016 and 2015, respectively. No direct CMS segment customer accounted for 10% or more of our consolidated net sales for the years ended December 31, 2016 and 2015.

Products from our CCS segment are primarily sold through independent distributors or system integrators. We also sell directly to cable television system operators, broadband operators or service providers that deploy broadband networks. Direct sales to our top three CCS segment customers, all of whom are distributors, represented 19% and 15% of our consolidated net sales for the years ended December 31, 2016 and 2015, respectively. Net sales to our largest distributor, Anixter International Inc. and its affiliates (Anixter), accounted for 11% and 12% of our consolidated net sales for the years ended December 31, 2016 and 2015, respectively.

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, and 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, or their failure to properly manage their business with respect to the purchase of and payment for our products, could materially and adversely affect our business, results of operations, financial condition and cash flows. See Part I, Item 1A, "Risk Factors."

We employ a global manufacturing and distribution strategy to control production costs and improve 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 \$2.3 billion, \$1.9 billion and \$1.7 billion for the years ended December 31, 2016, 2015 and 2014, 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 10,600 patents and patent applications and approximately 2,700 registered trademarks and trademark applications as of December 31, 2016. 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 AMP 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, 2016 and 2015 we had an order backlog of \$612 million and \$572 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 indicate 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 their efforts in one or more areas of the markets we serve. Our competitors include 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, Nokia Corp, Panduit Corp., RFS (a division of Alcatel-Lucent SA), Leviton Manufacturing Co., Inc., Ortronics (a brand of Legrand

NA, LLC), AFL (a subsidiary of Fujikura, Ltd.,), Sumitomo Corp, ACE Telecom, LLC, ZTE Corp, SOLiD Technologies and SpiderCloud Wireless, Inc. 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, Uniprise and AMP NETCONNECT 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 over \$200 million in research and development during 2016 and expect to continue with substantial investments in future years. We have also added significant IP and innovation through acquisitions, such as 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. The transformational BNS acquisition substantially expanded our foundation of innovation with the addition of BNS' approximately 7,000 patents and patent applications worldwide. Further, BNS' leading fiber technology will help us better address a transition to fiber deployments deeper into networks and data centers as consumers and businesses generate increasing bandwidth requirements. 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 market, 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 10,600 patents and patent applications, as well as our approximately 2,700 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 and thousands of enterprise customers, including many Fortune 500 enterprises, and leading cable television providers or MSOs. We are a key merchant 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 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 and Manufacturing Footprint

Our global manufacturing and distribution footprint and worldwide sales force give us significant scale within our addressable markets. We believe our scale and stability 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 while continuing to invest in research and development and acquisitions targeting new products and new 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;
- 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 an average of over 20 years of experience in connectivity solutions for the communications infrastructure industry.

We have a history of strong operating cash flow and have generated approximately \$1.2 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 prior to our initial public offering in 2013 (the IPO). 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 strong organic growth with strategic acquisitions. Although we have not yet fully integrated the BNS business, we have already delivered substantial synergies, completed significant system integrations and re-organized the business. We expect to have substantially completed the BNS integration by the end of 2017. 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 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 copper, aluminum, steel, brass, plastics and other polymers, fluoropolymers, bimetals and optical fiber, among others. We use significant volumes of copper, aluminum, steel and polymers 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 for a specific commodity 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. 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 copper, aluminum, fluoropolymers 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. 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. 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 and results of operations. If we do not comply with these laws or sufficiently increase prices or otherwise reduce costs to offset the increased cost of compliance, there could be a material adverse effect on our business, financial condition and results of operations.

Efforts to regulate emissions of greenhouse gases (GHGs), such as carbon dioxide, have been underway throughout the world 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 and results of operations.

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. This can have the effect that an entity pays more than its fair share to address such contamination. 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. Consequently, from time to time it has been necessary to undertake investigation and remediation projects at a few of these sites. There can be no assurance that the contractual indemnifications we have received from prior owners and operators of certain of these facilities will continue to be honored. In addition, we have disposed of waste products either directly or through third parties at numerous disposal sites, and from time to time we have been and may be held responsible for investigation and clean-up costs at these sites, particularly where those owners and operators have been unable to pay for investigation and clean-up. Also, there can be no guarantee that new environmental requirements or changes in their enforcement or the discovery of previously unknown conditions will not cause us to incur additional costs for environmental matters which could be material.

### **Employees**

As of December 31, 2016 we had a team of over 25,000 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 Investors 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.

### **BNS Acquisition Risks**

The completion of the integration of the BNS business (the Acquired Business) into our business will be difficult, costly and time-consuming and the anticipated benefits and cost savings of the BNS Acquisition (the Acquisition) may take longer to realize or may not be realized at all.

We currently expect to realize annual cost savings of more than \$200 million by 2018 related to the Acquisition. Our ability to realize the anticipated benefits of the Acquisition is dependent, to a large extent, on our ability to complete the integration of the two businesses. The combination of two independent businesses is a complex, costly and time-consuming process and there can be no assurance that we will be able to successfully integrate the Acquired Business into our business, or if such integration is successfully accomplished, that such integration will not be more costly or take longer than presently contemplated. If we cannot successfully complete the integration within a reasonable time frame, we may not be able to realize the anticipated benefits of the Acquisition, which could have a material adverse effect on our share price, business, cash flows, results of operations and financial position.

Our ability to realize the expected synergies and benefits of the Acquisition is subject to a number of risks and uncertainties, many of which are outside of our control. These risks and uncertainties include, among other things:

- our ability to successfully complete the timely integration of information technology systems;
- our ability to complete the effective integration of operations, standards, controls, policies and procedures, and technologies, as well as the harmonization of differences in the business cultures of legacy CommScope and the Acquired Business;
- our ability to minimize the diversion of management attention from ongoing business concerns of both our business and the Acquired Business during the process of integrating legacy CommScope and the Acquired Business; the risk that the Acquired Business may have liabilities we failed to or were unable to discover in the course of performing due diligence;
- the risk that integrating the Acquired Business' workforce into the legacy CommScope workforce may result in production disruptions or be more costly than anticipated;
- greater than expected difficulties in achieving anticipated cost savings, synergies, business opportunities and growth prospects from the combination; and
- greater than expected difficulties in managing the expanded operations of a significantly larger and more complex combined business.

We are relying on TE Connectivity (TE) to provide a wide range of services required to operate a significant portion of the Acquired Business under Transition Services Agreements (TSAs) and such reliance is expected to continue at least through most of 2017.

Due to the high level of integration of the Acquired Business with the remainder of TE's business, it is highly complex and time-consuming to separate the Acquired Business and effectively integrate it into our business. As a result, we are dependent on TE to continue to perform elements of such critical functions as information technology, finance, logistics and operations for portions of the Acquired Business under TSAs. It may be late in 2017 or later before we are able to assume all of these functions and discontinue all of the support provided by TE under the TSAs.

While operating under these TSAs, we are exposed to various risks, including the following:

- costs of operating the Acquired Business may be greater than we anticipated;
- services provided under TSAs may not meet our requirements in a timely and effective manner; and
- we may not be able to make operational changes or to get information necessary to realize the anticipated synergies. Competitive Risks

Our business is dependent on capital spending for data and communication networks by customers or end-users of our products and reductions in such capital spending could adversely affect our business.

Our performance is dependent on customers' or end-users' capital spending for constructing, rebuilding, maintaining or upgrading data and communication networks, which can be volatile or hard 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 amount of capital spending in the communications industry and, therefore, our sales and earnings, 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; 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.

We derived 23% of our 2016 consolidated net sales from our top three direct customers and channel partners, including distributors, system integrators and value-added resellers. Our largest distributor, Anixter International Inc., accounted for 11% of our 2016 consolidated net sales. The concentration of our net sales among these three customers and other key customers and channel partners subjects us to a variety of risks that could have a material adverse impact on our net sales and profitability, including, without limitation:

- lower sales resulting from the loss of one or more of our key customers or channel partners;
- renegotiations of agreements with key customers or channel partners resulting in materially less favorable terms; financial difficulties experienced by one or more of our key customers, channel partners or our channel partners' end customers, resulting in reduced purchases of our products and/or delays or difficulties in collecting accounts receivable balances;
- reductions in inventory levels held by channel partners and original equipment manufacturers (OEMs) which may be unrelated to purchasing trends by the end customer;
- consolidations in the telecommunications, wireless or cable television industries or other key end-user markets resulting in delays in purchasing decisions, reduced or delayed purchases by the merged businesses or increased leverage to reduce prices or renegotiate terms;
- new or proposed laws or regulations affecting the telecommunications, wireless or cable television industries or other key end-user markets resulting in reduced capital spending; and
- increases in the cost of borrowing or otherwise raising capital and/or reductions in the amount of debt or equity capital available to the telecommunications, wireless or cable television industries or other key end-user markets resulting in reduced capital spending.

Additionally, the risks above may be further increased to the extent that we have significant indirect sales to one or more end-users of our products (who may also be direct customers) with such indirect sales taking place through numerous channel partners and/or OEMs.

We generally have no minimum purchase commitments from any of our channel partners, OEMs or other customers, and our contracts with these parties generally 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 and end-users of our products, and any significant reduction in sales to these customers and end-users of our products, including as a result of their inability or unwillingness to continue purchasing our products, or their failure to properly manage their businesses with respect to the purchase of and payment for our products, could materially and adversely affect our business, results of operations, financial condition and cash flows.

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

Competition in our industry depends on a number of factors, including the level of customer capital spending, innovative solution offerings, quality and timing of the introduction of new products, customer service and pricing. 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 an even 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 the use of exclusively price driven Internet 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 (including some of those contemplated by the new administration in the U.S.) could decrease the price competitiveness of our products and/or increase our operating costs.

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 U.S. and other countries, including regulations regarding the "Open Internet" or "net neutrality." We have benefited from government programs that encourage spending on 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 to adapt to technological changes and develop, implement and market product innovations.

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 develop new products 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 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. If we are not successful in our ongoing innovation efforts, these failures could have a material adverse effect on our results of operations and financial condition.

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

A significant portion of our revenues are dependent on the commercial deployment of technologies based on 2G, 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 2G or 3G networks to 4G 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 current revenue is also partially dependent on the core copper enterprise business and we could experience unfavorable financial impacts if this business erodes at a significantly increasing rate beyond current forecasts and we do not have adequate fiber-based solutions for our customers.

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

Our business depends on delivering products of consistently high quality. To this end, our products are tested for quality both by us and our customers. Nevertheless, many of our products are highly complex and testing procedures used by us and our customers are limited to evaluating our products 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. Future claims may have a material adverse effect on our business, financial condition and results of operations. Any significant or systemic product failure could also result in lost future sales of the affected product and other products as well as reputational damage.

Our business depends on effective management information systems.

We rely on effective management information systems for critical business operations, for 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.

Our primary current major management information systems initiative is the completion of the integration of the BNS business into our legacy CommScope management information systems. If we are unable to successfully complete the integration, we could encounter difficulties that may cause us to experience a material adverse impact on our business, lapses in internal controls over financial reporting or an inability to timely and accurately report our financial results.

Our focus on the integration of the BNS business also creates the risk that we are not focusing enough on other major management information system initiatives, such as expanding our digital platform to accommodate the changing buying habits of our customers. Failure to maintain an adequate digital platform to produce information for business decision-making and support e-commerce activities could have a material adverse impact on our business through lost sales opportunities.

The hardware and software of our management information systems infrastructure is aging. If we are unable to maintain 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 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 information technology systems to operate our business. We rely on our information systems and those of third parties for storing proprietary company information about our products and intellectual property, as well as for processing customer orders, manufacturing and shipping products, invoicing our customers, tracking inventory, supporting accounting functions and financial statement preparation, paying our employees and vendors, and otherwise running our business. Additionally, we and others on our behalf store "personally identifiable information" with respect to employees, vendors, customers and others. Despite implemented security measures, our facilities, systems and procedures, and those of our third-party service providers, may be vulnerable to security breaches, acts of vandalism, 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 confidential or sensitive information, the deletion or modification of records or interruptions in our operations. Any such events, including those involving the misappropriation, loss or other unauthorized disclosure or use of confidential or sensitive information of the Company or our customers, vendors, employees or others, whether by us or a third party, could subject us to civil and criminal penalties; expose us to liabilities to our customers, employees, vendors, third parties or governmental authorities; disrupt our delivery of products and services; and have a negative impact on our reputation. Any of these events could have a material adverse effect on our business, financial condition and results of operations.

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

We internally produce, both domestically and internationally, a portion of the components used in our finished products. Disruption of our ability to produce at or distribute from these facilities due to failure of our manufacturing infrastructure, information technology outage, labor disturbances, fire, electrical outage, natural disaster, acts of terrorism, shipping interruptions or some other catastrophic event could have a material adverse effect on 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 and results of operations.

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

We 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, to meet customer demand for our products, we may experience lost sales opportunities and customer relations problems, which could have a material adverse effect on our business, financial condition and results of operations.

### 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.

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, we are dependent on a limited number of key suppliers.

Our key suppliers have in the past experienced and could in the future experience production, operational or financial difficulties, or there may be global shortages of the raw materials or components we use. Our inability to find sufficient sources of supply on reasonable terms could have a material adverse effect on 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. affecting trade, including changes to certain of these laws or policies contemplated by the new administration in the U.S., is a risk to us. To the extent there are unfavorable changes imposed by the U.S and/or retaliatory actions taken by trading partners, such as the addition of new tariffs or trade restrictions, we may experience adverse impacts on earnings and such changes could be material.

If contract manufacturers we rely on 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 our contract manufacturers encounter production, quality, financial or other difficulties, including labor disturbances or geopolitical risks, 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 and results of operations.

### Strategic Risks

We may not fully realize anticipated benefits from past or future acquisitions or equity investments.

We anticipate that a portion of any future growth of our business might be accomplished by acquiring existing businesses, products or technologies. Although we expect to realize strategic, operational and financial benefits as a

result of our past or future acquisitions and equity investments, we cannot predict whether and to what extent such benefits will be achieved. 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 and inventory, accounting and research and development activities; and addressing operating losses that may exist related to individual facilities or product lines. Further, many acquisitions involve new or developing technologies that may not achieve the expected results.

In addition, we might not be able to identify suitable acquisition opportunities or obtain any necessary financing on acceptable terms. We might 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. See "BNS Acquisition Risks" for details related to that acquisition.

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, as a result, 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 information technology and other operating systems; and potential post-closing claims for indemnification. 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 demands 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 and results of operations.

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. Restructuring actions as a result of the BNS acquisition are expected to continue and may be material. As a result of other 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, 2016, we had approximately \$4.6 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 \$441.1 million in borrowing capacity, reflecting a borrowing base of \$466.1 million and \$25.0 million of outstanding letters of credit. 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 and to recharacterize assets that might otherwise incrementally decrease borrowing availability.

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

- 4 imit 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, over the term of our debt, 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;
- imit 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 amortizable intangible assets and fixed assets for impairment if there are indicators of a possible impairment.

If, as a result of a general economic slowdown, deterioration in one or more of the markets in which we operate or in our financial performance and/or future outlook, the estimated fair value of our long-lived assets decreases, we may determine that one or more of our long-lived assets is impaired. Any resulting impairment charge 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, the level of repatriation of earnings from foreign affiliates, changes in tax laws, 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, may significantly impact our effective income 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.

There are proposals to change tax laws in many of the countries in which we do business. In particular, current U.S. tax reform proposals could significantly impact how we are taxed on both domestic operations as well as on earnings of foreign subsidiaries. Although we cannot predict whether, when or in what form proposed legislation may pass, if enacted, certain proposed tax law changes could have a material adverse impact on our income tax expense and cash flow.

We are commonly audited by various tax authorities. 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.

#### 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, including our sales force, operations management 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.

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 are nearing retirement age. Failure to ensure effective transfer of knowledge and smooth transitions involving key employees could hinder our strategic planning and execution.

As our workforce ages, we are challenged to find and attract a younger population to replace them. Younger generations are driven 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 these customers or vendors, contract manufacturers or other suppliers 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, reduce demand for our products or increase costs and could 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, 2016, our net liability for pension and other postretirement benefits was \$30.2 million (benefit obligations of \$382.7 million and plan assets of \$352.5 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 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 others, 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 and other estimates and assumptions with respect to our expected plan funding obligations. The actual amounts and timing of these contributions will depend upon a number of factors and the actual amounts and timing of our future plan funding 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.

Our financial condition may be adversely affected to the extent that we are required to make contributions to any of our defined benefit plans in excess of the amounts assumed in our current projections.

#### **International Risks**

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

We have significant international sales, manufacturing and distribution operations. We have major international manufacturing and/or distribution facilities in, among other countries, Australia, Belgium, China, the Czech Republic, Germany, India, Ireland, Mexico, Singapore and the United Kingdom (U.K.). For the years ended December 31, 2016, 2015 and 2014, international sales represented approximately 46%, 51% and 45%, 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; 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, Australian dollar, Indian rupee, British pound and Mexican peso. 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 international jurisdictions.

We are required to comply with the laws and regulations of the U.S. government and various 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), The FCPA prohibits U.S. companies and their officers, directors, employees and agents acting on their behalf from improperly offering, promising, authorizing or providing anything of value to foreign officials for the purposes of influencing official decisions or obtaining or retaining business or otherwise obtaining favorable treatment. The FCPA also requires companies to keep books, records and accounts that accurately and fairly reflect transactions and dispositions of assets and to maintain a system of adequate internal accounting controls. As part of our business, we deal with state-owned business enterprises, the employees and representatives of which may be considered foreign officials for purposes of the FCPA. We frequently rely on distributors, sales agents and other channel partners in connection with our sales to these state-owned enterprises, and could be held responsible for the improper actions of these third parties if we were to benefit from their actions, even though we may have limited control over them. We are also subject to the U.K. Anti-Bribery Act, which prohibits both domestic and international bribery, as well as bribery across both public and private sectors. In addition, some of the international locations in which we operate lack a developed legal system and have elevated levels of corruption. As a result of our activities in these locations, we are exposed to an increased risk of violating anti-corruption laws. 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, which could adversely affect our reputation, business, financial condition and results of operations 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 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 and incarceration for 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 and results of operations 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 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 addition, we have been required, and may be required in the future, to initiate 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. 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 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 and financial condition.

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 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. 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. 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 and results of operations. For example, the European Union has issued Restriction of Hazardous Substances Directive 2011/65/EU (RoHS 2), Registration, Evaluation, Authorization and restriction of Chemicals (REACH) and Waste Electrical and Electronic Equipment Directive 2012/19/EU (WEEE) regulating the manufacture, use and disposal of electrical goods and chemicals. If we do not comply with these and similar laws in other jurisdictions or sufficiently increase prices or otherwise reduce costs to offset the increased cost of compliance, it could have a material adverse effect on our business, financial condition and results of operations.

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 and results of operations.

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. This can have the effect that an entity pays more than its fair share to address such contamination. 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. Consequently, from time to time it has been necessary to undertake investigation and remediation projects at a few of these sites. There can be no assurance that the contractual indemnifications we have received from prior owners and operators of certain of these facilities will continue to be honored. In addition, we have disposed of waste products either directly or through third parties at numerous disposal sites, and from time to time we have been and may be held responsible for investigation and clean-up costs at these sites, particularly where those owners and operators have been unable to address such investigation and clean-up costs. Also, there can be no guarantee that new environmental requirements or changes in their enforcement or the discovery of previously unknown conditions will not cause us to incur additional costs for environmental matters which could 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. We currently intend to invest our future earnings, if any, to reduce indebtedness and fund our growth; in addition, we may from time to time make share repurchases. Therefore, the success of an investment of our common stock will depend upon any future appreciation in their value, and there can be no guarantee that our common stock will appreciate in value. The payment of future dividends will be at the discretion of our Board of Directors. In addition, the indentures and the credit agreements governing our indebtedness also effectively limit our ability to pay dividends. As a consequence of these limitations and restrictions, we may not otherwise be able to pay dividends on our common stock.

Provisions of our amended and restated certificate of incorporation and amended and restated 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 amended and restated certificate of incorporation and amended and restated 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;

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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; 30

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 desire.

# 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, 2016, our principal facilities, grouped according to the facility's primary use, were as follows:

	Approximate		
Location	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 f	acilities:		
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 (5)	304,000	CCS	Leased
Goa, India (4)	298,000	CMS	Owned
Reynosa, Mexico	279,000	CMS	Owned
Greensboro, NC (1)	196,000	CCS	Owned
Brno, Czech Republic	166,000	CCS	Leased
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	99,000	CCS	Owned
Vacant facilities and properties:			
Orland Park, IL (1)(6)	<del>_</del>	CMS	Owned
Sidney, NE (7)	376,000	CCS	Owned
Sorocaba, Brazil (8)	152,000	CMS	Owned

<sup>(1)</sup> 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).

<sup>(2)</sup> 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 Juarez, Mexico location, known as Praderas, consists of three buildings subject to one lease. One of the buildings consisting of 60,000 square feet is being subleased.
- (6) The building at the Orland Park facility was demolished and cleared and the 73 acre parcel is vacant.
- (7) The Sidney facility is currently being marketed for sale.
- (8) 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 have a material adverse effect on our business or financial condition upon their final disposition.

#### ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

# 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 Ra	ange Low				
2015	8					
First Quarter	\$32.00	\$20.19				
Second Quarter	\$32.53	\$27.75				
Third Quarter	\$34.12	\$26.87				
Fourth Quarter	\$33.54	\$24.85				
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				

As of February 6, 2017, the approximate number of registered stockholders of record of our common stock was 370.

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

Our employees surrendered 27,402 of common shares at an average share price of \$34.02 in the fourth quarter of 2016 and 143,000 of common shares at an average share price of \$27.16 in 2016 to satisfy the minimum withholding tax obligations related to restricted stock 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.

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

### **PART II**

## 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,						
	2016	2015	2014	2013	2012		
Results of Operations:	2010	2013	2014	2013	2012		
Net sales	\$4,923,621	\$3,807,828	\$3,829,614	\$3,480,117	\$3,321,885		
Gross profit	2,033,589	1,345,820	1,397,269	1,200,940	1,060,681		
Restructuring costs, net	42,875	29,488	19,267	22,104	22,993		
Asset impairments	38,552	90,784	12,096	45,529	40,907		
Operating income	574,750	181,593	577,449	329,714	238,238		
Net interest expense	(272,010)	(230,533)	(173,981)	(205,492)	(185,557)		
Net income (loss)	222,838	(70,875)	236,772	19,396	5,353		
Earnings (Loss) Per Share Information:							
Weighted average number of shares outstanding	; <b>:</b>						
Basic	192,470	189,876	186,905	160,641	154,708		
Diluted	196,459	189,876	191,450	164,013	155,517		
Earnings (loss) per share:							
Basic	\$1.16	\$(0.37)	\$1.27	\$0.12	\$0.03		
Diluted	\$1.13	\$(0.37)	\$1.24	\$0.12	\$0.03		
Other Information:							
Net cash generated by operating activities	\$606,225	\$302,060	\$289,418	\$237,701	\$286,135		
Depreciation and amortization	399,050	303,500	259,504	256,616	262,279		
Additions to property, plant and equipment	68,314	56,501	36,935	36,780	27,957		
Cash dividends per share	<b>\$</b> —	\$	\$	\$3.47	\$1.29		
	As of Decen	,					
	2016	2015	2014	2013	2012		
Balance Sheet Data:							
Cash and cash equivalents	\$428,228	\$562,884	\$729,321	\$346,320	\$264,375		
Goodwill and intangible assets	4,567,369	4,838,119	2,712,814	2,872,698	3,052,615		
Property, plant and equipment, net	474,990	528,706	289,371	310,143	355,212		
Total assets (1)	7,141,986	7,502,631	4,917,058	4,690,800	4,740,893		
Working capital	1,135,946	1,319,548	1,351,805	860,042	737,638		
Long-term debt, including current maturities (1)	4,562,010	5,243,651	2,668,898	2,471,297	2,418,399		
Stockholders' equity	1,394,084	1,222,720	1,307,619	1,088,016	1,182,282		

(1) 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.
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# 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 latency (i.e., 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. We believe the transaction has accelerated our strategy to drive profitable growth by expanding our business into attractive adjacent markets and to broaden our position as a leading communications infrastructure provider. In addition, the acquisition provides us with greater geographic and business diversity. The BNS business generated revenues of approximately \$1.8 billion for the year ended December 31, 2016 and \$0.5 billion for the four-month period ended December 25, 2015. During the years ended December 31, 2016 and 2015, we recognized \$62.3 million and \$96.9 million, respectively, of integration and transaction costs primarily related to the BNS acquisition. We will continue to incur costs as we complete the integration of BNS and these costs may be material.

The results of the BNS business are reported in our consolidated financial statements from August 28, 2015 to December 25, 2015 for the year ended December 31, 2015 and from December 26, 2015 to December 30, 2016 for the year ended December 31, 2016. The BNS fiscal calendar included 53 weeks in 2016.

As of January 1, 2016, we reorganized our internal management and reporting structure as part of the integration of the BNS acquisition. The reorganization changed the information regularly reviewed by our chief operating decision maker for purposes of allocating resources and assessing performance. As a result, we are reporting financial performance for 2016 based on our new operating segments: CommScope Connectivity Solutions (CCS) and CommScope Mobility Solutions (CMS). Prior to this change, we operated and reported based on the following operating segments: Wireless, Enterprise, Broadband and BNS. All prior year amounts throughout our management's discussion and analysis of financial condition and results of operations have been recast to reflect these operating segment changes.

Our CCS segment offers both indoor and outdoor connectivity solutions. Indoor solutions are primarily delivered through our SYSTIMAX, AMP 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 software and network rack and cabinet enclosures. Our outdoor connectivity solutions 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. The majority of the acquired BNS business is included in the CCS segment. 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.

Under our CMS segment, primarily through our Andrew brand, we are a global leader in providing merchant radio frequency (RF) wireless network connectivity solutions, including macro cell site, metro cell site, DAS and small cell solutions. 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.

To expand our CMS segment offerings, we acquired operations from Airvana LP (Airvana) in October 2015 for approximately \$45 million. This acquisition expanded our leadership and capabilities in providing indoor wireless capacity and coverage. The combination of Airvana's 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. Also within our CMS segment, we acquired two businesses of United Kingdom-based Alifabs Group (Alifabs) in July 2014 for approximately \$49 million. Alifabs designs and supplies metro cell enclosures, monopoles, smaller streetworks towers and tower solutions for the United Kingdom telecommunications, utility and energy markets.

Our future financial condition and performance will be largely dependent upon: our ability to successfully complete the integration of the BNS business; global spending by wireless operators; global spending by business enterprises on information technology; investment by cable operators and communications companies in the video and communications infrastructure; overall global business conditions; and our ability to manage costs successfully among 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 distributor 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 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 Reserves

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. These liabilities are subject to adjustment if we determine that foreign earnings previously considered to be permanently reinvested should no longer be 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 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. Goodwill is evaluated at the reporting unit level, which may be the same as a reportable segment or a level below a reportable segment. 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.

#### 2016 Interim Goodwill Analysis

During the first quarter of 2016, we reorganized our internal management and reporting structure and as a result realigned our goodwill reporting units. We tested goodwill for possible impairment prior to the realignment and no impairment was indicated. We then reallocated goodwill to the new reporting units based on relative fair value as required by GAAP. After the reallocation, the goodwill impairment test was performed using a DCF model for each of the new reporting units. One reporting unit in the CCS segment did not pass the goodwill impairment test, and a \$15.3 million goodwill impairment charge was recorded as of January 1, 2016.

#### 2016 Annual Goodwill Analysis

The annual test of goodwill was performed for each of the reporting units with goodwill balances as of October 1, 2016. The test was performed using a DCF valuation model. The weighted average discount rates used in the 2016 annual test were 10.0% for the CCS reporting units and 10.5% for the CMS reporting units. These discount rates were slightly higher than those used in the January 1, 2016 and the 2015 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. Future impairment tests could result in additional impairment charges and these could be material.

### Definite-Lived Intangible Assets and Other Long-Lived Assets

Management reviews definite-lived intangible assets, investments 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. Changes in the estimates of forecasted net cash flows may

cause additional asset impairments, which could result in charges that are material to our results of operations. During 2016, the Company determined that certain intangible assets in the CCS segment were no longer recoverable and recorded impairment charges of \$15.0 million.

Also during 2016, the Company determined certain production assets acquired with the BNS business would no longer be utilized and a \$8.3 million impairment charge was recorded in the CCS segment to reduce the assets to their estimated fair value.

#### **RESULTS OF OPERATIONS**

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				
		% of		% of			
		Net		Net	Dollar	%	
	Amount	Sales	Amount	Sales	Change	Change	;
	(dollars in	millions,	except per	share amo	ounts)		
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	16 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 En						
	Decemb	er 3	31,		Change		
	2016		2015		\$	%	
	(dollars	in r	nillions)				
Gross profit	\$2,033.	6	\$1,345.8	3	\$687.8	51.1%	
Gross margin percentage	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. Selling, general and administrative (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. 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			
	Decemb	er 31,	Change	
	2016	2015	\$	%
	(dollars	in millio	ns)	
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. We expect to incur additional pretax costs of \$0.5 million to \$1.0 million to complete actions announced to date. We expect to pay \$30.0 million to \$31.5 million in 2017 and an additional \$9.5 million to \$10.5 million between 2018 and 2022 related to restructuring actions that have been initiated. As a result of the continuing BNS integration, additional restructuring actions are expected to be identified and the resulting charges and cash requirements may be material.

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 CMS 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						
	Decembe	r 31,	Change				
	2016	2015	\$	%			
	(dollars in	n 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 4.375% senior secured notes due 2020 (the 2020 Notes) and we entered into a \$1.25 billion term loan due 2022 (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 Corporation (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 End	ed Decemb	per 31,				
	2016		2015				
		% of		% of			
		Net		Net	Dollar	%	
	Amount (dollars in	Sales millions)	Amount	Sales	Change	Change	
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	\$4,923.6	100.0 %	\$3,807.8	100.0 %	\$1,115.8	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	\$574.8	11.7 %	\$181.6	4.8 %	\$393.2	216.5	%
Non-GAAP adjusted operating income by segment:							
CCS	\$632.3	21.3					