

2019

Annual Report

Dear Fellow Shareholders,

This is an unprecedented time. The COVID-19 pandemic is putting incredible stress on the global economy and financial markets, and our associates, customers, and suppliers are experiencing disruptions in their daily lives that were unimaginable just a short time ago. Belden is certainly not immune from these new challenges, but our shareholders can rest assured that the Company has the solid financial foundation to weather these difficult times. In recent years we took proactive steps to strengthen our balance sheet, extend our debt maturities to 2025 and beyond, and secure ample sources of additional liquidity. These decisions are proving to be especially beneficial now. Our teams are rising to the occasion, ensuring the health and safety of our associates and supporting our customers. As we navigate the near-term challenges, we remain focused on the eventual recovery and the long-term opportunities for our business.

Now, reflecting on 2019, Belden delivered a total shareholder return of 32% during the year, which outpaced the strong gains in the U.S. equity markets. Beyond the robust equity performance, the year was highlighted by the transformative actions we initiated following a comprehensive strategic review of our portfolio of businesses. These actions, which are intended to further improve business performance and shareholder returns, include the following:

- Divesting our Live Media business (“Grass Valley”);
- Exiting undifferentiated product lines; and
- Streamlining the cost structure.

This will result in a simplified portfolio that is aligned with favorable secular trends in industrial automation, cybersecurity, broadband & 5G, and smart buildings. Once fully implemented, we expect to deliver significantly higher growth rates and margins, which we believe will support improved valuation and enhanced equity returns. I would like to share some additional details of each of these with you.

Divesting Grass Valley. During the year, we concluded that it was in the best interests of our shareholders, customers, and employees to separate Grass Valley from Belden. Subsequent to the end of the year, we announced a definitive agreement to sell 100% of Grass Valley in a transaction that is expected to close in the first half of 2020. We were pleased to reach this definitive agreement and are extremely excited about the opportunities for Belden going forward as we continue our transformation. Following the divestiture, our simplified portfolio, while smaller, offers improved revenue predictability and multiple platforms for organic growth. Further, the cash proceeds from the transaction will be available for strategic deployment.

Exiting undifferentiated product lines. We also decided to exit certain undifferentiated product lines, which represent approximately \$250 million in annual revenue, by 2021. These are primarily stand-alone copper cable products in international markets that cannot achieve our growth and margin goals. Importantly, we will retain our most attractive copper cable and fiber product lines, which are more specialized with superior growth and margin characteristics. This, too, provides an opportunity for strategic deployment of any proceeds we receive from divesting these product lines.

Streamlining the cost structure. Exiting entire business units and product lines obviously reduces the revenue base of the Company and creates opportunities for optimizing the cost structure. As a result, we implemented a meaningful cost reduction program that is designed to improve performance, delivering \$40 million in annualized SG&A savings. This will expand our EBITDA margins by approximately 200 basis points, supporting our margin goals. We are committed to delivering at least \$20 million of these savings in 2020, and the full \$40 million by 2021. We intend to deliver these savings by streamlining the organization and investing in technology to drive productivity. This includes consolidating our internal business unit reporting structure, realigning our sales and marketing organization, and optimizing headcount across many other functional areas. However, this does not include reducing our investments in R&D or new product development, as we continue to innovate and support our core businesses.

2019 was also highlighted by balanced capital deployment toward organic growth investments, strategic acquisitions, and share repurchases. These deployments, along with the transformative actions described above, provide the foundation for improved results going forward. I would like to share with you some of these significant accomplishments.

Organic Growth Investments – During our strategic planning process, our businesses identified many attractive opportunities to expand into high-growth markets and enhance our product offering. As a result, we deployed \$80 million in net capital expenditures to fund a number of organic initiatives that are expected to drive meaningful growth in future periods. This included investments in new software solutions for both cybersecurity and industrial automation, and targeted capacity additions to support our customers by shortening our lead times and expanding our fiber capabilities.

Strategic Acquisitions – We completed three strategic broadband fiber acquisitions in 2019 for a combined purchase price of \$74 million¹, and we are pleased with the successful integrations. These included Opterna International and the FutureLink product line in the second quarter and Special Product Company (SPC) in the fourth quarter. These acquisitions support our Broadband and 5G strategies by enhancing our fiber

¹ Net of cash acquired

management product offering and adding higher-growth outside-the-home product revenues. We continue to pursue a pipeline of attractive acquisition targets to further improve our robust portfolio.

Share Repurchases – During the year, we deployed the first \$50 million toward share repurchases under our \$300 million authorization. We expect to execute additional share repurchases in 2020 while maintaining prudent financial leverage within our target range of 2 to 3 times net debt to EBITDA².

To summarize, I am extremely pleased with our capital deployments in 2019. These initiatives support the ongoing transformation of Belden into the world’s leading specialty networking solutions provider and will allow us to drive impressive financial results.

Given our decision to divest Grass Valley, we presented the financial results for this business as discontinued operations for 2019. Full year revenues from continuing operations excluding Grass Valley were \$2.13 billion. Importantly, end demand for our products increased during the year despite the more challenging global economic environment that resulted from trade disputes. We also generated full year EBITDA margins of 16.5% and EPS³ of \$4.52. I would now like to share with you some of the details of our 2019 performance by segment.

Enterprise Solutions – Revenues in our Enterprise Solutions segment were \$1.08 billion in 2019, with EBITDA margins of 15.0%. The smart building market continues to benefit from healthy non-residential construction in the United States, and increased needs for contractor productivity and building efficiency. Integrated building networks with more connected devices are driving demand for our connectivity solutions, including our innovative fiber and power-over-Ethernet products. In the broadband & 5G market, our market-leading connectivity business is well-positioned to support our MSO cable customers as they upgrade existing networks and our telecom customers as they build out new 5G infrastructure. We continue to see robust demand for our fiber optic products, and we are significantly expanding our product offering and capturing additional share following the successful integration of our recent acquisitions. As a result, our fiber revenues more than doubled in 2019. We also see a number of attractive inorganic opportunities in the broadband fiber area that would allow us to add to our product offering and drive substantial growth.

Industrial Solutions – Revenues in our Industrial Solutions segment were \$1.05 billion in 2019, with EBITDA margins of 18.0%. Demand softened during the year in our largest industrial market, discrete

² Net leverage is calculated as (A) total debt less cash and cash equivalents divided by (B) the sum of trailing twelve months adjusted EBITDA plus trailing twelve months stock based compensation expense

³ Consolidated adjusted results are referenced in this letter. See appendix for reconciliations to comparable GAAP results. All references to EPS refer to adjusted income from continuing operations per diluted share attributable to Belden common stockholders.

manufacturing, in response to the escalating global trade dispute. However, our balanced portfolio of industrial automation businesses is a critical differentiator, and we benefitted from solid growth in our other three industrial markets – process facilities, energy, and mass transit. We continue to gain traction with our integrated product portfolio of ruggedized networking equipment and cybersecurity software, which supports our customers with essential interoperability and security of assets.

Strategic Financial Goals

Each year, we reflect on our financial goals to ensure alignment with our strategic plan and our end markets. We have a long track record of achieving our goals, but we are not satisfied with our recent performance. Our commitment to delivering for our shareholders is unwavering, and the important strategic actions outlined above will position us for success. An update on each of our financial goals is provided below.

- **Revenue Growth of 5 - 7%⁴**

Our long-term goal of 5-7% revenue growth represents a combination of market growth, share capture, and successful acquisition integration. In addition to our plans to remove certain declining or low-growth businesses from the portfolio, our strategic alignment with favorable secular trends in our served markets will drive demand for our secure, highly-engineered specialty networking solutions. We are well-positioned to deliver solid growth over the long-term given our organic investments and pipeline of potential inorganic opportunities, enabled by our strong balance sheet.

- **EBITDA Margins of 20 - 22%**

We have a long track record of margin expansion, with EBITDA margins increasing from 8.4% in 2005 when we started our transformation to 16.5% in 2019. We have line of sight to substantially higher margins, as the ongoing \$40 million cost reduction program and the planned exit of low-margin product lines are expected to be accretive to EBITDA margins by over 300 basis points. In addition, we anticipate making significant progress toward this financial goal as our teams execute a number of meaningful productivity initiatives and we leverage accelerating revenue growth.

- **Free Cash Flow Growth of 13 – 15%**

Our long-term goal of 13-15% free cash flow growth reflects our commitment to quality of earnings and working capital improvements. In 2019, free cash flow increased by 15% to \$167 million after adjusting for a \$46 million non-recurring after-tax gain related to patent litigation that occurred in

⁴ In constant currency

2018. We also increased net capital expenditures to fund our organic initiatives. This included investments in new software solutions and targeted capacity additions to support our fiber growth initiatives. We anticipate a robust free cash flow growth trajectory going forward.

- **Return on Invested Capital of 13 – 15%**

Our return on invested capital target of 13-15% requires a disciplined approach to capital allocation. We achieved a ROIC of 12.5% in 2019. Our strategic actions are expected to add approximately 150 basis points, and we anticipate making further progress as we execute our strategic plans.

Outlook

As a leading global specialty networking company primarily serving the Industrial and Enterprise markets, we are ideally positioned to benefit from a number of favorable secular trends impacting our businesses, including industrial automation, cybersecurity, broadband & 5G, and smart buildings. I am confident that we have the talent, strategy, balance sheet, and proven Lean enterprise system to navigate the COVID-19 situation, achieve our goals, and provide a compelling long-term return for our shareholders.

We are thankful for the loyalty of our customers, shareholders, and talented associates who make Belden a world-class company. We are grateful for your support, and we look forward to sharing in Belden's continued success together.

Sincerely,

A handwritten signature in black ink, appearing to read "John Stroup". The signature is fluid and cursive, with a large initial "J" and "S".

John Stroup

President, CEO and Chairman of the Board

BELDEN INC.
RECONCILIATION OF NON-GAAP MEASURES
(Unaudited)

In addition to reporting financial results in accordance with accounting principles generally accepted in the United States, we provide non-GAAP operating results adjusted for certain items, including: asset impairments; accelerated depreciation expense due to plant consolidation activities; purchase accounting effects related to acquisitions, such as the adjustment of acquired inventory and deferred revenue to fair value and transaction costs; severance, restructuring, and acquisition integration costs; gains (losses) recognized on the disposal of businesses and tangible assets; amortization of intangible assets; gains (losses) on debt extinguishment; certain revenues and gains (losses) from patent settlements; discontinued operations; and other costs. We adjust for the items listed above in all periods presented, unless the impact is clearly immaterial to our financial statements. When we calculate the tax effect of the adjustments, we include all current and deferred income tax expense commensurate with the adjusted measure of pre-tax profitability.

We utilize the adjusted results to review our ongoing operations without the effect of these adjustments and for comparison to budgeted operating results. We believe the adjusted results are useful to investors because they help them compare our results to previous periods and provide important insights into underlying trends in the business and how management oversees our business operations on a day-to-day basis. As an example, we adjust for the purchase accounting effect of recording deferred revenue at fair value in order to reflect the revenues that would have otherwise been recorded by acquired businesses had they remained as independent entities. We believe this presentation is useful in evaluating the underlying performance of acquired companies. Similarly, we adjust for other acquisition-related expenses, such as amortization of intangibles and other impacts of fair value adjustments because they generally are not related to the acquired business' core business performance. As an additional example, we exclude the costs of restructuring programs, which can occur from time to time for our current businesses and/or recently acquired businesses. We exclude the costs in calculating adjusted results to allow us and investors to evaluate the performance of the business based upon its expected ongoing operating structure. We believe the adjusted measures, accompanied by the disclosure of the costs of these programs, provides valuable insight.

Adjusted results should be considered only in conjunction with results reported according to accounting principles generally accepted in the United States.

	Three Months Ended		Twelve Months Ended	
	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
	<i>(In thousands, except percentages and per share amounts)</i>			
GAAP revenues	\$ 549,688	\$ 552,052	\$ 2,131,278	\$ 2,165,702
Deferred revenue adjustments	—	—	—	—
Adjusted revenues	<u>\$ 549,688</u>	<u>\$ 552,052</u>	<u>\$ 2,131,278</u>	<u>\$ 2,165,702</u>
GAAP gross profit	\$ 202,772	\$ 216,994	\$ 793,505	\$ 829,911
Severance, restructuring, and acquisition integration costs	2,333	1,979	3,425	17,962
Purchase accounting effects related to acquisitions	60	—	592	27
Amortization of software development intangible assets	318	43	525	79
Adjusted gross profit	<u>\$ 205,483</u>	<u>\$ 219,016</u>	<u>\$ 798,047</u>	<u>\$ 847,979</u>
<i>GAAP gross profit margin</i>	<i>36.9 %</i>	<i>39.3%</i>	<i>37.2 %</i>	<i>38.3%</i>
<i>Adjusted gross profit margin</i>	<i>37.4 %</i>	<i>39.7%</i>	<i>37.4 %</i>	<i>39.2%</i>
GAAP selling, general and administrative expenses	\$ (118,675)	\$ (104,813)	\$ (417,329)	\$ (411,352)
Severance, restructuring, and acquisition integration costs	18,645	191	23,119	4,546
Costs related to patent litigation	—	—	—	2,634
Purchase accounting effects related to acquisitions	—	1,138	—	1,663
Loss on sale of assets	—	—	—	94
Adjusted selling, general and administrative expenses	<u>\$ (100,030)</u>	<u>\$ (103,484)</u>	<u>\$ (394,210)</u>	<u>\$ (402,415)</u>
GAAP research and development expenses	\$ (22,346)	\$ (22,223)	\$ (94,360)	\$ (91,552)
Severance, restructuring, and acquisition integration costs	—	—	—	117
Adjusted research and development expenses	<u>\$ (22,346)</u>	<u>\$ (22,223)</u>	<u>\$ (94,360)</u>	<u>\$ (91,435)</u>

	Three Months Ended		Twelve Months Ended	
	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
(In thousands, except percentages and per share amounts)				
GAAP net income (loss) attributable to Belden	\$ (147,408)	\$ 43,526	\$ (377,015)	\$ 160,894
Loss (income) from discontinued operations, net of tax	149,759	(7,526)	486,667	6,433
Interest expense, net	13,863	14,639	55,814	60,839
Income tax expense	26,340	19,552	42,519	62,936
Non-operating pension settlement loss	—	1,342	—	1,342
Loss on debt extinguishment	—	—	—	22,990
Noncontrolling interests	179	(35)	239	(183)
Total non-operating adjustments	190,141	27,972	585,239	154,357
Amortization of intangible assets	18,351	18,693	74,609	75,140
Severance, restructuring, and acquisition integration costs	20,978	2,170	26,544	22,625
Costs related to patent litigation	—	—	—	2,634
Purchase accounting effects related to acquisitions	60	1,138	592	1,690
Amortization of software development intangible assets	318	43	525	79
Loss on sale of assets	—	—	—	94
Gain from patent litigation	—	—	—	(62,141)
Total operating income adjustments	39,707	22,044	102,270	40,121
Depreciation expense	10,419	9,674	40,409	38,309
Adjusted EBITDA	\$ 92,859	\$ 103,216	\$ 350,903	\$ 393,681
GAAP net income (loss) margin	(26.8)%	7.9%	(17.7)%	7.4%
Adjusted EBITDA margin	16.9 %	18.7%	16.5 %	18.2%
GAAP net income (loss) attributable to Belden	\$ (147,408)	\$ 43,526	\$ (377,015)	\$ 160,894
Operating income adjustments from above	39,707	22,044	102,270	40,121
Loss (income) from discontinued operations, net of tax	149,759	(7,526)	486,667	6,433
Non-operating pension settlement loss	—	1,342	—	1,342
Loss on debt extinguishment	—	—	—	22,990
Tax effect of adjustments above	12,796	(359)	(1,948)	(5,351)
Amortization expense attributable to noncontrolling interest, net of tax	—	(16)	—	(66)
Adjusted net income attributable to Belden	\$ 54,854	\$ 59,011	\$ 209,974	\$ 226,363
GAAP net income (loss) attributable to Belden	\$ (147,408)	\$ 43,526	\$ (377,015)	\$ 160,894
Loss (income) from discontinued operations, net of tax	149,759	(7,526)	486,667	6,433
Less: Preferred stock dividends	—	(8,733)	(18,437)	(34,931)
GAAP net income attributable to Belden common stockholders	\$ 2,351	\$ 27,267	\$ 91,215	\$ 132,396
Adjusted net income attributable to Belden	\$ 54,854	\$ 59,011	\$ 209,974	\$ 226,363
Less: Preferred stock dividends	—	(8,733)	(18,437)	(34,931)
Adjusted net income attributable to Belden common stockholders	\$ 54,854	\$ 50,278	\$ 191,537	\$ 191,432
GAAP income from continuing operations per diluted share attributable to Belden common stockholders	\$ 0.05	\$ 0.68	\$ 2.15	\$ 3.23
Adjusted income from continuing operations per diluted share attributable to Belden common stockholders	\$ 1.20	\$ 1.26	\$ 4.52	\$ 4.67
GAAP and adjusted diluted weighted average shares	45,684	40,031	42,416	40,956

BELDEN INC.
RECONCILIATION OF NON-GAAP MEASURES
(Unaudited)

We define free cash flow, which is a non-GAAP financial measure, as net cash from operating activities adjusted for capital expenditures net of the proceeds from the disposal of tangible assets. We believe free cash flow provides useful information to investors regarding our ability to generate cash from business operations that is available for acquisitions and other investments, service of debt principal, dividends and share repurchases. We use free cash flow, as defined, as one financial measure to monitor and evaluate performance and liquidity. Non-GAAP financial measures should be considered only in conjunction with financial measures reported according to accounting principles generally accepted in the United States. Our definition of free cash flow may differ from definitions used by other companies.

	Twelve Months Ended	
	December 31, 2019	December 31, 2018
	(In thousands)	
GAAP net cash provided by operating activities	\$ 276,893	\$ 289,220
Capital expenditures, net of proceeds from the disposal of tangible assets	(109,977)	(96,267)
Gain from patent litigation, after taxes	-	(46,109)
Non-GAAP free cash flow	<u>\$ 166,916</u>	<u>\$ 146,844</u>

**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, 2019

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 No. 001-12561

BELDEN INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

36-3601505

(IRS Employer Identification No.)

1 North Brentwood Boulevard

15th Floor

St. Louis, Missouri 63105

(Address of Principal Executive Offices and Zip Code)

(314) 854-8000

(Registrant's Telephone Number, Including Area Code)

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

<u>Title of each class</u>	<u>Trading Symbol</u>	<u>Name of each exchange on which registered</u>
Common Stock, \$0.01 par value per share	BDC	The New York Stock Exchange

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

Indicate by check mark if 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 for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No .

Indicate by check mark whether the Registrant has submitted electronically and posted on its corporate website, if any, every interactive data file required to be submitted and posted pursuant to Rule 405 of Regulation S-T (section 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No .

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No .

At June 30, 2019, the aggregate market value of Common Stock of Belden Inc. held by non-affiliates was \$1,719,404,831 based on the closing price (\$59.57) of such stock on such date.

As of February 6, 2020, there were 45,459,726 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

The registrant intends to file a definitive proxy statement for its annual meeting of stockholders within 120 days of the end of the fiscal year ended December 31, 2019 (the "Proxy Statement"). Portions of such proxy statement are incorporated by reference into Part III.

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Part I

Item 1. Business

General

Belden Inc. (the Company, us, we, or our) is a global supplier of specialty networking solutions built around two global business platforms - Enterprise Solutions and Industrial Solutions. Our comprehensive portfolio of solutions enables customers to transmit and secure data, sound, and video for mission critical applications across complex enterprise and industrial environments. Each business platform represents a reportable segment. Financial information about our segments appears in Note 6 to the Consolidated Financial Statements.

Our comprehensive portfolio of specialty networking solutions provides industry leading secure and reliable transmission of data, sound, and video for mission critical applications. We sell our products to distributors, end-users, installers, and directly to original equipment manufacturers (OEMs). Belden Inc. is a Delaware corporation incorporated in 1988, but the Company's roots date back to its founding by Joseph Belden in 1902.

As used herein, unless an operating segment is identified or the context otherwise requires, "Belden," the "Company", and "we" refer to Belden Inc. and its subsidiaries as a whole.

Strategy and Business Model

Our business model is designed to generate shareholder value:

- **Operational Excellence**—The core of our business model is operational excellence and the execution of our Belden Business System. The Belden Business System has three areas of focus. First, we demonstrate a commitment to Lean enterprise initiatives, which improve not only the quality and efficiency of the manufacturing environment, but our business processes on a company-wide basis. Second, we utilize our Market Delivery System (MDS), a go-to-market model that provides the foundation for organic growth. We believe that organic growth, resulting from both market growth and share capture, is essential to our success. Finally, our Talent Management System supports the development of our associates at all levels, which preserves the culture necessary to operate our business consistently and sustainably.
- **Cash Generation**—Our pursuit of operational excellence results in the generation of cash flow. We generated cash flows from operating activities of \$276.9 million, \$289.2 million, and \$255.3 million in 2019, 2018, and 2017, respectively.
- **Portfolio Improvement**—We utilize the cash flow generated by our business to fuel our continued transformation and generate shareholder value. We continuously improve our portfolio to ensure we provide the most complete, end-to-end solutions to our customers. Our portfolio is designed with balance across end markets and geographies to ensure we can meet our goals in most economic environments. We have a disciplined acquisition cultivation, execution, and integration system that allows us to invest in outstanding companies that strengthen our capabilities and enhance our ability to serve our customers.

Segments

We operate our business under the two segments – Enterprise Solutions and Industrial Solutions. A synopsis of the segments is included below:

Enterprise Solutions

The Enterprise Solutions (Enterprise) segment is a leading provider in network infrastructure solutions, as well as cabling and connectivity solutions for commercial audio/video and security applications. We serve customers in markets such as healthcare, education, financial, government, and corporate enterprises, as well as end-markets, including sport venues and academia. Enterprise product lines include copper cable and connectivity solutions, fiber cable and connectivity solutions, and racks and enclosures. Our products are used in applications such as local area networks, data centers, access control, and building automation. Enterprise provides true end-to-end copper and fiber network systems to include cable, assemblies, interconnect panels, and enclosures. Our high-performance solutions support all networking protocols up to and including 100G+ Ethernet technologies. Enterprise's innovative products can deliver data in addition to power over Ethernet, which meets the higher performance requirements driven by the increasing number of connections in smart buildings. Enterprise products also include intelligent power, cooling, and airflow management for mission-critical data center operations. The Enterprise product portfolio is designed to support Internet Protocol

convergence, the increased use of wireless communications, and cloud-based data centers by our customers. Our systems are installed through a network of highly trained system integrators and are supplied through authorized distributors.

Industrial Solutions

The Industrial Solutions (Industrial) segment is a leading provider of high performance networking components and machine connectivity products. Industrial products include physical network and fieldbus infrastructure components and on-machine connectivity systems customized to end user and OEM needs. Products are designed to provide reliability and confidence of performance for a wide range of industrial automation applications. Our products are used in applications such as network and fieldbus infrastructure; sensor and actuator connectivity; and power, control, and data transmission. Industrial products include solutions such as industrial and input/output (I/O) connectors, industrial cables, IP and networking cables, I/O modules, distribution boxes, ruggedized controls and sensors, and customer specific wiring solutions.

Our industrial cable products are used in discrete manufacturing and process operations involving the connection of computers, programmable controllers, robots, operator interfaces, motor drives, sensors, printers, and other devices. Many industrial environments, such as petrochemical and other harsh-environment operations, require cables with exterior armor or jacketing that can endure physical abuse and exposure to chemicals, extreme temperatures, and outside elements. Other applications require conductors, insulation, and jacketing materials that can withstand repeated flexing. In addition to cable product configurations for these applications, we supply heat-shrinkable tubing and wire management products to protect and organize wire and cable assemblies. Our industrial connector products are primarily used as sensor and actuator connections in factory automation supporting various fieldbus protocols as well as power connections in building automation. These products are used both as components of manufacturing equipment and in the installation and networking of such equipment.

Industrial Solutions products are sold directly to industrial equipment OEMs and through a network of industrial distributors, value-added resellers, and system integrators.

See Note 5 to the Consolidated Financial Statements for additional information regarding our segments.

Acquisitions

A key part of our business strategy includes acquiring companies to support our growth and enhance our product portfolio. Our acquisition strategy is based upon targeting leading companies that offer innovative products and strong brands. We utilize a disciplined approach to acquisitions based on product and market opportunities. When we identify acquisition candidates, we conduct rigorous financial and cultural analyses to make certain that they meet both our strategic plan targets and our goal for return on invested capital of 13-15%.

We have completed a number of acquisitions in recent years as part of this strategy. Most recently, in December 2019, we acquired substantially all of the assets of Special Product Company (SPC), a leading designer, manufacturer, and seller of outdoor cabinet products for optical fiber cable installations. In April 2019, we acquired the FutureLink business from Suttle Inc. as well as Opterna International Corp. (Opterna), which designs and manufactures complementary fiber connectivity, cabinet, and enclosure products used in optical networks. The results of SPC, FutureLink, and Opterna have been included in our Consolidated Financial Statements as of their acquisition dates, and are reported within the Enterprise Solutions segment.

In 2018, we acquired Net-Tech Technology, Inc. (NT2), an integrator of optical passive components and network optimization products used within broadband network applications where optical backhaul is used. The results of NT2 have been included in our Consolidated Financial Statements from the acquisition date, and are reported within the Enterprise Solutions segment.

In 2017, we completed the acquisition of Thinklogical Holdings, LLC (Thinklogical), a leading provider of secure, centralized KVM video switches to the command and control market. The results of Thinklogical have been included in our Consolidated Financial Statements from the acquisition date and are reported in the Enterprise Solutions segment.

For more information regarding these transactions, see Note 4 to the Consolidated Financial Statements.

Customers

We sell to distributors, OEMs, installers, and end-users. Sales to the distributor Anixter International Inc. (Anixter) represented approximately 13% of our consolidated revenues in 2019. On January 10, 2020, Anixter entered into a definitive agreement with WESCO International, Inc (WESCO) by which Anixter will be acquired WESCO. Sales to both Anixter and WESCO combined,

represented approximately 15% of our consolidated revenues in 2019. No other customer accounted for more than 10% of our revenues in 2019.

We have supply agreements with distributors and OEM customers. In general, our customers are not contractually obligated to buy our products exclusively, in minimum amounts, or for a significant period of time. We believe that our relationships with our customers and distributors are good and that they are loyal to Belden products as a result of our reputation, the breadth of our product portfolio, the quality and performance characteristics of our products, and our customer service and technical support, among other reasons.

International Operations

In addition to manufacturing facilities in the United States (U.S.), we have manufacturing and other operating facilities in Brazil, Canada, China, India, Japan, Mexico, and St. Kitts, as well as in various countries in Europe. During 2019, approximately 44% of Belden's sales were to customers outside the U.S. Our primary channels to international markets include both distributors and direct sales to end users and OEMs.

Financial information for Belden by country is shown in Note 6 to the Consolidated Financial Statements.

Competition

We face substantial competition in our major markets. The number and size of our competitors vary depending on the product line and segment. Some multinational competitors have greater financial, engineering, manufacturing, and marketing resources than we have. There are also many regional competitors that have more limited product offerings.

The markets in which we operate can be generally categorized as highly competitive with many players. In order to maximize our competitive advantages, we manage our product portfolio to capitalize on secular trends and high-growth applications in those markets. Based on available data for our served markets, we estimate that our market share across our segments is significant, ranging from approximately 5% – 20%. A substantial acquisition in one of our served markets would be necessary to meaningfully change our estimated market share percentage.

The principal competitive factors in all our product markets are technical features, quality, availability, price, customer support, and distribution coverage. The relative importance of each of these factors varies depending on the customer. Some products are manufactured to meet published industry specifications and are less differentiated on the basis of product characteristics. We believe that Belden stands out in many of our markets on the basis of the breadth of our product portfolio, the quality and performance characteristics of our products, our customer service, and our technical support.

Research and Development

We conduct research and development on an ongoing basis, including new and existing hardware and software product development, testing and analysis, and process and equipment development and testing. See the Consolidated Statements of Operations for amounts incurred for research and development. Many of the markets we serve are characterized by advances in information processing and communications capabilities, including advances driven by the expansion of digital technology, which require increased transmission speeds and greater bandwidth. Our markets are also subject to increasing requirements for mobility, information security, and transmission reliability. Some of our markets are using workflows and resources in public and private cloud and showing preference for software products delivered as services. We believe that our future success will depend in part upon our ability to enhance existing products and to develop, manufacture and deliver new products that meet or anticipate such changes in our served markets.

In our Enterprise Solutions segment, in order to support the demand for additional bandwidth and to improve service integrity, broadband service providers are investing in their networks to enhance delivery capabilities to customers for the foreseeable future. Additional bandwidth requirements resulting from increased traffic expose weak points in the network, which are often connectivity related, causing broadband service operators to improve and upgrade residential networks with higher performing connectivity products.

In our Industrial Solutions segment, there is a compelling need among global enterprises, service providers and government agencies to detect, prevent and respond to cyber security threats. This is a long-standing need within corporate networks, but we believe the rapid proliferation of new devices in the "internet of things" will cause this need to broaden and accelerate. Additionally, cyber-attacks are moving beyond traditional targets into critical infrastructure, which will further amplify the importance of our work in

network security. Furthermore, there is a growing trend toward adoption of Industrial Ethernet technology, bringing to the critical infrastructure the advantages of digital communication and the ability to network devices made by different manufacturers and integrate them with enterprise systems. While the adoption of this technology is at a more advanced stage in certain regions of the world, we believe that the trend will globalize. This trend will also lead to a rising need for wireless systems for some applications and for cybersecurity to protect this critical infrastructure. Part of our research and development is focused on creating scalable, efficient technologies to provide real-time instrumentation and analytics across entire networks. This includes delivering high-fidelity visibility and deep intelligence about networked systems, their vulnerabilities, and providing actionable information about how to effectively secure them. Additionally, we have highly-skilled and active research teams who analyze current and anticipated threats, and provide offerings to the market to enable customers to quickly detect and resolve cybersecurity threats.

Our research and development efforts are also focused on fiber optic technology, which presents a potential substitute for certain of the copper-based products that comprise a portion of our revenues. Fiber optic cables have certain advantages over copper-based cables in applications where large amounts of information must travel significant distances and where high levels of information security are required. While the cost to interface electronic and optical light signals and to terminate and connect optical fiber remains comparatively high, we expect that in future years the cost difference versus traditional copper networks will diminish. We sell fiber optic infrastructure, and many customers specify these products in combination with copper-based infrastructure. The final stage of most networks remains almost exclusively copper-based, and we expect that it will continue to be copper for the foreseeable future. However, if a significant decrease in the cost of fiber optic systems relative to the cost of copper-based systems were to occur, such systems could become superior on a price/performance basis to copper-based systems. Part of our research and development efforts focus on expanding our fiber-optic based product portfolio.

Patents and Trademarks

We have a policy of seeking patents when appropriate on inventions concerning new products, product improvements, and advances in equipment and processes as part of our ongoing research, development, and manufacturing activities. We own many patents and registered trademarks worldwide that are used by our operating segments, with pending applications for numerous others. We consider our patents and trademarks to be valuable assets. Our most prominent trademarks are: Belden®, Alpha Wire™, GarrettCom®, Hirschmann®, Lumberg Automation™, Mohawk®, Poliron™, PPC®, ProSoft Technology®, Thinklogical®, Tofino®, Tripwire® and West Penn Wire™.

Raw Materials

The principal raw material used in many of our cable products is copper. Other materials we purchase in large quantities include fluorinated ethylene-propylene (FEP), polyvinyl chloride (PVC), polyethylene, aluminum-clad steel and copper-clad steel conductors, aluminum, brass, other metals, optical fiber, printed circuit boards, and electronic components. With respect to all major raw materials used by us, we generally have either alternative sources of supply or access to alternative materials. Supplies of these materials are generally adequate and are expected to remain so for the foreseeable future.

Over the past three years, the prices of metals, particularly copper, have been highly volatile. The chart below illustrates the high and low spot prices per pound of copper over the last three years.

	2019	2018	2017
Copper spot prices per pound			
High	\$ 2.98	\$ 3.29	\$ 3.29
Low	\$ 2.51	\$ 2.56	\$ 2.48

Prices for materials such as PVC and other plastics derived from petrochemical feedstocks have also fluctuated. Since Belden utilizes the first in, first out (FIFO) inventory costing methodology, the impact of copper and other raw material cost changes on our cost of goods sold is delayed by approximately two months based on our rate of inventory turnover.

While we generally are able to adjust our pricing for fluctuations in commodity prices, we can experience short-term favorable or unfavorable variances. When the cost of raw materials increases, we are generally able to recover these costs through higher pricing of our finished products. The majority of our products are sold through distribution, and we manage the pricing of these products through published price lists, which we update from time to time, with new prices typically taking effect a few weeks after they are announced. Some OEM customer contracts have provisions for passing through raw material cost changes, generally with a lag of a few weeks to three months.

Backlog

Our business is characterized generally by short-term order and shipment schedules. Our backlog consists of product orders for which we have received a customer purchase order or purchase commitment and which have not yet been shipped. Orders are generally subject to cancellation or rescheduling by the customer. As of December 31, 2019, our backlog of orders believed to be firm was \$161.9 million. Nearly all of the backlog at December 31, 2019 is scheduled to be shipped in 2020.

Environmental Matters

We are subject to numerous federal, state, provincial, local, and foreign laws and regulations relating to the storage, handling, emission, and discharge of materials into the environment, including the Comprehensive Environmental Response, Compensation, and Liability Act; the Clean Water Act; the Clean Air Act; the Emergency Planning and Community Right-To-Know Act; the Resource Conservation and Recovery Act; and similar laws in the other countries in which we operate. We believe that our existing environmental control procedures and accrued liabilities are adequate, and we have no current plans for substantial capital expenditures in this area.

Employees

As of December 31, 2019, for our continuing operations, we had approximately 7,000 employees worldwide. We also utilized approximately 200 workers under contract manufacturing arrangements. Approximately 1,800 employees are covered by collective bargaining agreements at various locations around the world. We believe our relationship with our employees is generally positive, and we measure and monitor the workforce's sustainable engagement, among other metrics, to ensure this remains the case.

Available Information

We file annual, quarterly, and current reports, proxy statements, and other information with the Securities and Exchange Commission (SEC). These reports, proxy statements, and other information contain additional information about us. These electronic SEC filings are available on the SEC's web site at www.sec.gov.

Belden maintains an Internet web site at www.belden.com where our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, proxy statements, and all amendments to those reports and statements are available without charge, as soon as reasonably practicable following the time they are filed with or furnished to the SEC.

We will provide upon written request and without charge a printed copy of our Annual Report on Form 10-K. To obtain such a copy, please write to the Corporate Secretary, Belden Inc., 1 North Brentwood Boulevard, 15th Floor, St. Louis, MO 63105.

Information about our Executive Officers

The following table sets forth certain information with respect to the persons who were Belden executive officers as of February 10, 2020. All executive officers are elected to terms that expire at the organizational meeting of the Board of Directors following the Annual Meeting of Shareholders.

<u>Name</u>	<u>Age</u>	<u>Position</u>
John Stroup	53	President, Chief Executive Officer, and Chairman
Brian Anderson	45	Senior Vice President, Legal, General Counsel and Corporate Secretary
Ashish Chand	45	Executive Vice President, Industrial Automation
Henk Derksen	51	Senior Vice President, Finance, and Chief Financial Officer
Leo Kulmaczewski	54	Senior Vice President, Operations and Lean Enterprise
Dean McKenna	51	Senior Vice President, Human Resources
Paul Turner	56	Senior Vice President, Sales
Roel Vestjens	45	Executive Vice President and Chief Operating Officer
Doug Zink	44	Vice President and Chief Accounting Officer

John Stroup has been President, Chief Executive Officer and a member of the Board since October 2005. He was elected as Chairman of the Board on November 30, 2016. From 2000 to the date of his appointment with the Company, he was employed by Danaher Corporation, a manufacturer of professional instrumentation, industrial technologies, and tools and components. At Danaher, he initially served as Vice President, Business Development. He was promoted to President of a division of Danaher's

Motion Group and later to Group Executive of the Motion Group. Earlier, he was Vice President of Marketing and General Manager with Scientific Technologies Inc. He has a B.S. in Mechanical Engineering from Northwestern University and an M.B.A. from the University of California at Berkeley Haas School of Business.

Brian Anderson has been Senior Vice President, Legal, General Counsel and Corporate Secretary since April 2015. Prior to that, he served as Corporate Attorney for the Company from May 2008 through March 2015. Prior to joining Belden, Mr. Anderson was in private practice at the law firm Lewis Rice. Mr. Anderson has a B.S.B. in Accounting and an M.B.A. from Eastern Illinois University and holds a J.D. from Washington University in St. Louis.

Ashish Chand was appointed Executive Vice President, Industrial Automation in July 2019. Prior to that, he served as Managing Director, Industrial Solutions, for the Company's APAC division from August 2017 to June 2019. Mr. Chand joined the Company in 2002 and has assumed positions of increasing responsibility in sales and marketing, operations, business development and general management since that time. Prior to joining Belden, Mr. Chand had experience in the oil and gas and non-ferrous metals segments. Mr. Chand holds a doctoral degree in Business from the City University of Hong Kong, an M.B.A. from XLRI Jamshedpur, India and a B.A. from Loyola College Chennai, India.

Henk Derksen has been Senior Vice President, Finance, and Chief Financial Officer since January 2012. Prior to that, he served as Vice President, Corporate Finance from July 2011 to December 2011 and Treasurer and Vice President, Financial Planning and Analysis of the Company from January 2010 to July 2011. In August of 2003, he became Vice President, Finance for the Company's EMEA division, after joining the Company at the end of 2000. Prior to joining the Company, he was Vice President and Controller of Plukon Poultry, a food processing company from 1998 to 2000, and has 5 years' experience in public accounting with Price Waterhouse and Baker Tilly. Mr. Derksen has a M.A. in Accounting from the University of Arnhem in the Netherlands and holds a doctoral degree in Business Economics in addition to an Executive Master of Finance & Control from Tias Business School in the Netherlands.

Leo Kulmaczewski was appointed Senior Vice President, Operations and Lean Enterprise in October 2018. Prior to joining Belden, Mr. Kulmaczewski was employed by Leica Biosystems, a division of Danaher Corporation, in various operations roles in the medical devices industry, the most recent of which was Vice President, Operations, Global Supply Chain and Danaher Business System. Prior to joining Leica in 2014, he worked for Thermo Fisher Scientific, Honeywell and Motorola, among other companies. Mr. Kulmaczewski has a B.S. in Industrial Engineering from the University of Wisconsin and an M.B.A. from DePaul University.

Dean McKenna has been Senior Vice President, Human Resources since May 2015. Prior to joining Belden, he was Vice President of Human Resources for the international business of SC Johnson. Prior to SC Johnson, he worked in various senior international human resource, organizational development and talent positions at Ingredion, Akzo Nobel and ICI Group PLC. He received his degree in Strategic Human Resource Management at the Nottingham Business School in the United Kingdom.

Paul Turner has been Senior Vice President, Sales since February 2017. Mr. Turner joined Belden in 2006, and has held a variety of roles of increasing responsibility within Belden's sales organization since that time. Before joining Belden, Mr. Turner spent five years in the private sector in a subcontract manufacturing company based in the United Kingdom, ultimately serving in the post of Managing Director. Prior to that experience, Mr. Turner spent 13 years with the 3M Company in the United Kingdom, holding roles of increasing responsibility within 3M's commercial organization across the EMEA region.

Roel Vestjens has been Executive Vice President, Industrial Solutions since February 2018 and was appointed as Chief Operating Officer in July 2019. Prior to that, he was the Executive Vice President, Industrial Solutions and Broadcast IT Solutions from January 2017 to February 2018 and the Executive Vice President, Broadcast Solutions from March 2014 to January 2017. Mr. Vestjens joined Belden in 2006 as Director of Marketing for the EMEA region. In April 2008, Mr. Vestjens was promoted to Director of Sales and Marketing for the Industrial Solutions business, and in January 2009, he was appointed General Manager of Belden's Wire and Cable Systems business in EMEA. Mr. Vestjens relocated to Asia in November 2010, and became President of the APAC OEM business, followed by President of all APAC Operations in May 2012. Mr. Vestjens joined Belden from Royal Philips Electronics where he held various European sales and marketing positions. Mr. Vestjens holds a bachelor degree in Electrical Engineering and a Master of Science and Management degree from Nyenrode Business University in the Netherlands.

Doug Zink has been Vice President and Chief Accounting Officer since September 2013. Prior to that, he has served as the Company's Vice President, Internal Audit; Corporate Controller; and Director of Financial Reporting, after joining Belden in May 2007. Prior to joining the Company, he was a Financial Reporting Manager at TLC Vision Corporation, an eye care service company, from 2004 to 2007, and has five years of experience in public accounting with KPMG LLP and Arthur Andersen LLP. He holds Bachelor's and Master's Degrees in Accounting from Texas Christian University and is a Certified Public Accountant.

Cautionary Information Regarding Forward-Looking Statements

We make forward-looking statements in this Annual Report on Form 10-K, in other materials we file with the SEC or otherwise release to the public, and on our website. In addition, our senior management might make forward-looking statements orally to investors, analysts, the media, and others. Statements concerning our future operations, prospects, strategies, financial condition, future economic performance (including growth and earnings) and demand for our products and services, and other statements of our plans, beliefs, or expectations, including the statements contained in Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” that are not historical facts, are forward-looking statements. In some cases these statements are identifiable through the use of words such as “anticipate,” “believe,” “estimate,” “forecast,” “guide,” “expect,” “intend,” “plan,” “project,” “target,” “can,” “could,” “may,” “should,” “will,” “would,” and similar expressions. The forward-looking statements we make are not guarantees of future performance and are subject to various assumptions, risks, and other factors that could cause actual results to differ materially from those suggested by these forward-looking statements. These factors include, among others, those set forth in the following section and in the other documents that we file with the SEC.

We expressly disclaim any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

Item 1A. Risk Factors

Following is a discussion of some of the more significant risks that could materially impact our business. There may be additional risks that impact our business that we currently do not recognize as, or that are not currently, material to our business.

The presence of substitute products in the marketplace may reduce demand for our products and negatively impact our business.

Fiber optic systems are increasingly substitutable for copper based cable systems. Customers may shift demand to fiber optic systems with greater capabilities than copper based cable systems, leading to a reduction in demand for copper based cable. We may not be able to offset the effects of a reduction in demand for our copper-based cable systems with an increase in demand for our existing fiber optic systems. Further, the supply chain in the fiber market is highly constrained, with a small number of vertically integrated firms controlling critical inputs and the related intellectual property. Similarly, in our non-cable businesses, customers could rapidly shift the methods by which they capture and transmit signals in ways that could lead to decreased demand for our current or future products. These factors, either together or in isolation, may negatively impact revenue and profitability.

Our future success depends in part on our ability to develop and introduce new products and respond to changes in customer preferences.

Our markets are characterized by the introduction of products with increasing technological capabilities. Our success depends in part on our ability to anticipate and offer products that appeal to the changing needs and preferences of our customers in the various markets we serve. Developing new products and adapting existing products to meet evolving customer expectations requires high levels of innovation, and the development process may be lengthy and costly. If we are not able to timely anticipate, identify, develop and market products that respond to rapidly changing customer preferences, demand for our products could decline.

The relative costs and merits of our solutions could change in the future as various competing technologies address the market opportunities. We believe that our future success will depend in part upon our ability to enhance existing products and to develop and manufacture new products that meet or anticipate technological changes, which will require continued investment in engineering, research and development, capital equipment, marketing, customer service, and technical support. We have long been successful in introducing successive generations of more capable products, but if we were to fail to keep pace with technology or with the products of competitors, we might lose market share and harm our reputation and position as a technology leader in our markets. See the discussion above in Part I, Item 1, under *Research and Development*.

The increased influence of chief information officers and similar high-level executives may negatively impact demand for our products.

As a result of the increasing interconnectivity of a wide variety of systems, chief information officers and similar executives are more heavily involved in operation areas that have not historically been associated with information technology. As a result, CIOs and IT departments are exercising influence over the procurement and purchasing process at the expense of engineers, plant managers and operation personnel that have historically driven demand for many of our products. When making purchasing decisions, CIO's often value interoperability, standardization, cloud-readiness and security over domain expertise and niche application knowledge. As a result of the influences of CIOs and IT departments, we may face increased competition from IT-industry companies that have not traditionally had major presences in the markets in which we operate. Further, the variance in considerations that drive purchasing decisions between CIOs and those with niche application expertise may result in increased competition based on price and a reduction in demand for our products.

Alterations to our product mix and go-to-market strategies designed to respond to the changes in the marketplace presented by cloud computing may be disruptive to our business and lead to increase expenses, which may result in lower revenues and profitability. Further, if a competitor is able to more quickly or efficiently adapt, or if cloud computing results in significantly lower barriers to entry and new competitors enter our markets, demand for our products may be reduced.

The increased prevalence of cloud computing and other disruptive business models may negatively impact certain aspects of our business.

The nature in which many of our products are purchased or used is evolving with the increasing prevalence of cloud computing and other methods of off-premises computing and data storage. This may negatively impact one or more of our businesses in a number of ways, including:

- Consolidation of procurement power leading to the commoditization of IT products;
- Reduction in the demand for infrastructure products previously used to support on-site data centers;
- Lowering barriers to entry for certain markets, leading to new market entrants and enhanced competition; and
- Preferences for software as a service billing and pricing models may reduce demand for non-cloud "packaged" software.

We may be unable to achieve our goals related to growth.

In order to meet the goals in our strategic plan, we must grow our business, both organically and through acquisitions. Our goal is to generate total revenue growth of 5-7% per year in constant currency. We may be unable to achieve this desired growth due to a failure to identify growth opportunities, such as trends and technological changes in our end markets. We may ineffectively execute our Market Delivery System (“MDS”), which is designed to identify and capture growth opportunities. The enterprise and industrial end markets we serve may not experience the growth we expect. Further, those markets may be unable to sustain growth on a long-term basis, particularly in emerging markets. If we are unable to achieve our goals related to growth, it could have a material adverse effect on our results of operations, financial position, and cash flows.

We may be unable to implement our strategic plan successfully.

Our strategic plan is designed to continually enhance shareholder value by improving revenues and profitability, reducing costs, and improving working capital management. To achieve these goals, our strategic priorities are reliant on our Belden Business System, which includes continuing deployment of our MDS to capture market share through end-user engagement, channel management, outbound marketing, and careful vertical market selection; improving our recruitment and development of talented associates; developing strong global business platforms; acquiring businesses that fit our strategic plan; and continuing to be a leading Lean company. We have a disciplined process for deploying this strategic plan through our associates. There is a risk that we may not be successful in developing or executing these measures to achieve the expected results for a variety of reasons, including market developments, economic conditions, shortcomings in establishing appropriate action plans, or challenges with executing multiple initiatives simultaneously. For example, our MDS initiative may not succeed or we may lose market share due to challenges in choosing the right products to market or the right customers for these products, integrating products of acquired companies into our sales and marketing strategy, or strategically bidding against OEM partners. We may fail to identify growth opportunities. We may not be able to acquire businesses that fit our strategic plan on acceptable business terms, and we may not achieve our other strategic priorities.

We may be unable to achieve our strategic priorities in emerging markets.

Emerging markets are a significant focus of our strategic plan. The developing nature of these markets presents a number of risks. We may be unable to attract, develop, and retain appropriate talent to manage our businesses in emerging markets. Deterioration of social, political, labor, or economic conditions in a specific country or region may adversely affect our operations or financial results. Emerging markets may not meet our growth expectations, and we may be unable to maintain such growth or to balance such growth with financial goals and compliance requirements. Among the risks in emerging market countries are bureaucratic intrusions and delays, contract compliance failures, engrained business partners that do not comply with local or U.S. law, such as the Foreign Corrupt Practices Act, fluctuating currencies and interest rates, limitations on the amount and nature of investments, restrictions on permissible forms and structures of investment, unreliable legal and financial infrastructure, regime disruption and political unrest, uncontrolled inflation and commodity prices, fierce local competition by companies with better political connections, and corruption. In addition, the costs of compliance with local laws and regulations in emerging markets may negatively impact our competitive position as compared to locally owned manufacturers.

We must complete acquisitions and divestitures in order to achieve our strategic plan.

In order to meet the goals in our strategic plan, we must complete acquisitions and divestitures. The extent to which appropriate acquisitions are made will affect our overall growth, operating results, financial condition, and cash flows. Our ability to acquire businesses successfully will decline if we are unable to identify appropriate acquisition targets consistent with our strategic plan, the competition among potential buyers increases, the cost of acquiring suitable businesses becomes too expensive, or we lack sufficient sources of capital. As a result, we may be unable to make acquisitions or be forced to pay more or agree to less advantageous acquisition terms for the companies that we would like to acquire.

Additionally, our strategic plan includes the divestiture of our Grass Valley disposal group (as discussed in Note 5) and the planned divestiture of certain low-margin cable businesses representing up to \$250 million in annual revenues. As discussed in Note 28, we entered into a definitive agreement to sell the Grass Valley disposal group on February 4, 2020, which is subject to closing conditions. If we are unable to close the divestiture of Grass Valley per the terms of the definitive agreement or are unable to find an alternative buyer for the business with similar terms, it could have a material adverse effect on our operating results, financial condition, and cash flow. We may also be unable to find a suitable buyer(s) for certain low-margin cable assets with acceptable terms.

We may have difficulty integrating the operations of acquired businesses, which could negatively affect our results of operations and profitability.

We may have difficulty integrating acquired businesses and future acquisitions might not meet our performance expectations. Some of the integration challenges we might face include differences in corporate culture and management styles, additional or conflicting governmental regulations, compliance with the Sarbanes-Oxley Act of 2002, financial reporting that is not in compliance with U.S. generally accepted accounting principles, disparate company policies and practices, customer relationship issues, and retention of key personnel. In addition, management may be required to devote a considerable amount of time to the integration process, which could decrease the amount of time we have to manage the other businesses. We may not be able to integrate operations successfully or cost-effectively, which could have a negative impact on our results of operations or our profitability. The process of integrating operations could also cause some interruption of, or the loss of momentum in, the activities of acquired businesses.

Our results of operations are subject to foreign and domestic political, social, economic, and other uncertainties and are affected by changes in currency exchange rates.

In addition to manufacturing and other operating facilities in the U.S., we have manufacturing and other operating facilities in Brazil, Canada, China, India, Japan, Mexico, St. Kitts, and several European countries. We rely on suppliers in many countries, including China. Our foreign operations are subject to economic, social, and political risks inherent in maintaining operations abroad such as economic and political destabilization, land use risks, international conflicts, pandemics and other health-related crises, restrictive actions by foreign governments, and adverse foreign tax laws. In addition to economic and political risk, a risk associated with our European manufacturing operations is the higher relative expense and length of time required to adjust manufacturing employment capacity. We also face political risks in the U.S., including tax or regulatory risks or potential adverse impacts from legislative impasses over, or significant legislative, regulatory or executive changes in fiscal or monetary policy and other foreign and domestic government policies, including, but not limited to, trade policies and import/export policies.

Approximately 40% of our sales are outside the U.S. Other than the U.S. dollar, the principal currencies to which we are exposed through our manufacturing operations, sales, and related cash holdings are the euro, the Canadian dollar, the Hong Kong dollar, the Chinese yuan, the Japanese yen, the Mexican peso, the Australian dollar, the British pound, and the Brazilian real. Generally, we have revenues and costs in the same currency, thereby reducing our overall currency risk, although any realignment of our manufacturing capacity among our global facilities could alter this balance. When the U.S. dollar strengthens against other currencies, the results of our non-U.S. operations are translated at a lower exchange rate and thus into lower reported revenues and earnings.

Changes in tax laws may adversely affect our financial position.

We are a U.S.-based multinational company subject to tax in multiple U.S. and foreign tax jurisdictions. Significant judgment is required in determining our global provision for income taxes, deferred tax assets or liabilities and in evaluating our tax positions on a worldwide basis. While we believe our tax positions are consistent with the tax laws in the jurisdictions in which we conduct our business, it is possible that these positions may be contested or overturned by jurisdictional tax authorities, which may have a significant impact on our global provision for income taxes.

Tax laws are dynamic and subject to change as new laws are passed and new interpretations of the law are issued or applied. The U.S. recently enacted significant tax reform, and certain provisions of the new law may adversely affect us. In addition, governmental tax authorities are increasingly scrutinizing the tax positions of companies. Many countries in the European Union, as well as a number of other countries and organizations such as the Organization for Economic Cooperation and Development, are actively considering changes to existing tax laws. If tax laws and related regulations change, our financial results could be materially impacted. Given the unpredictability of these possible changes and their potential interdependency, it is possible such changes could adversely impact our financial results.

We may experience significant variability in our quarterly and annual effective tax rate which would affect our reported net income.

We have a complex tax profile due to the global nature of our operations, which encompass multiple taxing jurisdictions. Variability in the mix and profitability of domestic and international activities, identification and resolution of various tax uncertainties, changes in tax laws and rates, and the extent to which we are able to realize net operating loss and other carryforwards included in deferred tax assets and avoid potential adverse outcomes included in deferred tax liabilities, among other matters, may significantly affect our effective income tax rate in the future.

Our effective income tax rate is the result of the income tax rates in the various countries in which we do business. Our mix of income and losses in these jurisdictions affects our effective tax rate. For example, relatively more income in higher tax rate

jurisdictions would increase our effective tax rate and thus lower our net income. Similarly, if we generate losses in tax jurisdictions for which no benefits are available; our effective income tax rate will increase. Our effective income tax rate may also be impacted by the recognition of discrete income tax items, such as required adjustments to our liabilities for uncertain tax positions or our deferred tax asset valuation allowance. A significant increase in our effective income tax rate could have a material adverse impact on our earnings.

Of our \$407.5 million cash and cash equivalents balance as of December 31, 2019, \$210.2 million was held outside of the U.S. in our foreign operations. The Tax Cuts and Jobs Act of 2017 included a one-time transition tax of unremitted foreign earnings, and accordingly, in the fourth quarter of 2018 we recorded a final adjustment to the tax expense related to the transition tax on the one-time mandatory deemed repatriation of all our foreign earnings as of December 31, 2017. See Note 17 *Income Taxes* in the accompanying notes to our consolidated financial statements.

Changes in global tariffs and trade agreements may have a negative impact on global economic conditions, markets and our business.

Like most multinational companies, we have supply chains and sales channels that extend beyond national borders. Purchasing and production decisions in some cases are largely influenced by the trade agreements and the tax and tariff structures in place. Disruption in those structures can create significant market uncertainty. While the impact of Brexit and the U.S. and Chinese tariff actions are not currently material to us, unanticipated complications in the free movement of goods in Europe, an escalation of tariff activity anywhere in the world or changes to existing free trade agreements could materially impact our financial results. In addition to the potential direct impacts of free trade restrictions, longer term macroeconomic consequences could result, including slower growth, inflation, higher interest rates and unfavorable impacts to currency exchange rates. Any of these factors could have a material adverse effect on our business, financial condition and results of operations.

Our revenue for any particular period can be difficult to forecast.

Our revenue for any particular period can be difficult to forecast, especially in light of the challenging and inconsistent global macroeconomic environment and related market uncertainty. Our revenue may grow at a slower rate than in past periods or even decline on a year-over-year basis. Changes in market growth rates can have a significant effect on our operating results.

The timing of orders for customer projects can also have a significant effect on our operating results in the period in which the products are shipped and recognized as revenue. The timing of such projects is difficult to predict, and the timing of revenue recognition from such projects may affect period to period changes in revenue. As a result, our operating results could vary materially from quarter to quarter based on the receipt of such orders and their ultimate recognition as revenue. Similarly, we are often informed by our customers well in advance that such customer intends to place an order related to a specific project in a given quarter. Such a customer's timeline for execution of the project, and the resulting purchase order, may be unexpectedly delayed to a future quarter, or cancelled. The frequency of such delays can be difficult to predict. As a result, it is difficult to precisely forecast revenue and operating results for future quarters.

In addition, our revenue can be difficult to forecast due to unexpected changes in the level of our products held as inventory by our channel partners and customers. Our channel partners and customers purchase and hold our products in their inventory in order to meet the service and on-time delivery requirements of their customers. As our channel partners and customers change the level of Belden products owned and held in their inventory, our revenue is impacted. As we are dependent upon our channel partners and customers to provide us with information regarding the amount of our products that they own and hold in their inventory, unexpected changes can occur and impact our revenue forecast.

A challenging global economic environment or a downturn in the markets we serve could adversely affect our operating results and stock price in a material manner.

A challenging global economic environment could cause substantial reductions in our revenue and results of operations as a result of weaker demand by the end users of our products and price erosion. Price erosion may occur through competitors becoming more aggressive in pricing practices. A challenging global economy could also make it difficult for our customers, our vendors, and us to accurately forecast and plan future business activities. Our customers could also face issues gaining timely access to sufficient credit, which could have an adverse effect on our results if such events cause reductions in revenues, delays in collection, or write-offs of receivables. Further, the demand for many of our products is economically sensitive and will vary with general economic activity, trends in nonresidential construction, investment in manufacturing facilities and automation, demand for information technology equipment, and other economic factors.

Global economic uncertainty could result in a significant decline in the value of foreign currencies relative to the U.S. dollar, which could result in a significant adverse effect on our revenues and results of operations; could make it difficult for our customers and us

to accurately forecast and plan future business activities; and could cause our customers to slow or reduce spending on our products and services. Economic uncertainty could also arise from fiscal policy changes in the countries in which we operate.

Changes in foreign currency rates and commodity prices can impact the buying power of our customers. For example, a strengthened U.S. dollar can result in relative price increases for our products for customers outside of the U.S., which can have a negative impact on our revenues and results of operations. Furthermore, customers' ability to invest in capital expenditures, such as our products, can depend upon proceeds from commodities, such as oil and gas markets. A decline in energy prices, therefore, can have a negative impact on our revenues and results of operations.

The global markets in which we operate are highly competitive.

We face competition from other manufacturers for each of our global business platforms and in each of our geographic regions. These companies compete on price, reputation and quality, product technology and characteristics, and terms. Some multinational competitors have greater engineering, financial, manufacturing, and marketing resources than we have. Actions that may be taken by competitors, including pricing, business alliances, new product introductions, market penetration, and other actions, could have a negative effect on our revenues and profitability. Moreover, some competitors that are highly leveraged both financially and operationally could become more aggressive in their pricing of products.

Volatility of credit markets could adversely affect our business.

Uncertainty in U.S. and global financial and equity markets could make it more expensive for us to conduct our operations and more difficult for our customers to buy our products. Additionally, market volatility or uncertainty may cause us to be unable to pursue or complete acquisitions. Our ability to implement our business strategy and grow our business, particularly through acquisitions, may depend on our ability to raise capital by selling equity or debt securities or obtaining additional debt financing. Market conditions may prevent us from obtaining financing when we need it or on terms acceptable to us.

Changes in the price and availability of raw materials we use could be detrimental to our profitability.

Copper is a significant component of the cost of most of our cable products. Over the past few years, the prices of metals, particularly copper, have been volatile. Prices of other materials we use, such as polyvinylchloride (PVC) and other plastics derived from petrochemical feedstocks, have also been volatile. Generally, we have recovered much of the higher cost of raw materials through higher pricing of our finished products. The majority of our products are sold through distribution, and we manage the pricing of these products through published price lists which we update from time to time, with new prices typically taking effect a few weeks after they are announced. Some OEM contracts have provisions for passing through raw material cost changes, generally with a lag of a few weeks to three months. If we are unable to raise prices sufficiently to recover our material costs, our earnings could decline. If we raise our prices but competitors raise their prices less, we may lose sales, and our earnings could decline. If the price of copper were to decline, we may be compelled to reduce prices to remain competitive, which could have a negative effect on revenues. While we generally believe the supply of raw materials (copper, plastics, and other materials) is adequate, we have experienced instances of limited supply of certain raw materials, resulting in extended lead times and higher prices. If a supply interruption or shortage of materials were to occur (including due to labor or political disputes), this could have a negative effect on revenues and earnings.

Future operating results depend upon the Company's ability to obtain components in sufficient quantities on commercially reasonable terms.

Because the Company currently obtains certain components from single or limited sources, the Company is subject to significant supply and pricing risks. Many components, including those that are available from multiple sources, are at times subject to industry-wide shortages that could materially adversely affect the Company's financial condition and operating results. While the Company has entered into agreements for the supply of many components, there can be no assurance that the Company will be able to extend or renew these agreements on similar terms, or at all. Component suppliers may suffer from poor financial conditions, which can lead to business failure for the supplier or consolidation within a particular industry, further limiting the Company's ability to obtain sufficient quantities of components on commercially reasonable terms. A regional health crises, like the Coronavirus, could lead to quarantines or labor shortages, thus impacting the output of key suppliers. If the Company's supply of components for a new or existing product were delayed or constrained, or if an outsourcing partner delayed shipments of completed products to the Company, the Company's financial condition and operating results could be materially adversely affected. The Company's business and financial performance could also be materially adversely affected depending on the time required to obtain sufficient quantities from the original source, or to identify and obtain sufficient quantities from an alternative source.

Potential problems with our information systems could interfere with our business and operations.

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, billing our customers, tracking inventory, supporting accounting functions and financial statement preparation, paying our employees, and otherwise running our business. Any disruption, whether from hackers or other sources, in our information systems or those of the third parties upon whom we rely could have a significant impact on our business. In addition, we may need to enhance our information systems to provide additional capabilities and functionality. The implementation of new information systems and enhancements is frequently disruptive to the underlying business of an enterprise. Any disruptions affecting our ability to accurately report our financial performance on a timely basis could adversely affect our business in a number of respects. If we are unable to successfully implement potential future information systems enhancements, our financial position, results of operations, and cash flows could be negatively impacted.

We, and others on our behalf, store “personally identifiable information” (“PII”) with respect to employees, vendors, customers, and others. While we have implemented safeguards to protect the privacy of this information, it is possible that hackers or others might obtain this information. If that occurs, in addition to having to take potentially costly remedial action, we also may be subject to fines, penalties, lawsuits, and reputational damage.

Perceived failure of our signal transmission solutions to provide expected results may result in negative publicity and harm our business and operating results.

Our customers use our signal transmission solutions in a wide variety of IT systems and application environments in order to help reduce security vulnerabilities and demonstrate compliance. Despite our efforts to make clear in our marketing materials and customer agreements the capabilities and limitations of these products, some customers may incorrectly view the deployment of such products in their IT infrastructure as a guarantee that there will be no security breach or policy non-compliance event. As a result, the occurrence of a high profile security breach, or a failure by one of our customers to pass a regulatory compliance IT audit, could result in public and customer perception that our solutions are not effective and harm our business and operating results, even if the occurrence is unrelated to the use of such products or if the failure is the result of actions or inactions on the part of the customer.

Our use of open source software could negatively impact our ability to sell our products and may subject us to unanticipated obligations.

The products, services, or technologies we acquire, license, provide, or develop may incorporate or use open source software. We monitor and restrict our use of open source software in an effort to avoid unintended consequences, such as reciprocal license grants, patent retaliation clauses, and the requirement to license our products at no cost. Nevertheless, we may be subject to unanticipated obligations regarding our products which incorporate or use open source software.

Our revenue and profits would likely decline, at least temporarily, if we were to lose a key distributor.

We rely on several key distributors in marketing our products. Distributors purchase the products of our competitors along with our products. Our largest distributor, Anixter International Inc., accounted for 13% of our revenue in 2019 and our top six distributors, including Anixter, accounted for a total of 26% of our revenue in 2019. On a combined basis, Anixter and WESCO accounted for approximately 15% of our revenues in 2019. If we were to lose one of these key distributors, our revenue and profits would likely decline, at least temporarily. Changes in the inventory levels of our products owned and held by our distributors can result in significant variability in our revenues. Further, certain distributors are allowed to return certain inventory in exchange for an order of equal or greater value. We have recorded reserves for the estimated impact of these inventory policies.

Consolidation of our distributors, like the proposed acquisition of Anixter by Wesco International, Inc., could adversely impact our revenues and earnings. It could also result in consolidation of distributor inventory, which would temporarily depress our revenues. We have also experienced financial failure of distributors from time to time, resulting in our inability to collect accounts receivable in full. A global economic downturn could cause financial difficulties (including bankruptcy) for our distributors and other customers, which would adversely affect our results of operations.

If we are unable to retain senior management and key employees, our business operations could be adversely affected.

Our success has been largely dependent on the skills, experience, and efforts of our senior management and key employees. The loss of any of our senior management or other key employees, for example sales and product development employees, could have an adverse effect on us. We may not be able to find qualified replacements for these individuals and the integration of potential replacements may be disruptive to our business. More broadly, a key determinant of our success is our ability to attract, develop, and retain talented associates. While this is one of our strategic priorities, we may not be able to succeed in this regard.

We might have difficulty protecting our intellectual property from use by competitors, or competitors might accuse us of violating their intellectual property rights.

Disagreements about patents and other intellectual property rights occur in the markets we serve. Third parties have asserted and may in the future assert claims of infringement of intellectual property rights against us or against our customers or channel partners for which we may be liable. Furthermore, a successful claimant could secure a judgment that requires us to pay substantial damages or prevents us from distributing certain products or performing certain services. We may encounter difficulty enforcing our own intellectual property rights against third parties, which could result in price erosion or loss of market share.

We are subject to laws and regulations worldwide, changes to which could increase our costs and individually or in the aggregate adversely affect our business.

We are subject to laws and regulations affecting our domestic and international operations in a number of areas. These U.S. and foreign laws and regulations affect our activities including, but not limited to, in areas of labor, advertising, real estate, billing, e-commerce, promotions, quality of services, property ownership and infringement, tax, import and export requirements, anti-corruption, foreign exchange controls and cash repatriation restrictions, data privacy requirements, anti-competition, environmental, health and safety.

Compliance with these laws, regulations and similar requirements may be onerous and expensive, and they may be inconsistent from jurisdiction to jurisdiction, further increasing the cost of compliance and doing business. Any such costs, which may rise in the future as a result of changes in these laws and regulations or in their interpretation, could individually or in the aggregate make our products and services less attractive to our customers, delay the introduction of new products in one or more regions, or cause us to change or limit our business practices. We have implemented policies and procedures designed to ensure compliance with applicable laws and regulations, but there can be no assurance that our employees, contractors, or agents will not violate such laws and regulations or our policies and procedures.

Specifically with respect to data privacy, new data protection regulations have been adopted or are being considered for most of the developed world. Most notable are the European Commission's adoption of the General Data Protection Regulation (GDPR), which became effective in May 2018 and the California Consumer Privacy Act (CCPA), which became law on January 1, 2020. The GDPR and CCPA include operational requirements for companies that receive or process personal data of residents of their respective jurisdictions and include significant penalties for non-compliance. In addition, some countries are considering or have passed legislation implementing data protection requirements or requiring local storage and processing of data or similar requirements that could increase the cost and complexity of delivering our services.

If our goodwill or other intangible assets become impaired, we would be required to recognize charges that would reduce our income.

Under accounting principles generally accepted in the U.S., goodwill and certain other intangible assets are not amortized but must be reviewed for possible impairment annually or more often in certain circumstances if events indicate that the asset values may not be recoverable. We have incurred significant charges for the impairment of goodwill and other intangible assets in the past, and we may be required to do so again in future periods if the underlying value of our business declines. Such a charge would reduce our income without any change to our underlying cash flows.

Some of our employees are members of collective bargaining groups, and we might be subject to labor actions that would interrupt our business.

Some of our employees, primarily outside the U.S., are members of collective bargaining groups. We believe that our relations with employees are generally good. However, if there were a dispute with one of these bargaining groups, the affected operations could be interrupted, resulting in lost revenues, lost profit contribution, and customer dissatisfaction.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Belden owns and leases manufacturing, warehousing, sales, and administrative space in locations around the world. We also have a corporate office that we lease in St. Louis, Missouri. The leases are of varying terms, expiring from 2020 through 2035.

The table below summarizes the geographic locations of our manufacturing and other operating facilities utilized by our segments as of December 31, 2019.

	<u>Enterprise Solutions</u>	<u>Industrial Solutions</u>	<u>Both Segments</u>	<u>Total</u>
Brazil	—	1	—	1
Canada	—	1	—	1
China	2	—	1	3
Czech Republic	—	1	—	1
Denmark	1	—	—	1
Germany	1	1	—	2
Hungary	—	—	1	1
India	1	—	1	2
Italy	—	—	1	1
Mexico	—	—	3	3
Netherlands	—	—	1	1
St. Kitts	1	—	—	1
United States	4	3	1	8
Total	<u>10</u>	<u>7</u>	<u>9</u>	<u>26</u>

In addition to the manufacturing and other operating facilities summarized above, our business included in continuing operations, also utilize approximately 12 warehouses worldwide. As of December 31, 2019, we owned or leased a total of approximately 6 million square feet of facility space worldwide. We believe that our production facilities are suitable for their present and intended purposes and adequate for our current level of operations.

Item 3. Legal Proceedings

As disclosed on our Current Report on Form 8-K filed with the SEC on December 3, 2018, we are fully cooperating with an SEC investigation related to the material weakness in internal controls over financial reporting as of December 31, 2017 disclosed in our 2017 Form 10-K. We continue to believe that the outcome of the investigation will not have a material adverse effect on the Company.

We are also a party to various legal proceedings and administrative actions that are incidental to our operations. In our opinion, the proceedings and actions in which we are involved should not, individually or in the aggregate, have a material adverse effect on our financial condition, operating results, or cash flows. However, since the trends and outcome of this litigation are inherently uncertain, we cannot give absolute assurance regarding the future resolution of such litigation, or that such litigation may not become material in the future.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

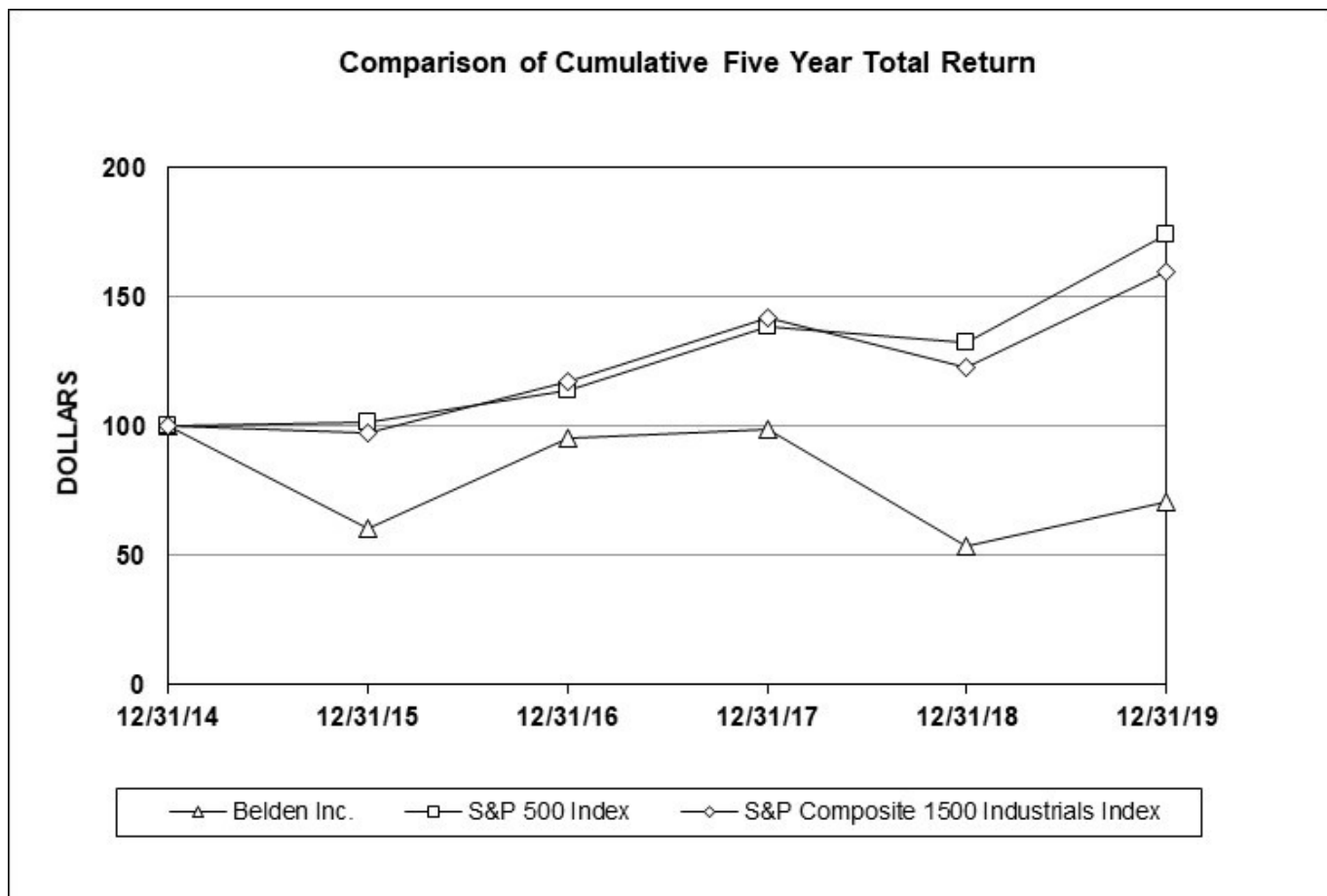
Item 5. Market for Registrant’s Common Equity, Related Shareholder Matters and Issuer Purchases of Equity Securities

Our common stock is traded on the New York Stock Exchange under the symbol “BDC.” As of February 6, 2020, there were 246 record holders of common stock of Belden Inc.

On November 29, 2018, our Board of Directors authorized a share repurchase program, which allowed us to purchase up to \$300.0 million of our common stock through open market repurchases, negotiated transactions, or other means, in accordance with applicable securities laws and other restrictions. This program was funded with cash on hand and cash flows from operating activities. During the fourth quarter of 2019, we did not repurchase any shares of our common stock under the program. During the year ended December 31, 2019 and since the inception of this program, we have repurchased a total of 0.9 million shares of our common stock under the program for an aggregate cost of \$50.0 million and an average price per share of \$56.19.

Stock Performance Graph

The following graph compares the cumulative total shareholder return on Belden’s common stock over the five-year period ended December 31, 2019, with the cumulative total return during such period of the Standard and Poor’s 500 Stock Index and the Standard and Poor’s 1500 Industrials Index. The comparison assumes \$100 was invested on December 31, 2014, in Belden’s common stock and in each of the foregoing indices and assumes reinvestment of dividends. The stock performance shown on the graph below represents historical stock performance and is not necessarily indicative of future stock price performance.



(1) The chart above and the accompanying data are “furnished,” not “filed,” with the SEC.

Total Return to Shareholders
(Includes reinvestment of dividends)

<u>Company Name / Index</u>	ANNUAL RETURN PERCENTAGE				
	Years Ended December 31,				
	2015	2016	2017	2018	2019
Belden Inc.	(39.3)%	57.3%	3.5%	(45.7)%	32.1%
S&P 500 Index	1.4 %	12.0%	21.8%	(4.4)%	31.5%
S&P 1500 Industrials Index	(2.7)%	20.4%	21.1%	(13.4)%	29.8%

INDEXED RETURNS
Years Ended December 31,

<u>Company Name / Index</u>	Base Period					
	2014	2015	2016	2017	2018	2019
Belden Inc.	\$ 100.00	\$ 60.69	\$ 95.47	\$ 98.79	\$ 53.65	\$ 70.89
S&P 500 Index	100.00	101.38	113.51	138.29	132.23	173.86
S&P 1500 Industrials Index	100.00	97.29	117.14	141.81	122.84	159.45

Item 6. Selected Financial Data

	Years Ended December 31,				
	2019	2018	2017	2016	2015
	(In thousands, except per share amounts and percentages)				
Balance sheet data:					
Total assets	\$ 3,406,759	\$ 3,779,321	\$ 3,840,613	\$ 3,806,803	\$ 3,290,602
Long-term debt	1,439,484	1,463,200	1,560,748	1,620,161	1,725,282
Total stockholders' equity	965,819	1,387,588	1,434,866	1,461,317	825,523
Statement of operations data:					
Revenues	2,131,278	2,165,702	2,087,185	1,988,664	1,940,904
Operating income	207,207	314,008	233,641	201,537	170,435
Operating income margin	9.7%	14.5%	11.2%	10.1%	8.8%
Income from continuing operations	109,891	167,144	102,607	106,192	105,845
Basic income per share from continuing operations attributable to Belden common stockholders	2.16	3.25	1.61	2.52	2.50
Diluted income per share from continuing operations attributable to Belden common stockholders	2.15	3.23	1.60	2.49	2.46
Other data:					
Basic weighted average common shares outstanding	42,203	40,675	42,220	42,093	42,390
Diluted weighted average common shares outstanding	42,416	40,956	42,643	42,557	42,953
Dividends per common share	\$ 0.20	\$ 0.20	\$ 0.20	\$ 0.20	\$ 0.20
Statement of cash flow data:					
Net cash provided by operating activities	276,893	289,220	255,300	314,794	241,460

The following table is a Non-GAAP Reconciliation of free cash flow.

	Years ended December 31,				
	2019	2018	2017	2016	2015
	(In thousands)				
Net cash provided by operating activities	\$ 276,893	\$ 289,220	\$ 255,300	\$ 314,794	\$ 241,460
Capital expenditures, net of proceeds from the disposal of tangible assets	(109,977)	(96,267)	(63,222)	(53,582)	(54,436)
Free cash flow (1)	\$ 166,916	\$ 192,953	\$ 192,078	\$ 261,212	\$ 187,024

- (1) We define free cash flow, which is a non-GAAP financial measure, as net cash from operating activities adjusted for capital expenditures net of the proceeds from the disposal of tangible assets. We believe free cash flow provides useful information to investors regarding our ability to generate cash from business operations that is available for acquisitions and other investments, service of debt principal, dividends and share repurchases. We use free cash flow, as defined, as one financial measure to monitor and evaluate performance and liquidity. Non-GAAP financial measures should be considered only in conjunction with financial measures reported according to accounting principles generally accepted in the United States. Our definition of free cash flow may differ from definitions used by other companies.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Overview

We are a global supplier of specialty networking solutions built around two global business platforms – Enterprise Solutions and Industrial Solutions. Our comprehensive portfolio of signal transmission solutions provides industry leading secure and reliable transmission of data, sound, and video for mission critical applications.

We strive to create shareholder value by:

- Delivering highly engineered signal transmission solutions for mission-critical applications in a diverse set of global markets;
- Maintaining a balanced product portfolio across end markets, applications, and geographies that allows for a disciplined approach to growth;
- Capturing additional market share by using our Market Delivery System to improve channel and end-user relationships and to concentrate sales efforts on customers in higher growth geographies and vertical end-markets;
- Managing our product portfolio to provide innovative and complete end-to-end solutions for our customers in applications for which we have operational expertise and can drive customer loyalty;
- Acquiring leading companies with innovative product portfolios and opportunities for synergies which fit within our strategic framework;
- Continuously improving our processes and systems through scalable, flexible, and sustainable business systems for talent management, Lean enterprise, and acquisition cultivation and integration; and
- Protecting and enhancing the value of the Belden brands.

We believe our business system, balance across markets and geographies, systematic go-to-market approach, extensive portfolio of innovative solutions, commitment to Lean principles, and improving margin profile present a unique value proposition for our shareholders.

We consider adjusted revenue growth on a constant currency basis, adjusted EBITDA margin, free cash flow, and return on invested capital to be our key operating performance indicators. Our current business goals are to:

- Grow adjusted revenues on a constant currency basis by 5-7% per year, from a combination of end market growth, market share capture, and contributions from acquisitions;
- Achieve adjusted EBITDA margins in the range of 20-22%;
- Achieve free cash flow growth in the range of 13-15%; and
- Realize return on invested capital of 13-15%.

Significant Trends and Events in 2019

The following trends and events during 2019 had varying effects on our financial condition, results of operations, and cash flows.

Foreign currency

Our exposure to currency rate fluctuations primarily relates to exchange rate movements between the U.S. dollar and the euro, Canadian dollar, Hong Kong dollar, Chinese yuan, Japanese yen, Mexican peso, Australian dollar, British pound, Indian rupee, and Brazilian real. Generally, as the U.S. dollar strengthens against these foreign currencies, our revenues and earnings are negatively impacted as our foreign denominated revenues and earnings are translated into U.S. dollars at a lower rate. Conversely, as the U.S. dollar weakens against foreign currencies, our revenues and earnings are positively impacted.

In addition to the translation impact described above, currency rate fluctuations have an economic impact on our financial results. As the U.S. dollar strengthens or weakens against foreign currencies, it results in a relative price increase or decrease for certain of our products that are priced in U.S. dollars in a foreign location.

Commodity Prices

Our operating results can be affected by changes in prices of commodities, primarily copper and compounds, which are components in some of the products we sell. Generally, as the costs of inventory purchases increase due to higher commodity prices, we raise selling prices to customers to cover the increase in costs, resulting in higher sales revenue but a lower gross profit percentage. Conversely, a decrease in commodity prices would result in lower sales revenue but a higher gross profit percentage. Selling prices of our products are affected by many factors, including end market demand, capacity utilization, overall economic conditions, and commodity prices. Importantly, however, there is no exact measure of the effect of changing commodity prices, as there are thousands of transactions in any given quarter, each of which has various factors involved in the individual pricing decisions. Therefore, all references to the effect of copper prices or other commodity prices are estimates.

Channel Inventory

Our operating results also can be affected by the levels of Belden products purchased and held as inventory by our channel partners and customers. Our channel partners and customers purchase and hold our products in their inventory in order to meet the service and on-time delivery requirements of their customers. Generally, as our channel partners and customers change the level of Belden products owned and held in their inventory, it impacts our revenues. Comparisons of our results between periods can be impacted by changes in the levels of channel inventory. We are dependent upon our channel partners to provide us with information regarding the amount of our products that they own and hold in their inventory. As such, all references to the effect of channel inventory changes are estimates.

Market Growth and Market Share

The markets in which we operate can generally be characterized as highly competitive and highly fragmented, with many players. Based on available data for our served markets, we estimate that our market share across our segments is significant, ranging from approximately 5% - 20%. A substantial acquisition in one of our served markets would be necessary to meaningfully change our estimated market share percentage. We monitor available data regarding market growth, including independent market research reports, publicly available indices, and the financial results of our direct and indirect peer companies, in order to estimate the extent to which our served markets grew or contracted during a particular period. We generally expect that our unit sales volume will increase or decrease consistently with the market growth rate. Our strategic goal is to utilize our Market Delivery System to target faster growing geographies, applications, and trends within our end markets, in order to achieve growth that is higher than the general market growth rate. To the extent that we exceed the market growth rates, we consider it to be the result of capturing market share.

Discontinued Operations Treatment of the Grass Valley Disposal Group

During the fourth quarter of 2019, we committed to a plan to sell Grass Valley, and at such time, met all of the criteria to classify the assets and liabilities of this business as held for sale. Furthermore, we determined a divestiture of Grass Valley represents a strategic shift that is expected to have a major impact on our operations and financial results. As a result, the Grass Valley disposal group, which was included in our Enterprise Solutions segment, is now reported within discontinued operations. As such, comparable prior period information has been recast to exclude the Grass Valley disposal group from continuing operations, with the exception of the Consolidated Cash Flow Statements. The Grass Valley disposal group excludes certain Grass Valley pension plans that we will retain. In 2019, we wrote down the carrying value of Grass Valley and recognized asset impairments totaling \$521.4 million. See Note 5.

Acquisitions

We completed the acquisitions of SPC, Opterna, and FutureLink on December 6, 2019, April 15, 2019, and April 5, 2019, respectively. The results of SPC, Opterna, and FutureLink have been included in our Consolidated Financial Statements as of their acquisition dates and are reported within the Enterprise Solutions segment. See Note 4.

Cost Reduction Program: 2019

During the fourth quarter of 2019, we began a cost reduction program to improve performance and enhance margins by streamlining the organizational structure and investing in technology to drive productivity. We recognized approximately \$19.6 million of severance costs for this program during 2019. The costs were incurred by both of our segments, as well as our corporate office. The cost reduction program is expected to deliver an estimated \$40.0 million reduction in selling, general, and administrative expenses on an annual basis, with some benefit in 2020, and the full benefit realized in 2021. We expect to incur approximately \$10.0 million for this program in 2020. See Note 14.

Opterna, FutureLink, and SPC Integration Program: 2019

In 2019, we began a restructuring program to integrate the recent acquisitions of Opterna, FutureLink, and SPC with our existing businesses. The restructuring and integration activities were focused on achieving desired cost savings by consolidating existing and acquired facilities and other support functions. We recognized \$6.1 million of severance and other restructuring costs for this program during 2019. The costs were incurred by the Enterprise Solutions segment. We expect to incur an additional \$5.0 million for this program in 2020. See Note 14.

Preferred Stock Conversion

On July 15, 2019, all outstanding Preferred Stock was automatically converted into shares of Belden common stock at the conversion rate of 132.50, resulting in the issuance of approximately 6.9 million shares of Belden common stock. Upon conversion, the Preferred Stock was automatically extinguished and discharged, is no longer deemed outstanding for all purposes, and delisted from trading on the New York Stock Exchange. For the year ended December 31, 2019, dividends on the Preferred Stock were \$18.4 million. See Note 21.

Results of OperationsConsolidated Income from Continuing Operations before Taxes

	Years Ended December 31,			Percentage Change	
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
	(In thousands, except percentages)				
Revenues	\$ 2,131,278	\$ 2,165,702	\$ 2,087,185	(1.6)%	3.8 %
Gross profit	793,505	829,911	802,320	(4.4)%	3.4 %
Selling, general and administrative expenses	417,329	411,352	389,743	1.5 %	5.5 %
Research and development expenses	94,360	91,552	88,748	3.1 %	3.2 %
Amortization of intangibles	74,609	75,140	90,188	(0.7)%	(16.7)%
Gain from patent litigation	—	62,141	—	(100.0)%	n/a
Operating income	207,207	314,008	233,641	(34.0)%	34.4 %
Interest expense, net	55,814	60,839	82,651	(8.3)%	(26.4)%
Non-operating pension benefit (cost)	1,017	(99)	(561)	(1,127.3)%	(82.4)%
Loss on debt extinguishment	—	22,990	52,441	(100.0)%	(56.2)%
Income from continuing operations before taxes	152,410	230,080	97,988	(33.8)%	134.8 %

2019 Compared to 2018

Revenues decreased \$34.4 million from 2018 to 2019 due to the following factors:

- Acquisitions contributed \$32.4 million to the increase in revenues.
- Currency translation had a \$28.0 million unfavorable impact on revenues.
- Lower sales volume, including the impact of changes in channel inventory and weaker industrial markets, resulted in a \$21.6 million decrease in revenues.
- Lower copper costs resulted in a \$17.2 million decrease in revenues.

Gross profit decreased \$36.4 million from 2018 to 2019. The decrease in gross profit is primarily attributable to the decrease in revenues discussed above as well as unfavorable product mix and the impact of lower production volumes. Gross profit for 2019 included \$3.4 million of severance, restructuring, and acquisition integration costs; \$0.6 million of cost of sales arising from the adjustment of inventory to fair value related to acquisitions; and \$0.5 million for the amortization of software development intangible assets. Gross profit for 2018 included \$18.0 million of severance, restructuring, and acquisition integration costs and \$0.1 million for the amortization of software development intangible assets.

Selling, general and administrative expenses increased \$6.0 million from 2018 to 2019 primarily due to an \$18.5 million increase in severance, restructuring, and acquisition integration costs and acquisitions and a \$5.4 million increase from acquisitions. These increases were partially offset by the impact of productivity improvement initiatives, currency translation, decrease in costs related to patent litigation, and purchase accounting effects of acquisitions, which attributed to a decline in selling, general and administrative expenses of \$9.5 million, \$4.1 million, \$2.6 million, and \$1.7 million, respectively.

Research and development expenses increased \$2.8 million from 2018 to 2019 primarily due to investments in research and development as well as acquisitions, which contributed \$3.9 million and \$0.3 million, respectively. These increases were partially offset by currency translation of \$1.4 million.

Amortization of intangibles decreased \$0.5 million from 2018 to 2019 primarily due to certain intangible assets becoming fully amortized, partially offset by the amortization expense for intangible assets from the acquisitions of SPC and Opterna. See Note 4.

The \$62.1 million gain from patent litigation in 2018 is for judgments received in 2018 from the patent infringement case filed in 2011 by our wholly-owned subsidiary, PPC, against Corning alleging they willfully infringed upon two patents. After years of post-trial motions and appeals, the District Court ruled in favor of PPC and required Corning to pay judgments of \$62.1 million in 2018 to PPC. See Note 2.

Operating income decreased \$106.8 million from 2018 to 2019 primarily due to the gain from the patent litigation in 2018, decrease in gross profit discussed above, and changes in operating expenses discussed above.

Net interest expense decreased \$5.0 million from 2018 to 2019 as a result of our debt refinancing during 2018. In March 2018, we issued €350.0 million aggregate principal amount of new senior subordinated notes due 2028 at an interest rate of 3.875%, and used the net proceeds of this offering and cash on hand to repurchase all of our outstanding €200.0 million 5.5% senior subordinated notes due 2023 as well as all of our outstanding \$200.0 million 5.25% senior subordinated notes due 2024.

The loss on debt extinguishment recognized in 2018 represents the premium paid to the bond holders to retire the 2023 and 2024 notes as well as the unamortized debt issuance costs that were written-off. The loss on debt extinguishment recognized in 2017 represents the premium paid to the bond holders to retire the 2022 and a portion of the 2023 notes as well as the unamortized debt issuance costs that were written-off and the unamortized debt issuance costs related to creditors no longer participating in the Amended and Restated Credit Agreement (the Revolver), which we amended in May 2017. See Note 15.

Income from continuing operations before taxes decreased \$77.7 million from 2018 to 2019 primarily due to the decrease in operating income, partially offset by the decrease in interest expense and loss on debt extinguishment discussed above.

2018 Compared to 2017

Revenues increased \$78.5 million from 2017 to 2018 due to the following factors:

- Higher sales volume, including changes in channel inventory, resulted in a \$53.8 million increase in revenues.
- Acquisitions contributed \$29.7 million to the increase in revenues.
- Currency translation had a \$12.0 million favorable impact on revenues.
- Higher copper costs contributed \$10.7 million to the increase in revenues.
- The divestiture of our MCS business resulted in a \$27.7 million decrease in revenues.

Gross profit increased \$27.6 million from 2017 to 2018 while gross profit margin remained relatively flat year-over-year. The increase in gross profit is primarily attributable to the increase in revenues discussed above, and the impact on margins is due to copper prices, which result in higher revenues as discussed above, but as they have minimal impact to gross profit dollars, result in lower gross profit margins. Gross profit for 2018 included \$18.0 million of severance, restructuring, and acquisition integration costs and \$0.1 million for the amortization of software development intangible assets. Gross profit for 2017 included \$32.5 million of severance, restructuring, and acquisition integration costs; \$6.1 million of cost of sales arising from the adjustment of inventory to fair value related to an acquisition; and \$0.8 million of accelerated depreciation in our Enterprise Solutions segment.

Selling, general and administrative expenses increased \$21.6 million from 2017 to 2018 primarily due to increases in manufacturing constraints, acquisitions, an increase in costs related to patent litigation, and currency translation of \$14.5 million, \$5.7 million, \$2.6 million, and \$2.5 million, respectively; partially offset by the MCS divestiture in 2017, which contributed to a decline of approximately \$3.7 million over the year ago period.

Research and development expenses increased \$2.8 million from 2017 to 2018 primarily due to investments in research and development, acquisitions, and currency translation of \$2.8 million, \$0.9 million, and \$0.8 million, respectively. These increases were partially offset by the MCS divestiture in 2017, which contributed to a \$1.7 million decline in research and development expenses over the year ago period.

Amortization of intangibles decreased \$15.0 million from 2017 to 2018 primarily due to certain intangible assets becoming fully amortized, partially offset by an increase in amortization expense for intangible assets from the acquisition of NT2. See Note 12.

The \$62.1 million gain from patent litigation in 2018 is for judgments received in 2018 from the patent infringement case filed in 2011 by our wholly-owned subsidiary, PPC, against Corning alleging they willfully infringed upon two patents. After years of post-trial motions and appeals, the District Court ruled in favor of PPC and required Corning to pay judgments of \$62.1 million in 2018 to PPC. See Note 2.

Operating income increased \$80.4 million from 2017 to 2018 primarily due to the gain from patent litigation and increases in gross profit discussed above, partially offset by the changes in operating expenses discussed above.

Net interest expense decreased \$21.8 million from 2017 to 2018 as a result of our debt transactions during 2017 and 2018. In July 2017, we issued €450.0 million aggregate principal amount of new senior subordinated notes due 2027 at an interest rate of 3.375%, and used the net proceeds of this offering and cash on hand to repurchase all of our outstanding \$700.0 million 5.5% senior subordinated notes due 2022. In September 2017, we issued €300.0 million aggregate principal amount of new senior subordinated notes due 2025 at an interest rate of 2.875%, and used the net proceeds of this offering to repurchase €300.0 million of our

outstanding €500.0 million 5.5% senior subordinated notes due 2023. In March 2018, we issued €350.0 million aggregate principal amount of new senior subordinated notes due 2028 at an interest rate of 3.875%, and used the net proceeds of this offering and cash on hand to repurchase all of our outstanding €200.0 million 5.5% senior subordinated notes due 2023 as well as all of our outstanding \$200.0 million 5.25% senior subordinated notes due 2024. See Note 15.

The loss on debt extinguishment recognized in 2018 represents the premium paid to the bond holders to retire the 2023 and 2024 notes as well as the unamortized debt issuance costs that were written-off. The loss on debt extinguishment recognized in 2017 represents the premium paid to the bond holders to retire the 2022 and a portion of the 2023 notes as well as the unamortized debt issuance costs that were written-off and the unamortized debt issuance costs related to creditors no longer participating in the Amended and Restated Credit Agreement (the Revolver), which we amended in May 2017. See Note 15.

Income from continuing operations before taxes increased by \$132.1 million from 2017 to 2018 primarily due to the increase in operating income, decrease in interest expense, and decrease in the loss on debt extinguishment discussed above.

Income Taxes

	2019	2018	2017	Percentage Change	
				2019 vs. 2018	2018 vs. 2017
	(In thousands, except percentages)				
Income from continuing operations before taxes	\$ 152,410	\$ 230,080	\$ 97,988	(33.8)%	134.8 %
Income tax benefit (expense)	(42,519)	(62,936)	4,619	(32.4)%	(1,462.5)%
Effective tax rate	27.9%	27.4%	(4.7)%		

2019 Compared to 2018

We recognized income tax expense of \$42.5 million in 2019, representing an effective tax rate of 27.9%. The effective tax rate was primarily impacted by a change in valuation allowance on certain deferred tax assets and foreign tax rate differences.

During the fourth quarter of 2019, the United States Treasury issued final and proposed regulations with respect to certain aspects related to the Tax Cuts and Jobs Act of 2017 (the "Act"). Additional guidance provided in these regulations resulted in a tax adjustment in the fourth quarter of 2019.

Our income tax expense was also impacted by foreign tax rate differences. Foreign tax rate differences reduced our income tax expense by approximately \$13.1 million and \$2.4 million in 2019 and 2018, respectively.

Our income tax expense and effective tax rate in future periods may be impacted by many factors, including our geographic mix of income and changes in tax laws.

As of December 31, 2019, we maintained a valuation allowance on our deferred tax assets of \$50.4 million. Of this amount, approximately \$43.0 million relates to deferred tax assets for certain U.S. foreign tax credits and U.S. state net operating losses and tax credits. The \$33.9 million valuation allowance on the foreign tax credits is a direct result of the regulations issued by the United States Treasury in the fourth quarter of 2019, the Act and the impact of classifying a business as discontinued operations. The remaining \$9.1 million valuation allowance primarily relates to state net operating losses and tax credits. While we have positive evidence in the form of projected sources of income, we determined that these state carryforward assets were not realizable as of December 31, 2019 due to a history of net operating losses and tax credits expiring without being utilized in certain states and because the current forecast of income is not sufficient to utilize all of these state net operating losses and tax credits prior to expiration.

2018 Compared to 2017

We recognized income tax expense of \$62.9 million in 2018, representing an effective tax rate of 27.4%. The effective tax rate was impacted by the Act and foreign tax rate differences.

On December 22, 2017, the Act was signed into law, making significant changes to the U.S. Internal Revenue Code. In accordance with the Act, we recorded \$24.5 million as additional income tax expense in the fourth quarter of 2017, the period in which the legislation was enacted. The total income tax expense included a \$41.6 million tax benefit for the remeasurement of deferred tax assets and liabilities to the 21% rate at which they are expected to reverse, offset with a one-time tax expense on deemed repatriation of \$30.8 million and a valuation allowance of \$35.3 million recorded against foreign tax credit carryovers that we no longer expect

to be able to realize based upon the new tax law. Additionally, Staff Accounting Bulletin No. 118 (“SAB 118”) was issued to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Act. December 22, 2018 marked the end of the measurement period for purposes of SAB 118. As such, we have completed our analysis based on legislative updates relating to the Act currently available, which resulted in additional SAB 118 tax expense of \$10.0 million for the year ended December 31, 2018. The total tax expense included an \$8.0 million tax expense associated with an increase to the valuation allowance against foreign tax credit carryovers that we no longer expect to be able to realize based upon the new tax law, a \$1.3 million tax expense adjustment to the transition tax on the deemed repatriation of cumulative foreign earnings, a \$1.1 million tax expense resulting from a valuation allowance established on the deferred tax assets associated with stock options of covered employees, and a \$0.4 million income tax benefit associated with an adjustment to the remeasurement of certain deferred tax assets and liabilities.

Our income tax expense was also impacted by foreign tax rate differences. Foreign tax rate differences impacted our income tax expense by approximately \$(2.4) million and \$14.7 million in 2018 and 2017, respectively.

Our income tax expense and effective tax rate in future periods may be impacted by many factors, including our geographic mix of income and changes in tax laws.

As of December 31, 2018, we maintained a valuation allowance on our deferred tax assets of \$39.4 million. Of this amount, approximately \$33.1 million relates to deferred tax assets for certain U.S foreign tax credits and U.S. state net operating losses and tax credits. The \$23.9 million valuation allowance on the foreign tax credits is a direct result of the Act, as described above. The remaining \$9.2 million valuation allowance primarily relates to state net operating losses and tax credits. While we have positive evidence in the form of projected sources of income, we determined that these state carryforward assets were not realizable as of December 31, 2018 due to a history of net operating losses and tax credits expiring without being utilized in certain states and because the current forecast of income is not sufficient to utilize all of these state net operating losses and tax credits prior to expiration.

Consolidated Adjusted EBITDA

	Years Ended December 31,		
	2019	2018	2017
	(In thousands, except percentages)		
GAAP and adjusted revenues	\$ 2,131,278	\$ 2,165,702	\$ 2,087,185
GAAP net income (loss)	\$ (376,776)	\$ 160,711	\$ 92,853
Amortization of intangible assets	74,609	75,140	90,188
Severance, restructuring, and acquisition integration costs ⁽¹⁾	26,544	22,625	41,893
Interest expense, net	55,814	60,839	82,651
Income tax expense (benefit)	42,519	62,936	(4,619)
Depreciation expense	40,409	38,309	38,624
Loss on debt extinguishment	—	22,990	52,441
Purchase accounting effects related to acquisitions ⁽²⁾	592	1,690	6,133
Costs related to patent litigation	—	2,634	—
Amortization of software development intangible assets	525	79	—
Non-operating pension settlement loss	—	1,342	—
Loss on sale of assets ⁽³⁾	—	94	1,013
Gain from patent litigation	—	(62,141)	—
Loss from discontinued operations	486,667	6,433	9,754
Adjusted EBITDA	<u>\$ 350,903</u>	<u>\$ 393,681</u>	<u>\$ 410,931</u>
GAAP net income (loss) margin	(17.7)%	7.4%	4.4%
Adjusted EBITDA margin	16.5 %	18.2%	19.7%

- (1) See Note 14, *Severance, Restructuring, and Acquisition Integration Activities*, for details.
- (2) In 2019, we collectively recognized \$0.6 million of cost of sales related to purchase accounting adjustments of acquired inventory to fair value for both our SPC and Opterna acquisitions. In 2018, we made a \$1.7 million adjustment to increase the earn-out liability associated with an acquisition. In 2017, we recognized \$6.1 million of cost of sales related to the adjustment of acquired inventory to fair value for our Thinklogical acquisition.
- (3) In 2018 and 2017, we recognized a \$0.1 million and \$1.0 million loss on sale of assets, respectively, for the sale of our MCS business and Hirschmann JV. See Note 2.

Use of Non-GAAP Financial Information

Adjusted Revenues, Adjusted EBITDA, Adjusted EBITDA margin, and free cash flow are non-GAAP financial measures. In addition to reporting financial results in accordance with accounting principles generally accepted in the United States, we provide non-GAAP operating results adjusted for certain items, including: asset impairments; accelerated depreciation expense due to plant consolidation activities; purchase accounting effects related to acquisitions, such as the adjustment of acquired inventory and deferred revenue to fair value, and transaction costs; severance, restructuring, and acquisition integration costs; gains (losses) recognized on the disposal of businesses and tangible assets; amortization of intangible assets; gains (losses) on debt extinguishment; certain revenues and gains (losses) from patent settlements; discontinued operations; and other costs. We adjust for the items listed above in all periods presented, unless the impact is clearly immaterial to our financial statements. When we calculate the tax effect of the adjustments, we include all current and deferred income tax expense commensurate with the adjusted measure of pre-tax profitability.

We utilize the adjusted results to review our ongoing operations without the effect of these adjustments and for comparison to budgeted operating results. We believe the adjusted results are useful to investors because they help them compare our results to previous periods and provide important insights into underlying trends in the business and how management oversees our business operations on a day-to-day basis. As an example, we adjust for the purchase accounting effect of recording deferred revenue at fair value in order to reflect the revenues that would have otherwise been recorded by acquired businesses had they remained as independent entities. We believe this presentation is useful in evaluating the underlying performance of acquired companies. Similarly, we adjust for other acquisition-related expenses, such as amortization of intangibles and other impacts of fair value adjustments because they generally are not related to the acquired businesses' core business performance. As an additional example, we exclude the costs of restructuring programs, which can occur from time to time for our current businesses and/or recently acquired businesses. We exclude the costs in calculating adjusted results to allow us and investors to evaluate the performance of the business based upon its expected ongoing operating structure. We believe the adjusted measures, accompanied by the disclosure of the costs of these programs, provides valuable insight. Adjusted results should be considered only in conjunction with results reported according to accounting principles generally accepted in the United States.

	2019	2018	2017	Percentage Change	
				2019 vs. 2018	2018 vs. 2017
	(In thousands, except percentages)				
Adjusted Revenues	\$ 2,131,278	\$ 2,165,702	\$ 2,087,185	(1.6)%	3.8 %
Adjusted EBITDA	350,903	393,681	410,944	(10.9)%	(4.2)%
<i>as a percent of adjusted revenues</i>	<i>16.5%</i>	<i>18.2%</i>	<i>19.7%</i>		

2019 Compared to 2018

Revenues decreased \$34.4 million from 2018 to 2019 due to the following factors:

- Acquisitions contributed \$32.4 million to the increase in revenues.
- Currency translation had a \$28.0 million unfavorable impact on revenues.
- Lower sales volume, including the impact of changes in channel inventory and weaker industrial markets, resulted in a \$21.6 million decrease in revenues.
- Lower copper costs resulted in a \$17.2 million decrease in revenues.

Adjusted EBITDA decreased \$42.8 million in 2019 from 2018 primarily due to the decrease in revenues discussed above as well as unfavorable product mix and the impact of lower production volumes.

2018 Compared to 2017

Revenues increased \$78.5 million from 2017 to 2018 due to the following factors:

- Higher sales volume, including changes in channel inventory, resulted in a \$53.8 million increase in revenues.
- Acquisitions contributed \$29.7 million to the increase in revenues.
- Currency translation had a \$12.0 million favorable impact on revenues.
- Higher copper costs contributed \$10.7 million to the increase in revenues.
- The divestiture of our MCS business resulted in a \$27.7 million decrease in revenues.

Adjusted EBITDA decreased \$17.3 million in 2018 from 2017 primarily due to unfavorable product mix and investments in organic growth initiatives, partially offset by the increase in revenues.

Segment Results of Operations

For additional information regarding our segment measures, see Note 5 to the Consolidated Financial Statements.

Enterprise Solutions

	2019	2018	2017	Percentage Change	
				2019 vs. 2018	2018 vs. 2017
	(In thousands, except percentages)				
Segment Revenues	\$ 1,081,232	\$ 1,095,900	\$ 1,054,847	(1.3)%	3.9 %
Segment EBITDA	162,276	190,910	196,554	(15.0)%	(2.9)%
<i>as a percent of segment revenues</i>	<i>15.0%</i>	<i>17.4%</i>	<i>18.6%</i>		

2019 Compared to 2018

Enterprise revenues decreased \$14.7 million in 2019 as compared to 2018 primarily due to decreases in volume, including changes in channel inventory; lower copper prices; and unfavorable currency translation, which contributed \$31.9 million, \$7.8 million, and \$7.4 million, respectively, to the decrease in revenues over the year ago period; partially offset by the impact of acquisitions which grew revenues \$32.4 million.

Enterprise EBITDA decreased \$28.6 million in 2019 as compared to 2018 primarily due to the decreases in revenues discussed above as well as the impact of lower production volumes.

2018 Compared to 2017

Enterprise revenues increased \$41.1 million in 2018 as compared to 2017 primarily due to acquisitions, higher copper prices, increases in volume, and favorable currency translation, which contributed \$29.7 million, \$4.3 million, \$4.1 million, and \$3.0 million, respectively, to the increase in revenues over the year ago period.

Enterprise EBITDA decreased \$5.6 million in 2018 as compared to 2017 primarily due to manufacturing constraints.

Industrial Solutions

	2019	2018	2017	Percentage Change	
				2019 vs. 2018	2018 vs. 2017
	(In thousands, except percentages)				
Segment Revenues	\$ 1,050,046	\$ 1,069,802	\$ 1,032,338	(1.8)%	3.6 %
Segment EBITDA	188,947	203,746	208,875	(7.3)%	(2.5)%
<i>as a percent of segment revenues</i>	<i>18.0%</i>	<i>19.0%</i>	<i>20.2%</i>		

2019 Compared to 2018

Industrial Solutions revenues decreased \$19.8 million in 2019 as compared to 2018 primarily due to unfavorable currency translation and lower copper prices, which contributed \$20.6 million and \$9.4 million, respectively, to the decrease in revenues over the year ago period; partially offset by increases in volume, which grew revenues \$10.2 million year-over-year.

Industrial EBITDA decreased \$14.8 million in 2019 as compared to 2018 primarily due to the decline in revenues discussed above and the impact of lower production volumes.

2018 Compared to 2017

Industrial Solutions revenues increased \$37.5 million in 2018 as compared to 2017 primarily due to volume growth, including changes in channel inventory; favorable currency translation; and higher copper costs, which contributed \$50.5 million, \$9.0 million, and \$5.7 million, respectively, to the increase in revenues year over year; partially offset by \$27.7 million from the MCS divestiture in 2017.

Industrial EBITDA decreased \$5.1 million in 2018 as compared to 2017. The revenue growth discussed above was offset by unfavorable product mix and temporary inefficiencies related to extended lead times throughout the supply chain experienced in 2018.

Liquidity and Capital Resources

Significant factors affecting our cash liquidity include (1) cash provided by operating activities, (2) disposals of businesses and tangible assets, (3) cash used for acquisitions, restructuring actions, capital expenditures, share repurchases, dividends, and senior subordinated note repurchases, and (4) our available credit facilities and other borrowing arrangements. We expect our operating activities to generate cash in 2020 and believe our sources of liquidity are sufficient to fund current working capital requirements, capital expenditures, contributions to our retirement plans, share repurchases, senior subordinated note repurchases, quarterly dividend payments, and our short-term operating strategies. However, we may require external financing were we to complete a significant acquisition. Our ability to continue to fund our future needs from business operations could be affected by many factors, including, but not limited to: economic conditions worldwide, customer demand, competitive market forces, customer acceptance of our product offerings, and commodities pricing.

The following table is derived from our Consolidated Cash Flow Statements and summarizes cash flows from operations, including discontinued operations:

	Years Ended December 31,	
	2019	2018
	(In thousands)	
Net cash provided by (used for):		
Operating activities	\$ 276,893	\$ 289,220
Investing activities	(184,369)	(140,676)
Financing activities	(86,948)	(281,770)
Effects of currency exchange rate changes on cash and cash equivalents	(301)	(7,272)
Increase (decrease) in cash and cash equivalents	5,275	(140,498)
Cash and cash equivalents, beginning of year	420,610	561,108
Cash and cash equivalents, end of year	<u>\$ 425,885</u>	<u>\$ 420,610</u>

Net cash provided by operating activities totaled \$276.9 million for 2019 compared to \$289.2 million for 2018. Operating cash flows declined \$12.3 million, or 4.3%, compared to the prior year primarily due to the \$62 million pre-tax cash proceeds from the Corning patent litigation received in 2018. Excluding the patent litigation proceeds, operating cash flows increased year-over-year due in part to favorable changes in receivables and inventory. Receivables were a source of cash of \$22.9 million compared to a use of cash of \$21.7 million in the prior year. Inventory was a source of cash of \$44.5 million compared to a use of cash of \$14.8 million in the prior year. The improvements in receivables and inventory are attributable to effective working capital management.

Net cash used for investing activities totaled \$184.4 million for 2019 compared to \$140.7 million for 2018. Investing activities for 2019 included capital expenditures of \$110.0 million and payments, net of cash acquired, for acquisitions of \$74.4 million. Investing activities for 2018 included capital expenditures of \$97.8 million; payments, net of cash acquired, for acquisitions of \$84.6 million; net proceeds from the sale of an operating facility of \$1.5 million; and net cash received for the sale of the MCS business and Hirschmann JV which closed on December 31, 2017 of \$40.2 million. Capital expenditures increased \$12.2 million year-over-year due in part to investments in fiber capacity and software development.

Net cash flows from financing activities was a \$86.9 million use of cash for 2019 compared to \$281.8 million for 2018. Financing activities for 2019 included payments under our share repurchase program of \$50.0 million; cash dividend payments of \$34.4 million, net payments related to share based compensation activities of \$2.1 million; and interest payments on our financing leases of \$0.4 million. Financing activities for 2018 included payments under borrowing arrangements of \$484.8 million, payments under our share repurchase program of \$175.0 million, cash dividend payments of \$43.2 million, debt issuance costs of \$7.6 million, net payments related to share based compensation activities of \$2.1 million, payments for the redemption of our stockholders' rights agreement of \$0.4 million, and cash proceeds from the issuance of the €350.0 million 3.875% Notes due 2028 of \$431.3 million.

Our cash and cash equivalents balance, including discontinued operations, was \$425.9 million as of December 31, 2019. Of this amount, \$228.4 million was held outside of the U.S. in our foreign operations. Substantially all of the foreign cash and cash equivalents are readily convertible into U.S. dollars or other foreign currencies. Our strategic plan does not require the repatriation of foreign cash in order to fund our operations in the U.S., and it is our current intention to permanently reinvest the foreign cash and cash equivalents outside of the U.S. If we were to repatriate the foreign cash to the U.S., we may be required to accrue and pay U.S. taxes in accordance with applicable U.S. tax rules and regulations as a result of the repatriation. See Note 17, *Income Taxes* in the accompanying notes to our consolidated financial statements.

Our outstanding debt obligations as of December 31, 2019 consisted of \$1.5 billion of senior subordinated notes. As of December 31, 2019, we had no borrowings outstanding on the Revolver, and our available borrowing capacity, including the assets of the Grass Valley disposal group, was \$310.6 million. Additional discussion regarding our various borrowing arrangements is included in Note 15 to the Consolidated Financial Statements.

Contractual obligations outstanding at December 31, 2019, have the following scheduled maturities:

	Total	Less than 1 Year	1-3 Years	4-5 Years	More than 5 Years
	(In thousands)				
Long-term debt payment obligations ⁽¹⁾⁽²⁾	\$ 1,459,380	\$ —	\$ —	\$ —	\$ 1,459,380
Interest payments on long-term debt obligations	396,348	51,219	102,437	102,437	140,255
Operating lease obligations ⁽³⁾	87,092	18,899	30,953	20,585	16,655
Purchase obligations ⁽⁴⁾	31,163	30,507	656	—	—
Other commitments ⁽⁵⁾	6,779	426	5,478	875	—
Pension and other postemployment obligations	54,026	5,191	11,169	10,364	27,302
Total	\$ 2,034,788	\$ 106,242	\$ 150,693	\$ 134,261	\$ 1,643,592

(1) As described in Note 15 to the Consolidated Financial Statements.

(2) Amounts do not include accrued and unpaid interest. Accrued and unpaid interest related to long-term debt obligations is reflected on the line entitled, "Interest payments on long-term debt obligations" in the table.

(3) As described in Note 11 to the Consolidated Financial Statements.

(4) Includes agreements to purchase goods or services that are enforceable and legally binding on us and that specify all significant terms, including fixed or minimum quantities to be purchased; fixed, minimum, or variable price provisions; and the approximate timing of the transaction.

(5) Does not include accounts payable reflected in the financial statements. Includes obligations for uncertain tax positions and legal settlement obligations (see Notes 17 and 28 to the Consolidated Financial Statements).

Our commercial commitments expire or mature as follows:

	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
	(In thousands)				
Standby financial letters of credit	\$ 11,227	\$ 9,177	\$ 2,050	\$ —	\$ —
Bank guarantees	4,451	1,934	2,517	—	—
Surety bonds	3,311	3,311	—	—	—
Total	\$ 18,989	\$ 14,422	\$ 4,567	\$ —	\$ —

Standby financial letters of credit, bank guarantees, and surety bonds are generally issued to secure obligations we have for a variety of commercial reasons such as workers compensation self-insurance programs in several states and the importation and exportation of product. We expect to replace most of these when they expire or mature.

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, results of operations, or cash flows that are or would be considered material to investors.

Current-Year Adoption of Recent Accounting Pronouncements

Discussion regarding our adoption of accounting pronouncements is included in Note 2 to the Consolidated Financial Statements.

Critical Accounting Estimates

Our consolidated financial statements are prepared in conformity with accounting principles generally accepted in the U.S. (GAAP). In connection with the preparation of our financial statements, we are required to make assumptions and estimates about future events, and apply judgments that affect the reported amounts of assets, liabilities, revenues, expenses, and the related disclosures. We base our assumptions, estimates, and judgments on historical experience, current trends, and other factors that management believes to be relevant at the time our consolidated financial statements are prepared. On a regular basis, we review the accounting policies, assumptions, estimates, and judgments to ensure that our financial statements are presented fairly and in accordance with GAAP. However, because future events and their effects cannot be determined with certainty, actual results could differ from our assumptions and estimates, and such differences could be material.

Our significant accounting policies are discussed in Note 2 of our Consolidated Financial Statements. We believe that the following accounting estimates are the most critical to aid in fully understanding and evaluating our reported financial results, and they require our most difficult, subjective, or complex judgments, resulting from the need to make estimates about the effect of matters that are inherently uncertain.

Revenue Recognition

We recognize revenue consistent with the principles as outlined in the following five step model: (1) identify the contract with the customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract, and (5) recognize revenue when (or as) each performance obligation is satisfied. See Note 3.

At the time of sale, we establish an estimated reserve for trade, promotion, and other special price reductions such as contract pricing, discounts to meet competitor pricing, and on-time payment discounts. We also reserve for, among other things, correction of billing errors, incorrect shipments, and settlement of customer disputes. Customers are allowed to return inventory if and when certain conditions regarding the functionality of the inventory and our approval of the return are met. Certain distribution customers are allowed to return inventory at original cost, in an amount not to exceed three percent of the prior year's purchases, in exchange for an order of equal or greater value. Until we can process these reductions, corrections, and returns (together, the Changes) through individual customer records, we estimate the amount of outstanding Changes and recognize them by reducing revenues. We determine our estimate based on our historical Changes as a percentage of revenues and the average time period between the original sale and the issuance of the Changes. We adjust other current assets and cost of sales for the estimated level of returns.

We base these estimates on historical and anticipated sales demand, trends in product pricing, and historical and anticipated Changes patterns. We make revisions to these estimates in the period in which the facts that give rise to each revision become known. Future market conditions and product transitions might require us to take actions to further reduce prices and increase customer return authorizations. We do not believe there is a reasonable likelihood that there will be a material change in the future estimates or assumptions we use to measure the Changes. However, if actual results are not consistent with our estimates or assumptions, we may be exposed to losses or gains that could be material. A 10% change in our sales reserve for such Changes as of December 31, 2019 would have affected net income by less than \$1 million in 2019.

At times, we enter into arrangements that involve the delivery of multiple promised goods or services. For these arrangements, when the promised goods or services can be separated, the revenue is allocated to each distinct good or service based on that performance obligation's relative standalone selling price and recognized based upon transfer of control for each performance obligation. Generally, we determine standalone selling price using the adjusted market assessment approach. For software licenses with highly variable standalone selling prices sold with either support or professional services, we generally determine the standalone selling price of the software license using the residual approach.

Revenue allocated to support services under our support contracts is typically recognized ratably over the term of the service. Revenue allocated to distinct professional services is recognized when (or as) the performance obligation is satisfied depending on the terms of the arrangement. When professional services are not distinct from goods, the professional services and goods are combined into one performance obligation, and revenue allocated to that performance obligation is recognized when (or as) the performance obligation is satisfied.

Income Taxes

We recognize deferred tax assets resulting from tax credit carryforwards, net operating loss carryforwards, and deductible temporary differences between taxable income on our income tax returns and income before taxes under GAAP. Deferred tax assets generally represent future tax benefits to be received when these carryforwards can be applied against future taxable income or when expenses previously reported in our Consolidated Financial Statements become deductible for income tax purposes. A deferred tax asset valuation allowance is required when some portion or all of the deferred tax assets may not be realized. We are required to estimate taxable income in future years or develop tax strategies that would enable tax asset realization in each taxing jurisdiction and use judgment to determine whether to record a deferred tax asset valuation allowance for part or all of a deferred tax asset.

We consider the weight of all available evidence, both positive and negative, in assessing the realizability of the deferred tax assets associated with net operating losses. We consider the reversals of existing taxable temporary differences as well as projections of future taxable income. We consider the future reversals of existing taxable temporary differences to the extent they were of the same character as the temporary differences giving rise to the deferred tax assets. We also consider whether the future reversals of existing taxable temporary differences will occur in the same period and jurisdiction as the temporary differences giving rise to the deferred tax assets. The assumptions utilized to estimate our future taxable income are consistent with those assumptions utilized for purposes of testing goodwill for impairment, as well as with our budgeting and strategic planning processes.

Significant judgment is required in evaluating our uncertain tax positions. We establish accruals for uncertain tax positions when we believe that the full amount of the associated tax benefit may not be realized. In the future, if we prevail in matters for which accruals have been established previously or pay amounts in excess of reserves, there could be a material effect on our income tax provisions in the period in which such determination is made.

We have significant tax credit carryforwards in the U.S. for which we have recorded a partial valuation allowance as a result of the Tax Cuts and Jobs Act of 2017 (the "Act"), regulations issued by the United States Treasury in the fourth quarter of 2019, and the classification of a business as discontinued operations. The utilization of these credits is dependent upon the recognition of both U.S. taxable income as well as income characterized as foreign source under the U.S. tax laws. We do not expect to generate enough foreign source income in the future to utilize all of these tax credits due to law changes introduced by the Act.

See Note 17, *Income Taxes*, to the consolidated financial statements for further information regarding income taxes.

Goodwill and Indefinite-Lived Intangible Assets

We test our goodwill and other indefinite-lived intangible assets not subject to amortization for impairment on an annual basis during the fourth quarter or when indicators of impairment exist. We base our estimates on assumptions we believe to be reasonable, but which are not predictable with precision and therefore are inherently uncertain. Actual future results could differ from these estimates.

We test goodwill annually for impairment at the reporting unit level. A reporting unit is an operating segment, or a business unit one level below an operating segment if discrete financial information for that business is prepared and regularly reviewed by segment management. However, components within an operating segment are aggregated as a single reporting unit if they have similar economic characteristics. We determined that each of our reportable segments (Enterprise Solutions and Industrial Solutions) represents an operating segment. Within those operating segments, we have identified reporting units based on whether there is discrete financial information prepared that is regularly reviewed by segment management. As a result of this evaluation, we have identified from our continuing operations, four reporting units within Enterprise Solutions and six reporting units within Industrial Solutions for purposes of goodwill impairment testing.

The accounting guidance related to goodwill impairment testing allows for the performance of an optional qualitative assessment of whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. Such an evaluation is made based on the weight of all available evidence and the significance of all identified events and circumstances that may influence the fair value of a reporting unit. If it is more likely than not that the fair value is less than the carrying value, then a quantitative assessment is required for the reporting unit, as described in the paragraph below. In 2019, we did not perform a qualitative assessment over any of our reporting units.

When we evaluate goodwill for impairment using a quantitative assessment, we compare the fair value of each reporting unit to its carrying value. We determine the fair value using an income approach. Under the income approach, we calculate the fair value of a reporting unit based on the present value of estimated future cash flows using growth rates and discount rates that are consistent with current market conditions in our industry. If the fair value of the reporting unit exceeds the carrying value of the net assets including goodwill assigned to that unit, goodwill is not impaired. If the carrying value of the reporting unit's net assets including goodwill exceeds the fair value of the reporting unit, then we record an impairment charge based on that difference. In addition to the income approach, we calculate the fair value of our reporting units under a market approach. The market approach measures the fair value of a reporting unit through analysis of financial multiples of comparable businesses. Consideration is given to the financial conditions and operating performance of the reporting unit being valued relative to those publicly-traded companies operating in the same or similar lines of business.

For our annual impairment test in 2019, we performed a quantitative assessment for all ten of our reporting units included in continuing operations, none of which proved to be impaired during 2019. Based on our annual goodwill impairment test, the excess of the fair values over the carrying values of our ten reporting units tested under a quantitative income approach ranged from 12% - 394%. The assumptions used to estimate fair values were based on the past performance of the reporting unit as well as the projections incorporated in our strategic plan. Significant assumptions included sales growth, profitability, and related cash flows, along with cash flows associated with taxes and capital spending. The discount rate used to estimate fair value was risk adjusted in consideration of the economic conditions in effect at the time of the impairment test. We also considered assumptions that market participants may use. In our quantitative assessments, the discount rates ranged from 9.0% to 17.0%, the 2020 to 2029 compounded annual revenue growth rates ranged from 1.9% to 7.6%, and the long-term revenue growth rates ranged from 2.0% to 3.0%. By their nature, these assumptions involve risks and uncertainties, with the primary factor that could have an adverse effect being our assumptions relating to growing revenues consistent with our strategic plan.

We test our indefinite-lived intangible assets, which consist primarily of trademarks, for impairment on an annual basis during the fourth quarter. The accounting guidance related to impairment testing for such intangible assets allows for the performance of an optional qualitative assessment, similar to that described above for goodwill. We did not perform any qualitative assessments as part of our indefinite-lived intangible asset impairment testing for 2019. Rather, we performed a quantitative assessment for each of our indefinite-lived trademarks in 2019. Under the quantitative assessments, we determined the fair value of each trademark using a relief from royalty methodology and compared the fair value to the carrying value. We determined that none of our trademarks were impaired during 2019. Significant assumptions to determine fair value included sales growth, royalty rates, and discount rates.

We do not believe there is a reasonable likelihood that there will be a material change in the future estimates or assumptions we used to test for impairment losses on goodwill and other intangible assets. However, if actual results are significantly different from our estimates or assumptions, we may have to recognize an impairment charge that could be material.

As noted above, we also test our goodwill and other indefinite-lived intangible assets not subject to amortization for impairment when indicators of impairment exist. During 2019, we committed to a plan to sell Grass Valley, and at such time, met all of the criteria to classify the assets and liabilities of this business as held for sale. Furthermore, we determined a divestiture of Grass Valley represents a strategic shift that is expected to have a major impact on our operations and financial results. We wrote down the carrying value of Grass Valley and recognized impairment charges to goodwill, customer relationships, trademarks, etc. See Note 5.

Pension and Other Postretirement Benefits

Our pension and other postretirement benefit costs and obligations are dependent on the various actuarial assumptions used in calculating such amounts. These assumptions relate to discount rates, salary growth, long-term return on plan assets, health care cost trend rates, mortality tables, and other factors. We base the discount rate assumptions on current investment yields on high-quality corporate long-term bonds. The salary growth assumptions reflect our long-term actual experience and future or near-term outlook. Long-term return on plan assets is determined based on historical portfolio results and management's expectation of the future economic environment. Our health care cost trend assumptions are developed based on historical cost data, the near-term outlook, and an assessment of likely long-term trends. Our key assumptions are described in further detail in Note 18 to the Consolidated Financial Statements. Actual results that differ from our assumptions are accumulated and, if in excess of the lesser of 10% of the projected benefit obligation or the fair market value of plan assets, amortized over the estimated future working life of the plan participants.

As a sensitivity measure, the effect of a 50 basis point decline in the assumed discount rate would have resulted in an increase in the 2019 net periodic benefit cost and projected benefit obligations as of December 31, 2019 of approximately \$0.5 million and \$28.3 million, respectively. A 50 basis point decline in the expected return on plan assets would have resulted in an increase in the 2019 net periodic benefit cost of approximately \$1.6 million.

Conversely, the effect of a 50 basis point increase in the assumed discount rate would have resulted in a decrease in the 2019 net periodic benefit cost and projected benefit obligations as of December 31, 2019 of approximately \$0.4 million and \$32.9 million, respectively. A 50 basis point increase in the expected return on plan assets would have resulted in a decrease in the 2019 net periodic benefit cost of approximately \$1.6 million.

Business Combination Accounting

We allocate the consideration of an acquired business to its identifiable assets and liabilities based on estimated fair values. The excess of the consideration over the amount allocated to the assets and liabilities, if any, is recorded to goodwill. We use all available information to estimate fair values. We typically engage third party valuation specialists to assist in the fair value determination of inventories, tangible long-lived assets, and intangible assets other than goodwill. The carrying values of acquired receivables and accounts payable have historically approximated their fair values as of the business combination date. As necessary, we may engage third party specialists to assist in the estimation of fair value for certain liabilities. We adjust the preliminary acquisition accounting, as necessary, typically up to one year after the acquisition closing date as we obtain more information regarding asset valuations and liabilities assumed.

Our acquisition accounting methodology contains uncertainties because it requires management to make assumptions and to apply judgment to estimate the fair value of acquired assets and liabilities. Management estimates the fair value of assets and liabilities based upon quoted market prices, the carrying value of the acquired assets and widely accepted valuation techniques, including discounted cash flows and market multiple analyses. Unanticipated events or circumstances may occur which could affect the accuracy of our fair value estimates, including assumptions regarding industry economic factors and business strategies.

If actual results are materially different than the assumptions we used to determine fair value of the assets and liabilities acquired through a business combination, it is possible that adjustments to the carrying values of such assets and liabilities will have an impact on our net earnings.

See Note 4 to the Consolidated Financial Statements for the acquisition-related information associated with significant acquisitions completed in the last three fiscal years.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Market risks relating to our operations result primarily from currency exchange rates, certain commodity prices, interest rates, and credit extended to customers. Each of these risks is discussed below.

Currency Exchange Rate Risk

We are exposed to foreign currency risks that arise from normal business operations. These risks include the translation of local currency balances of foreign subsidiaries and transactions denominated in currencies other than a location's functional currency.

Our investments in certain foreign subsidiaries are recorded in currencies other than the U.S. dollar. As these foreign currency denominated investments are translated at the end of each period during consolidation using period-end exchange rates, fluctuations of exchange rates between the foreign currency and the U.S. dollar increase or decrease the value of those investments. These fluctuations and the results of operations for foreign subsidiaries, where the functional currency is not the U.S. dollar, are translated

into U.S. dollars using the average exchange rates during the year, while the assets and liabilities are translated using period end exchange rates. The assets and liabilities-related translation adjustments are recorded as a separate component of accumulated other comprehensive income (loss) in our Consolidated Balance Sheets. We generally view our investments in international subsidiaries with functional currencies other than the U.S. dollar as long-term. As a result, we do not generally use derivatives to manage these net investments. However, we designated euro debt issued in 2018, 2017 and 2016 by Belden Inc., a USD functional currency entity, as a net investment hedge of certain international subsidiaries. See Note 15 for further discussion.

Transactions denominated in currencies other than a location's functional currency may produce receivables or payables that are fixed in terms of the amount of foreign currency that will be received or paid. A change in exchange rates between the functional currency and the currency in which a transaction is denominated increases or decreases the expected amount of functional currency cash flows upon settlement of the transaction. That increase or decrease in expected functional currency cash flows is a foreign exchange transaction gain or loss that is included in our operating income in the Consolidated Statements of Operations. In 2019, we recorded approximately \$1.5 million of net foreign currency transaction losses.

Generally, the currency in which we sell our products is the same as the currency in which we incur the costs to manufacture our products, resulting in a natural hedge. Our currency exchange rate management strategy primarily involves the use of natural techniques, where possible, such as the offsetting or netting of like-currency cash flows. However, we re-evaluate our strategy as the foreign currency environment changes, and it is possible that we could utilize derivative financial instruments to manage this risk in the future. We did not have any foreign currency derivatives outstanding as of December 31, 2019.

Our exposure to currency rate fluctuations primarily relates to exchange rate movements between the U.S. dollar and the euro, Canadian dollar, Hong Kong dollar, Chinese yuan, Japanese yen, Mexican peso, Australian dollar, British pound, Indian rupee, and Brazilian real.

Commodity Price Risk

Certain raw materials used by us are subject to price volatility caused by supply conditions, political and economic variables, and other unpredictable factors. The primary purpose of our commodity price management activities is to manage the volatility associated with purchases of commodities in the normal course of business. We do not speculate on commodity prices.

We are exposed to price risk related to our purchase of copper used in our products, although we are generally able to raise selling prices to customers to cover the increase in copper costs. Our copper price management strategy involves the use of natural techniques, where possible, such as purchasing copper for future delivery at fixed prices. We do not generally use commodity price derivatives and did not have any outstanding at December 31, 2019 or 2018.

The following table presents unconditional commodity purchase obligations outstanding as of December 31, 2019. The unconditional purchase obligations will settle during 2020.

	<u>Purchase Amount</u>	<u>Fair Value</u>
	(In thousands, except average price)	
Unconditional copper purchase obligations:		
Commitment volume in pounds	1,625	
Weighted average price per pound	\$ 2.71	
Commitment amounts	\$ 4,403	\$ 4,541

We are also exposed to price risk related to our purchase of selected commodities derived from petrochemical feedstocks used in our products. We generally purchase these commodities based upon market prices established with the vendors as part of the purchase process. Pricing of these commodities is volatile as they tend to fluctuate with the price of oil. Historically, we have not used commodity financial instruments to hedge prices for commodities derived from petrochemical feedstocks.

Interest Rate Risk

We have occasionally managed our debt portfolio by using interest rate derivative instruments, such as swap agreements, to achieve an overall desired position of fixed and floating rates. We were not a party to any interest rate derivative instruments as of or for the years ended December 31, 2019 or 2018.

The following table provides information about our financial instruments that are sensitive to changes in interest rates. The table presents principal amounts by expected maturity dates and fair values as of December 31, 2019.

	Principal Amount by Expected Maturity			Fair Value
	2020	Thereafter	Total	
	(In thousands, except interest rates)			
€350.0 million fixed-rate senior subordinated notes due 2028	\$ —	\$ 392,910	\$ 392,910	\$ 417,561
Average interest rate		3.875%		
€450.0 million fixed-rate senior subordinated notes due 2027	\$ —	\$ 505,170	\$ 505,170	\$ 529,029
Average interest rate		3.375%		
€200.0 million fixed-rate senior subordinated notes due 2026	\$ —	\$ 224,520	\$ 224,520	\$ 240,472
Average interest rate		4.125%		
€300.0 million fixed-rate senior subordinated notes due 2025	\$ —	\$ 336,780	\$ 336,780	\$ 345,594
Average interest rate		2.875%		
Total			\$ 1,459,380	\$ 1,532,656

Concentrations of Credit Risk

Financial instruments that potentially subject us to significant concentrations of credit risk consist of cash and cash equivalents and accounts receivable. We are exposed to credit losses in the event of nonperformance by counterparties to these financial instruments. We place cash and cash equivalents with various high-quality financial institutions throughout the world, and exposure is limited at any one financial institution. Although we do not obtain collateral or other security to support these financial instruments, we evaluate the credit standing of the counterparty financial institutions. As of December 31, 2019, we had \$10.2 million in accounts receivable outstanding from Anixter International Inc. This represented approximately 3% of our total accounts receivable outstanding at December 31, 2019. Anixter generally pays all outstanding receivables within thirty to sixty days of invoice receipt.

Item 8. Financial Statements and Supplementary Data

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Belden Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Belden Inc. (the Company) as of December 31, 2019 and 2018, and the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and the financial statement schedule listed in the Index at Item 15(a) (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission 2013 framework and our report dated February 11, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

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

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

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Valuation of Goodwill for Certain Reporting Units

Description of the Matter

At December 31, 2019, the Company had goodwill on its balance sheet aggregating \$1.2 billion. As more fully described in Notes 2 and 12 to the Company's consolidated financial statements, goodwill is tested for impairment at least annually at the reporting unit level. The Company's goodwill is initially assigned to reporting units as of the respective acquisition dates. The Company performed a quantitative assessment for all of its reporting units and determined that the fair values of these reporting units were in excess of the carrying values. Therefore, the Company did not record any goodwill impairment for any of its reporting units.

How We Addressed the Matter in Our Audit

Auditing the Company's annual goodwill impairment test for certain reporting units under the quantitative assessment was complex due to the judgments and estimation required in determining the fair values of the reporting units. In particular, the fair value estimates are sensitive to significant assumptions such as discount rates, revenue growth rates, projected operating margins, and terminal growth rates, which are sensitive to and affected by expectations about future market or economic conditions and company-specific qualitative factors.

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's preparation and review of the goodwill impairment tests, significant assumptions discussed above, as used in each of the models, and the completeness and accuracy of the data used in the models.

Our audit procedures included, among others, involving our specialists to assist us in assessing methodologies, and testing the significant assumptions discussed above and the underlying data used by the Company in its analyses, and reviewing the methodology and market support used to determine the discount rate. We compared the significant assumptions used by the Company to current industry and future economic trends, changes to the Company's business model, customer base or product mix and other relevant factors. We assessed the historical accuracy of the Company's estimates and performed sensitivity analyses of significant assumptions to evaluate the changes in the fair values of the reporting units that would result from changes in the assumptions. We tested the Company's reconciliation of the aggregate fair value of the reporting units to the market capitalization of the Company. We also evaluated whether any changes in the composition of the reporting units reflected significant changes in the organizational structure or segments.

Revenue recognition - allocating consideration to performance obligations and estimating variable consideration

Description of the Matter

As described in Notes 2 and 3 to the consolidated financial statements, the Company has contractual arrangements that include software, support, and service revenues. The Company estimated the selling prices of those contractual arrangements to determine the allocation of consideration to each of the performance obligations. The objective was to determine the price at which the Company would transact a sale if the product, support or service was sold on a standalone basis. Generally, the Company determines standalone selling price using the adjusted market assessment approach. For software licenses with highly variable standalone selling prices sold with either support or professional services, the Company generally determines the standalone selling price of the software license using the residual approach. The Company estimated the standalone selling prices of each of the performance obligations and projected cash flows over the term of each contractual arrangement to determine the amount of total consideration allocated to each of the performance obligations. The Company also enters into sales contracts that provide certain distributors with price concessions, product return rights, refunds, and stock rotations, which all result in variable consideration. At the time of sale, the Company establishes an estimated reserve for the variable consideration and recognizes it by reducing revenues. Estimates are based on a percentage of revenues and the average time period between the original sale and the issuance of the adjustments. As of December 31, 2019, the Company recorded \$29.5 million in unprocessed changes and \$28.7 million in estimated pricing adjustments that were recognized as a reduction of revenues and accounts receivable, respectively.

Auditing the Company's allocation of consideration expected to be received under its contractual arrangements was complex and involved a high degree of subjective auditor judgment because of the management judgment required to develop the estimates of standalone selling prices for the highly variable pricing of software licenses. Auditing the Company's measurement of variable consideration under the distributor contracts involved especially challenging judgment because the calculation involves subjective management assumptions, including historical adjustments as a percentage of revenues and the estimated period of time between the original sale and the issuance of the adjustment, all used in the estimates of unprocessed changes and pricing concessions. The estimates developed by the Company are also dependent on anticipated sales demand, trends in product pricing, and historical and anticipated adjustment patterns.

*How We
Addressed the
Matter in Our
Audit*

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's processes to determine the estimated standalone selling price of each of the performance obligations, the allocation of total consideration to be received over the contractual term to all performance obligations based on their relative standalone selling price and to calculate the variable consideration, including the process to determine and evaluate the underlying assumptions about estimates of expected unprocessed changes and pricing concessions.

We performed audit procedures related to the estimated standalone selling prices and allocation to the performance obligations over the term of the contractual arrangement, including the following, among others. To test the calculation of the amount of consideration allocated to each performance obligation, we evaluated the accuracy and completeness of the underlying data used in the Company's calculation of the ranges of each standalone selling price and recalculated the established range for the standalone selling price used. We analyzed transaction level detail, such as invoices and price lists, to test that, if necessary, the transaction price was reallocated to bring the amount allocated to the performance obligation within the established range. We evaluated the appropriateness of the methodology used to determine the standalone selling price by comparing such prices to historical analysis and practices observed in the industry. In addition, we performed detailed testing of the underlying transactions in the calculation by agreeing the amounts recognized to source documents and performed an analysis to recalculate the allocation of revenue between performance obligations as part of our overall testing of revenue transactions. Our audit procedures related to the Company's estimates of variable consideration included, among others, evaluating the significant assumptions and the accuracy and completeness of the underlying data used in the Company's calculation. This included testing the Company's estimate of historical adjustments as a percentage of revenues and the average time period between the original sale and the issuance of the adjustment memo. In addition, we inspected the results of the Company's retrospective review of adjustments reserved compared to actual adjustments issued, evaluated the estimates made based on historical experience and performed sensitivity analyses to evaluate the changes in variable consideration that would result from changes in the Company's significant assumptions.

Fair Value Estimate and Impairment Loss of the Grass Valley Reporting Unit

*Description of
the Matter*

As described in Note 5 to the consolidated financial statements, the Company announced the sale of its Grass Valley business in the fourth quarter of 2019, which is expected to close in early 2020. The Company evaluated the carrying value of the Grass Valley reporting unit and its related indefinite-lived intangible assets and concluded the carrying value of those assets exceeded the associated fair value. As a result, the Company recorded an impairment loss of \$521.4 million.

Auditing the Company's fair value of the reporting unit, including consideration of the fair value of the various forms of consideration expected to be received from the disposal, involved a high degree of subjectivity, as the fair value estimates developed by the Company, with the assistance of a third-party valuation specialist, were based on assumptions related to projected financial information and the associated terms of the disposal. The fair value of the reporting unit was sensitive to significant assumptions such as discount rates, revenue growth rates, projected EBITDA margins, and terminal growth rates. These assumptions are sensitive to and affected by expectations about future market or economic conditions and Grass Valley-specific qualitative factors. The estimated fair value of the consideration expected to be received was calculated based on a combination of cash expected to be received at closing, as well as an interest-bearing note receivable from the buyer with a five-year maturity and additional consideration available to the Company. The additional consideration is contingent on certain performance thresholds being met and certain assumptions underlying this contingent consideration, such as revenue growth rates, projected EBITDA margins, and terminal growth rates all used in projecting earnings, are subjective and sensitive to change.

*How We
Addressed the
Matter in Our
Audit*

We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls over the Company's process to determine the fair value of the Grass Valley reporting unit. This included controls over the Company's review of the significant assumptions underlying the fair value determination, including projected revenue and EBITDA assumptions, as well as the estimated discount rates.

Our testing of the Company's fair value determination and subsequent impairment charge included, among other procedures, evaluation of the methods and significant assumptions used by the Company's third-party valuation specialist, and evaluation of the operating data used in the estimated fair value. For example, we compared the significant assumptions discussed above that were used to estimate future revenue and EBITDA of the business unit to current industry and economic trends in the Broadcast sector, obtained support to evaluate such data based on historical performance, performed a sensitivity analysis of the significant assumptions to evaluate the change in the fair value estimate that would result from changes in the assumptions and recalculated the Company's estimate. We recalculated the impairment loss recorded. We also involved our valuation specialists to assist in our evaluation of the discount rates used in the fair value estimate.

/s/ Ernst & Young LLP
We have served as the Company's auditor since 1993.
St. Louis, Missouri
February 11, 2020

Belden Inc.
Consolidated Balance Sheets

	December 31,	
	2019	2018
	(In thousands, except par value)	
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 407,480	\$ 407,454
Receivables, net	334,634	335,956
Inventories, net	231,333	265,002
Other current assets	29,172	30,590
Current assets of discontinued operations	375,135	219,722
Total current assets	1,377,754	1,258,724
Property, plant and equipment, less accumulated depreciation	345,918	310,960
Operating lease right-of-use assets	62,251	—
Goodwill	1,243,669	1,206,877
Intangible assets, less accumulated amortization	339,505	359,931
Deferred income taxes	25,216	26,459
Other long-lived assets	12,446	13,249
Long-term assets of discontinued operations	—	603,121
	\$ 3,406,759	\$ 3,779,321
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 268,466	\$ 297,498
Accrued liabilities	283,799	272,396
Current liabilities of discontinued operations	170,279	147,028
Total current liabilities	722,544	716,922
Long-term debt	1,439,484	1,463,200
Postretirement benefits	136,227	127,748
Deferred income taxes	48,725	36,109
Long-term operating lease liabilities	55,652	—
Other long-term liabilities	38,308	30,140
Long-term liabilities of discontinued operations	—	17,614
Stockholders' equity:		
Preferred stock, par value \$0.01 per share— 2,000 shares authorized; 0 shares and 52 shares outstanding at 2019 and 2018, respectively	—	1
Common stock, par value \$0.01 per share— 200,000 shares authorized; 50,335 shares issued; 45,458 and 39,396 shares outstanding at 2019 and 2018, respectively	503	503
Additional paid-in capital	811,955	1,139,395
Retained earnings	518,004	922,000
Accumulated other comprehensive loss	(63,418)	(74,907)
Treasury stock, at cost— 4,877 and 10,939 shares at 2019 and 2018, respectively	(307,197)	(599,845)
Total Belden stockholders' equity	959,847	1,387,147
Noncontrolling interest	5,972	441
Total stockholders' equity	965,819	1,387,588
	\$ 3,406,759	\$ 3,779,321

The accompanying notes are an integral part of these Consolidated Financial Statements.

Belden Inc.
Consolidated Statements of Operations

	Years Ended December 31,		
	2019	2018	2017
	(In thousands, except per share amounts)		
Revenues	\$ 2,131,278	\$ 2,165,702	\$ 2,087,185
Cost of sales	(1,337,773)	(1,335,791)	(1,284,865)
Gross profit	793,505	829,911	802,320
Selling, general and administrative expenses	(417,329)	(411,352)	(389,743)
Research and development expenses	(94,360)	(91,552)	(88,748)
Amortization of intangibles	(74,609)	(75,140)	(90,188)
Gain from patent litigation	—	62,141	—
Operating income	207,207	314,008	233,641
Interest expense, net	(55,814)	(60,839)	(82,651)
Non-operating pension benefit (cost)	1,017	(99)	(561)
Loss on debt extinguishment	—	(22,990)	(52,441)
Income from continuing operations before taxes	152,410	230,080	97,988
Income tax benefit (expense)	(42,519)	(62,936)	4,619
Income from continuing operations	109,891	167,144	102,607
Loss from discontinued operations, net of tax	(486,667)	(6,433)	(9,754)
Net income (loss)	(376,776)	160,711	92,853
Less: Net income (loss) attributable to noncontrolling interest	239	(183)	(357)
Net income (loss) attributable to Belden	(377,015)	160,894	93,210
Less: Preferred stock dividends	18,437	34,931	34,931
Net income (loss) attributable to Belden common stockholders	\$ (395,452)	\$ 125,963	\$ 58,279
Weighted average number of common shares and equivalents:			
Basic	42,203	40,675	42,220
Diluted	42,416	40,956	42,643
Basic income (loss) per share attributable to Belden common stockholders:			
Continuing operations attributable to Belden common stockholders	\$ 2.16	\$ 3.25	\$ 1.61
Discontinued operations attributable to Belden common stockholders	(11.53)	(0.16)	(0.23)
Net income (loss) attributable to Belden common stockholders	\$ (9.37)	\$ 3.10	\$ 1.38
Diluted income (loss) per share attributable to Belden common stockholders:			
Continuing operations attributable to Belden common stockholders	\$ 2.15	\$ 3.23	\$ 1.60
Discontinued operations attributable to Belden common stockholders	(11.53)	(0.16)	(0.23)
Net income (loss) attributable to Belden common stockholders	\$ (9.37)	\$ 3.08	\$ 1.37

The accompanying notes are an integral part of these Consolidated Financial Statements.

Belden Inc.
Consolidated Statements of Comprehensive Income

	Years Ended December 31,		
	2019	2018	2017
	(In thousands)		
Net income (loss)	\$ (376,776)	\$ 160,711	\$ 92,853
Foreign currency translation, net of tax of \$1.0 million, \$1.7 million, and \$1.3 million, respectively	24,121	27,802	(65,046)
Adjustments to pension and postretirement liability, net of tax of \$1.1 million, \$1.0 million, and \$2.2 million, respectively	(12,168)	(4,690)	6,071
Other comprehensive income (loss), net of tax	11,953	23,112	(58,975)
Comprehensive income (loss)	(364,823)	183,823	33,878
Less: Comprehensive income (loss) attributable to noncontrolling interest	703	(190)	(373)
Comprehensive income (loss) attributable to Belden	\$ (365,526)	\$ 184,013	\$ 34,251

The accompanying notes are an integral part of these Consolidated Financial Statements.

Belden Inc.
Consolidated Cash Flow Statements

	Years Ended December 31,		
	2019	2018	2017
	(In thousands)		
Cash flows from operating activities:			
Net income (loss)	\$ (376,776)	\$ 160,711	\$ 92,853
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Asset impairment of discontinued operations	521,441	—	—
Depreciation and amortization	139,259	148,632	149,650
Share-based compensation	17,751	18,497	14,647
Loss on debt extinguishment	—	22,990	52,441
Deferred income tax expense (benefit)	(23,540)	11,300	(24,098)
Changes in operating assets and liabilities, net of the effects of exchange rate changes, acquired businesses, and disposals:			
Receivables	22,926	(21,748)	(24,931)
Inventories	44,477	(14,779)	(84,088)
Accounts payable	(41,527)	(29,401)	100,752
Accrued liabilities	(17,654)	17,238	(25,076)
Income taxes	5,497	(4,390)	5,001
Other assets	(16,118)	(18,748)	(13,255)
Other liabilities	1,157	(1,082)	11,404
Net cash provided by operating activities	<u>276,893</u>	<u>289,220</u>	<u>255,300</u>
Cash flows from investing activities:			
Capital expenditures	(110,002)	(97,847)	(64,261)
Cash used to acquire businesses, net of cash acquired	(74,392)	(84,580)	(166,896)
Proceeds from disposal of tangible assets	25	1,580	1,039
Proceeds from disposal of business	—	40,171	—
Net cash used for investing activities	<u>(184,369)</u>	<u>(140,676)</u>	<u>(230,118)</u>
Cash flows from financing activities:			
Payments under borrowing arrangements	—	(484,757)	(1,105,892)
Payments under share repurchase program	(50,000)	(175,000)	(25,000)
Cash dividends paid	(34,439)	(43,169)	(43,376)
Debt issuance costs paid	—	(7,609)	(17,316)
Withholding tax payments for share based-payment awards	(2,149)	(2,094)	(6,564)
Redemption of stockholders' rights agreement	—	(411)	—
Other	(360)	—	—
Borrowings under credit arrangements	—	431,270	866,700
Net cash used for financing activities	<u>(86,948)</u>	<u>(281,770)</u>	<u>(331,448)</u>
Effect of foreign currency exchange rate changes on cash and cash equivalents	(301)	(7,272)	19,258
Increase (decrease) in cash and cash equivalents	<u>5,275</u>	<u>(140,498)</u>	<u>(287,008)</u>
Cash and cash equivalents, beginning of year	<u>420,610</u>	<u>561,108</u>	<u>848,116</u>
Cash and cash equivalents, end of year	<u>\$ 425,885</u>	<u>\$ 420,610</u>	<u>\$ 561,108</u>

For all periods presented, the Consolidated Cash Flow Statement includes the results of the Grass Valley disposal group.

The accompanying notes are an integral part of these Consolidated Financial Statements.

Belden Inc.
Consolidated Stockholders' Equity Statements

Belden Inc. Stockholders											
	Mandatory Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Retained Earnings	Treasury Stock		Accumulated Other Comprehensive Income (Loss)	Non-controlling Interest	Total
	Shares	Amount	Shares	Amount			Shares	Amount			
	(In thousands)										
Balance at December 31, 2016	52	\$ 1	50,335	\$ 503	\$ 1,116,090	\$ 783,812	(8,155)	\$ (401,026)	\$ (39,067)	\$ 1,004	\$ 1,461,316
Net income (loss)	—	—	—	—	—	93,210	—	—	—	(357)	92,853
Other comprehensive income, net of tax	—	—	—	—	—	—	—	—	(58,959)	(16)	(58,975)
Preferred stock issuance, net	—	—	—	—	(2,635)	—	55	(203)	—	—	(2,838)
Exercise of stock options, net of tax withholding forfeitures	—	—	—	—	(4,270)	—	97	544	—	—	(3,726)
Conversion of restricted stock units into common stock, net of tax withholding forfeitures	—	—	—	—	—	—	(313)	(25,000)	—	—	(25,000)
Share-based compensation related items	—	—	—	—	14,647	—	—	—	—	—	14,647
Preferred stock dividends	—	—	—	—	—	(34,931)	—	—	—	—	(34,931)
Common stock dividends (\$0.20 per share)	—	—	—	—	—	(8,481)	—	—	—	—	(8,481)
Balance at December 31, 2017	52	\$ 1	50,335	\$ 503	\$ 1,123,832	\$ 833,610	(8,316)	\$ (425,685)	\$ (98,026)	\$ 631	\$ 1,434,866
Cumulative effect of change in accounting principles	—	—	—	—	—	(29,041)	—	—	—	—	(29,041)
Net income (loss)	—	—	—	—	—	160,894	—	—	—	(183)	160,711
Other comprehensive loss, net of tax	—	—	—	—	—	—	—	—	23,119	(7)	23,112
Exercise of stock options, net of tax withholding forfeitures	—	—	—	—	(883)	—	20	118	—	—	(765)
Conversion of restricted stock units into common stock, net of tax withholding forfeitures	—	—	—	—	(2,051)	—	51	722	—	—	(1,329)
Share repurchase program	—	—	—	—	—	—	(2,694)	(175,000)	—	—	(175,000)
Share-based compensation	—	—	—	—	18,497	—	—	—	—	—	18,497
Redemption of stockholders' rights agreement	—	—	—	—	—	(411)	—	—	—	—	(411)
Preferred stock dividends	—	—	—	—	—	(34,931)	—	—	—	—	(34,931)
Common stock dividends (\$0.20 per share)	—	—	—	—	—	(8,121)	—	—	—	—	(8,121)
Balance at December 31, 2018	52	\$ 1	50,335	\$ 503	\$ 1,139,395	\$ 922,000	(10,939)	\$ (599,845)	\$ (74,907)	\$ 441	\$ 1,387,588
Net income (loss)	—	—	—	—	—	(377,015)	—	—	—	239	(376,776)
Other comprehensive income, net of tax	—	—	—	—	—	—	—	—	11,489	464	11,953
Acquisition of business with noncontrolling interests	—	—	—	—	—	—	—	—	—	5,195	5,195
Acquisition of noncontrolling interests	—	—	—	—	(398)	—	—	—	—	(367)	(765)
Exercise of stock options, net of tax withholding forfeitures	—	—	—	—	(291)	—	4	180	—	—	(111)
Conversion of restricted stock units into common stock, net of tax withholding forfeitures	—	—	—	—	(3,714)	—	91	1,679	—	—	(2,035)
Share repurchase program	—	—	—	—	—	—	(890)	(50,000)	—	—	(50,000)
Share-based compensation	—	—	—	—	17,751	—	—	—	—	—	17,751
Preferred stock conversion	(52)	(1)	—	—	(340,788)	—	6,857	340,789	—	—	—
Preferred stock dividends	—	—	—	—	—	(18,437)	—	—	—	—	(18,437)
Common stock dividends (\$0.20 per share)	—	—	—	—	—	(8,544)	—	—	—	—	(8,544)
Balance at December 31, 2019	—	\$ —	50,335	\$ 503	\$ 811,955	\$ 518,004	(4,877)	\$ (307,197)	\$ (63,418)	\$ 5,972	\$ 965,819

The accompanying notes are an integral part of these Consolidated Financial Statements.

Notes to Consolidated Financial Statements

Note 1: Basis of Presentation

Business Description

Belden Inc. (the Company, us, we, or our) is a global supplier of specialty networking solutions built around two global business platforms – Enterprise Solutions and Industrial Solutions. Our comprehensive portfolio of solutions enables customers to transmit and secure data, sound, and video for mission critical applications across complex enterprise and industrial environments.

Consolidation

The accompanying Consolidated Financial Statements include Belden Inc. and all of its subsidiaries, including variable interest entities for which we are the primary beneficiary. We eliminate all significant affiliate accounts and transactions in consolidation.

Foreign Currency

For international operations with functional currencies other than the United States (U.S.) dollar, we translate assets and liabilities at current exchange rates; we translate income and expenses using average exchange rates. We report the resulting translation adjustments, as well as gains and losses from certain affiliate transactions, in accumulated other comprehensive income (loss), a separate component of stockholders' equity. We include exchange gains and losses on transactions in operating income.

We determine the functional currency of our foreign subsidiaries based upon the currency of the primary economic environment in which each subsidiary operates. Typically, that is determined by the currency in which the subsidiary primarily generates and expends cash. We have concluded that the local currency is the functional currency for all of our material subsidiaries.

Reporting Periods

Our fiscal year and fiscal fourth quarter both end on December 31. Our fiscal first quarter ends on the Sunday falling closest to 91 days after December 31. Our fiscal second and third quarters each have 91 days.

Use of Estimates in the Preparation of the Financial Statements

The preparation of financial statements in conformity with accounting principles generally accepted in the U.S. requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, and operating results and the disclosure of contingencies. Actual results could differ from those estimates. We make significant estimates with respect to the collectability and valuation of receivables, the valuation of inventory, the realization of deferred tax assets, the valuation of goodwill and indefinite-lived intangible assets, the valuation of contingent liabilities, the calculation of share-based compensation, the calculation of pension and other postretirement benefits expense, and the valuation of acquired businesses.

Reclassifications

We have made certain reclassifications to the 2018 and 2017 Condensed Consolidated Financial Statements, primarily in relation to the Grass Valley disposal group being included in discontinued operations. See Note 5.

Note 2: Summary of Significant Accounting Policies

Fair Value Measurement

Accounting guidance for fair value measurements specifies a hierarchy of valuation techniques based upon whether the inputs to those valuation techniques reflect assumptions other market participants would use based upon market data obtained from independent sources or reflect our own assumptions of market participant valuation. The hierarchy is broken down into three levels based on the reliability of the inputs as follows:

- Level 1 – Quoted prices in active markets that are unadjusted and accessible at the measurement date for identical, unrestricted assets or liabilities;
- Level 2 – Quoted prices for identical assets and liabilities in markets that are not active, quoted prices for similar assets and liabilities in active markets, or financial instruments for which significant inputs are observable, either directly or indirectly; and
- Level 3 – Prices or valuations that require inputs that are both significant to the fair value measurement and unobservable.

During 2019, 2018, and 2017 we utilized Level 1 inputs to determine the fair value of cash equivalents, and Level 3 inputs to determine the fair value of net assets acquired in business combinations (see Note 4), for our annual impairment testing (see Note 12), and our impairment testing over our disposal group (see Note 5). We did not have any transfers between Level 1 and Level 2 fair value measurements during 2019.

Cash and Cash Equivalents

We classify cash on hand and deposits in banks, including commercial paper, money market accounts, and other investments with an original maturity of three months or less, that we hold from time to time, as cash and cash equivalents. We periodically have cash equivalents consisting of short-term money market funds and other investments. As of December 31, 2019 and 2018, we did not have any such cash equivalents on hand. The primary objective of our investment activities is to preserve our capital for the purpose of funding operations. We do not enter into investments for trading or speculative purposes.

Accounts Receivable and Revenue Reserves

We classify amounts owed to us and due within twelve months, arising from the sale of goods or services and from other business activities, as current receivables. We classify receivables due after twelve months as other long-lived assets.

At the time of sale, we establish an estimated reserve for trade, promotion, and other special price reductions such as contract pricing, discounts to meet competitor pricing, and on-time payment discounts. We also adjust receivable balances for, among other things, correction of billing errors, incorrect shipments, and settlement of customer disputes. Customers are allowed to return inventory if and when certain conditions regarding the physical state of the inventory and our approval of the return are met. Certain distribution customers are allowed to return inventory at original cost, in an amount not to exceed three percent of the prior year's purchases, in exchange for an order of equal or greater value. Until we can process these reductions, corrections, and returns (together, the Changes) through individual customer records, we estimate the amount of outstanding Changes and recognize them by reducing revenues. We base these estimates on historical and anticipated sales demand, trends in product pricing, and historical and anticipated Changes patterns. We make revisions to these estimates in the period in which the facts that give rise to each revision become known. Future market conditions might require us to take actions to further reduce prices and increase customer return authorizations. Unprocessed Changes recognized against our gross accounts receivable balance at December 31, 2019 and 2018 totaled \$29.5 million and \$25.5 million, respectively. Unprocessed Changes recognized as accrued liabilities at December 31, 2019 and 2018 totaled \$11.0 million and \$9.1 million, respectively.

As of and for each of the three year periods ended December 31, 2019, we evaluated the collectability of accounts receivable based on the specific identification method. A considerable amount of judgment is required in assessing the realizability of accounts receivable, including the current creditworthiness of each customer and related aging of past due balances. We perform ongoing credit evaluations of our customers' financial condition. Through these evaluations, we may become aware of a situation where a customer may not be able to meet its financial obligations due to deterioration of its financial viability, credit ratings, or bankruptcy. We record a specific reserve for bad debts against amounts due to reduce the receivable to its estimated collectible balance. We recognized bad debt expense, net of recoveries, of \$0.1 million, \$0.2 million, and \$0.4 million in 2019, 2018, and 2017, respectively. The allowance for doubtful accounts at December 31, 2019 and 2018 totaled \$2.6 million and \$3.1 million, respectively.

Inventories and Related Reserves

Inventories are stated at the lower of cost or net realizable value. We determine the cost of all raw materials, work-in-process, and finished goods inventories by the first in, first out method. Cost components of inventories include direct labor, applicable production overhead, and amounts paid to suppliers of materials and products as well as freight costs and, when applicable, duty costs to import the materials and products.

We evaluate the realizability of our inventory on a product-by-product basis in light of historical and anticipated sales demand, technological changes, product life cycle, component cost trends, product pricing, and inventory condition. In circumstances where inventory levels are in excess of anticipated market demand, where inventory is deemed technologically obsolete or not saleable due to condition, or where inventory cost exceeds net realizable value, we record a charge to cost of sales and reduce the inventory to its net realizable value. The allowances for excess and obsolete inventories at December 31, 2019 and 2018 totaled \$21.2 million and \$17.4 million, respectively.

Property, Plant and Equipment

We record property, plant and equipment at cost. We calculate depreciation on a straight-line basis over the estimated useful lives of the related assets ranging from 10 to 40 years for buildings, 5 to 12 years for machinery and equipment, and 5 to 10 years for

computer equipment and software. Construction in process reflects amounts incurred for the configuration and build-out of property, plant and equipment and for property, plant and equipment not yet placed into service. We charge maintenance and repairs—both planned major activities and less-costly, ongoing activities—to expense as incurred. We capitalize interest costs associated with the construction of capital assets and amortize the costs over the assets' useful lives. Depreciation expense is included in costs of sales; selling, general and administrative expenses; and research and development expenses in the Consolidated Statements of Operations based on the specific categorization and use of the underlying assets being depreciated.

We review property, plant and equipment to determine whether an event or change in circumstances indicates the carrying values of the assets may not be recoverable. We base our evaluation on the nature of the assets, the future economic benefit of the assets, and any historical or future profitability measurements, as well as other external market conditions or factors that may be present. If such impairment indicators are present or other factors exist that indicate that the carrying amount of an asset may not be recoverable, we determine whether impairment has occurred through the use of an undiscounted cash flow analysis. If impairment has occurred, we recognize a loss for the difference between the carrying amount and the fair value of the asset.

For purposes of impairment testing of long-lived assets, we have identified asset groups at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. Generally, our asset groups are based on an individual plant or operating facility level. In some circumstances, however, a combination of plants or operating facilities may be considered the asset group due to interdependence of operational activities and cash flows.

Goodwill and Intangible Assets

Our intangible assets consist of (a) definite-lived assets subject to amortization such as developed technology, customer relationships, certain in-service research and development, certain trademarks, backlog, and capitalized software intangible assets, and (b) indefinite-lived assets not subject to amortization such as goodwill, certain trademarks, and certain in-process research and development intangible assets. We record amortization of the definite-lived intangible assets over the estimated useful lives of the related assets, which generally range from one year or less for backlog to more than 25 years for certain of our customer relationships. We determine the amortization method for our definite-lived intangible assets based on the pattern in which the economic benefits of the intangible asset are consumed. In the event we cannot reliably determine that pattern, we utilize a straight-line amortization method.

We test our goodwill and other indefinite-lived intangible assets not subject to amortization for impairment on an annual basis as of our fiscal November month-end or when indicators of impairment exist. We base our estimates on assumptions we believe to be reasonable, but which are not predictable with precision and therefore are inherently uncertain. Actual future results could differ from these estimates.

The accounting guidance related to goodwill impairment testing allows for the performance of an optional qualitative assessment of whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. Such an evaluation is made based on the weight of all available evidence and the significance of all identified events and circumstances that may influence the fair value of a reporting unit. If it is more likely than not that the fair value is less than the carrying value, then a quantitative assessment is required for the reporting unit, as described in the paragraph below. In 2019, we did not perform a qualitative assessment over any of our reporting units.

For our annual impairment test in 2019, we performed a quantitative assessment for all ten of our reporting units included in continuing operations. Under a quantitative assessment for goodwill impairment, we determine the fair value using the income approach (using Level 3 inputs) as reconciled to our aggregate market capitalization. Under the income approach, we calculate the fair value of a reporting unit based on the present value of estimated future cash flows. If the fair value of the reporting unit exceeds the carrying value of the net assets including goodwill assigned to that unit, goodwill is not impaired. If the carrying value of the reporting unit's net assets including goodwill exceeds the fair value of the reporting unit, then we record an impairment charge based on that difference. In addition to the income approach, we calculate the fair value of our reporting units under a market approach. The market approach measures the fair value of a reporting unit through analysis of financial multiples of comparable businesses. Consideration is given to the financial conditions and operating performance of the reporting unit being valued relative to those publicly-traded companies operating in the same or similar lines of business. The fair values of all ten reporting units tested under a quantitative approach were in excess of the carrying values as of the impairment testing date, and as a result, the goodwill balances for our continuing operations reporting units were not impaired in 2019. Furthermore, goodwill was not impaired in 2018 or 2017. See Note 12 for further discussion.

We also evaluate indefinite lived intangible assets for impairment annually or at other times if events have occurred or circumstances exist that indicate the carrying values of those assets may no longer be recoverable. We compare the fair value of the asset with its carrying amount. If the carrying amount of the asset exceeds its fair value, we recognize an impairment loss in an

amount equal to that excess. We did not recognize impairment charges for our indefinite lived intangible assets in 2019, 2018, or 2017. See Note 12 for further discussion.

We review intangible assets subject to amortization whenever an event or change in circumstances indicates the carrying values of the assets may not be recoverable. We test intangible assets subject to amortization for impairment and estimate their fair values using the same assumptions and techniques we employ on property, plant and equipment. We did not recognize any impairment charges for amortizable intangible assets in 2019, 2018, or 2017.

Due to its overall financial performance during the year and discontinued operations classification, we performed interim impairment tests on the Grass Valley reporting unit, which resulted in a total asset impairment of \$521.4 million for the year ended December 31, 2019. We determined the estimated fair values of the assets and of the reporting unit by calculating the present values of their estimated future cash flows, which was based in part on the assumed proceeds from a divestiture of Grass Valley. See Note 12 for further discussion.

Disposals

During 2018, we sold a previously closed operating facility for net proceeds of \$1.5 million and recognized a \$0.6 million gain on the sale.

During 2017, we sold our MCS business and a 50% ownership interest in Xuzhou Hirschmann Electronics Co. Ltd (the Hirschmann JV) for a total purchase price of \$40.2 million and recognized a loss on sale of the assets of \$1.0 million, which was included in selling, general and administrative expenses. This loss included \$2.8 million of accumulated other comprehensive losses that were recognized as a result of the sale. The \$40.2 million of proceeds from the sale was collected during 2018. The MCS business was part of the Industrial Solutions segment and operated in Germany and the United States. The Hirschmann JV was an equity method investment located in China that was not included in an operating segment.

Pension and Other Postretirement Benefits

Our pension and other postretirement benefit costs and obligations are dependent on the various actuarial assumptions used in calculating such amounts. These assumptions relate to discount rates, salary growth, long-term return on plan assets, health care cost trend rates, mortality tables, and other factors. We base the discount rate assumptions on current investment yields on high-quality corporate long-term bonds. The salary growth assumptions reflect our long-term actual experience and future or near-term outlook. We determine the long-term return on plan assets based on historical portfolio results and management's expectation of the future economic environment. Our health care cost trend assumptions are developed based on historical cost data, the near-term outlook, and an assessment of likely long-term trends. Actual results that differ from our assumptions are accumulated and, if in excess of the lesser of 10% of the projected benefit obligation or the fair market value of plan assets, are amortized over the estimated future working life of the plan participants.

Accrued Sales Rebates

We grant incentive rebates to participating customers as part of our sales programs. The rebates are determined based on certain targeted sales volumes. Rebates are paid quarterly or annually in either cash or receivables credits. Until we can process these rebates through individual customer records, we estimate the amount of outstanding rebates and recognize them as accrued liabilities and reductions in our gross revenues. We base our estimates on both historical and anticipated sales demand and rebate program participation. We charge revisions to these estimates back to accrued liabilities and revenues in the period in which the facts that give rise to each revision become known. Future market conditions and product transitions might require us to take actions to increase sales rebates offered, possibly resulting in an incremental increase in accrued liabilities and an incremental reduction in revenues at the time the rebate is offered. Accrued sales rebates at December 31, 2019 and 2018 totaled \$37.2 million and \$41.3 million, respectively.

Contingent Liabilities

We have established liabilities for environmental and legal contingencies that are probable of occurrence and reasonably estimable, the amounts of which are currently not material. A significant amount of judgment and use of estimates is required to quantify our ultimate exposure in these matters. We review the valuation of these liabilities on a quarterly basis, and we adjust the balances to account for changes in circumstances for ongoing and emerging issues.

We accrue environmental remediation costs based on estimates of known environmental remediation exposures developed in consultation with our environmental consultants and legal counsel, the amounts of which are not currently material. We expense environmental compliance costs, which include maintenance and operating costs with respect to ongoing monitoring programs, as incurred. We evaluate the range of potential costs to remediate environmental sites. The ultimate cost of site clean-up is difficult to predict given the uncertainties of our involvement in certain sites, uncertainties regarding the extent of the required clean-up, the availability of alternative clean-up methods, variations in the interpretation of applicable laws and regulations, the possibility of insurance recoveries with respect to certain sites, and other factors.

We are, from time to time, subject to routine litigation incidental to our business. These lawsuits primarily involve claims for damages arising out of the use of our products, allegations of patent or trademark infringement, and litigation and administrative proceedings involving employment matters and commercial disputes. Assessments regarding the ultimate cost of lawsuits require judgments concerning matters such as the anticipated outcome of negotiations, the number and cost of pending and future claims, and the impact of evidentiary requirements. Based on facts currently available, we believe the disposition of the claims that are pending or asserted will not have a materially adverse effect on our financial position, results of operations or cash flow.

Business Combination Accounting

We allocate the consideration of an acquired business to its identifiable assets and liabilities based on estimated fair values. The excess of the consideration over the amount allocated to the assets and liabilities, if any, is recorded to goodwill. We use all available information to estimate fair values. We typically engage third party valuation specialists to assist in the fair value determination of inventories, tangible long-lived assets, and intangible assets other than goodwill. The carrying values of acquired receivables and accounts payable have historically approximated their fair values as of the business combination date. As necessary, we may engage third party specialists to assist in the estimation of fair value for certain liabilities, such as deferred revenue or postretirement benefit liabilities. We adjust the preliminary acquisition accounting, as necessary, typically up to one year after the acquisition closing date as we obtain more information regarding asset valuations and liabilities assumed.

Revenue Recognition

We recognize revenue consistent with the principles as outlined in the following five step model: (1) identify the contract with the customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract, and (5) recognize revenue when (or as) each performance obligation is satisfied. See Note 3.

Gain from Patent Litigation

On July 5, 2011, the Company's wholly-owned subsidiary, PPC, filed an action for patent infringement against Corning alleging that Corning infringed two of PPC's patents. In July 2015, a jury found that Corning willfully infringed both patents. Following a series of appeals, we received a pre-tax amount of approximately \$62.1 million from Corning on July 19, 2018. We recorded the \$62.1 million of cash received as a pre-tax gain from patent litigation during 2018. Prior to 2018, we had not recognized any amounts in our consolidated financial statements related to this matter. On September 27, 2018, Corning filed a petition for certiorari review by the U.S. Supreme Court. On December 10, 2018, Corning's certiorari review by the Supreme Court was denied, thus exhausting their opportunities for further appellate relief.

Cost of Sales

Cost of sales includes our total cost of inventory sold during the period, including material, labor, production overhead costs, variable manufacturing costs, and fixed manufacturing costs. Production overhead costs include operating supplies, applicable utility expenses, maintenance costs, and scrap. Variable manufacturing costs include inbound, interplant, and outbound freight, inventory shrinkage, and charges for excess and obsolete inventory. Fixed manufacturing costs include the costs associated with our purchasing, receiving, inspection, warehousing, distribution centers, production and inventory control, and manufacturing management. Cost of sales also includes the costs to provide maintenance and support and other professional services.

Shipping and Handling Costs

We recognize fees earned on the shipment of product to customers as revenues and recognize costs incurred on the shipment of product to customers as a cost of sales.

Selling, General and Administrative Expenses

Selling, general and administrative expenses include expenses not directly related to the production of inventory. They include all expenses related to selling and marketing our products, as well as the salary and benefit costs of associates performing the selling and marketing functions. Selling, general and administrative expenses also include salary and benefit costs, purchased services, and other costs related to our executive and administrative functions.

Research and Development Costs

Research and development costs are expensed as incurred.

Advertising Costs

Advertising costs are expensed as incurred. Advertising costs were \$14.7 million, \$17.0 million, and \$18.0 million for 2019, 2018, and 2017, respectively.

Share-Based Compensation

We compensate certain employees and non-employee directors with various forms of share-based payment awards and recognize compensation costs for these awards based on their fair values. We estimate the fair values of certain awards, primarily stock appreciation rights (SARs), on the grant date using the Black-Scholes-Merton option-pricing formula, which incorporates certain assumptions regarding the expected term of an award and expected stock price volatility. We develop the expected term assumption based on the vesting period and contractual term of an award, our historical exercise and cancellation experience, our stock price history, plan provisions that require exercise or cancellation of awards after employees terminate, and the extent to which currently available information indicates that the future is reasonably expected to differ from past experience. We develop the expected volatility assumption based on historical price data for our common stock. We estimate the fair value of certain restricted stock units with service vesting conditions and performance vesting conditions based on the grant date stock price. We estimate the fair value of certain restricted stock units with market conditions using a Monte Carlo simulation valuation model with the assistance of a third party valuation firm.

After calculating the aggregate fair value of an award, we use an estimated forfeiture rate to discount the amount of share-based compensation cost expected to be recognized in our operating results over the service period of the award. We develop the forfeiture assumption based on our historical pre-vesting cancellation experience.

Income Taxes

Income taxes are provided based on earnings reported for financial statement purposes. The provision for income taxes differs from the amounts currently payable to taxing authorities because of the recognition of revenues and expenses in different periods for income tax purposes than for financial statement purposes. Income taxes are provided as if operations in all countries, including the U.S., were stand-alone businesses filing separate tax returns.

We recognize deferred tax assets resulting from tax credit carryforwards, net operating loss carryforwards, and deductible temporary differences between taxable income on our income tax returns and pretax income on our financial statements. Deferred tax assets generally represent future tax benefits to be received when these carryforwards can be applied against future taxable income or when expenses previously reported in our Consolidated Financial Statements become deductible for income tax purposes. A deferred tax asset valuation allowance is required when some portion or all of the deferred tax assets may not be realized. At December 31, 2019 the valuation allowance of \$50.4 million was primarily related to net operating losses and foreign tax credits that we do not expect to realize.

Our effective tax rate is based on expected income, statutory tax rates, and tax planning opportunities available to us in the various jurisdictions in which we operate. Significant judgment is required in determining our effective tax rate and in evaluating our tax positions. We establish accruals for uncertain tax positions when we believe that the full amount of the associated tax benefit may not be realized. To the extent we were to prevail in matters for which accruals have been established or would be required to pay amounts in excess of reserves, there could be a material effect on our income tax provisions in the period in which such determination is made.

On December 22, 2017, the “Tax Cuts and Jobs Act” (the “Act”) was signed into law, making significant changes to the U.S. Internal Revenue Code. During 2019, the United States Treasury issued final and proposed regulations with respect to certain aspects related to the Act. Additional guidance provided in these regulation resulted in a tax adjustment in the fourth quarter of 2019.

The total tax provision expense in 2019 included a \$10.0 million tax expense associated with the increase to the valuation allowance against foreign tax credit carryovers that were no longer expected to be able to realize based upon the new proposed tax regulations. See Note 17, *Income Taxes*, in the accompanying notes to our consolidated financial statements.

Current-Year Adoption of Accounting Pronouncements

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, *Leases* ("ASU 2016-02"), a leasing standard for both lessees and lessors that supersedes the lease requirements in Accounting Standards Codification (ASC) Topic 840, "Leases." Under its core principle, a lessee will recognize a right-of-use (ROU) asset and lease liability on the balance sheet for nearly all leased assets, and additional disclosures are required to enable users of financial statements to assess the amount, timing, and uncertainty of cash flows arising from leases. We adopted ASU 2016-02 on January 1, 2019 using the permitted transition method issued in July 2018, under ASU No. 2018-11 ("ASU 2018-11"), *Leases: Targeted Improvements*, which provides an additional (and optional) transition method for adopting the new lease standard. Furthermore, we elected the following practical expedients and accounting policy elections upon adoption: (i) the package of practical expedients as defined in ASU 2016-02, (ii) the short-term lease accounting policy election, (iii) the practical expedient to not separate non-lease components from lease components, and (iv) the easement practical expedient, which permits an entity to continue applying its current policy for accounting for land easements that existed as of the effective date of ASU 2016-02. Excluding the impact of our Grass Valley disposal group, the adoption of ASU 2016-02 on January 1, 2019 resulted in the recognition of right-of-use assets of approximately \$70.7 million and lease liabilities for operating leases of approximately \$77.3 million on the Consolidated Balance Sheet, with no material impact to the Consolidated Statements of Operations or Consolidated Cash Flow Statements. The difference between the initial lease liabilities and the ROU assets is related primarily to previously existing lease liabilities. See Note 11 for further information regarding the impact of the adoption of ASU 2016-02 on the Company's financial statements.

In August 2017, the FASB issued Accounting Standards Update No. ASU 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities* ("ASU 2017-12"). The new guidance better aligns an entity's risk management activities and financial reporting for hedging relationships through changes to both the designation and measurement guidance for qualifying hedging relationships and the presentation of hedge results. The new guidance also makes certain targeted improvements to simplify the application of hedge accounting guidance and ease the administrative burden of hedge documentation requirements and assessing hedge effectiveness. The standard is effective for fiscal years beginning after December 15, 2018. We adopted ASU 2017-12 effective January 1, 2019. The adoption had no impact on our results of operations.

In February 2018, the FASB issued ASU No. 2018-02 ("ASU 2018-02"), *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*. ASU 2018-02 provides an option to allow reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act of 2017. The new guidance is effective for annual and interim periods beginning after December 15, 2018. We adopted ASU 2018-02 effective January 1, 2019, and elected to not reclassify the income tax effects of the Act from accumulated other comprehensive income to retained earnings. The adoption had no impact on our results of operations.

In June 2018, the FASB issued ASU No. 2018-07 ("ASU 2018-07"), *Improvements to Nonemployee Share-Based Payment Accounting*. The amendments in ASU 2018-07 expand the scope of Topic 718, Compensation - Stock Compensation, to include share-based payment transactions for acquiring goods and services from non-employees, and provide that non-employee share-based payment awards be measured at their grant-date fair value and the probability of satisfying performance conditions be taken into account when non-employee share-based payment awards contain such conditions. The standard is effective for fiscal years beginning after December 15, 2018. We adopted ASU 2018-07 effective January 1, 2019. The adoption had no impact on our results of operations.

In August 2018, the Securities and Exchange Commission ("SEC") adopted the final rule under SEC Release No. 33-10532, *Disclosure Update and Simplification*, amending certain disclosure requirements that were redundant, duplicative, overlapping, outdated or superseded. Additionally, the amendments expanded the disclosure requirements on the analysis of stockholders' equity for interim financial statements. Under the amendments, an analysis of changes in each caption of stockholders' equity presented in the balance sheet must be provided in a note or separate statement. The analysis should present a reconciliation of the beginning balance to the ending balance of each period presented. This final rule was effective on November 5, 2018. We implemented SEC Release No. 33-10532 effective January 1, 2019, which had no impact on our results of operations.

Pending Adoption of Recent Accounting Pronouncements

In June 2016, the FASB issued Accounting Standards Update No. 2016-13 ("ASU 2016-13"), *Financial Instruments - Credit Losses*. The main provisions of ASU 2016-13 provide financial statement users with more decision-useful information about the expected credit losses on financial instruments and other commitments to extend credit held by a reporting entity at each reporting date, and

require a financial asset (or a group of financial assets) measured at amortized cost basis to be presented at the net amount expected to be collected. The new standard will be effective for us beginning January 1, 2020. We expect the adoption will result in an increase to our allowance for doubtful accounts for continuing operations of approximately \$1.0 million, and an increase for discontinued operations of approximately \$2.0 million.

Note 3: Revenues

On January 1, 2018, we adopted Accounting Standards Update No. 2014-09, *Revenue from Contracts with Customers* (Topic 606) using the modified retrospective method applied to those contracts which were not completed as of January 1, 2018. Results for reporting periods beginning after January 1, 2018 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported in accordance with the accounting standards in effect for those periods. We recorded a net increase to retained earnings of \$2.6 million as of January 1, 2018 due to the cumulative impact of adopting Topic 606, with the impact primarily related to sales commissions and software revenues within our Industrial Solutions segment.

Revenues are recognized when control of the promised goods or services is transferred to our customers and in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services. Taxes collected from customers and remitted to governmental authorities are not included in our revenues. We do not evaluate a contract for a significant financing component when the time between cash collection and performance is less than one year.

The following tables present our revenues disaggregated by major product category (in thousands).

	<u>Cable & Connectivity</u>	<u>Networking, Software & Security</u>	<u>Total Revenues</u>
Year Ended December 31, 2019			
Enterprise Solutions	\$ 1,031,687	\$ 49,545	\$ 1,081,232
Industrial Solutions	630,462	419,584	1,050,046
Total	<u>\$ 1,662,149</u>	<u>\$ 469,129</u>	<u>\$ 2,131,278</u>
Year Ended December 31, 2018			
Enterprise Solutions	\$ 1,046,744	\$ 49,156	\$ 1,095,900
Industrial Solutions	662,742	407,060	1,069,802
Total	<u>\$ 1,709,486</u>	<u>\$ 456,216</u>	<u>\$ 2,165,702</u>
Year Ended December 31, 2017			
Enterprise Solutions	\$ 1,024,090	\$ 30,757	\$ 1,054,847
Industrial Solutions	628,889	403,449	1,032,338
Total	<u>\$ 1,652,979</u>	<u>\$ 434,206</u>	<u>\$ 2,087,185</u>

The following tables present our revenues disaggregated by geography, based on the location of the customer purchasing the product (in thousands).

	<u>Americas</u>	<u>EMEA</u>	<u>APAC</u>	<u>Total Revenues</u>
Year Ended December 31, 2019				
Enterprise Solutions	\$ 830,197	\$ 135,734	\$ 115,301	\$ 1,081,232
Industrial Solutions	607,374	274,028	168,644	1,050,046
Total	<u>\$ 1,437,571</u>	<u>\$ 409,762</u>	<u>\$ 283,945</u>	<u>\$ 2,131,278</u>
Year Ended December 31, 2018				
Enterprise Solutions	\$ 838,874	\$ 135,241	\$ 121,785	\$ 1,095,900
Industrial Solutions	619,790	290,538	159,474	1,069,802
Total	<u>\$ 1,458,664</u>	<u>\$ 425,779</u>	<u>\$ 281,259</u>	<u>\$ 2,165,702</u>
Year Ended December 31, 2017				
Enterprise Solutions	\$ 802,274	\$ 134,270	\$ 118,303	\$ 1,054,847
Industrial Solutions	606,437	280,785	145,116	1,032,338
Total	<u>\$ 1,408,711</u>	<u>\$ 415,055</u>	<u>\$ 263,419</u>	<u>\$ 2,087,185</u>

The following tables present our revenues disaggregated by products, including software products, and support and services (in thousands).

	Products	Support & Services	Total Revenues
Year Ended December 31, 2019			
Enterprise Solutions	\$ 1,081,232	\$ —	\$ 1,081,232
Industrial Solutions	963,007	87,039	1,050,046
Total	<u>\$ 2,044,239</u>	<u>\$ 87,039</u>	<u>\$ 2,131,278</u>
Year Ended December 31, 2018			
Enterprise Solutions	\$ 1,095,883	\$ 17	\$ 1,095,900
Industrial Solutions	974,029	95,773	1,069,802
Total	<u>\$ 2,069,912</u>	<u>\$ 95,790</u>	<u>\$ 2,165,702</u>
Year Ended December 31, 2017			
Enterprise Solutions	\$ 1,054,847	\$ —	\$ 1,054,847
Industrial Solutions	929,263	103,075	1,032,338
Total	<u>\$ 1,984,110</u>	<u>\$ 103,075</u>	<u>\$ 2,087,185</u>

We generate revenues primarily by selling products that provide secure and reliable transmission of data, sound, and video for mission critical applications. We also generate revenues from providing support and professional services. We sell our products to distributors, end-users, installers, and directly to original equipment manufacturers. At times, we enter into arrangements that involve the delivery of multiple performance obligations. For these arrangements, revenue is allocated to each performance obligation based on its relative standalone selling price and recognized when or as each performance obligation is satisfied. Most of our performance obligations related to the sale of products are satisfied at a point in time when control of the product is transferred based on the shipping terms of the arrangement. Generally, we determine standalone selling price using the prices charged to customers on a standalone basis.

The amount of consideration we receive and revenue we recognize varies due to rebates, returns, and price adjustments. We estimate the expected rebates, returns, and price adjustments based on an analysis of historical experience, anticipated sales demand, and trends in product pricing. We adjust our estimate of revenue at the earlier of when the most likely amount of consideration we expect to receive changes or when the consideration becomes fixed. Adjustments to revenue for performance obligations satisfied in prior periods was not significant during the year ended December 31, 2019.

The following table presents estimated and accrued variable consideration:

	December 31, 2019	December 31, 2018
	(in thousands)	
Accrued rebates	\$ 37,170	\$ 41,312
Accrued returns	10,974	9,137
Price adjustment recognized against gross accounts receivable	28,672	24,976

Depending on the terms of an arrangement, we may defer the recognition of a portion of the consideration received because we have to satisfy a future obligation. Consideration allocated to support services under a support and maintenance contract is typically paid in advance and recognized ratably over the term of the service. Consideration allocated to professional services is recognized when or as the services are performed depending on the terms of the arrangement. As of December 31, 2019, total deferred revenue was \$70.1 million, and of this amount, \$54.3 million is expected to be recognized within the next twelve months, and the remaining \$15.8 million is long-term and will be recognized over a period greater than twelve months.

The following table presents deferred revenue activity (in thousands):

Balance at December 31, 2017	\$	73,478
New deferrals		104,900
Revenue recognized		(106,020)
Balance at December 31, 2018		72,358
New deferrals		111,812
Revenue recognized		(114,100)
Balance at December 31, 2019	\$	<u>70,070</u>

We expense sales commissions as incurred when the duration of the related revenue arrangement is one year or less. We capitalize sales commissions in other current and long-lived assets on our balance sheet when the duration of the related revenue arrangement is longer than one year, and we amortize it over the related revenue arrangement period. Total capitalized sales commissions was \$3.4 million as of December 31, 2019 and \$2.9 million as of December 31, 2018. For the years ended December 31, 2019 and 2018, we recognized \$4.9 million and \$4.7 million of sales commissions expense in selling, general, and administrative expenses, respectively.

Note 4: Acquisitions

Special Product Company

On December 6, 2019, we purchased and assumed substantially all the assets, and certain specified liabilities of Special Product Company (SPC) for a preliminary purchase price of \$23.1 million. SPC, based in Kansas City, Kansas, is a leading designer, manufacturer, and seller of outdoor cabinet products for optical fiber cable installations. The assets purchased and liabilities assumed from SPC have been included in our Consolidated Financial Statements as of December 6, 2019, and are reported within the Enterprise Solutions segment.

Opterna

We acquired 100% of the shares of Opterna International Corp. (Opterna) on April 15, 2019 for a preliminary purchase price, net of cash acquired, of \$51.7 million. Of the \$51.7 million purchase price, \$45.9 million was paid in 2019 with cash on hand. The acquisition included a potential earnout, which is based upon future Opterna financial targets through April 15, 2021. The maximum earnout consideration is \$25.0 million, but based upon a third party valuation specialist using certain assumption in a discounted cash flow model, the estimated fair value of the earnout included in the purchase price is \$5.8 million. Opterna is an international fiber optics solution business based in Sterling, Virginia which designs and manufactures a range of complementary fiber connectivity, cabinet, and enclosure products used in optical networks. The results of Opterna have been included in our Consolidated Financial Statements from April 15, 2019, and are reported within the Enterprise Solutions segment. Certain subsidiaries of Opterna include noncontrolling interests. Because Opterna has a controlling financial interest in these subsidiaries, they are consolidated into our financial statements. The results that are attributable to the noncontrolling interest holders are presented as net income attributable to noncontrolling interests in the Consolidated Statements of Operations. An immaterial amount of Opterna's annual revenues are generated from transactions with the noncontrolling interests. On October 25, 2019, we purchased the noncontrolling interest of one subsidiary for a purchase price of \$0.8 million; of which \$0.4 million was paid at closing and the remaining \$0.4 million is to be paid in 2021. The following table summarizes the estimated, preliminary fair values of the assets acquired and the liabilities assumed as of April 15, 2019 (in thousands):

Receivables	\$	5,308
Inventory		7,470
Prepaid and other current assets		566
Property, plant, and equipment		1,328
Intangible assets		28,000
Goodwill		35,007
Deferred income taxes		69
Operating lease right-of-use assets		2,204
Other long-lived assets		2,070
Total assets acquired	\$	<u>82,022</u>
Accounts payable	\$	4,847
Accrued liabilities		4,346
Long-term deferred tax liability		6,817
Long-term operating lease liability		1,923
Other long-term liabilities		7,153
Total liabilities assumed	\$	<u>25,086</u>
Net assets	\$	<u>56,936</u>
Noncontrolling interest		<u>5,195</u>
Net assets attributable to Belden	\$	<u>51,741</u>

The above purchase price allocation is preliminary, and is subject to revision as additional information about the fair value of lease assets and liabilities as well as deferred taxes becomes available. A change in the estimated fair value of the net assets acquired will change the amount of the purchase price allocable to goodwill.

During the fourth quarter 2019, we recorded measurement-period adjustments that decreased goodwill by approximately \$0.6 million primarily for changes in the fair value of certain deferred tax liabilities. The impact of these adjustments to the consolidated statement of operations was immaterial.

A single estimate of fair value results from a complex series of judgments about future events and uncertainties and relies heavily on estimates and assumptions. The judgments we have used in estimating the preliminary fair value assigned to each class of acquired assets and assumed liabilities could materially affect the results of our operations.

The fair value of acquired receivables is \$5.3 million, which is equivalent to its gross contractual amount.

For the purpose of the above allocation, we based our estimate of fair value for the acquired inventory, intangible assets, and noncontrolling interests on valuation studies performed by a third party valuation firm. We have estimated a fair value adjustment for inventories based on the estimated selling price of the work-in-process and finished goods acquired at the closing date less the sum of the costs to complete the work-in-process, the costs of disposal, and a reasonable profit allowance for post acquisition selling efforts. We used various valuation methods including discounted cash flows, lost income, excess earnings, and relief from royalty to estimate the fair value of the identifiable intangible assets (Level 3 valuation).

Goodwill and other intangible assets reflected above were determined to meet the criteria for recognition apart from tangible assets acquired and liabilities assumed. The goodwill is primarily attributable to expansion of product offerings in the optical fiber market. Our tax basis in the acquired goodwill is zero. The intangible assets related to the acquisition consisted of the following:

	Fair Value	Amortization Period
	(In thousands)	(In years)
Intangible assets subject to amortization		
Developed technologies	\$ 3,400	5
Customer relationships	22,800	15
Sales backlog	1,300	0.5
Trademarks	500	2.0
Total intangible assets subject to amortization	<u>\$ 28,000</u>	
Intangible assets not subject to amortization:		
Goodwill	\$ 35,007	
Total intangible assets not subject to amortization	<u>\$ 35,007</u>	
Total intangible assets	<u><u>\$ 63,007</u></u>	
Weighted average amortization period		12.9

The amortizable intangible assets reflected in the table above were determined by us to have finite lives. The useful life for the developed technology intangible asset was based on the estimated time that the technology provides us with a competitive advantage and thus approximates the period and pattern of consumption of the intangible asset. The useful life for the customer relationship intangible asset was based on our forecasts of estimated sales from recurring customers. The useful life of the backlog intangible asset was based on our estimate of when the ordered items would ship and control of the items transfers. The useful life for the trademarks was based on the period of time we expect to continue to go to market using the trademarks.

Our consolidated revenues and income from continuing operations before taxes for the year ended December 31, 2019 included \$26.6 million and \$2.0 million from Opterna, respectively. For the year ended December 31, 2019, Opterna's income before taxes included \$3.0 million of amortization of intangible assets, \$5.6 million of acquisition integration costs, and \$0.6 million of cost of sales related to the adjustment of acquired inventory to fair value. Our consolidated income from continuing operations before taxes for the year ended December 31, 2019 included \$0.1 million of net income attributable to noncontrolling interest of Opterna.

The following table illustrates the unaudited pro forma effect on operating results as if the Opterna acquisition had been completed January 1, 2018.

	Years Ended December 31,	
	2019	2018
	(In thousands, except per share data)	
	(Unaudited)	
Revenues	\$ 2,139,894	\$ 2,213,781
Net income (loss) attributable to Belden common stockholders	(389,957)	123,546
Diluted income (loss) per share attributable to Belden common stockholders	\$ (9.24)	\$ 3.02

For purposes of the pro forma disclosures, the year ended December 31, 2018 includes expenses related to the acquisition, including severance, restructuring, and acquisition costs; amortization of intangible assets; and cost of sales arising from the adjustment of inventory to fair value of \$5.5 million, \$3.8 million, and \$0.5 million, respectively.

The above unaudited pro forma information is presented for information purposes only and does not purport to represent what our results of operations would have been had we completed the acquisition on the date assumed, nor is it necessarily indicative of the results that may be expected in future periods. Pro forma adjustments exclude cost savings from any synergies resulting from the acquisition.

FutureLink

We acquired the FutureLink product line and related assets from Suttle, Inc. on April 5, 2019 for a purchase price of \$5.0 million, which was funded with cash on hand. The acquisition of FutureLink allows us to offer a more complete set of fiber product offerings. The results from the acquisition of FutureLink have been included in our Condensed Consolidated Financial Statements from April 5, 2019, and are reported within the Enterprise Solutions segment. The acquisition of FutureLink was not material to our financial position or results of operations.

Note 5: Discontinued Operations

We classify assets and liabilities as held for sale (disposal group) when management, having the authority to approve the action, commits to a plan to sell the disposal group, the sale is probable within one year, and the disposal group is available for immediate sale in its present condition. We also consider whether an active program to locate a buyer has been initiated, whether the disposal group is marketed actively for sale at a price that is reasonable in relation to its current fair value, and whether actions required to complete the plan indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn.

During the fourth quarter of 2019, we committed to a plan to sell Grass Valley, and at such time, met all of the criteria to classify the assets and liabilities of this business as held for sale. Furthermore, we determined a divestiture of Grass Valley represents a strategic shift that is expected to have a major impact on our operations and financial results. As a result, the Grass Valley disposal group, which was included in our Enterprise Solutions segment, is now reported within discontinued operations. The Grass Valley disposal group excludes certain Grass Valley pension liabilities that we expect to retain - see Note 28. We also ceased depreciating and amortizing the assets of the disposal group once they met the held for sale criteria in the fourth quarter of 2019. We intend to complete the sale of the Grass Valley disposal group during 2020.

We wrote down the carrying value of Grass Valley and recognized asset impairments totaling \$521.4 million in 2019. The impairment charge consisted of impairments to goodwill, customer relationships, and trademarks of \$326.1 million, \$14.4 million, and \$1.6 million, respectively, as well as an impairment of the disposal group of \$179.3 million (\$180.4 million translated at year-end exchange rates). We determined the estimated fair values of the assets and of the reporting unit by calculating the present values of their estimated future cash flows.

The following table summarizes the operating results of the disposal group for the years ended December 31, 2019, 2018, and 2017:

	Years Ended December 31,		
	2019	2018	2017
	(In thousands)		
Revenues	\$ 360,496	\$ 419,666	\$ 301,458
Cost of sales	(208,173)	(241,164)	(169,025)
Gross profit	152,323	178,502	132,433
Selling, general and administrative expenses	(93,796)	(114,567)	(71,280)
Research and development expenses	(37,172)	(49,033)	(45,582)
Amortization of intangibles	(12,782)	(23,689)	(13,808)
Asset impairment of discontinued operations	(521,441)	—	—
Interest expense, net	(819)	(720)	(250)
Non-operating pension cost	(221)	(243)	(153)
Income (loss) before taxes	\$ (513,908)	\$ (9,750)	\$ 1,360

The disposal group recognized depreciation and amortization expense of approximately \$23.7 million, \$35.1 million, and \$20.8 million during the years ended December 31, 2019, 2018, and 2017, respectively. The disposal group also had capital expenditures of approximately \$29.4 million, \$22.6 million, and \$14.9 million during the years ended December 31, 2019, 2018, and 2017, respectively. Furthermore, the disposal group incurred stock-based compensation expense of \$0.9 million, \$1.4 million, and \$1.5 million during the years ended December 31, 2019, 2018, and 2017, respectively. The disposal group did not have any significant non-cash charges for investing activities during the years ended December 31, 2019, 2018, and 2017.

The following table provides the major classes of assets and liabilities of the disposal group as of December 31, 2019 and 2018:

	December 31,	
	2019	2018
	(In thousands)	
Assets:		
Cash and cash equivalents	\$ 18,405	\$ 13,156
Receivables, net	117,386	129,983
Inventories, net	55,002	51,416
Other current assets	35,187	25,167
Property, plant and equipment, less accumulated depreciation	61,233	55,010
Operating lease right-of-use assets	16,902	—
Goodwill	26,707	350,777
Intangible assets, less accumulated amortization	143,459	151,162
Deferred income taxes	57,469	29,559
Other long-lived assets	21,652	16,613
Impairment of disposal group	(180,358)	—
Total Assets of discontinued operations	<u>\$ 373,044</u>	<u>\$ 822,843</u>
Liabilities:		
Accounts payable	\$ 52,425	\$ 55,148
Accrued liabilities	83,349	91,880
Postretirement benefits	6,224	5,043
Deferred income taxes	2,740	3,834
Long-term operating lease liabilities	20,459	—
Other long-term liabilities	5,082	8,737
Total liabilities of discontinued operations	<u>\$ 170,279</u>	<u>\$ 164,642</u>

The disposal group also had \$42.3 million of accumulated other comprehensive losses as of December 31, 2019.

Note 6: Operating Segments and Geographic Information

We are organized around two global business platforms: Enterprise Solutions and Industrial Solutions. Each of the global business platforms represents a reportable segment.

The segments design, manufacture, and market a portfolio of signal transmission solutions for mission critical applications used in a variety of end markets. We sell the products manufactured by our segments through distributors or directly to systems integrators, original equipment manufacturers (OEMs), end-users, and installers.

The key measures of segment profit or loss reviewed by our chief operating decision maker are Segment Revenues and Segment EBITDA. Segment Revenues represent non-affiliate revenues and include revenues that would have otherwise been recorded by acquired businesses as independent entities but were not recognized in our Consolidated Statements of Operations due to the effects of purchase accounting and the associated write-down of acquired deferred revenue to fair value. Segment EBITDA excludes certain items, including depreciation expense; amortization of intangibles; asset impairment; severance, restructuring, and acquisition integration costs; purchase accounting effects related to acquisitions, such as the adjustment of acquired inventory and deferred revenue to fair value; and other costs. We allocate corporate expenses to the segments for purposes of measuring Segment EBITDA. Corporate expenses are allocated on the basis of each segment's relative EBITDA prior to the allocation.

Our measure of segment assets does not include cash, goodwill, intangible assets, deferred tax assets, or corporate assets. All goodwill is allocated to reporting units of our segments for purposes of impairment testing.

The results of our former equity method investment in the Hirschmann JV, which we sold effective December 31, 2017, were not included in the corporate expense allocation.

Operating Segment Information

Enterprise Solutions

	Years ended December 31,		
	2019	2018	2017
	(In thousands)		
Segment revenues	\$ 1,081,232	\$ 1,095,900	\$ 1,054,847
Affiliate revenues	4,221	6,085	5,091
Segment EBITDA	162,276	190,910	196,554
Depreciation expense	20,765	19,374	19,255
Amortization of intangibles	23,500	22,255	37,245
Amortization of software development intangible assets	175	71	—
Severance, restructuring, and acquisition integration costs	11,050	14,863	28,146
Purchase accounting effects of acquisitions	592	1,690	6,133
Acquisition of property, plant and equipment	42,897	42,938	34,613
Segment assets	527,189	479,324	473,429

Industrial Solutions

	Years ended December 31,		
	2019	2018	2017
	(In thousands)		
Segment revenues	\$ 1,050,046	\$ 1,069,802	\$ 1,032,338
Affiliate revenues	11	81	67
Segment EBITDA	188,947	203,746	208,875
Depreciation expense	19,644	18,935	19,369
Amortization of intangibles	51,109	52,885	52,943
Amortization of software development intangible assets	350	8	—
Severance, restructuring, and acquisition integration costs	15,494	7,762	13,747
Acquisition of property, plant and equipment	34,581	29,215	13,319
Segment assets	464,418	459,647	464,683

Total Segments

	Years ended December 31,		
	2019	2018	2017
	(In thousands)		
Segment revenues	\$ 2,131,278	\$ 2,165,702	\$ 2,087,185
Affiliate revenues	4,232	6,166	5,158
Segment EBITDA	351,223	394,656	405,429
Depreciation expense	40,409	38,309	38,624
Amortization of intangibles	74,609	75,140	90,188
Amortization of software development intangible assets	525	79	—
Severance, restructuring, and acquisition integration costs	26,544	22,625	41,893
Purchase accounting effects of acquisitions	592	1,690	6,133
Acquisition of property, plant and equipment	77,478	72,153	47,932
Segment assets	991,607	938,971	938,112

The following table is a reconciliation of the total of the reportable segments' Revenues and EBITDA to consolidated revenues and consolidated income from continuing operations before taxes, respectively.

	Years Ended December 31,		
	2019	2018	2017
	(In thousands)		
Total Segment Revenues	\$ 2,131,278	\$ 2,165,702	\$ 2,087,185
Deferred revenue adjustments	—	—	—
Consolidated Revenues	<u>\$ 2,131,278</u>	<u>\$ 2,165,702</u>	<u>\$ 2,087,185</u>
Total Segment EBITDA	\$ 351,223	\$ 394,656	\$ 405,429
Amortization of intangibles	(74,609)	(75,140)	(90,188)
Depreciation expense	(40,409)	(38,309)	(38,624)
Severance, restructuring, and acquisition integration costs (1)	(26,544)	(22,625)	(41,893)
Purchase accounting effects related to acquisitions (2)	(592)	(1,690)	(6,133)
Amortization of software development intangible assets	(525)	(79)	—
Loss on sale of assets (3)	—	(94)	(1,013)
Costs related to patent litigation	—	(2,634)	—
Gain from patent litigation	—	62,141	—
Income from equity method investment	—	—	7,502
Eliminations	(1,337)	(2,218)	(1,439)
Consolidated operating income	<u>207,207</u>	<u>314,008</u>	<u>233,641</u>
Interest expense, net	(55,814)	(60,839)	(82,651)
Non-operating pension benefit (cost)	1,017	(99)	(561)
Loss on debt extinguishment	—	(22,990)	(52,441)
Consolidated income from continuing operations before taxes	<u>\$ 152,410</u>	<u>\$ 230,080</u>	<u>\$ 97,988</u>

(1) See Note 14, *Severance, Restructuring, and Acquisition Integration Activities*, for details.

(2) In 2019, we collectively recognized \$0.6 million of cost of sales related to purchase accounting adjustments of acquired inventory to fair value for both our SPC and Opterna acquisitions. In 2018, we made a \$1.7 million adjustment to increase the earn-out liability associated with an acquisition. In 2017, we recognized \$6.1 million of cost of sales related to the adjustment of acquired inventory to fair value for our Thinklogical acquisition.

(3) In 2018 and 2017, we recognized a \$0.1 million and \$1.0 million loss on sale of assets, respectively, for the sale of our MCS business and Hirschmann JV. See Note 2.

Below are reconciliations of other segment measures to the consolidated totals.

	Years Ended December 31,		
	2019	2018	2017
	(In thousands)		
Total segment assets	\$ 991,607	\$ 938,971	\$ 938,112
Cash and cash equivalents	407,480	407,454	541,350
Goodwill	1,243,669	1,206,877	1,208,587
Intangible assets, less accumulated amortization	339,505	359,931	424,932
Deferred income taxes	25,216	26,459	28,517
Corporate assets	24,147	16,786	60,865
Assets of discontinued operations	375,135	822,843	638,250
Total assets	<u>\$ 3,406,759</u>	<u>\$ 3,779,321</u>	<u>\$ 3,840,613</u>
Total segment acquisition of property, plant and equipment	\$ 77,478	\$ 72,153	\$ 47,932
Corporate acquisition of property, plant and equipment	3,110	3,013	1,502
Total acquisition of property, plant and equipment	<u>\$ 80,588</u>	<u>\$ 75,166</u>	<u>\$ 49,434</u>

Geographic Information

The Company attributes foreign sales based on the location of the customer purchasing the product. The table below summarizes net sales and long-lived assets for the years ended December 31, 2019, 2018 and 2017 for the following countries: the U.S., Canada, China, and Germany. No other individual foreign country's net sales or long-lived assets are material to the Company.

	<u>United States</u>	<u>Canada</u>	<u>China</u>	<u>Germany</u>	<u>All Other</u>	<u>Total</u>
	(In thousands, except percentages)					
Year ended December 31, 2019						
Revenues	\$ 1,271,628	\$ 170,683	\$ 129,716	\$ 105,614	\$ 453,637	\$ 2,131,278
Percent of total revenues	60%	8%	6%	5%	21%	100%
Long-lived assets	\$ 152,214	\$ 16,452	\$ 40,247	\$ 48,272	\$ 101,179	\$ 358,364
Year ended December 31, 2018						
Revenues	\$ 1,206,401	\$ 166,669	\$ 107,582	\$ 100,691	\$ 584,359	\$ 2,165,702
Percent of total revenues	56%	8%	5%	4%	27%	100%
Long-lived assets	\$ 170,368	\$ 13,352	\$ 36,989	\$ 39,724	\$ 63,776	\$ 324,209
Year ended December 31, 2017						
Revenues	\$ 1,254,758	\$ 167,466	\$ 120,568	\$ 112,976	\$ 431,417	\$ 2,087,185
Percent of total revenues	60%	8%	6%	5%	21%	100%
Long-lived assets	\$ 210,292	\$ 13,200	\$ 34,647	\$ 37,875	\$ 49,834	\$ 345,848

Major Customer

Revenues generated from sales to the distributor Anixter International Inc., in both the Enterprise Solutions and Industrial Solutions segments, were \$285.0 million (13% of revenues), \$309.0 million (14% of revenues), and \$292.2 million (14% of revenues) for 2019, 2018, and 2017, respectively. Revenues generated from sales to both Anixter and WESCO combined were approximately \$328.2 million (15% of revenues), \$361.7 million (17% of revenues), and \$342.8 million (16% of revenues) for 2019, 2018, and 2017, respectively. At December 31, 2019, we had \$10.2 million in accounts receivable outstanding from Anixter International Inc. This represented approximately 3% of our total accounts receivable outstanding at December 31, 2019.

Note 7: Noncontrolling Interest

We have a 51% ownership percentage in a joint venture with Shanghai Hi-Tech Control System Co, Ltd (Hite). The purpose of the joint venture is to develop and provide certain Industrial Solutions products and integrated solutions to customers in China. Belden and Hite are committed to fund \$1.53 million and \$1.47 million, respectively, to the joint venture in the future. The joint venture is determined to not have sufficient equity at risk; therefore, it is considered a variable interest entity. We have determined that Belden is the primary beneficiary of the joint venture, due to both our ownership percentage and our control over the activities of the joint venture that most significantly impact its economic performance based on the terms of the joint venture agreement with Hite. Because Belden is the primary beneficiary of the joint venture, we have consolidated the joint venture in our financial statements. The results of the joint venture attributable to Hite's ownership are presented as net income (loss) attributable to noncontrolling interest in the consolidated statements of operations. The joint venture is not material to our consolidated financial statements as of or for the years ended December 31, 2019, 2018, or 2017.

We acquired Opterna in April 2019. Certain subsidiaries of Opterna include noncontrolling interests. Because we have a controlling financial interest in these subsidiaries, they are consolidated into our financial statements. The results of these subsidiaries were consolidated into our financial statements as of the acquisition date. The results that are attributable to the noncontrolling interest holders are presented as net income attributable to noncontrolling interests in the Consolidated Statements of Operations. An immaterial amount of Opterna's annual revenues are generated from transactions with the noncontrolling interests. On October 25, 2019, we purchased the noncontrolling interest of one subsidiary for a purchase price of \$0.8 million; of which \$0.4 million was paid at closing and the remaining \$0.4 million will be paid in 2021. The subsidiaries of Opterna that include noncontrolling interests are not material to our consolidated financial statements as of or for the years ended December 31, 2019, 2018 or 2017.

Note 8: Income Per Share

The following table presents the basis of the income per share computation:

	Years Ended December 31,		
	2019	2018	2017
	(In thousands)		
Numerator:			
Income from continuing operations	\$ 109,891	\$ 167,144	\$ 102,607
Less: Net income (loss) attributable to noncontrolling interest	239	(183)	(357)
Less: Preferred stock dividends	18,437	34,931	34,931
Income from continuing operations attributable to Belden common stockholders	91,215	132,396	68,033
Add: Loss from discontinued operations, net of tax	(486,667)	(6,433)	(9,754)
Net income (loss) attributable to Belden common stockholders	\$ (395,452)	\$ 125,963	\$ 58,279
Denominator:			
Weighted average shares outstanding, basic	42,203	40,675	42,220
Effect of dilutive common stock equivalents	213	281	423
Weighted average shares outstanding, diluted	42,416	40,956	42,643

Basic weighted average shares outstanding is used to calculate diluted loss per share when the numerator is a loss because using diluted weighted average shares outstanding would be anti-dilutive.

For the years ended December 31, 2019, 2018, and 2017, diluted weighted average shares outstanding do not include outstanding equity awards of 1.2 million, 0.9 million, and 0.5 million, respectively, because to do so would have been anti-dilutive. In addition, for the years ended December 31, 2019, 2018, and 2017, diluted weighted average shares outstanding do not include outstanding equity awards of 0.3 million, 0.3 million, and 0.2 million, respectively, because the related performance conditions have not been satisfied. Furthermore, for the years ended December 31, 2019, 2018, and 2017, diluted weighted average shares outstanding do not include the weighted average impact of preferred shares that are convertible into 3.7 million, 6.9 million, and 6.9 million common shares, respectively, because deducting the preferred stock dividends from net income was more dilutive.

For purposes of calculating basic earnings per share, unvested restricted stock units are not included in the calculation of basic weighted average shares outstanding until all necessary conditions have been satisfied and issuance of the shares underlying the restricted stock units is no longer contingent. Necessary conditions are not satisfied until the vesting date, at which time holders of our restricted stock units receive shares of our common stock.

For purposes of calculating diluted earnings per share, unvested restricted stock units are included to the extent that they are dilutive. In determining whether unvested restricted stock units are dilutive, each issuance of restricted stock units is considered separately.

Once a restricted stock unit has vested, it is included in the calculation of both basic and diluted weighted average shares outstanding.

Note 9: Inventories

The major classes of inventories were as follows:

	December 31,	
	2019	2018
	(In thousands)	
Raw materials	\$ 98,530	\$ 108,623
Work-in-process	34,717	36,460
Finished goods	119,331	137,283
Gross inventories	252,578	282,366
Excess and obsolete reserves	(21,245)	(17,364)
Net inventories	\$ 231,333	\$ 265,002

Note 10: Property, Plant and Equipment

The carrying values of property, plant and equipment were as follows:

	December 31,	
	2019	2018
	(In thousands)	
Land and land improvements	\$ 27,502	\$ 25,902
Buildings and leasehold improvements	126,580	120,896
Machinery and equipment	558,639	523,857
Computer equipment and software	119,533	121,504
Construction in process	70,993	56,483
Gross property, plant and equipment	<u>903,247</u>	<u>848,642</u>
Accumulated depreciation	<u>(557,329)</u>	<u>(537,682)</u>
Net property, plant and equipment	<u>\$ 345,918</u>	<u>\$ 310,960</u>

Depreciation Expense

We recognized depreciation expense in income from continuing operations of \$40.4 million, \$38.3 million, and \$38.6 million in 2019, 2018, and 2017, respectively.

Note 11: Leases

We have operating and finance leases for properties, including manufacturing facilities, warehouses, and office space; as well as vehicles and certain equipment. We make certain judgments in determining whether a contract contains a lease in accordance with ASU 2016-02. Our leases have remaining lease terms of less than 1 year to 16 years, some of which include options to extend the lease for a period of up to 15 years and some include options to terminate the leases within 1 year. We do not assume renewals in our determination of the lease term unless the renewals are deemed to be reasonably certain as of the commencement date of the lease. Our lease agreements do not contain any material residual value guarantees or material variable lease payments.

We have entered into various short-term operating leases with an initial term of twelve months or less. These leases are not recorded on our balance sheet as of December 31, 2019, and the rent expense for short-term leases was not material.

We have certain property and equipment lease contracts that may contain lease and non-lease components, and we have elected to utilize the practical expedient to account for these components together as a single combined lease component.

As the rate implicit in most of our leases is not readily determinable, we use the incremental borrowing rate to determine the present value of the lease payments, which is unique to each leased asset, and is based upon the term of the lease, commencement date of the lease, local currency of the leased asset, and the credit rating of the legal entity leasing the asset.

The components of lease expense were as follows:

	Year Ended	
	December 31, 2019	
	(In thousands)	
Operating Lease Cost	\$	<u>14,622</u>
Finance Lease Cost		
Amortization of right-of-use asset	\$	142
Interest on lease liabilities		22
Total finance lease cost	<u>\$</u>	<u>164</u>

Supplemental cash flow information related to leases was as follows:

	Year Ended	
	December 31, 2019	
	(In thousands)	
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	\$	14,594
Operating cash flows from finance leases		25
Financing cash flows from finance leases		258

Supplemental balance sheet information related to leases was as follows:

	December 31, 2019	
	(In thousands, except lease term and discount rate)	
Operating leases:		
Total operating lease right-of-use assets	\$	62,251
Accrued liabilities	\$	13,900
Long-term operating lease liabilities		55,652
Total operating lease liabilities	\$	69,552
Finance leases:		
Other long-lived assets, at cost	\$	823
Accumulated depreciation		(391)
Other long-lived assets, net	\$	432
Weighted Average Remaining Lease Term		
Operating leases		6 years
Finance leases		3 years
Weighted Average Discount Rate		
Operating leases		6.9%
Finance leases		6.2%

The following table summarizes maturities of lease liabilities as of December 31, 2019 (in thousands):

2020	\$	19,086
2021		16,988
2022		14,128
2023		11,598
2024		9,032
Thereafter		16,655
Total	\$	87,487

The following table summarizes maturities of lease liabilities as of December 31, 2018 (in thousands):

2019	\$	14,453
2020		13,335
2021		11,784
2022		10,593
2023		8,417
Thereafter		20,404
Total	<u>\$</u>	<u>78,986</u>

Note 12: Intangible Assets

The carrying values of intangible assets were as follows:

	December 31, 2019			December 31, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
	(In thousands)			(In thousands)		
Goodwill	\$ 1,243,669	\$ —	\$ 1,243,669	\$ 1,206,877	\$ —	\$ 1,206,877
Definite-lived intangible assets subject to amortization:						
Developed technology	\$ 413,310	\$ (331,696)	\$ 81,614	\$ 399,095	\$ (280,301)	\$ 118,794
Customer relationships	297,595	(110,732)	186,863	258,798	(94,557)	164,241
Trademarks	56,393	(30,213)	26,180	54,897	(24,443)	30,454
In-service research and development	10,702	(7,160)	3,542	10,708	(5,336)	5,372
Backlog	11,335	(10,935)	400	9,567	(9,567)	—
Total intangible assets subject to amortization	<u>789,335</u>	<u>(490,736)</u>	<u>298,599</u>	<u>733,065</u>	<u>(414,204)</u>	<u>318,861</u>
Indefinite-lived intangible assets not subject to amortization:						
Trademarks	40,106	—	40,106	40,270	—	40,270
In-process research and development	800	—	800	800	—	800
Total intangible assets not subject to amortization	<u>40,906</u>	<u>—</u>	<u>40,906</u>	<u>41,070</u>	<u>—</u>	<u>41,070</u>
Intangible assets	<u>\$ 830,241</u>	<u>\$ (490,736)</u>	<u>\$ 339,505</u>	<u>\$ 774,135</u>	<u>\$ (414,204)</u>	<u>\$ 359,931</u>

Segment Allocation of Goodwill and Trademarks

The changes in the carrying amount of goodwill assigned to reporting units in our reportable segments are as follows:

	Enterprise Solutions	Industrial Solutions	Consolidated
	(In thousands)		
Balance at December 31, 2017	\$ 432,601	\$ 775,986	\$ 1,208,587
Acquisitions and purchase accounting adjustments	2,443	—	2,443
Translation impact	(462)	(3,691)	(4,153)
Balance at December 31, 2018	<u>\$ 434,582</u>	<u>\$ 772,295</u>	<u>\$ 1,206,877</u>
Acquisitions and purchase accounting adjustments	38,209	—	38,209
Translation impact	(260)	(1,157)	(1,417)
Balance at December 31, 2019	<u>\$ 472,531</u>	<u>\$ 771,138</u>	<u>\$ 1,243,669</u>

The changes in the carrying amount of indefinite-lived trademarks are as follows:

	Enterprise Solutions	Industrial Solutions	Consolidated
	(In thousands)		
Balance at December 31, 2017	\$ 31,063	\$ 9,681	\$ 40,744
Translation impact	—	(474)	(474)
Balance at December 31, 2018	\$ 31,063	\$ 9,207	\$ 40,270
Translation impact	—	(164)	(164)
Balance at December 31, 2019	\$ 31,063	\$ 9,043	\$ 40,106

Impairment

The annual measurement date for our goodwill and indefinite-lived intangible assets impairment test is our fiscal November month-end. For our 2019 goodwill impairment test, we performed a quantitative assessment for all ten of our reporting units included in continuing operations and determined the estimated fair values of our reporting units by calculating the present values of their estimated future cash flows using Level 3 inputs. We did not perform a qualitative assessment over our reporting units. We determined that the fair values of the reporting units were in excess of the carrying values; therefore, we did not record any goodwill impairment for the ten reporting units. We also did not recognize any goodwill impairment in 2018 or 2017 based upon the results of our annual goodwill impairment testing.

During the fourth quarter of 2019, we committed to a plan to sell Grass Valley, and at such time, met all of the criteria to classify the assets and liabilities of this business as held for sale. Furthermore, we determined a divestiture of Grass Valley represents a strategic shift that is expected to have a major impact on our operations and financial results. As a result, the Grass Valley disposal group, which was included in our Enterprise Solutions segment, is now reported within discontinued operations. We also ceased depreciating and amortizing the assets of the disposal group once they met the held for sale criteria in the fourth quarter of 2019. During 2019, we wrote down the carrying value of Grass Valley and recognized asset impairments totaling \$521.4 million, which consisted of impairments to goodwill, customer relationships, and trademarks of \$326.1 million, \$14.4 million, and \$1.6 million, respectively, as well as an impairment of the disposal group of \$179.3 million (\$180.4 million translated at year-end exchange rates). We determined the estimated fair values of the assets and of the reporting unit by calculating the present values of their estimated future cash flows, which was based in part on the assumed proceeds from a divestiture of Grass Valley.

Similar to the quantitative goodwill impairment test, we determined the estimated fair values of our indefinite-lived trademarks by calculating the present values of the estimated cash flows (using Level 3 inputs) attributable to the respective trademarks. We did not recognize any trademark impairment charges in 2019, 2018, or 2017.

Amortization Expense

We recognized amortization expense in income from continuing operations of \$74.6 million, \$75.1 million, and \$90.2 million in 2019, 2018, and 2017, respectively. We expect to recognize annual amortization expense of \$65.3 million in 2020, \$33.2 million in 2021, \$30.3 million in 2022, \$28.7 million in 2023, and \$26.6 million in 2024 related to our intangible assets balance as of December 31, 2019.

The weighted-average amortization period for our customer relationships, trademarks, developed technology, and in-service research and development is 18.3, 8.5, 6.8, and 5.0 years, respectively.

Note 13: Accrued Liabilities

The carrying values of accrued liabilities were as follows:

	December 31,	
	2019	2018
	(In thousands)	
Wages, severance and related taxes	\$ 58,953	\$ 46,674
Current deferred revenue	54,255	62,272
Accrued rebates	37,170	41,312
Accrued interest	18,781	18,530
Employee benefits	17,791	17,984
Lease liabilities	14,072	—
Other (individual items less than 5% of total current liabilities)	82,777	85,624
Accrued liabilities	<u>\$ 283,799</u>	<u>\$ 272,396</u>

Note 14: Severance, Restructuring, and Acquisition Integration Activities*Cost Reduction Program: 2019*

During the fourth quarter of 2019, we began a cost reduction program to improve performance and enhance margins by streamlining the organizational structure and investing in technology to drive productivity. We recognized approximately \$19.6 million of severance costs for this program during 2019. The costs were incurred by both of our segments, as well as our corporate office. The cost reduction program is expected to deliver an estimated \$40.0 million reduction in selling, general, and administrative expenses on an annual basis, with some benefit in 2020, and the full benefit realized in 2021. We expect to incur approximately \$10.0 million for this program in 2020.

Opterna, FutureLink, and SPC Integration Program: 2019

In 2019, we began a restructuring program to integrate Opterna, FutureLink, and SPC with our existing businesses. The restructuring and integration activities were focused on achieving desired cost savings by consolidating existing and acquired facilities and other support functions. We recognized \$6.1 million of severance and other restructuring costs for this program during 2019. The costs were incurred by the Enterprise Solutions segment. We expect to incur an additional \$5.0 million for this program in 2020.

Industrial Manufacturing Footprint Program: 2016-2018

In 2016, we began a program to consolidate our manufacturing footprint. The manufacturing consolidation is complete. We recognized \$17.7 million and \$30.6 million of severance and other restructuring costs for this program during 2018 and 2017, respectively, and \$66.1 million cumulatively. The costs were incurred by the Enterprise Solutions and Industrial Solutions segments, as the manufacturing locations involved in the program serve both platforms.

The following table summarizes the costs by segment of the programs described above as well as other immaterial programs and acquisition integration activities:

	Severance	Other Restructuring and Integration Costs	Total Costs
	(In thousands)		
Year Ended December 31, 2019			
Enterprise Solutions	\$ 5,260	\$ 5,790	\$ 11,050
Industrial Solutions	15,494	—	15,494
Total	<u>\$ 20,754</u>	<u>\$ 5,790</u>	<u>\$ 26,544</u>
Year Ended December 31, 2018			
Enterprise Solutions	\$ 548	\$ 14,314	\$ 14,862
Industrial Solutions	240	7,523	7,763
Total	<u>\$ 788</u>	<u>\$ 21,837</u>	<u>\$ 22,625</u>
Year Ended December 31, 2017			
Enterprise Solutions	\$ 4,165	\$ 23,981	\$ 28,146
Industrial Solutions	676	13,071	13,747
Total	<u>\$ 4,841</u>	<u>\$ 37,052</u>	<u>\$ 41,893</u>

The other restructuring and integration costs primarily consisted of equipment transfers, costs to consolidate operating and support facilities, retention bonuses, relocation, travel, legal, and other costs. The majority of the other restructuring and integration costs related to these actions were paid as incurred or are payable within the next 60 days.

The following table summarizes the costs of the various programs described above as well as other immaterial programs and acquisition integration activities by financial statement line item in the Consolidated Statement of Operations:

	Years ended December 31,		
	2019	2018	2017
	(In thousands)		
Cost of sales	\$ 3,425	\$ 17,962	\$ 32,480
Selling, general and administrative expenses	23,119	4,546	9,308
Research and development expenses	—	117	105
Total	<u>\$ 26,544</u>	<u>\$ 22,625</u>	<u>\$ 41,893</u>

Accrued Severance

Our accrued severance balance was \$20.2 million, \$1.7 million, and \$3.4 million as of December 31, 2019, 2018 and 2017, respectively. The \$20.2 million accrued severance balance at December 31, 2019 relates to the new Cost Reduction program, for which no cash payments were made during 2019; the majority of these amounts will be paid during 2020.

Note 15: Long-Term Debt and Other Borrowing Arrangements

The carrying values of our long-term debt and other borrowing arrangements were as follows:

	December 31,	
	2019	2018
	(In thousands)	
Revolving credit agreement due 2022	\$ —	\$ —
Senior subordinated notes:		
3.875% Senior subordinated notes due 2028	392,910	400,050
3.375% Senior subordinated notes due 2027	505,170	514,350
4.125% Senior subordinated notes due 2026	224,520	228,600
2.875% Senior subordinated notes due 2025	336,780	342,900
Total senior subordinated notes	<u>1,459,380</u>	<u>1,485,900</u>
Less unamortized debt issuance costs	(19,896)	(22,700)
Long-term debt	<u>\$ 1,439,484</u>	<u>\$ 1,463,200</u>

Revolving Credit Agreement due 2022

In 2017, we entered into an Amended and Restated Credit Agreement (the Revolver) to amend and restate our prior Revolving Credit Agreement. The Revolver provides a \$400.0 million multi-currency asset-based revolving credit facility. The borrowing base under the Revolver includes eligible accounts receivable; inventory; and property, plant and equipment of certain of our subsidiaries in the U.S., Canada, Germany, and the Netherlands. The maturity date of the Revolver is May 16, 2022. Interest on outstanding borrowings is variable, based upon LIBOR or other similar indices in foreign jurisdictions, plus a spread that ranges from 1.25%-1.75%, depending upon our leverage position. We pay a commitment fee on our available borrowing capacity of 0.25%. In the event we borrow more than 90% of our borrowing base, we are subject to a fixed charge coverage ratio covenant. In 2017, we recognized a \$0.8 million loss on debt extinguishment for unamortized debt issuance costs related to creditors no longer participating in the new Revolver. In connection with executing the Revolver, we also paid \$2.3 million of fees to creditors and third parties that we will amortize over the remaining term of the Revolver. As of December 31, 2019, we had no borrowings outstanding on the Revolver, and our available borrowing capacity, including the assets of the Grass Valley disposal group, was \$310.6 million.

Senior Subordinated Notes

In March 2018, we completed an offering for €350.0 million (\$431.3 million at issuance) aggregate principal amount of 3.875% senior subordinated notes due 2028 (the 2028 Notes). The carrying value of the 2028 Notes as of December 31, 2019 is \$392.9 million. The 2028 Notes are guaranteed on a senior subordinated basis by our current and future domestic subsidiaries. The 2028 Notes rank equal in right of payment with our senior subordinated notes due 2027, 2026, and 2025 and with any future subordinated debt, and they are subordinated to all of our senior debt and the senior debt of our subsidiary guarantors, including our Revolver. Interest is payable semiannually on March 15 and September 15 of each year, which commenced on September 15, 2018. We paid approximately \$7.5 million of fees associated with the issuance of the 2028 Notes, which are being amortized over the life of the 2028 Notes using the effective interest method. We used the net proceeds from this offering and cash on hand to repurchase the 2023 and 2024 Notes - see further discussion below.

In July 2017, we completed an offering for €450.0 million (\$509.5 million at issuance) aggregate principal amount of 3.375% senior subordinated notes due 2027 (the 2027 Notes). The carrying value of the 2027 Notes as of December 31, 2019 is \$505.2 million. The 2027 Notes are guaranteed on a senior subordinated basis by our current and future domestic subsidiaries. The 2027 Notes rank equal in right of payment with our senior subordinated notes due 2028, 2026, and 2025 and with any future subordinated debt, and they are subordinated to all of our senior debt and the senior debt of our subsidiary guarantors, including our Revolver. Interest is payable semiannually on January 15 and July 15 of each year, which commenced on January 15, 2018. We paid approximately \$8.8 million of fees associated with the issuance of the 2027 Notes, which are being amortized over the life of the 2027 Notes using the effective interest method.

In October 2016, we completed an offering for €200.0 million (\$222.2 million at issuance) aggregate principal amount of 4.125% senior subordinated notes due 2026 (the 2026 Notes). The carrying value of the 2026 Notes as of December 31, 2019 is \$224.5 million. The 2026 Notes are guaranteed on a senior subordinated basis by our current and future domestic subsidiaries. The notes rank equal in right of payment with our senior subordinated notes due 2028, 2027, and 2025 and with any future subordinated debt, and they are subordinated to all of our senior debt and the senior debt of our subsidiary guarantors, including our Revolver. Interest

is payable semiannually on April 15 and October 15 of each year, which commenced on April 15, 2017. We paid approximately \$3.9 million of fees associated with the issuance of the 2026 Notes, which are being amortized over the life of the 2026 Notes using the effective interest method.

In September 2017, we completed an offering for €300.0 million (\$357.2 million at issuance) aggregate principal amount of 2.875% senior subordinated notes due 2025 (the 2025 Notes). The carrying value of the 2025 Notes as of December 31, 2019 is \$336.8 million. The 2025 Notes are guaranteed on a senior subordinated basis by our current and future domestic subsidiaries. The 2025 Notes rank equal in right of payment with our senior subordinated notes due 2028, 2027, and 2026 and with any future subordinated debt, and they are subordinated to all of our senior debt and the senior debt of our subsidiary guarantors, including our Revolver. Interest is payable semiannually on March 15 and September 15 of each year, which commenced on March 15, 2018. We paid approximately \$6.2 million of fees associated with the issuance of the 2025 Notes, which are being amortized over the life of the 2025 Notes using the effective interest method.

The senior subordinated notes due 2025, 2026, 2027 and 2028 are redeemable after September 15, 2020, October 15, 2021, July 15, 2022, and March 15, 2023, respectively, at the following redemption prices as a percentage of the face amount of the notes:

Senior Subordinated Notes due							
2025		2026		2027		2028	
Year	Percentage	Year	Percentage	Year	Percentage	Year	Percentage
2020	101.438%	2021	102.063%	2022	101.688%	2023	101.938%
2021	100.719%	2022	101.375%	2023	101.125%	2024	101.292%
2022 and thereafter	100.000%	2023	100.688%	2024	100.563%	2025	100.646%
		2024 and thereafter	100.000%	2025 and thereafter	100.000%	2026 and thereafter	100.000%

Fair Value of Long-Term Debt

The fair value of our senior subordinated notes as of December 31, 2019 was approximately \$1,532.7 million based on quoted prices of the debt instruments in inactive markets (Level 2 valuation). This amount represents the fair values of our senior subordinated notes with a carrying value of \$1,459.4 million as of December 31, 2019.

Maturities

Maturities on outstanding long-term debt and other borrowings during each of the five years subsequent to December 31, 2019 are as follows (in thousands):

2020	\$	—
2021		—
2022		—
2023		—
2024		—
Thereafter		1,459,380
		<u>\$ 1,459,380</u>

Note 16: Net Investment Hedge

All of our euro denominated notes were issued by Belden Inc., a USD functional currency entity. As of December 31, 2019, all of our outstanding foreign denominated debt is designated as a net investment hedge on the foreign currency risk of our net investment in our euro foreign operations. The objective of the hedge is to protect the net investment in the foreign operations against adverse changes in the euro exchange rate. The transaction gain or loss is reported in the translation adjustment section of other comprehensive income, which was a gain of \$26.6 million, a gain of \$87.5 million, and a loss of \$56.2 million for the years ended December 31, 2019, 2018, and 2017, respectively.

Note 17: Income Taxes

	Years ended December 31,		
	2019	2018	2017
	(In thousands)		
Income before taxes:			
United States operations	\$ 42,833	\$ 115,500	\$ 80,048
Foreign operations	109,577	114,580	17,940
Income before taxes	<u>\$ 152,410</u>	<u>\$ 230,080</u>	<u>\$ 97,988</u>
Income tax expense (benefit):			
Currently payable			
United States federal	\$ 21,893	\$ 31,730	\$ (2,751)
United States state and local	3,090	3,912	336
Foreign	13,859	16,968	26,807
	<u>38,842</u>	<u>52,610</u>	<u>24,392</u>
Deferred			
United States federal	7,567	7,220	(17,741)
United States state and local	(1,205)	(31)	(7,115)
Foreign	(2,685)	3,137	(4,155)
	<u>3,677</u>	<u>10,326</u>	<u>(29,011)</u>
Income tax expense (benefit)	<u>\$ 42,519</u>	<u>\$ 62,936</u>	<u>\$ (4,619)</u>

	Years Ended December 31,		
	2019	2018	2017
Effective income tax rate reconciliation from continuing operations:			
United States federal statutory rate	21.0 %	21.0 %	35.0 %
State and local income taxes	1.2 %	1.5 %	0.7 %
Impact of change in tax contingencies	— %	(0.7)%	1.1 %
Foreign income tax rate differences	(8.6)%	(1.0)%	15.1 %
Impact of change in deferred tax asset valuation allowance	9.2 %	0.3 %	0.7 %
Impact of non-taxable translation gain	— %	— %	(27.7)%
Impact of non-taxable interest income	— %	— %	(5.6)%
Domestic permanent differences and tax credits	5.1 %	1.9 %	(49.0)%
Impact of tax reform	— %	4.4 %	25.0 %
	<u>27.9 %</u>	<u>27.4 %</u>	<u>(4.7)%</u>

On December 22, 2017, the “Tax Cuts and Jobs Act” (the “Act”) was signed into law, making significant changes to the U.S. Internal Revenue Code. Changes include, but are not limited to, a corporate tax rate decrease from 35% to 21% effective for tax years beginning after December 31, 2017, the transition of U.S. international taxation from a worldwide tax system to a territorial tax system, and a one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. In accordance with the Act, we recorded \$24.5 million as an additional income tax expense in the fourth quarter of 2017, the period in which the legislation was enacted. The total income tax expense included a \$41.6 million tax benefit for the remeasurement of deferred tax assets and liabilities to the 21% rate at which they are expected to reverse, offset with a one-time tax expense on deemed repatriation of \$30.8 million and a valuation allowance of \$35.3 million recorded against foreign tax credit carryovers that we no longer expect to be able to realize based upon the new tax law.

Additionally, Staff Accounting Bulletin No. 118 (“SAB 118”) was issued to address the application of US GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Act. December 22, 2018 marked the end of the measurement period for purposes of SAB 118. As such, we completed our analysis based on legislative updates relating to the Act which resulted in an additional SAB 118 tax expense of \$2.9 million in the fourth quarter of 2018 and a total tax expense of \$10.0 million for the year ended December 31, 2018. The total tax provision expense included an \$8.0 million tax expense associated with an increase to the

valuation allowance against foreign tax credit carryovers that we no longer expect to be able to realize based upon the new tax law, a \$1.3 million tax expense adjustment to the transition tax on the deemed repatriation of cumulative foreign earnings, a \$1.1 million tax expense resulting from a valuation allowance established on the deferred tax assets associated with stock options of covered employees, and a \$0.4 million income tax benefit associated with an adjustment to the remeasurement of certain deferred tax assets and liabilities.

During 2019, the United States Treasury issued final and proposed regulations with respect to certain aspects related to the Tax Cuts and Jobs Acts of 2017. Additional guidance provided in these regulations resulted in a tax adjustment in the fourth quarter of 2019. The total tax provision expense in 2019 included \$10.0 million tax expense associated with the increase to the valuation allowance against foreign tax credit carryovers that we no longer expect to be able to realize based upon the new proposed tax regulations.

If we were to repatriate foreign cash to the U.S., we may be required to accrue and pay U.S. taxes in accordance with applicable U.S. tax rules and regulations as a result of the repatriation. However, it is our assertion to permanently reinvest the earnings of our non-U.S. subsidiaries in those operations and for continued non-U.S. growth opportunities. As a result, as of December 31, 2019, we have not made a provision for U.S. or additional foreign withholding taxes.

Foreign tax rate differences resulted in an income tax expense (benefit) of \$(13.1) million, \$(2.4) million, and \$14.7 million in 2019, 2018, and 2017, respectively. Additionally, in 2019, 2018 and 2017, our income tax expense was reduced by \$3.9 million, \$3.0 million, and \$3.5 million, respectively, due to a tax holiday for our operations in St. Kitts. The tax holiday in St. Kitts is scheduled to expire in 2022.

	December 31,	
	2019	2018
	(In thousands)	
Components of deferred income tax balances:		
Deferred income tax liabilities:		
Plant, equipment, and intangibles	\$ (96,254)	\$ (98,141)
Deferred income tax assets:		
Postretirement, pensions, and stock compensation	30,338	27,549
Reserves and accruals	16,371	20,641
Net operating loss and tax credit carryforwards	76,456	79,703
Valuation allowances	(50,420)	(39,402)
	<u>72,745</u>	<u>88,491</u>
Net deferred income tax liability	<u>\$ (23,509)</u>	<u>\$ (9,650)</u>

During 2019, the United States Treasury issued final and proposed regulations with respect to certain aspects related to the Tax Cuts and Jobs Act of 2017. Additional guidance provided in these regulations resulted in a change in our valuation allowance assessment in the fourth quarter of 2019. The increase in deferred tax valuation allowances is primarily due to the valuation allowance against foreign tax credit carryovers that we no longer expect to be able to realize based upon the new proposed tax regulations.

As of December 31, 2019, we had \$216.6 million of gross net operating loss carryforwards and \$47.1 million of tax credit carryforwards. Unless otherwise utilized, net operating loss carryforwards will expire upon the filing of the tax returns for the following respective years: \$6.7 million in 2019, \$22.6 million between 2020 and 2024, and \$142.3 million between 2025 and 2039. Net operating losses with an indefinite carryforward period total \$45.0 million. Of the \$216.6 million in net operating loss carryforwards, we have determined, based on the weight of all available evidence, both positive and negative, that we will utilize \$150.5 million of these net operating loss carryforwards within their respective expiration periods. A valuation allowance has been recorded on the remaining portion of the net operating loss carryforwards.

Unless otherwise utilized, tax credit carryforwards of \$47.1 million will expire as follows: \$2.1 million between 2020 and 2024, \$39.8 million between 2025 and 2039. Tax credit carryforwards with an indefinite carryforward period total \$5.2 million. We have determined, based on the weight of all available evidence, both positive and negative, that we will utilize \$8.3 million of these tax credit carryforwards within their respective expiration periods. A valuation allowance has been recorded on the remaining portion of the tax credit carryforwards.

The following tables summarize our net operating loss carryforwards and tax credit carryforwards as of December 31, 2019 by jurisdiction:

	Net Operating Loss Carryforwards	
	(In thousands)	
Australia	\$	9,589
Germany		16,768
Japan		330
Luxembourg		86
Netherlands		14,165
Other		57,567
United Kingdom		10,854
United States - Federal and various states		107,280
Total	\$	216,639

	Tax Credit Carryforwards	
	(In thousands)	
United States	\$	45,877
Canada		1,187
Total	\$	47,064

In 2019, we recognized a net \$0.2 million increase to reserves for uncertain tax positions. A reconciliation of the beginning and ending amounts of unrecognized tax benefits is as follows:

	2019	2018
	(In thousands)	
Balance at beginning of year	\$ 6,591	\$ 6,881
Additions based on tax positions related to the current year	488	749
Additions for tax positions of prior years	—	1,292
Reductions for tax positions of prior years - Settlement	(300)	(1,571)
Reduction for tax positions of prior years - Statute of limitations	—	(760)
Balance at end of year	\$ 6,779	\$ 6,591

The balance of \$6.8 million at December 31, 2019, reflects tax positions that, if recognized, would impact our effective tax rate.

As of December 31, 2019, we believe it is reasonably possible that \$0.4 million of unrecognized tax benefits will change within the next twelve months primarily attributable to the expected completion of tax audits in the U.S.

Our practice is to recognize interest and penalties related to uncertain tax positions in interest expense and operating expenses, respectively. We do not have any accrued amounts for the payment of interest and penalties as of December 31, 2019 and 2018.

Our federal tax return for the tax years 2015 and later remain subject to examination by the Internal Revenue Service. Our state and foreign income tax returns for the tax years 2011 and later remain subject to examination by various state and foreign tax authorities.

Note 18: Pension and Other Postretirement Benefits

We sponsor defined benefit pension plans and defined contribution plans that cover substantially all employees in Canada, the Netherlands, the United Kingdom, the U.S., and certain employees in Germany. Certain defined benefit plans in the United Kingdom are frozen and additional benefits are not being earned by the participants. We closed the U.S. defined benefit pension plan to new entrants effective January 1, 2010. Employees who were not active participants in the U.S. defined benefit pension plan on December 31, 2009, are not eligible to participate in the plan. During 2017, we sold our MCS business and its associated pension liabilities. Annual contributions to retirement plans equal or exceed the minimum funding requirements of applicable local regulations. The assets of the funded pension plans we sponsor are maintained in various trusts and are invested primarily in equity and fixed income securities.

Benefits provided to employees under defined contribution plans include cash contributions by the Company based on either hours worked by the employee or a percentage of the employee's compensation. Defined contribution expense for 2019, 2018, and 2017 was \$12.1 million, \$11.8 million, and \$11.4 million, respectively.

We sponsor unfunded postretirement medical and life insurance benefit plans for certain of our employees in Canada and the U.S. The medical benefit portion of the U.S. plan is only for employees who retired prior to 1989 as well as certain other employees who were near retirement and elected to receive certain benefits.

The following tables provide a reconciliation of the changes in the plans' benefit obligations and fair value of assets as well as a statement of the funded status and balance sheet reporting for these plans.

Years Ended December 31,	Pension Benefits		Other Benefits	
	2019	2018	2019	2018
	(In thousands)			
Change in benefit obligation:				
Benefit obligation, beginning of year	\$ (412,880)	\$ (266,515)	\$ (26,143)	\$ (30,333)
Service cost	(3,668)	(4,579)	(35)	(47)
Interest cost	(12,261)	(11,480)	(960)	(945)
Participant contributions	(86)	(85)	(4)	(6)
Actuarial gain (loss)	(39,329)	14,968	(2,374)	1,681
Acquisitions	—	(185,692)	—	—
Settlements	49	7,054	—	—
Plan amendments	—	(2,822)	—	—
Foreign currency exchange rate changes	(9,890)	23,439	(1,260)	2,020
Benefits paid	16,713	12,832	1,306	1,487
Benefit obligation, end of year	<u>\$ (461,352)</u>	<u>\$ (412,880)</u>	<u>\$ (29,470)</u>	<u>\$ (26,143)</u>

Years Ended December 31,	Pension Benefits		Other Benefits	
	2019	2018	2019	2018
	(In thousands)			
Change in plan assets:				
Fair value of plan assets, beginning of year	\$ 311,509	\$ 198,000	\$ —	\$ —
Actual return on plan assets	45,896	(8,366)	—	—
Employer contributions	5,673	5,363	1,302	1,481
Plan participant contributions	86	85	4	6
Acquisitions	—	153,919	—	—
Settlements	—	(7,054)	—	—
Foreign currency exchange rate changes	9,275	(17,606)	—	—
Benefits paid	(16,713)	(12,832)	(1,306)	(1,487)
Fair value of plan assets, end of year	<u>\$ 355,726</u>	<u>\$ 311,509</u>	<u>\$ —</u>	<u>\$ —</u>
Funded status, end of year	\$ (105,626)	\$ (101,371)	\$ (29,470)	\$ (26,143)
Amounts recognized in the balance sheets:				
Prepaid benefit cost	\$ 5,542	\$ 4,801	\$ —	\$ —
Accrued benefit liability, current	(3,000)	(3,162)	(1,411)	(1,405)
Accrued benefit liability, noncurrent	(108,168)	(103,010)	(28,059)	(24,738)
Net funded status	<u>\$ (105,626)</u>	<u>\$ (101,371)</u>	<u>\$ (29,470)</u>	<u>\$ (26,143)</u>

The accumulated benefit obligation for all defined benefit pension plans was \$456.9 million and \$407.0 million at December 31, 2019 and 2018, respectively.

The projected benefit obligation, accumulated benefit obligation, and fair value of plan assets for the pension plans with a projected benefit obligation in excess of plan assets were \$404.9 million, \$400.4 million, and \$293.7 million, respectively, as of December 31, 2019 and were \$363.1 million, \$357.4 million, and \$256.9 million, respectively, as of December 31, 2018.

The accumulated benefit obligation and fair value of plan assets for other postretirement benefit plans with an accumulated benefit obligation in excess of plan assets were \$29.5 million and \$0 million, respectively, as of December 31, 2019 and were \$26.1 million and \$0 million, respectively, as of December 31, 2018.

The following table provides the components of net periodic benefit costs for the plans.

Years Ended December 31,	Pension Benefits			Other Benefits		
	2019	2018	2017	2019	2018	2017
	(In thousands)					
Components of net periodic benefit cost:						
Service cost	\$ 3,668	\$ 4,579	\$ 4,767	\$ 35	\$ 47	\$ 49
Interest cost	12,261	11,480	7,551	960	945	1,139
Expected return on plan assets	(15,699)	(16,389)	(10,642)	—	—	—
Amortization of prior service cost (credit)	169	(42)	(41)	—	—	—
Settlement loss (gain)	(7)	1,342	(8)	—	—	—
Net loss (gain) recognition	1,432	2,775	2,562	(133)	(12)	—
Net periodic benefit cost	\$ 1,824	\$ 3,745	\$ 4,189	\$ 862	\$ 980	\$ 1,188

We recorded settlement losses totaling \$1.3 million during 2018. The settlement losses were the result of lump-sum payments to participants that exceeded the sum of the pension plan's respective annual service cost and interest cost amounts.

The following table presents the assumptions used in determining the benefit obligations and the net periodic benefit cost amounts.

	Pension Benefits		Other Benefits	
	Years Ended December 31, 2019	Years Ended December 31, 2018	Years Ended December 31, 2019	Years Ended December 31, 2018
Weighted average assumptions for benefit obligations at year end:				
Discount rate	2.2%	3.1%	2.9%	3.7%
Salary increase	3.5%	3.6%	N/A	N/A
Cash balance interest credit rate	4.0%	4.7%	N/A	N/A
Weighted average assumptions for net periodic cost for the year:				
Discount rate	3.1%	2.8%	3.7%	3.3%
Salary increase	3.6%	3.6%	N/A	N/A
Cash balance interest credit rate	4.7%	4.7%	N/A	N/A
Expected return on assets	5.0%	5.5%	N/A	N/A
Assumed health care cost trend rates:				
Health care cost trend rate assumed for next year	N/A	N/A	5.6%	5.8%
Rate that the cost trend rate gradually declines to	N/A	N/A	5.0%	5.0%
Year that the rate reaches the rate it is assumed to remain at	N/A	N/A	2023	2025

Plan assets are invested using a total return investment approach whereby a mix of equity securities and fixed income securities are used to preserve asset values, diversify risk, and achieve our target investment return benchmark. Investment strategies and asset allocations are based on consideration of the plan liabilities, the plan's funded status, and our financial condition. Investment performance and asset allocation are measured and monitored on an ongoing basis.

Plan assets are managed in a balanced portfolio comprised of two major components: an asset growth portion and an asset protection portion. The expected role of asset growth investments is to maximize the long-term real growth of assets, while the role of asset protection investments is to generate current income, provide for more stable periodic returns, and provide some protection against a permanent loss of capital.

Absent regulatory or statutory limitations, the target asset allocation for the investment of the assets for our ongoing pension plans is 30-50% in asset protection investments and 50-70% in asset growth investments and for our pension plans where the majority of the participants are in payment or terminated vested status is 50-75% in asset protection investments and 25-50% in asset growth investments. Asset growth investments include a diversified mix of U.S. and international equity, primarily invested through investment funds. Asset protection investments include government securities and investment grade corporate bonds, primarily invested through investment funds and group insurance contracts. We develop our expected long-term rate of return assumptions based on the historical rates of returns for securities and instruments of the type in which our plans invest.

The expected long-term rate of return on plan assets reflects the average rate of earnings expected on the invested assets and future assets to be invested to provide for the benefits included in the projected benefit obligation. We use historic plan asset returns combined with current market conditions to estimate the rate of return. The expected rate of return on plan assets is a long-term assumption based on an analysis of historical and forward looking returns considering the plan's actual and target asset mix.

The following table presents the fair values of the pension plan assets by asset category.

	December 31, 2019				December 31, 2018			
	Fair Market Value at December 31, 2019	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Fair Market Value at December 31, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	(In thousands)				(In thousands)			
Asset Category:								
Equity securities(a)								
U.S. equities fund	\$ 131,563	\$ 2,793	\$ —	\$ —	\$ 96,417	\$ 1,465	\$ —	\$ —
Non-U.S. equities fund	54,496	5,949	—	—	47,274	5,755	—	—
Debt securities(b)								
Government bond fund	74,219	—	745	—	66,439	—	1,253	—
Corporate bond fund	40,940	—	9,854	—	39,366	—	7,116	—
Fixed income fund(c)	35,895	—	33,701	—	41,167	—	39,340	—
Other investments(d)	9,462	—	—	—	17,274	—	—	—
Cash & equivalents	9,151	167	—	—	3,572	136	—	—
Total	\$ 355,726	\$ 8,909	\$ 44,300	\$ —	\$ 311,509	\$ 7,356	\$ 47,709	\$ —

- (a) This category includes investments in actively managed and indexed investment funds that invest in a diversified pool of equity securities of companies located in the U.S., Canada, Western Europe and other developed countries throughout the world. The funds are valued using the net asset value method in which an average of the market prices for the underlying investments is used to value the fund. Equity securities held in separate accounts are valued based on observable quoted prices on active exchanges. Funds which are valued using the net asset value method are not included in the fair value hierarchy.
- (b) This category includes investments in investment funds that invest in U.S. treasuries; other national, state and local government bonds; and corporate bonds of highly rated companies from diversified industries. The funds are valued using the net asset value method in which an average of the market prices for the underlying investments is used to value the fund. Funds valued using the net asset value method are not included in the fair value hierarchy.
- (c) This category includes guaranteed insurance contracts and annuity policies.
- (d) This category includes investments in hedge funds that pursue multiple strategies in order to provide diversification and balance risk/return objectives, real estate funds, and private equity funds. Funds valued using the net asset method are not included in the fair value hierarchy.

The plans do not invest in individual securities. All investments are through well diversified investment funds. As a result, there are no significant concentrations of risk within the plan assets.

The following table reflects the benefits as of December 31, 2019 expected to be paid in each of the next five years and in the aggregate for the five years thereafter from our pension and other postretirement plans. Because our other postretirement plans are unfunded, the anticipated benefits with respect to these plans will come from our own assets. Because our pension plans are primarily funded plans, the anticipated benefits with respect to these plans will come primarily from the trusts established for these plans.

	Pension Plans	Other Plans
	(In thousands)	
2020	\$ 22,952	\$ 1,431
2021	22,159	1,442
2022	22,595	1,450
2023	24,115	1,453
2024	22,397	1,461
2025-2029	109,442	7,447
Total	<u>\$ 223,660</u>	<u>\$ 14,684</u>

We anticipate contributing \$6.1 million and \$1.4 million to our pension and other postretirement plans, respectively, during 2020.

The pre-tax amounts in accumulated other comprehensive loss that have not yet been recognized as components of net periodic benefit cost at December 31, 2019 and the changes in these amounts during the year ended December 31, 2019 are as follows.

	Pension Benefits	Other Benefits
	(In thousands)	
Components of accumulated other comprehensive loss:		
Net actuarial loss (gain)	\$ 56,746	\$ (600)
Net prior service cost	2,661	—
	<u>\$ 59,407</u>	<u>\$ (600)</u>

	Pension Benefits	Other Benefits
	(In thousands)	
Changes in accumulated other comprehensive loss:		
Net actuarial loss (gain), beginning of year	\$ 48,395	\$ (3,047)
Amortization of actuarial gain (loss)	(1,432)	133
Actuarial loss	39,329	2,374
Asset gain	(30,197)	—
Settlement gain recognized	7	—
Currency impact	644	(60)
Net actuarial loss (gain), end of year	<u>\$ 56,746</u>	<u>\$ (600)</u>
Prior service cost, beginning of year	\$ 2,725	\$ —
Amortization of prior service cost	(169)	—
Currency impact	105	—
Prior service cost, end of year	<u>\$ 2,661</u>	<u>\$ —</u>

Note 19: Comprehensive Income and Accumulated Other Comprehensive Income (Loss)

The accumulated balances related to each component of other comprehensive income (loss), net of tax, are as follows:

	Foreign Currency Translation Component	Pension and Other Postretirement Benefit Plans	Accumulated Other Comprehensive Income (Loss)
	(In thousands)		
Balance at December 31, 2017	\$ (69,691)	\$ (28,335)	\$ (98,026)
Other comprehensive gain (loss) loss attributable to Belden before reclassifications	27,809	(7,813)	19,996
Amounts reclassified from accumulated other comprehensive loss	—	3,123	3,123
Net current period other comprehensive gain (loss) attributable to Belden	27,809	(4,690)	23,119
Balance at December 31, 2018	(41,882)	(33,025)	(74,907)
Other comprehensive gain (loss) attributable to Belden before reclassifications	23,657	(13,281)	10,376
Amounts reclassified from accumulated other comprehensive income	—	1,113	1,113
Net current period other comprehensive gain (loss) attributable to Belden	23,657	(12,168)	11,489
Balance at December 31, 2019	\$ (18,225)	\$ (45,193)	\$ (63,418)

The following table summarizes the effects of reclassifications from accumulated other comprehensive income (loss):

	Amount Reclassified from Accumulated Other Comprehensive Income	Affected Line Item in the Consolidated Statements of Operations and Comprehensive Income
	(In thousands)	
Amortization of pension and other postretirement benefit plan items:		
Settlement gain	\$ (7)	(1)
Actuarial losses	1,299	(1)
Prior service cost	169	(1)
Total before tax	1,461	
Tax benefit	(348)	
Total net of tax	\$ 1,113	

- (1) The amortization of these accumulated other comprehensive income (loss) components are included in the computation of net periodic benefit costs (see Note 16).

Note 20: Share-Based Compensation

Compensation cost charged against income, primarily selling, general and administrative expense, and the income tax benefit recognized for our share-based compensation arrangements is included below:

	Years Ended December 31,		
	2019	2018	2017
	(In thousands)		
Total share-based compensation cost	\$ 16,802	\$ 17,143	\$ 13,144
Income tax benefit	3,999	4,080	4,995

We currently have outstanding stock appreciation rights (SARs), restricted stock units with service vesting conditions, restricted stock units with performance vesting conditions, and restricted stock units with market conditions. We grant SARs with an exercise price equal to the closing market price of our common stock on the grant date. Generally, SARs may be converted into shares of our common stock in equal amounts on each of the first three anniversaries of the grant date and expire 10 years from the grant date. Certain awards provide for accelerated vesting in certain circumstances, including following a change in control of the Company. Restricted stock units with service conditions generally vest 3-5 years from the grant date. Restricted stock units issued based on the attainment of the performance conditions generally vest on the second or third anniversary of their grant date. Restricted stock units issued based on the attainment of market conditions generally vest on the third anniversary of their grant date.

We recognize compensation cost for all awards based on their fair values. The fair values for SARs are estimated on the grant date using the Black-Scholes-Merton option-pricing formula which incorporates the assumptions noted in the following table. Expected volatility is based on historical volatility, and expected term is based on historical exercise patterns of SAR holders. The fair value of restricted stock units with service vesting conditions or performance vesting conditions is the closing market price of our common stock on the date of grant. We estimate the fair value of certain restricted stock units with market conditions using a Monte Carlo simulation valuation model with the assistance of a third party valuation firm. Compensation costs for awards with service conditions are amortized to expense using the straight-line method. Compensation costs for awards with performance conditions and graded vesting are amortized to expense using the graded attribution method.

	Years Ended December 31,		
	2019	2018	2017
	(In thousands, except weighted average fair value and assumptions)		
Weighted-average fair value of SARs and options granted	\$ 22.31	\$ 25.19	\$ 27.31
Total intrinsic value of SARs converted and options exercised	354	2,263	7,156
Tax benefit related to share-based compensation	101	113	967
Weighted-average fair value of restricted stock shares and units granted	64.61	72.54	79.96
Total fair value of restricted stock shares and units vested	10,325	5,740	10,355
Expected volatility	35.05%	33.16%	36.89%
Expected term (in years)	5.7	5.6	5.6
Risk-free rate	2.56%	2.70%	2.01%
Dividend yield	0.32%	0.27%	0.27%

	SARs and Stock Options			Restricted Shares and Units		
	Number	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value	Number	Weighted-Average Grant-Date Fair Value
	(In thousands, except exercise prices, fair values, and contractual terms)					
Outstanding at January 1, 2019	1,289	\$ 65.58			627	\$ 71.66
Granted	237	61.71			353	64.61
Exercised or converted	(49)	48.27			(170)	58.73
Forfeited or expired	(110)	71.73			(73)	70.30
Outstanding at December 31, 2019	1,367	\$ 65.04	6.2	\$ (13,727)	737	\$ 68.31
Vested or expected to vest at December 31, 2019	1,349	\$ 65.01	6.1	\$ (13,498)		
Exercisable or convertible at December 31, 2019	936	63.88	5.1	(8,312)		

At December 31, 2019, the total unrecognized compensation cost related to all nonvested awards was \$28.2 million. That cost is expected to be recognized over a weighted-average period of 2.0 years.

Historically, we have issued treasury shares, if available, to satisfy award conversions and exercises.

Note 21: Preferred Stock

In 2016, we issued 5.2 million depositary shares, each of which represented 1/100th interest in a share of 6.75% Series B Mandatory Convertible Preferred Stock (the Preferred Stock), for an offering price of \$100 per depositary share. We received approximately \$501 million of net proceeds from this offering, which were used for general corporate purposes. On July 15, 2019, all outstanding Preferred Stock was automatically converted into shares of Belden common stock at the conversion rate of 132.50, resulting in the issuance of approximately 6.9 million shares of Belden common stock. Upon conversion, the Preferred Stock was automatically extinguished and discharged, is no longer deemed outstanding for all purposes, and delisted from trading on the New York Stock Exchange. For the years ended December 31, 2019, 2018 and 2017, dividends on the Preferred Stock were \$18.4 million, \$34.9 million, and \$34.9 million, respectively.

Note 22: Stockholder Rights Plan

On March 27, 2018, our Board of Directors authorized the redemption of all outstanding preferred share purchase rights issued pursuant to the then existing Rights Agreement. Under the former Rights Agreement, one right was attached to each outstanding share of common stock. The rights were redeemed at a redemption price of \$0.01 per right, resulting in a total payment of \$0.4 million to the holders of the rights as of the close of business on March 27, 2018.

Note 23: Share Repurchases

On May 25, 2017, our Board of Directors authorized a share repurchase program, which allowed us to purchase up to \$200.0 million of our common stock through open market repurchases, negotiated transactions, or other means, in accordance with applicable securities laws and other restrictions. This program was funded with cash on hand and cash flows from operating activities. During 2018, we repurchased 2.7 million shares of our common stock under the program for an aggregate cost of \$175.0 million and an average price per share of \$64.94. During 2017, we repurchased 0.3 million shares of our common stock under the program for an aggregate cost of \$25.0 million and an average price per share of \$79.75. We utilized all \$200.0 million authorized under this share repurchase program.

On November 29, 2018, our Board of Directors authorized another share repurchase program, which allows us to purchase up to \$300.0 million of our common stock through open market repurchases, negotiated transactions, or other means, in accordance with applicable securities laws and other restrictions. During 2018, we did not repurchase any shares of our common stock under this program. During 2019, we repurchased 0.9 million shares of our common stock under the program for an aggregate cost of \$50.0 million and an average price per share of \$56.19.

Note 24: Market Concentrations and Risks

Concentrations of Credit

We sell our products to many customers in several markets across multiple geographic areas. The ten largest customers, of which six are distributors, constitute in aggregate approximately 39%, 40%, and 40% of revenues in 2019, 2018, and 2017, respectively.

Unconditional Commodity Purchase Obligations

At December 31, 2019, we were committed to purchase approximately 1.6 million pounds of copper at an aggregate fixed cost of \$4.4 million. At December 31, 2019, this fixed cost was \$0.1 million less than the market cost that would be incurred on a spot purchase of the same amount of copper. The aggregate market cost was based on the current market price of copper obtained from the New York Mercantile Exchange.

Labor

Approximately 25% of our labor force is covered by collective bargaining agreements at various locations around the world. Approximately 22% of our labor force is covered by collective bargaining agreements that we expect to renegotiate during 2020.

Fair Value of Financial Instruments

Our financial instruments consist primarily of cash and cash equivalents, trade receivables, trade payables, and debt instruments. The carrying amounts of cash and cash equivalents, trade receivables, and trade payables at December 31, 2019 are considered representative of their respective fair values. The fair value of our senior subordinated notes at December 31, 2019 and 2018 was approximately \$1,532.7 million and \$1,485.0 million, respectively, based on quoted prices of the debt instruments in inactive markets (Level 2 valuation). This amount represents the fair values of our senior subordinated notes with a carrying value of \$1,459.4 million and \$1,485.9 million as of December 31, 2019 and 2018, respectively.

Note 25: Contingent LiabilitiesGeneral

Various claims are asserted against us in the ordinary course of business including those pertaining to income tax examinations, product liability, customer, employment, vendor, and patent matters. Based on facts currently available, management believes that the disposition of the claims that are pending or asserted will not have a materially adverse effect on our financial position, operating results, or cash flow.

Letters of Credit, Guarantees and Bonds

At December 31, 2019, we were party to unused standby letters of credit, bank guarantees, and surety bonds totaling \$11.2 million, \$4.5 million, and \$3.3 million, respectively. These commitments are generally issued to secure obligations we have for a variety of commercial reasons, such as workers compensation self-insurance programs in several states and the importation and exportation of product.

Note 26: Supplemental Cash Flow Information

Supplemental cash flow information is as follows:

	Years Ended December 31,		
	2019	2018	2017
	(In thousands)		
Income tax refunds received	\$ 4,695	\$ 3,920	\$ 4,031
Income taxes paid	(40,760)	(52,147)	(32,249)
Interest paid	(51,160)	(48,519)	(79,047)

Note 27: Quarterly Operating Results (Unaudited)

Our quarterly operating results summarized below are for continuing operations, and have been recast to exclude the results of our disposal group.

2019	1st	2nd	3rd	4th	Year
	(In thousands, except days and per share amounts)				
Number of days in quarter	90	91	91	93	365
Revenues	\$ 500,140	\$ 548,352	\$ 533,098	\$ 549,688	\$ 2,131,278
Gross profit	186,856	205,072	198,805	202,772	793,505
Operating income	47,490	58,775	57,542	43,400	207,207
Income from continuing operations	27,935	41,395	38,031	2,530	109,891
Income (loss) from discontinued operations, net of tax	(2,757)	895	(335,046)	(149,759)	(486,667)
Net income (loss)	25,178	42,290	(297,015)	(147,229)	(376,776)
Less: Net income (loss) attributable to noncontrolling interest	(24)	90	(6)	179	239
Net income (loss) attributable to Belden	25,202	42,200	(297,009)	(147,408)	(377,015)
Less: Preferred stock dividends	8,733	8,733	971	—	18,437
Net income (loss) attributable to Belden common stockholders	16,469	33,467	(297,980)	(147,408)	(395,452)
Basic income (loss) per share attributable to Belden common stockholders:					
Continuing operations attributable to Belden common stockholders	\$ 0.48	\$ 0.82	\$ 0.83	\$ 0.05	\$ 2.16
Discontinued operations attributable to Belden common stockholders	(0.07)	0.02	(7.54)	(3.29)	(11.53)
Net income (loss) attributable to Belden common stockholders	<u>\$ 0.42</u>	<u>\$ 0.84</u>	<u>\$ (6.70)</u>	<u>\$ (3.24)</u>	<u>\$ (9.37)</u>
Diluted income (loss) per share attributable to Belden stockholders:					
Continuing operations attributable to Belden common stockholders	\$ 0.48	\$ 0.82	\$ 0.83	\$ 0.05	\$ 2.15
Discontinued operations attributable to Belden common stockholders	(0.07)	0.02	(7.54)	(3.29)	(11.53)
Net income (loss) attributable to Belden common stockholders	<u>\$ 0.42</u>	<u>\$ 0.84</u>	<u>\$ (6.70)</u>	<u>\$ (3.24)</u>	<u>\$ (9.37)</u>

Included in income from continuing operations in the first, second, third, and fourth quarters of 2019 are severance, restructuring, and integration costs of \$0.0 million, \$2.5 million, \$3.0 million, and \$21.0 million, respectively.

2018	1st	2nd	3rd	4th	Year
	(In thousands, except days and per share amounts)				
Number of days in quarter	91	91	91	92	365
Revenues	\$ 498,715	\$ 560,898	\$ 554,037	\$ 552,052	\$ 2,165,702
Gross profit	186,359	212,057	214,501	216,994	829,911
Operating income	44,878	68,706	129,160	71,264	314,008
Income from continuing operations	3,855	40,278	87,046	35,965	167,144
Income (loss) from discontinued operations, net of tax	(1,285)	(11,486)	(1,188)	7,526	(6,433)
Net income	2,570	28,792	85,858	43,491	160,711
Less: Net loss attributable to noncontrolling interest	(48)	(77)	(23)	(35)	(183)
Net income attributable to Belden	2,618	28,869	85,881	43,526	160,894
Less: Preferred stock dividends	8,733	8,733	8,732	8,733	34,931
Net income (loss) attributable to Belden common stockholders	(6,115)	20,136	77,149	34,793	125,963
Basic income (loss) per share attributable to Belden common stockholders:					
Continuing operations attributable to Belden common stockholders	\$ (0.12)	\$ 0.77	\$ 1.64	\$ 0.68	\$ 3.25
Discontinued operations attributable to Belden common stockholders	(0.03)	(0.28)	(0.03)	0.19	(0.16)
Net income (loss) attributable to Belden common stockholders	\$ (0.15)	\$ 0.49	\$ 1.90	\$ 0.87	\$ 3.10
Diluted income (loss) per share attributable to Belden stockholders:					
Continuing operations attributable to Belden common stockholders	\$ (0.12)	\$ 0.77	\$ 1.64	\$ 0.68	\$ 3.23
Discontinued operations attributable to Belden common stockholders	(0.03)	(0.28)	(0.03)	0.19	(0.16)
Net income (loss) attributable to Belden common stockholders	\$ (0.15)	\$ 0.49	\$ 1.62	\$ 0.87	\$ 3.08

Included in income from continuing operations in the first, second, third, and fourth quarters of 2018 are severance, restructuring, and integration costs of \$11.2 million, \$4.6 million, \$4.6 million, and \$2.2 million, respectively.

Note 28: Subsequent Events

On February 4, 2020, we entered into a Securities and Asset Purchase Agreement (the "Agreement") with BDC Media Acquisition LLC, an affiliate of Black Dragon Capital Investment Management, LLC (the "Buyer"), pursuant to which we agreed to sell our Grass Valley live media business (the "Business") to the Buyer. The Agreement provides for us to receive \$140 million in cash, a subordinated note with an initial face amount of \$213 million (less the amount of certain pension liabilities being assumed by the Buyer), and a possible earn-out of up to \$150 million in the event that the Buyer is able to earn an agreed-upon return on its equity investment. The subordinated note earns interest in-kind at the rate of 10% per annum. The note is contemplated to be a five-year instrument, but that term is subject to extension if the Buyer's senior indebtedness is extended beyond December 31, 2025. The Agreement requires that, prior to closing, we transfer the Business' U.K. pension obligations to one of our non-Grass Valley subsidiaries, obtain any required approvals in connection with that transfer, and fulfill various other closing conditions. We expect the sale to close in the first half of 2020.

We signed a settlement agreement with the sellers ("Claimant") of Snell Advanced Media (SAM) on January 30, 2019 for claims arising over the timing of the earnout consideration outlined in the purchase agreement. SAM was acquired on February 8, 2018 and is included in the Grass Valley disposal group. As part of the settlement, the parties agreed that the earnout consideration would be payable during the first quarter 2020, unless earlier payment is required as per the terms of the purchase agreement, and Belden would immediately pay the Claimant \$0.9 million for interest and fees incurred, which we recognized in selling, general, and administrative expenses in our 2018 financial statements. On January 16, 2020, we paid the sellers the full earnout consideration of \$31.4 million.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

In accordance with Securities Exchange Act Rules 13a-15(e) and 15d-15(e), our management, under the supervision of our Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this Annual Report on Form 10-K. As permitted, that evaluation excluded the business operations of Opterna, FutureLink, and SPC which were all acquired in 2019. The acquired business operations excluded from our evaluation constituted approximately 4% of our total assets as of December 31, 2019 and 1% of our revenues and operating income for the year ended December 31, 2019. The operations of the acquired business will be included in our 2020 evaluation. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of December 31, 2019.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal controls over financial reporting for the Company. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Securities Exchange Act of 1934, as amended, as a process designed by, or under the supervision of, the company's principal executive and principal financial officers and effected by the company's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

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

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

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting can also be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk.

The Company's management assessed the effectiveness of the Company's internal controls over financial reporting as of December 31, 2019. In making this assessment, the Company's management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (COSO) in Internal Control-Integrated Framework.

Based on that assessment, the Chief Executive Officer and Chief Financial Officer concluded as of December 31, 2019, the Company's internal control over financial reporting was effective.

Our internal controls over financial reporting as of December 31, 2019 have been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report that follows.

Changes to Internal Control over Financial Reporting

There were no changes to our internal control over financial reporting that occurred during the year ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Belden Inc.

Opinion on Internal Control over Financial Reporting

We have audited Belden Inc.'s internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control- Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission 2013 framework (the COSO criteria). In our opinion, Belden Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

As indicated in the accompanying Management's Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of Opterna, FutureLink, and Special Product Company, which are included in the 2019 consolidated financial statements of the Company and constituted 4% of total assets as of December 31, 2019 and 1% of revenues and operating income for the year then ended. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting of Opterna, FutureLink, and Special Product Company.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of Belden Inc. as of December 31, 2019 and 2018, and the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and the financial statement schedule listed in the Index at Item 15(a) and our report dated February 11, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ Ernst & Young LLP
St. Louis, Missouri
February 11, 2020

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information regarding directors is incorporated herein by reference to “Item I-Election of Directors,” as described in the Proxy Statement. Information regarding executive officers is set forth in Part I herein under the heading “Executive Officers.” The additional information required by this Item is incorporated herein by reference to “Corporate Governance” (opening paragraph and table), “Corporate Governance-Audit Committee,” “Ownership Information-Delinquent Section 16(a) Reports,” “Corporate Governance-Corporate Governance Documents” and “Other Matters-Stockholder Proposals for the 2020 Annual Meeting,” as described in the Proxy Statement.

Item 11. Executive Compensation

Incorporated herein by reference to “Executive Compensation,” “Corporate Governance-Director Compensation,” “Corporate Governance-Related Party Transactions and Compensation Committee Interlocks” and “Corporate Governance-Board Leadership Structure and Role in Risk Oversight” as described in the Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Shareholder Matters

Incorporated herein by reference to “Ownership Information-Equity Compensation Plan Information on December 31, 2019” and “Ownership Information-Stock Ownership of Certain Beneficial Owners and Management” as described in the Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Incorporated herein by reference to “Corporate Governance-Related Party Transactions and Compensation Committee Interlocks” and “Corporate Governance” (paragraph following the table) as described in the Proxy Statement.

Item 14. Principal Accountant Fees and Services

Incorporated herein by reference to “Public Accounting Firm Information-Fees to Independent Registered Public Accountants for 2019 and 2018” and “Public Accounting Firm Information-Audit Committee’s Pre-Approval Policies and Procedures” as described in the Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) Documents filed as part of this Report:

1. **Financial Statements**

Report of Independent Registered Public Accounting Firm

Consolidated Balance Sheets as of December 31, 2019 and December 31, 2018

Consolidated Statements of Operations for Each of the Three Years in the Period Ended December 31, 2019

Consolidated Statements of Comprehensive Income for Each of the Three Years in the Period Ended December 31, 2019

Consolidated Cash Flow Statements for Each of the Three Years in the Period Ended December 31, 2019

Consolidated Stockholders' Equity Statements for Each of the Three Years in the Period Ended December 31, 2019

Notes to Consolidated Financial Statements

2. **Financial Statement Schedule**

Schedule II – Valuation and Qualifying Accounts

	<u>Beginning Balance</u>	<u>Charged to Costs and Expenses</u>	<u>Divestitures/ Acquisitions</u>	<u>Charge Offs</u>	<u>Recoveries</u>	<u>Currency Movement</u>	<u>Ending Balance</u>
	(In thousands)						
Accounts Receivable—							
Allowance for Doubtful Accounts:							
2019	\$ 3,137	\$ 159	\$ 368	\$ (969)	\$ (86)	\$ (40)	2,569
2018	3,709	353	—	(567)	(176)	(182)	3,137
2017	5,112	898	38	(1,644)	(465)	(230)	3,709
Inventories—							
Excess and Obsolete Allowances:							
2019	\$ 17,364	\$ 6,403	\$ 452	\$ (2,333)	\$ (606)	\$ (35)	21,245
2018	19,887	2,801	—	(2,464)	(2,675)	(185)	17,364
2017	21,301	2,217	2,628	(5,292)	(1,685)	718	19,887
Deferred Income Tax Asset—							
Valuation Allowance:							
2019	\$ 39,402	\$ 12,358	\$ 330	\$ —	\$ (1,629)	\$ (41)	50,420
2018	47,636	15,626	(2)	(22,577)	(928)	(353)	39,402
2017	13,124	37,670	—	(2,675)	(1,047)	564	47,636

All other financial statement schedules not included in this Annual Report on Form 10-K are omitted because they are not applicable.

3. Exhibits

The following exhibits are filed herewith or incorporated herein by reference, as indicated. Documents indicated by an asterisk (*) identify each management contract or compensatory plan.

Exhibit Number	Description of Exhibit	The filings referenced for incorporation by reference are Company (Belden Inc.) filings unless noted to be those of Belden 1993 Inc.
3.1	Certificate of Incorporation, as amended	February 29, 2008 Form 10-K, Exhibit 3.1
3.2	Amended and Restated Bylaws	May 31, 2016 Form 8-K, Exhibit 3.1
4.1	Indenture relating to 4.125% Senior Subordinated Notes due 2026	October 11, 2016 Form 8-K, Exhibit 4.1
4.2	First Supplemental Indenture relating to 4.125% Senior Subordinated Notes due 2026	June 26, 2017 Form 8-K, Exhibit 4.22
4.3	Indenture relating to 3.375% Senior Subordinated Notes due 2027	July 10, 2017 Form 8-K, Exhibit 4.1
4.4	Indenture relating to 2.875% Senior Subordinated Notes due 2025	September 22, 2017 Form 8-K, Exhibit 4.1
4.5	Indenture relating to 3.875% Senior Subordinated Notes due 2028	March 16, 2018 Form 8-K, Exhibit 4.1
10.1	Trademark License Agreement	November 15, 1993 Form 10-Q of Belden 1993 Inc., Exhibit 10.2
10.2*	CDT 2001 Long-Term Performance Incentive Plan, as amended	April 6, 2009 Proxy Statement, Appendix I
10.3*	Belden Inc. 2011 Long Term Incentive Plan, as amended	April 6, 2016 Proxy Statement, Appendix II
10.4*	Form of Stock Appreciation Rights Award	August 3, 2016 Form 10-Q, Exhibit 10.1
10.5*	Form of Performance Stock Units Award	August 3, 2016 Form 10-Q, Exhibit 10.2
10.6*	Form of Restricted Stock Units Award	May 6, 2014 Form 10-Q, Exhibit 10.3
10.7*	Belden Inc. Annual Cash Incentive Plan, as amended and restated	February 29, 2012 Form 10-K, Exhibit 10.16
10.8*	2004 Belden CDT Inc. Non-Employee Director Deferred Compensation Plan	December 21, 2004 Form 8-K, Exhibit 10.1
10.9*	Belden Wire & Cable Company (BWC) Supplemental Excess Defined Benefit Plan	March 22, 2002 Form 10-K of Belden 1993 Inc., Exhibit 10.14
10.10*	First Amendment to Belden Wire & Cable Company (BWC) Supplemental Excess Defined Benefit Plan	March 22, 2002 Form 10-K of Belden 1993 Inc., Exhibit 10.15
10.11*	Second Amendment to Belden Wire & Cable Company (BWC) Supplemental Excess Defined Benefit Plan	March 14, 2003 Form 10-K of Belden 1993 Inc., Exhibit 10.21
10.12*	Third Amendment to Belden Wire & Cable Company (BWC) Supplemental Excess Defined Benefit Plan	November 15, 2004 Form 10-Q, Exhibit 10.50
10.13*	BWC Supplemental Excess Defined Contribution Plan	March 22, 2002 Form 10-K of Belden 1993 Inc., Exhibit 10.16

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Exhibit Number	Description of Exhibit	The filings referenced for incorporation by reference are Company (Belden Inc.) filings unless noted to be those of Belden 1993 Inc.
10.14*	First Amendment to BWC Supplemental Excess Defined Contribution Plan	March 22, 2002 Form 10-K of Belden 1993 Inc., Exhibit 10.17
10.15*	Second Amendment to BWC Supplemental Excess Defined Contribution Plan	2003 Form 10-K of Belden 1993 Inc., Exhibit 10.24
10.16*	Third Amendment to BWC Supplemental Excess Defined Contribution Plan	November 15, 2004 Form 10-Q, Exhibit 10.51
10.17*	Trust Agreement	November 15, 2004 Form 10-Q, Exhibit 10.52
10.18*	First Amendment to Trust Agreement	November 15, 2004 Form 10-Q, Exhibit 10.53
10.19*	Trust Agreement	November 15, 2004 Form 10-Q, Exhibit 10.54
10.20*	First Amendment to Trust Agreement	November 15, 2004 Form 10-Q, Exhibit 10.55
10.21*	Amended and Restated Executive Employment Agreement with John Stroup	April 7, 2008 Form 8-K, Exhibit 10.1
10.22*	First Amendment to Amended and Restated Executive Employment Agreement with John Stroup	December 17, 2008 Form 8-K, Exhibit 10.1
10.23*	Amended and Restated Executive Employment Agreement with Henk Derksen	January 5, 2012 Form 8-K, Exhibit 10.1
10.24*	Executive Employment Agreement with Doug Zink	November 6, 2013 Form 10-Q, Exhibit 10.1
10.25*	Executive Employment Agreement with Roel Vestjens	August 5, 2014 Form 10-Q, Exhibit 10.2
10.26*	Executive Employment Agreement with Brian Anderson	May 5, 2015 Form 10-Q, Exhibit 10.1
10.27*	Executive Employment Agreement with Dean McKenna	August 4, 2015 Form 10-Q Exhibit 10.1
10.28*	Executive Employment Agreement with Paul Turner	February 13, 2018 Form 10-K Exhibit 10.31
10.29*	Executive Employment Agreement with Leo Kulmaczewski	November 5, 2018 Form 10-Q Exhibit 10.1
10.30*	Executive Employment Agreement with Ashish Chand	August 5, 2019 Form 10-Q Exhibit 10.1
10.31*	Form of Indemnification Agreement with each of the Directors and Brian Anderson, Ashish Chand, Henk Derksen, Dean McKenna, John Stroup, Paul Turner, Roel Vestjens, and Doug Zink	March 1, 2007 Form 10-K, Exhibit 10.39
10.32	Amended and Restated Credit Agreement	May 22, 2017, Form 8-K, Exhibit 10.1
10.33	Purchase Agreement by and among Belden Inc., the Guarantors named therein and Deutsche Bank AG	March 8, 2018 Form 8-K, Exhibit 10.1
14.1	Code of Ethics	August 26, 2016 Form 8-K, Exhibit 14.1
21.1	List of Subsidiaries of Belden Inc.	Filed herewith
23.1	Consent of Ernst & Young LLP	Filed herewith

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Exhibit Number	Description of Exhibit	The filings referenced for incorporation by reference are Company (Belden Inc.) filings unless noted to be those of Belden 1993 Inc.
24.1	<u>Powers of Attorney from Members of the Board of Directors</u>	Filed herewith
31.1	<u>Rule 13a-14(a)/15d-14(a) Certification of the Chief Executive Officer</u>	Filed herewith
31.2	<u>Rule 13a-14(a)/15d-14(a) Certification of the Chief Financial Officer</u>	Filed herewith
32.1	<u>Section 1350 Certification of the Chief Executive Officer</u>	Filed herewith
32.2	<u>Section 1350 Certification of the Chief Financial Officer</u>	Filed herewith
101	The following financial statements from the Company's Annual Report on Form 10-K for the year ended December 31, 2019, formatted in Inline XBRL: (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Comprehensive Income, (iv) Consolidated Cash Flow Statements, (v) Consolidated Statements of Stockholders' Equity and (vi) Notes to Consolidated Financial Statements, tagged as blocks of text and including detailed	
104	The cover page from the Company's Annual Report on Form 10-K for the year ended December 31, 2019, formatted in Inline XBRL	

* Management contract or compensatory plan

Copies of the above Exhibits are available to shareholders at a charge of \$0.25 per page, minimum order of \$10.00. Direct requests to:

Belden Inc., Attention: Corporate Secretary
1 North Brentwood Boulevard, 15th Floor
St. Louis, Missouri 63105

Signatures

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

BELDEN INC.

By /s/ JOHN S. STROUP

John S. Stroup

President, Chief Executive Officer, and
Chairman

Date: February 11, 2020

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the date indicated.

<u> /s/ JOHN S. STROUP </u> John S. Stroup	President, Chief Executive Officer, and Chairman	February 11, 2020
<u> /s/ HENK DERKSEN </u> Henk Derksen	Senior Vice President, Finance, and Chief Financial Officer	February 11, 2020
<u> /s/ DOUGLAS R. ZINK </u> Douglas R. Zink	Vice President and Chief Accounting Officer	February 11, 2020
<u> /s/ DAVID ALDRICH* </u> David Aldrich	Lead Independent Director	February 11, 2020
<u> /s/ LANCE C. BALK* </u> Lance C. Balk	Director	February 11, 2020
<u> /s/ STEVEN BERGLUND* </u> Steven Berglund	Director	February 11, 2020
<u> /s/ DIANE D. BRINK* </u> Diane D. Brink	Director	February 11, 2020
<u> /s/ JUDY L. BROWN* </u> Judy L. Brown	Director	February 11, 2020
<u> /s/ BRYAN C. CRESSEY* </u> Bryan C. Cressey	Director	February 11, 2020
<u> /s/ JONATHAN KLEIN* </u> Jonathan Klein	Director	February 11, 2020
<u> /s/ GEORGE MINNICH* </u> George Minnich	Director	February 11, 2020

 /s/ JOHN S. STROUP

*By John S. Stroup, Attorney-in-fact