2021
Annual Report

BELDEN

Dear Fellow Shareholders,

2021 was an exceptional year for Belden that was highlighted by meaningful recovery in our end markets, significant progress on our organic growth initiatives, and successful management of inflationary pressures and supply chain challenges. The operating environment was incredibly complex during the year, and our teams rose to the occasion once again to support our customers, execute our strategic plans, and deliver extraordinary financial results[1], which included:

- Revenues of $2.408 billion, increasing 29% overall and 20% organically;
- EBITDA of $376 million, increasing 51%;
- EPS of $4.78, increasing 74%; and
- Free cash flow of $211 million, increasing 145%.

2021 was also a year of strong equity performance. Belden delivered a total shareholder return of 57% for the year, which outpaced the gains in the U.S. equity markets.

Beyond this financial and equity performance, some of our notable accomplishments included further strengthening the balance sheet, launching innovative new products, enhancing our solution delivery capabilities, and completing strategic acquisitions and divestitures. These accomplishments provide the foundation for continued profitable growth and robust shareholder returns, and I would like to share some additional details with you now.

Strengthened balance sheet. The Company completed a number of actions in 2021 to further strengthen our balance sheet and liquidity position. This included extending a debt maturity from 2025 to 2031 at historically low fixed interest rates and increasing our cash balance from $502 million to $644 million. In addition, we reduced our net leverage level meaningfully during the year, from 4.0x net debt to EBITDA to 2.1x. The Company is in a very strong financial position which provides ample flexibility as we navigate an uncertain environment and pursue our strategic growth plans.

New product innovation. We increased our R&D efforts in recent years to drive accelerating organic growth, which led to a number of innovative new product launches during the year. One example is a new and expanded suite of advanced connectivity solutions called LioN-X. This state-of-the-art, future-ready connectivity solution is core to providing secure communication from the sensor to the cloud in industrial environments. Another exciting

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[1] 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.

new product in the industrial automation market is a new cellular communications gateway called ProLinx Edge that is designed to help customers establish remote connection to their machines and monitor data via a secure cloud-based network. Customers will now be able to use this single integrated device, whereas multiple components were previously required to provide the same functionality. We expect to continue developing innovative new products and complete networking solutions to support our customers and drive profitable growth.

Enhanced solution delivery capabilities. We continue to transition Belden from a product supplier to a value-added partner in the design and implementation of complete networking solutions. Beyond individual product sales, the Company is uniquely positioned to offer complete and differentiated solutions, including cable, connectivity, networking, and software products and services. Given our product breadth and application expertise, customers are increasingly turning to Belden to solve their complex networking issues and enable them to collect and analyze vast amounts of data. Our sales and engineering teams are engaging with customers to optimize their operations, increase productivity, and improve safety. To support our value-added solution selling capabilities, we are opening Customer Innovation Centers, or CICs, at five locations across the United States, Europe, and Asia. This will allow us to not only supply our customers, but co-innovate with them, create solutions that solve their complex networking problems, and deliver superior service and support. The CIC model is unique to Belden and it reflects our commitment to leading in our key markets.

Strategic acquisitions. We are prioritizing organic growth while continuing to pursue strategic acquisitions, and we purchased one company in 2021 and one subsequent to year end. During the year, we acquired OTN Systems in Belgium for $73 million. OTN Systems is a leading provider of highly reliable network solutions tailored for specific applications in harsh, mission-critical environments. Its value-added technology allows customers to easily build, maintain, and monitor complex networks in industrial markets. Subsequent to year end, we acquired macmon secure GmbH in Germany for $43 million. Macmon is a recognized leader in advanced network access control software, and its products are complementary to Belden’s leading industrial networking portfolio. These businesses are being integrated with our existing product offering to expand our ability to provide complete end-to-end solutions.

Tripwire divestiture. We also completed the divestiture of our cybersecurity business, known as Tripwire, subsequent to year end. This important transaction allowed us to monetize the business for $350 million in cash with minimal impact on consolidated earnings or free cash flow. We also maintained an exclusive commercial relationship with the buyer that will allow us to continue providing Tripwire’s integrated cybersecurity solutions to our customers in industrial end markets.

To summarize, I am extremely proud of the Company's strong financial performance and significant accomplishments during the year. I would now like to share some of the details of our 2021 performance by segment.

Industrial Solutions – Revenues in our Industrial Solutions segment increased 35% in 2021 to $1.33 billion. Segment EBITDA margins increased 220 basis points, from 14.9% to 17.1%. Demand increased sharply during the year, with broad-based strength in each of our industrial markets – discrete manufacturing, process facilities, energy, and mass transit. We continue to see a number of compelling longer-term demand drivers for automation solutions as industrial customers respond to increasing labor costs, increasing capacity and productivity requirements, and other factors. Belden is highly differentiated in the marketplace, and we expect to deliver solid growth in this market going forward.

Enterprise Solutions – Revenues in our Enterprise Solutions segment increased 23% in 2021 to $1.07 billion. Segment EBITDA margins increased 190 basis points, from 11.4% to 13.3%. In smart buildings, integrated building networks with more connected devices are driving demand for our connectivity solutions, including our innovative fiber and power-over-Ethernet products. We see long-term secular tailwinds involving more connected devices and bandwidth demand in buildings as well as applications requiring fiber connectivity products. We are also benefitting from our commercial focus on high-growth verticals such as data centers, e-commerce warehouses and healthcare facilities. In addition, we continue to capture market share as a result of our operational excellence and superior lead times.

In broadband & 5G, the ever-increasing demand for more bandwidth and faster speeds is driving increasing investments in network infrastructure by our customers. With our market-leading connectivity solutions, we are well-positioned to support our MSO cable customers as they upgrade existing networks and our telecom customers as they build out new 5G infrastructure. Demand for our fiber optic products is robust, and we are significantly expanding our product offering and capturing additional market share following the successful integration of our recent acquisitions. We continue to cultivate a number of other attractive inorganic opportunities in the broadband fiber area that would allow us to add to our product offering and drive substantial growth.

Value Creation Framework

Our commitment to delivering for our shareholders is unwavering. We believe that Belden is extremely well positioned for success and we have the right portfolio, strategy, and management team in place. An update on our value creation framework is provided below.

- **Revenue Growth**

We delivered strong revenue growth of 29% in 2021 as our markets recovered from the pandemic and our organic growth initiatives gained traction. To support sustainable organic growth that exceeds global GDP, we have aligned our businesses around attractive growth markets and removed certain declining or low-growth businesses from the portfolio. We also continue to cultivate potential inorganic opportunities in our core markets to augment our organic growth.

- **Increasing Profitability**

  Revenue growth is critically important, but it must be profitable growth. Belden has a long track record of margin expansion, and EBITDA margins increased 220 basis points to 15.6% in 2021 despite significant inflationary pressures. We are committed to increasing our profit margins and believe the business can achieve 30% incremental EBITDA margins as we leverage the expected revenue growth and our teams execute a number of meaningful productivity initiatives.

- **Free Cash Flow Generation**

  We generated free cash flow of $211 million in 2021, compared to $86 million in 2020. Free cash flow growth reflects high quality of earnings and working capital improvements, and we expect to deliver solid free cash flow going forward. This should result in ample cash to be used for strategic deployment or returned to our shareholders.

- **Disciplined Capital Allocation**

  The Company maintains a disciplined and balanced approach to capital allocation. Organic growth investments are a top priority, followed by de-levering, strategic M&A and share repurchases. We believe that we can deploy significant capital toward value-creating initiatives while maintaining a conservative net leverage level.

Environmental, Social and Governance (ESG) at Belden

Events of the past few years are a powerful reminder that we must be willing to take bold, concerted action to make a positive, meaningful impact in the industries we serve and the communities in which we operate.

For more than 120 years, Belden has been committed to the highest standards of ethics and integrity, including our dedication to the environment and our approach to creating sustainability in our operations and concerning the materials we use. We are guided by our long-standing values of integrity and excellence, and we dedicate ourselves to ensure our efforts in this area help address important issues for our business, our employees and society.

In 2020, we formalized Board oversight of ESG matters to demonstrate and implement our commitment to our stakeholders, and we are pleased to share the following highlights from 2021.

- Completed our first materiality assessment to understand stakeholder's ESG perspectives and to build internal consensus on Belden's priority ESG topics.
- Set 2025 goals and corresponding KPIs for each priority topic and completed a thorough review process by leadership.
- Incorporated ESG content in annual disclosures including annual report and proxy.
- Published our ESG website to provide greater transparency to stakeholders.
- Engaged ratings agencies and enhanced our ESG ratings.

We have set several ESG objectives that will guide our work over the next few years. More important than setting ambitious goals is achieving them, and we have established a rigorous review process to ensure progress and accountability. Some of our ESG goals involve the following priority topics.

- Minimize our environmental impacts by managing solid waste responsibly and reducing the amount of waste that ends up in landfills.
- Ensure that our team members across the world work in diverse, equitable and inclusive workplaces where everyone can be themselves and feel that their participation is valued.
- Source responsibly and ensure our suppliers uphold ethical and fundamental labor standards, and that workers' rights are protected in our supply chain.
- Process, use and protect Belden's data and the data of our employees, customers, and business partners in compliance with all applicable privacy and data protection laws and regulations.

We believe it takes everyone to be part of the solution and we look forward to facilitating positive change and achieving these ambitious and meaningful goals, together.

Outlook

The market environment is very dynamic with considerable ongoing uncertainties, but I am extremely optimistic about our future. We had an exceptional 2021, and we entered 2022 with significant momentum. Our strategic growth initiatives are gaining traction, and our teams are executing at a very high level. Our transformed portfolio is aligned with the favorable secular trends in industrial automation, smart buildings, and broadband & 5G. I am confident in our ability to drive solid and sustainable organic growth, and compelling returns 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,

Roel Vestjens

President and Chief Executive Officer

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.

	Twelve Months Ended	
	December 31, 2021	December 31, 2020
	(In thousands, except percentages and per share amounts)	
GAAP and adjusted revenues	$ 2,408,100	$ 1,862,716
GAAP gross profit	$ 854,362	$ 663,289
Severance, restructuring, and acquisition integration costs	11,308	704
Amortization of software development intangible assets	2,900	1,821
Adjustments related to acquisitions and divestitures	2,349	125
Adjusted gross profit	$ 870,919	$ 665,939
GAAP gross profit margin	*35.5 %*	*35.6 %*
Adjusted gross profit margin	*36.2 %*	*35.8 %*
GAAP selling, general and administrative expenses	$ (426,335)	$ (366,188)
Severance, restructuring, and acquisition integration costs	12,584	11,554
Adjustments related to acquisitions and divestitures	(7,385)	—
Adjusted selling, general and administrative expenses	$ (421,136)	$ (354,634)
GAAP and adjusted research and development expenses	$ (124,660)	$ (107,296)
GAAP income (loss) from continuing operations	$ 62,457	$ 54,403
Interest expense, net	62,695	58,888
Income tax expense (benefit)	25,205	11,724
Gain on sale of note receivable	(27,036)	—
Loss on debt extinguishment	5,715	—
Non-operating pension settlement loss	—	3,153
Total non-operating adjustments	66,579	73,765
Goodwill and other asset impairment	140,461	—
Severance, restructuring, and acquisition integration costs	23,892	12,258
Amortization of intangible assets	38,346	64,395
Amortization of software development intangible assets	2,900	1,821
Adjustments related to acquisitions and divestitures	(5,036)	125
Total operating income adjustments	200,563	78,599
Depreciation expense	45,940	42,470
Adjusted EBITDA	$ 375,539	$ 249,237
GAAP income (loss) from continuing operations margin	*2.6 %*	*2.9 %*
Adjusted EBITDA margin	*15.6 %*	*13.4 %*
GAAP income (loss) from continuing operations	$ 62,457	$ 54,403
Less: Net income attributable to noncontrolling interest	392	104
GAAP net income (loss) from continuing operations attributable to Belden	$ 62,065	$ 54,299
GAAP income (loss) from continuing operations	$ 62,457	$ 54,403
Plus: Operating income adjustments from above	200,563	78,599
Plus: Loss on debt extinguishment	5,715	—
Plus: Non-operating pension settlement loss	—	3,153
Less: Gain on sale of note receivable	27,036	—
Less: Net income attributable to noncontrolling interest	392	104
Less: Tax effect of adjustments above	24,365	12,515
Adjusted net income from continuing operations attributable to Belden stockholders	$ 216,942	$ 123,536
GAAP income (loss) from continuing operations per diluted share attributable to Belden stockholders	$ 1.37	$ 1.21
Adjusted income from continuing operations per diluted share attributable to Belden stockholders	$ 4.78	$ 2.75
GAAP diluted weighted average shares	45,361	44,937
Adjustment for anti-dilutive shares that are dilutive under adjusted measures	—	—
Adjusted diluted weighted average shares	45,361	44,937

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, 2021	**December 31, 2020**
	(In thousands)	
GAAP net cash provided by operating activities	$ 272,055	$ 173,364
Capital expenditures, net of proceeds from the disposal of tangible assets	(60,748)	(87,054)
Non-GAAP free cash flow	$ 211,307	$ 86,310

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, 2021
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	**36-3601505**
(State or other jurisdiction of incorporation or organization)	(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:

Title of each class	Trading Symbol	Name of each exchange on which registered
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 ☐	

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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

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

Yes ☐ No ☑.

At July 4, 2021, the aggregate market value of Common Stock of Belden Inc. held by non-affiliates was $2,002,746,472 based on the closing price ($50.88) of such stock on such date.

As of February 9, 2022, there were 44,991,811 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, 2021 (the “Proxy Statement”). Portions of such proxy statement are incorporated by reference into Part III.

Part I

Item 1. Business

General

Belden Inc. (the Company, us, we, or our) connects and protects the world with the industry's most complete suite of end-to-end specialty networking 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. Our business is organized around two global businesses, Enterprise Solutions and Industrial Solutions, both of which benefit from favorable secular trends which we expect to drive future growth. Each business represents a reportable segment. Financial information about our segments appears in Note 6 to the Consolidated Financial Statements. 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 portfolio and strategic priorities align with attractive end markets with favorable secular trends. Within Industrial Solutions, the growing demand for automated production drives demand for our solutions. Enterprise Solutions benefits from increasing consumer demand for more internet bandwidth and faster speeds, investment in 5G technology, and trends requiring integrated networks in smart buildings. We are well positioned to benefit from these secular trends in the form of improved revenue growth which in turn will drive Adjusted EBITDA (as defined in Part II, Item 7) growth in the future.

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 $272.1 million, $173.4 million, and $276.9 million in 2021, 2020, and 2019, 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 and broadband solutions, as well as cabling and connectivity solutions for commercial audio/video and security applications. We serve customers in markets such as commercial real estate, hospitality, healthcare, education, financial, government, and broadband and wireless service providers, as well as end-markets, including sport venues, stadiums, data centers, military installations, and academia. Enterprise product lines include copper cable and connectivity solutions, fiber cable and connectivity solutions, interconnect panels, racks and enclosures, and secure, high performance signal extension and matrix switching systems.

Enterprise provides true end-to-end copper and fiber network systems, which are used in applications such as local area networks, data centers, access control, 5G, Fiber to the Home and building automation. 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.

Industrial Solutions

The Industrial Solutions (Industrial) segment is a leading provider of high performance networking and machine connectivity products. Industrial products include physical network and fieldbus infrastructure components and on-machine connectivity systems to meet end user and OEM needs. Products are designed to provide reliability and confidence of performance for a wide range of industrial automation applications. The products are used in markets that include discrete automation, process automation, energy and mass transit. Applications include network and fieldbus infrastructure; sensor and actuator connectivity; and power, control, and data transmission. Industrial products include solutions such as industrial Ethernet switches, network management software, routers, firewalls, gateways, input/output (I/O) connectors/systems, industrial Ethernet cables, optical fiber industrial Ethernet cables, Fieldbus cables, IP and networking cables, I/O modules, distribution boxes, 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 6 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.

We have completed a number of acquisitions in recent years as part of this strategy. Most recently, in January 2022, we acquired macmon secure GmbH (Macmon), a leading provider of products and services that secure network infrastructures in a variety of mission critical industries - refer to Note 26, *Subsequent Events*, for further discussion. In January 2021, we acquired OTN Systems N.V. (OTN Systems), a leading provider of automation networking infrastructure solutions. 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 OTN Systems have been included in our Consolidated Financial Statements as of its acquisition date and are reported within the Industrial Solutions segment. The results of SPC, FutureLink, and Opterna have been included in our Consolidated Financial Statements as of their respective acquisition dates and are reported within 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. For the year ended December 31, 2021, sales to our largest distributor represented approximately 16% of our consolidated revenues. No other customer accounted for more than 10% of our revenues in 2021.

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 Canada, China, India, Mexico, and St. Kitts, as well as various countries in Europe. During 2021, approximately 47% 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

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. 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 Industrial Solutions segment, customers are rapidly adopting new technology to enable digital transformations and improve their Environmental, Social & Governance (ESG) impact. This includes deploying Industry 4.0 to increase visibility of their digitized assets and adopting Artificial Intelligence (AI) to increase analytics and autonomous decision-making in their systems. These approaches need users to refine workflows by collecting data from disparate sources, transmitting it to points of consolidation and decision making, and converting it to standard formats that application software can use. This overall process can be referred to as "digitization" and a key part of our research and development is focused on supporting these customer journeys with technology that add value at multiple steps in the digitization process, during data acquisition, data transmission, and data orchestration and management. Our research and development enables customized enhanced solutions to support customers' innovative methods surrounding the collection, analysis, and transmission of data.

Additionally, in our Industrial Solutions segment, there is a compelling need among customers 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 continue to cause this need to broaden and accelerate in manufacturing settings. 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.

Enterprise Solutions R&D efforts are aligned to the secular trends in our markets for increased communication at faster speeds of transmission. This phenomenon is visible across all of our markets. We continue to invest in R&D to support the continuing growth in capacity and bandwidth between the data center and the consumer to enhance their experience in their living, work and play interactions.

To support the demand for additional bandwidth and to improve service integrity, broadband service providers will continue to invest in their networks to enhance delivery capabilities to customers for the foreseeable future. The growing bandwidth demand exposes bottlenecks in the network and leads broadband service operators to improve and upgrade residential networks with higher performance connectivity products. Broadband service providers are also investing in the deployment of 5G technology. Our R&D efforts are focused on the development of fiber connectivity and 5G solutions that support the investment plans of the broadband service providers.

The ability to integrate across the multitude of applications within service providers and on-premise networks requires a deep understanding of the unique challenges posed by heavier and faster transmission of data. Common across the Enterprise Solutions segment, our R&D efforts are focused on ensuring continuously evolving solutions, be it copper and coax cable or fiber optic cable and connectivity as it becomes more pervasive across all networks including wireless. We anticipate the need to develop the ability to customize networks in the various systems in close collaboration with our partners to advise our mutual end customers.

Our research and development has a strong focus on improving the performance of fiber optic technology, making it easier to handle and install, more robust for technicians and end users, leading to networks that can be deployed more quickly, with higher performance and reliability. Even with the explosive growth in fiber, connections to the end devices that consumers utilize to live, work and play, be it wireless access points or IoT devices, are still going to strongly benefit from the remaining advantages of copper-based connectivity, with a heavy focus on powering the ever-increasing collection of data consuming and generating devices connected to our increasingly digitized world. Building automation and the rapid rise of IoT has catalyzed the need to add more devices on the network. This is turn necessitates the distribution of power across the network. There will be a need for solutions offering power to these distributed devices and the Enterprise Solutions segment continues to innovate in this area in preparation for a world with a need to upgrade legacy systems as we build greenfield installations.

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®, OTN Systems™, PPC®, ProSoft Technology®, Thinklogical®, Tofino®, Tripwire® and West Penn Wire™. The Tripwire® trademark will be sold as part of the Tripwire divestiture in the first quarter of 2022 - see Note 26.

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.

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.

	2021	2020	2019
Copper spot prices per pound			
High	$ 4.78	$ 3.63	$ 2.98
Low	$ 3.54	$ 2.12	$ 2.51

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. As of December 31, 2021 and 2020, our backlog was $705.7 million and $223.0 million, respectively. The majority of the backlog at December 31, 2021 is scheduled to ship in 2022.

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. While we believe that our existing environmental control procedures are adequate, we will continue to evaluate and update our procedures as needed to address new or changing aspects of environmental matters.

Environmental, Social, and Governance (ESG) at Belden

At Belden, we believe that we have a responsibility to make a positive impact in our industry, in the communities in which we operate, and to all affected by our business operations. Our ESG journey is guided by our shared values, and we are dedicated to continuously improving our impact through establishing visible and measurable progress.

We acknowledge our role in protecting the environment and are currently assessing our impacts. Our strong desire is to identify and prioritize areas of improvement and we are committed to doing our part for future generations and for the planet. In 2021, under the oversight of our ESG Steering Committee, we engaged a third party to conduct our first materiality assessment to identify the ESG topics that are most relevant to our stakeholders and to our business. By engaging both internal and external stakeholders, we have developed a framework for our management of the identified material priority topics and to guide our strategy in making measurable progress. To put our ambitions into action, we have established goals for our material topics, including carbon reduction goals for 2025, and look forward to communicating our continuous improvements. Upholding transparency and open communication, we launched our dedicated ESG website on Earth Day 2021, which includes key data across a range of current ESG initiatives. Our ESG website includes our first formal greenhouse gas inventory for direct emissions (Scope 1 and 2). We are working to validate further historical information to serve as a verified baseline for improvements to our carbon footprint.

We are committed to building a workforce centered on our values and promoting the well-being of people across our entire value chain—employees, customers, partners and suppliers. We believe in the potential of our workforce and the importance of providing career development for those who want to learn and grow with us. We celebrate diversity and embrace differences to broaden our perspectives and strengthen the work we do. Our focus is to foster a culture of teamwork that is diverse and inclusive, and we are dedicated to creating an equitable environment for our employees. Under the leadership of our director of Inclusive Culture, we are building out a diversity, equity, and inclusion (DEI) strategy and look forward to sharing our progress with this initiative.

For further details on our ESG program and progress, please visit https://www.belden.com/resources/sustainability.

Human Capital Resources

During 2021, our employees continued to experience disruptions and challenges stemming from the continuing COVID-19 pandemic. Across our locations, we have also experienced changes in working practices as well as health and safety protocols as we work together to keep each other safe and our customers supplied. Throughout 2021, many of our employees continued to work remotely as they navigated through varying degrees of the crisis. We have implemented improved technologies that better enable collaboration, connection and teamwork wherever team members are based. Some employees work with equipment and machinery that are fixed at locations, and thus were unable to work remotely. However, mask protocols, hygiene guidelines and social distancing kept people safe.

The engagement of our team members, as measured in our twice-a-year employee survey, remained high at 89%. We were also very pleased to once again be recognized as a Great Place to Work® in Germany and India, with our facilities in Denmark and Netherlands also receiving Great Place to Work® recognition. Voluntary turnover of management and professional staff remained low at 8% worldwide, in line with the historically low turnover in prior years. We continue to live our value of We Invest in Talent with 70% of vacancies in our top 165 positions being filled with people that have been promoted from within, continuing our strong balance of external hiring to introduce new ideas and perspectives with career development practices that enable internal promotions.

As part of our work on Inclusive Culture, we launched our new AVID council (Authentic Voices for Inclusion and Diversity). Its purpose is to advise, guide and support our colleagues around the world as we seek to become an even more diverse and inclusive organization. The council is made up of team members from a wide variety of backgrounds across the company. We also completed a worldwide Workplace Inclusion survey with our DEI partners at Kaleidescope Group. The survey had a response rate of 75% and highlighted areas of strength and opportunities as we continue to evolve our culture. We learned that our team members have strong feelings of belonging and mutual respect in a culture which is honest and authentic. However, we also identified opportunities to improve equity and employee “voice” in certain locations. We have incorporated this feedback into our DEI action plans. While our senior leadership reflects both ethnic and gender diversity, we remain committed to further increasing diversity throughout all levels of the organization, including our Board of Directors.

We launched our Be Well program in the USA and have commenced plans to expand this internationally. The program supports our team members as they strive to achieve their own physical, financial, social and emotional well-being. The program consists of events, challenges, active learning and incentives that help our team members reflect upon and improve their overall well-being.

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 15, 2022. All executive officers are elected to terms that expire at the organizational meeting of the Board of Directors following the Annual Meeting of Shareholders.

Name	Age	Position
Roel Vestjens	47	President and Chief Executive Officer
Brian Anderson	47	Senior Vice President, Legal, General Counsel and Corporate Secretary
Ashish Chand	47	Executive Vice President, Industrial Automation
Dean McKenna	53	Senior Vice President, Human Resources
Anshu Mehrotra	51	Senior Vice President, Sales and Marketing
Jeremy Parks	46	Senior Vice President, Finance, and Chief Financial Officer
Doug Zink	46	Vice President and Chief Accounting Officer

Roel Vestjens was appointed President and Chief Executive Officer on May 21, 2020. Prior to that, he was the Chief Operating Officer since July 2019; Executive Vice President, Industrial Solutions from February 2018 to July 2019; 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.

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.

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.

Anshu Mehrotra was appointed Senior Vice President, Sales and Marketing in January 2021. Prior to joining Belden, he was Group President for Welding at Illinois Tool Works (ITW), leading the global Industrial Welding platform. Prior to ITW, he has had a number of leadership roles in general management and sales at Ingersoll Rand, Allegion and Johnson Controls. He has a B.S. in Electronics Engineering from Delhi University, an M.S. in Industrial Engineering from Northern Illinois University and an M.B.A. from Northwestern University at Kellogg School of Management.

Jeremy Parks was appointed Senior Vice President, Finance, and Chief Financial Officer on February 16, 2021. Prior to re-joining Belden in 2021, Mr. Parks worked as the Chief Financial Officer of International Wire Corp. From 2008 through August of 2020, Mr. Parks worked for the Company in various financial roles, most recently as Vice President of Finance of the Company's Industrial Solutions segment. Mr. Parks has a B.A. and M.A. in economics from State University of New York – Buffalo, and an M.B.A from Xavier University.

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.

Supply chain issues, including scarcity of raw materials or other components necessary to produce the products we manufacture, could increase costs or cause a delay in our ability to fulfill orders, and could adversely affect our future results of operations and our overall financial performance.

The Company relies on an extended supply chain and the availability of certain raw materials, including but not limited to copper, to produce a significant amount of our products. A reduction or interruption in supply, including interruptions due to COVID-19 or geopolitical unrest beyond the Company's control, an inability to procure quality raw materials in a cost effective manner and constrain volatile materials costs, a failure to monitor contract compliance to ensure and sustain sourcing savings, a failure to procure adequate inventory or raw materials from our suppliers, or regulatory changes may lead to delays in manufacturing and increases in costs.

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. Health crises, like the Covid-19 pandemic, 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. Similarly, if the Company's customers experience production challenges due to the inability to obtain certain components, this may negatively impact the customers' ordering patterns from the Company.

The effects of the COVID-19 pandemic continued to materially affect how we and our customers operated our businesses in 2021, and the duration and extent to which this or future epidemics, pandemics or other major disasters will impact our future results of operations and overall financial performance remains uncertain.

In December 2019, a novel coronavirus disease ("COVID-19") was first reported and on March 11, 2020, the World Health Organization characterized COVID-19 as a pandemic that has yet to fully recede. The widespread health crisis is adversely affecting the broader economies, financial markets and may adversely affect the overall demand environment for many of our products.

Our operations and the operations of our suppliers, channel partners and customers were and continue to be disrupted to varying degrees by a range of external factors related to the COVID-19 pandemic, some of which are not within our control. Many governments imposed, and may yet impose or may re-impose, a wide range of restrictions on the physical movement or congregation of people in order to limit the spread of COVID-19. The COVID-19 pandemic has had, and likely will continue to have, an impact on the attendance and productivity of our employees, and those of our channel partners or customers, resulting in negative impacts to our results of operations and overall financial performance. Additionally, COVID-19 has resulted, and may result in future periods, in delays in non-residential construction, non-crisis-related IT purchases and project completion schedules in general, all of which can negatively impact our results in both current and future periods.

The duration and extent of the impact from the COVID-19 pandemic or any future epidemic, pandemic or major disaster depends on future developments that cannot be accurately predicted at this time, such as the severity and transmission rate of the virus (including variant mutations of the virus), the extent and effectiveness of containment actions, treatments and vaccinations, the effects of measures enacted by policy makers and central banks around the globe, and the impact of these and other factors on our employees, customers, channel partners and suppliers. If we are not able to respond to and manage the impact of such events effectively, our business will be affected.

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 Canada, China, India, 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 47% 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 Mexican peso, the Australian dollar, the British pound and Indian rupee. 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.

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.

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

As part of our strategic plan initiatives, we periodically execute 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, 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 companies we would like to acquire.

We may also have difficulty integrating acquired businesses or future acquisitions may be unable to 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. Furthermore, we may be unable to integrate operations successfully or cost-effectively, which could have an adverse impact on our results of operations or our profitability.

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.

Inflation and changes in the price and availability of raw materials may lead to higher input and labor costs in a way that could be detrimental to our profitability.

As a result, of increased inflation, costs of raw materials and labor may increase in a way that we are unable to offset in a timely manner through higher prices for finished goods.

Copper is a significant component of the cost of most of our cable products. Over the past few years, and in particular in 2021, the prices of metals, particularly copper, have been volatile. Prices of other materials we use, such as 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. Especially during periods of inflation, if we are unable to raise prices timely and sufficiently to recover our material costs or increases in the cost of internal or external labor, our earnings and margins 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.

Similarly, if we raise employee wages in a manner sufficient to offset inflation, it may erode our profitability. Conversely, if we fail to raise employee wages in a manner sufficient to offset inflation, associates could leave the Company resulting in capacity constraints which could have a negative effect on revenues and earnings.

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

In order to meet the goals in our strategic plan, we must execute our Market Delivery System ("MDS") and grow our business, both organically and through acquisitions. We may be unable to achieve our goals due to a failure to identify growth opportunities, such as trends and technological changes in our end markets. 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.

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

The loss of key 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.

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.

Cyber security incidents have and could in the future interfere with our business and operations.

Computer hacking, malware, phishing, and spamming attacks against online networking platforms have become more prevalent. Though it is difficult to determine what, if any, harm may directly result from any specific attack or interruption, such events could also be expensive to remedy, harm our reputation or brands, and/or lead users to lose trust and confidence in our business. We, and others on our behalf, also 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 in the future, as occurred in 2020. Based on this occurrence or any future occurrence, in addition to having to take potentially costly remedial action, we may also be subject to fines, penalties, lawsuits, and reputational damage.

Furthermore, 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. 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.

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. Governmental tax authorities are increasingly scrutinizing the tax positions of companies. The U.S. federal and state governments, 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.

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 technical features, quality, availability, price, customer support, and distribution coverage. 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, intellectual property advantages, 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.

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.

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.

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*.

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.

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.

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.

Actions of activists could cause us to incur substantial costs, divert management's attention and resources, and have an adverse effect on our business.

From time to time, we may be subject to proposals by activists urging us to take certain actions. If activist activities ensue, our business could be adversely affected because responding and reacting to actions by activists can be costly and time-consuming, disrupt our operations and divert the attention of management and our employees. For example, we may be required to retain the services of various professionals to advise us on activist matters, including legal, financial and communications advisors, the costs of which may negatively impact our future financial results. In addition, perceived uncertainties as to our future direction, strategy or leadership created as a consequence of activist initiatives may result in the loss of potential business opportunities, harm our ability to attract new investors, customers, employees, and joint venture partners, and cause our stock price to experience periods of volatility.

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 incident or policy non-compliance event. As a result, the occurrence of a high profile security incident, 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, WESCO, accounted for approximately 16% of our revenue in 2021 and our top seven distributors, including WESCO, accounted for a total of 31% of our revenue in 2021. 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 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.

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 and evolving data protection regulations have been adopted or are being considered or refined for most of the developed world. many of these data privacy regulations contain 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 further 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 incurred significant charges in 2021 for the impairment of goodwill and other intangible, and we may be required to do so again in future periods. 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 2022 through 2035.

The table below summarizes the geographic locations of our manufacturing and other operating facilities utilized by our segments as of December 31, 2021.

	Enterprise Solutions	Industrial Solutions	Both Segments	Total
Belgium	—	1	—	1
Canada	—	1	—	1
China	2	—	1	3
Czech Republic	—	1	—	1
Denmark	2	—	—	2
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 Kingdom	1	—	—	1
United States	4	3	1	8
Total	12	7	9	28

In addition to the manufacturing and other operating facilities summarized above, our business operations also utilize approximately 7 warehouses worldwide. As of December 31, 2021, 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

On November 24, 2020, the Company announced a data incident involving unauthorized access and copying of some current and former employee data, as well as limited company information regarding some business partners. In January 2021, Anand Edke filed a putative class action lawsuit against the Company in the Circuit Court of Cook County, Illinois, Case No. 2021 CH 47. In February 2021, Kia Mackey filed a separate putative class action lawsuit against the Company in the U.S District Court for the Eastern District of Missouri, Case No. 4:21-CV-00149. The Edke case was transferred to the U.S. District Court for the Eastern District of Missouri and subsequently stayed pursuant to the joint request of the parties due to the similarity to the Mackey case. In the Mackey case, the plaintiff has asked for injunctive relief, unspecified damages, and unspecified legal fees. It is premature to estimate the potential exposure to the Company associated with the litigation. The Company intends to vigorously defend the lawsuit.

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.

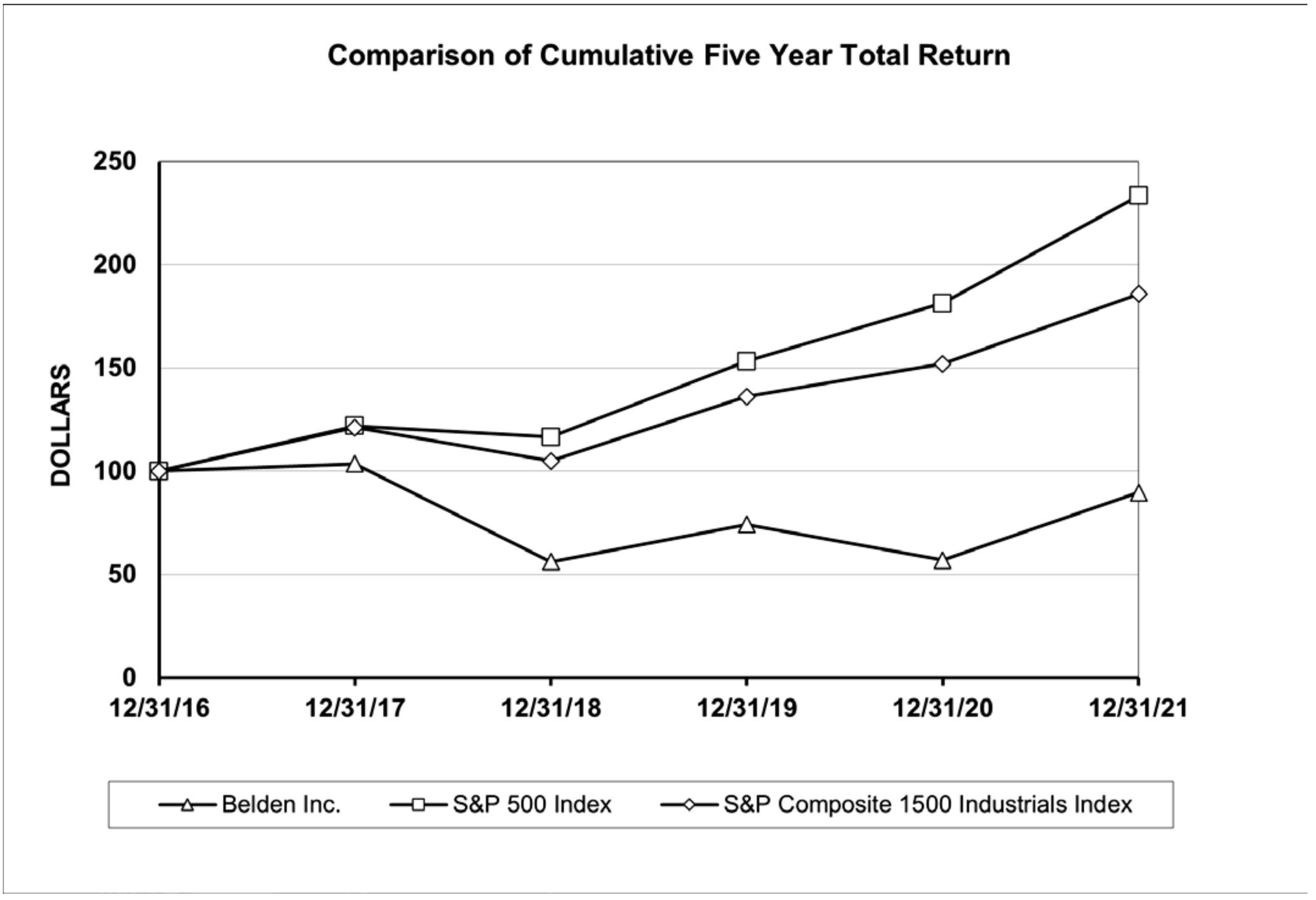
PART II

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 9, 2022, there were 221 record holders of common stock of Belden Inc.

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, 2021, 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, 2016, 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)

Company Name / Index	ANNUAL RETURN PERCENTAGE Years Ended December 31, 2017	2018	2019	2020	2021
Belden Inc.	3.5 %	(45.7)%	32.1 %	(23.4)%	57.5 %
S&P 500 Index	21.8 %	(4.4)%	31.5 %	18.4 %	28.7 %
S&P 1500 Industrials Index	21.1 %	(13.4)%	29.8 %	11.7 %	22.2 %

Company Name / Index	Base Period 2016	INDEXED RETURNS Years Ended December 31, 2017	2018	2019	2020	2021
Belden Inc.	$ 100.00	$ 103.48	$ 56.19	$ 74.26	$ 56.88	$ 89.57
S&P 500 Index	100.00	121.83	116.49	153.17	181.35	233.41
S&P 1500 Industrials Index	100.00	121.06	104.87	136.12	152.03	185.75

Item 6. Selected Financial Data

Not applicable.

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 businesses – 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 2021

The following trends and events during 2021 had varying effects on our financial condition, results of operations, and cash flows.

Pandemic

On March 11, 2020, the World Health Organization (WHO) declared the outbreak of the novel coronavirus (COVID-19) a pandemic. Since the beginning of the pandemic, our foremost focus has been on the health and safety of our employees and customers. In response to the outbreak, to protect the health and safety of our employees, we modified practices at our manufacturing locations and offices to adhere to guidance from the WHO, the U.S. Centers for Disease Control and Prevention and other local health and governmental authorities with respect to social distancing, physical separation, personal protective equipment and sanitization. In light of variant mutations of the virus, even as vaccinations become more prevalent and more employees return to our offices, many of these safeguards will continue.

Our suppliers, distributors, and other partners have similarly had their operations disrupted, and in regions of the world where infection rates have remained high, human suffering and market disruptions have persisted. We will continue to actively monitor the situation and may take further actions that alter our business operations as may be required by local or foreign governmental authorities, or that we determine are in the best interests of our employees and customers.

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, Mexican peso, Australian dollar, British pound, and Indian rupee. 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. Because all of our senior subordinated notes are denominated in euros, interest expense on the notes is affected by exchange rate movements between the U.S. dollar and the euro.

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.

Amended Revolving Credit Agreement

During the second quarter of 2021, we entered into an amended and restated Revolving Credit Agreement that provides a $300.0 million multi-currency asset-based revolving credit facility (the Revolver). The maturity date of the Revolver is June 2, 2026. The borrowing base under the Revolver includes eligible accounts receivable; inventory; and property, plant and equipment of certain of our subsidiaries in the United States, Canada, Germany, the United Kingdom and the Netherlands. 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 paid approximately $2.3 million of fees associated with the amended Revolver, which are being amortized over its term using the effective interest method. As of December 31, 2021, we had no borrowings outstanding on the Revolver, and our available borrowing capacity was $$274.2 million. See Note 16.

Debt Refinancing

During the third quarter of 2021, we completed an offering for €300.0 million aggregate principal amount of 3.375% senior subordinated notes due 2031. With the proceeds from this offering and cash on hand, we repurchased all of the €300.0 million aggregate principal amount of 2.875% senior subordinated notes previously due 2025. We recognized a $5.7 million loss on debt extinguishment for the premiums paid to the bond holders to retire the 2025 Notes and for the unamortized debt issuance costs on the 2025 Notes that we were required to write-off. See Note 16.

OTN Systems Acquisition

We acquired 100% of the shares of OTN Systems on January 29, 2021 for a purchase price, net of cash acquired, of $73.3 million. OTN Systems, based in Olen, Belgium, is a leading provider of easy to use and highly-reliable network solutions tailored for specific applications in harsh, mission-critical environments. The acquisition of OTN Systems supports one of our key strategic priorities related to the growing demand for industrial automation by adding proprietary technology and mission-critical hardware and software products for more complete end-to-end solutions. The results of OTN Systems have been included in our Condensed Consolidated Financial Statements from January 29, 2021, and are reported within the Industrial Solutions segment. See Note 4.

Opterna Earn-Out

Our acquisition of Opterna in 2019 included potential earn-out consideration, which as of the acquisition date, had an estimated fair value of $5.8 million. As the financial targets tied to the earn-out were not achieved within the contractual timeframe, we reduced the earn-out liability to zero and recognized a $5.8 million benefit in Selling, General and Administrative Expenses during 2021. This benefit was excluded from Segment EBITDA of our Enterprise Solutions segment. See Note 4.

Sale of Note Receivable

During 2021, we sold the seller's note associated with the 2020 Grass Valley disposal for $62.0 million and recognized a gain on sale of approximately $27.0 million. See Note 5.

Sale-Leaseback

During the fourth quarter of 2021, we sold certain real estate in Germany as part of a sale and leaseback transaction for €24.5 million (approximately $27.8 million) and recognized a $0.6 million loss on the sale. The lease is for a term of 10 years and as of December 31, 2021, had a total right-of-use asset balance of $25.3 million. When the assets met the held for sale criteria during the third quarter of 2021, we performed a recoverability test and determined that the carrying values of the assets were not recoverable and as a result, recognized a $2.3 million impairment charge to write them down to fair value. The impairment charge was excluded from Segment EBITDA of our Industrial Solutions segment. See Note 11.

Definitive Agreement to Divest Tripwire

On February 7, 2022, we signed a definitive agreement to divest Tripwire for $350 million in cash. The transaction is expected to close in the first quarter of 2022. During the fourth quarter of 2021, we recognized a goodwill impairment charge for the Tripwire reporting unit of $131.2 million, representing the reporting unit's excess carrying value over its present value of estimated future cash flows, which was based in part on the assumed proceeds from the divestiture.

Divestiture of Oil and Gas Cable Business in Brazil

During the second quarter of 2021, we completed the sale of our oil and gas cable business in Brazil for $10.9 million, net of cash delivered with the business. During the first quarter of 2021, we committed to a plan to sell the business and determined that we met all of the criteria to classify the assets and liabilities of this business as held for sale. At such time, the carrying value of the disposal group exceeded the fair value less costs to sell, which we determined based upon the expected sale price, by $3.4 million. Therefore, we recognized an impairment charge equal to this amount in the first quarter of 2021. The impairment charge was excluded from Segment EBITDA of our Industrial Solutions segment. See Note 5.

Long-Lived Asset Impairment

During 2021, we performed a recoverability test on certain held and used long-lived assets in our Industrial Solutions segment. We determined that the carrying values of the assets were not recoverable and recognized a $3.6 million impairment charge to write them down to fair value. This impairment charge was excluded from Segment EBITDA of our Industrial Solutions segment. See Note 11.

Cost Reduction Program

We have executed a cost reduction program to streamline the organizational structure and invest in technology to drive productivity. We recognized $5.8 million of severance and other restructuring costs for this program during 2021. These costs were incurred by both the Enterprise Solutions and Industrial Solutions segments. The cost reduction program is substantially complete and has delivered a reduction in selling, general, and administrative expenses of approximately $60 million on an annual basis. We expect to recognize costs of approximately $3 million for this program in 2022. See Note 15.

Acquisition Integration Program

We are integrating our recent acquisitions such as OTN Systems, SPC, and Opterna with our existing businesses. The restructuring and integration activities are focused on achieving desired cost savings by consolidating existing and acquired facilities and other support functions. We recognized $12.6 million of severance and other restructuring costs for this program during 2021. These costs were incurred by both the Enterprise Solutions and Industrial Solutions segments. We do not expect to incur significant incremental costs for this program in 2022. See Note 15.

Results of Operations

Consolidated Income from Continuing Operations before Taxes

	Years Ended December 31,			Percentage Change	
	2021	2020	2019	2021 vs. 2020	2020 vs. 2019
	(In thousands, except percentages)				
Revenues	$ 2,408,100	$ 1,862,716	$ 2,131,278	29.3 %	(12.6)%
Gross profit	854,362	663,289	793,505	28.8 %	(16.4)%
Selling, general and administrative expenses	426,335	366,188	417,329	16.4 %	(12.3)%
Research and development expenses	124,660	107,296	94,360	16.2 %	13.7 %
Amortization of intangibles	38,346	64,395	74,609	(40.5)%	(13.7)%
Goodwill and other asset impairment	140,461	—	—	n/a	n/a
Operating income	124,560	125,410	207,207	(0.7)%	(39.5)%
Interest expense, net	62,695	58,888	55,814	6.5 %	5.5 %
Non-operating pension benefit (cost)	4,476	(395)	1,017	1,233.2 %	(138.8)%
Gain on sale of note receivable	27,036	—	—	n/a	n/a
Loss on debt extinguishment	5,715	—	—	n/a	n/a
Income from continuing operations before taxes	87,662	66,127	152,410	32.6 %	(56.6)%

2021 Compared to 2020

Revenues increased $545.4 million from 2020 to 2021 due to the following factors:

- Higher sales volume from industrial automation, smart buildings, and broadband & 5G products resulted in a $373.1 million increase in revenues.
- Copper prices had a $117.2 million favorable impact on revenues.
- Currency translation had a $26.7 million favorable impact on revenues.
- Acquisitions contributed an estimated $37.7 million in revenues.
- Divestitures had a $9.3 million unfavorable impact on revenues.

Gross profit increased $191.1 million from 2020 to 2021 due to the increases in revenues discussed above while gross profit margins remained relatively flat. Excluding the impact of higher copper pass through pricing and changes in foreign currency rates, gross profit margins increased more than 200 basis points.

Selling, general and administrative expenses increased $60.1 million from 2020 to 2021. Strategic investments to enhance our solution selling capabilities, including customer innovation centers; higher incentive compensation; acquisitions; and increases in restructuring and integration costs contributed $27.1 million, $22.5 million, $10.8 million, and $1.0 million to the increase in selling, general and administrative expenses, respectively. These increases were partially offset by the impact of divestitures which contributed a $1.3 million decline in selling, general and administrative expenses year over year.

Research and development expenses increased $17.4 million from 2020 to 2021 primarily due to increased investments in R&D projects as we continue our commitment to growth initiatives.

Amortization of intangibles decreased $26.0 million from 2020 to 2021 primarily due to a significant technology intangible asset becoming fully amortized.

Asset impairments increased $140.5 million from 2020 to 2021 as a result of the Tripwire carrying value exceeding its fair value by $131.2 million in our annual impairment test, impairment charges of $3.6 million to write down certain held and used long-lived assets in our Industrial Solutions segment to fair value, impairment charges of $3.4 million for our former oil and gas business in Brazil sold during 2021, and impairment charges of $2.3 million to write down certain real estate in Neckartenzlingen, Germany sold as part of a sale and leaseback transaction during 2021 to its fair value. See Notes 13, 11 and 5, respectively.

Operating income remained relatively flat year over year primarily as a result of the increase in gross profit and decrease in amortization expense, partially offset by the increase in selling, general and administrative expenses; research and development expenses; and asset impairments discussed above.

Net interest expense increased $3.8 million from 2020 to 2021 primarily due to currency translation. See Note 16.

Gain on sale of note receivable increased $27.0 million from 2020 to 2021 as a result of the sale of the Seller's Note in 2021 related to the 2020 divestiture of Grass Valley.

Loss on debt extinguishment increased $5.7 million from 2020 to 2021 due to the debt refinancing that took place during 2021. The $5.7 million loss on debt extinguishment represents the premium paid to the bond holders to retire the 2025 Notes and for the unamortized debt issuance costs on the 2025 Notes that we were required to write-off. See Note 16.

Income from continuing operations before taxes increased $116.0 million from 2020 to 2021 primarily due to the increase in operating income discussed above.

2020 Compared to 2019

Revenues decreased $268.6 million from 2019 to 2020 due to the following factors:

- Lower sales volume, including the impact of COVID-19 and changes in channel inventory, contributed $302.7 million to the decrease in revenues.
- Currency translation had a $1.9 million unfavorable impact on revenues.
- Acquisitions increased revenues by $34.3 million.
- Copper prices had a $1.7 million favorable impact on revenues.

Gross profit decreased $130.2 million from 2019 to 2020 due to the decreases in revenues discussed above as well as unfavorable mix; partially offset by the impact of acquisitions.

Selling, general and administrative expenses decreased $51.1 million from 2019 to 2020. Benefits realized from our Cost Reduction Program coupled with productivity improvement initiatives contributed an estimated $43.1 million decline in selling, general and administrative expenses. A decrease in severance, restructuring and acquisition integration costs; decreases in commission costs; and currency translation contributed an estimated $11.6 million; $3.5 million; and $0.5 million decline in selling, general and administrative expenses, respectively. These decreases were partially offset by a $7.6 million increase from acquisitions.

Research and development expenses increased $12.9 million from 2019 to 2020 primarily due to increased investments in R&D projects as we continue our commitment to growth initiatives.

Amortization of intangibles decreased $10.2 million from 2019 to 2020 primarily due to certain intangible assets becoming fully amortized.

Operating income decreased $81.8 million from 2019 to 2020 primarily as a result of the decline in gross profit discussed above.

Net interest expense increased $3.1 million from 2019 to 2020. The increase is primarily the result of interest accrued on the Revolver borrowings during 2020 coupled with currency translation. During 2020, we borrowed $190.0 million on our Revolver, which we fully repaid by December 31, 2020. See Note 16.

Income from continuing operations before taxes decreased $86.3 million from 2019 to 2020 primarily due to the decline in operating income discussed above.

Income Taxes

	2021	2020	2019	Percentage Change 2021 vs. 2020	2020 vs. 2019
	(In thousands, except percentages)				
Income from continuing operations before taxes	$ 87,662	$ 66,127	$ 152,410	32.6 %	(56.6)%
Income tax expense	(25,205)	(11,724)	(42,519)	115.0 %	(72.4)%
Effective tax rate	28.8%	17.7%	27.9 %		

2021

We recognized income tax expense of $25.2 million in 2021, representing an effective tax rate of 28.8%. The effective tax rate was primarily impacted by a change in the deferred tax asset valuation allowance due to the release of a valuation allowance against the foreign tax credits in the U.S. and a pension deferred tax asset in a foreign jurisdiction. In addition, we recognized a total income tax expense from domestic permanent differences and tax credits of $39.8 million in 2021 primarily associated with a goodwill impairment in the U.S. and our foreign income inclusions. See Note 18.

2020

We recognized income tax expense of $11.7 million in 2020, representing an effective tax rate of 17.7%. The effective tax rate was impacted by foreign tax rate differences, which resulted in an income tax benefit of $25.3 million in 2020. Additionally, in 2020, our income tax expense was reduced by $4.0 million due to a tax holiday for our operations in St. Kitts. The tax holiday in St. Kitts is scheduled to expire in 2023. Partially offsetting these benefits, we recognized income tax expense of $22.4 million in 2020 from domestic permanent differences and tax credits primarily associated with our foreign income inclusions.

2019

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, which reduced our income tax expense by approximately $13.1 million in 2019.

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.

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.

Consolidated Adjusted EBITDA

	Years Ended December 31,		
	2021	2020	2019
	(In thousands, except percentages)		
GAAP and adjusted revenues	$2,408,100	$1,862,716	$2,131,278
GAAP income from continuing operations	$ 62,457	$ 54,403	$ 109,891
Income tax expense	25,205	11,724	42,519
Loss on debt extinguishment	5,715	—	—
Gain on note receivable	(27,036)	—	—
Non-operating pension settlement loss	—	3,153	—
Interest expense, net	62,695	58,888	55,814
Goodwill and other asset impairment	140,461	—	—
Amortization of intangible assets	38,346	64,395	74,609
Amortization of software development intangible assets	2,900	1,821	525
Depreciation expense	45,940	42,470	40,409
Severance, restructuring, and acquisition integration costs (1)	23,892	12,258	26,544
Adjustments related to acquisitions and divestitures (2)	(5,036)	125	592
Adjusted EBITDA	$ 375,539	$ 249,237	$ 350,903
GAAP income from continuing operations margin	*2.6 %*	*2.9 %*	*5.2 %*
Adjusted EBITDA margin	*15.6 %*	*13.4 %*	*16.5 %*

(1) See Note 15, *Severance, Restructuring, and Acquisition Integration Activities,* for details.

(2) In 2021, we collected $2.2 million of receivables associated with the sale of Grass Valley and acquisition of SPC that were previously written off, reduced the Opterna earn-out liability by $5.8 million, recognized cost of sales of $2.3 million related to purchase accounting adjustments of acquired inventory to fair value for the OTN Systems acquisition, and recognized a $0.6 million loss on the sale of tangible assets. In 2020 and 2019, we collectively recognized $0.1 million and $0.6 million, respectively, of cost of sales related to acquisition accounting adjustments of acquired inventory to fair value for both our SPC and Opterna acquisitions.

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 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 acquisition-related expenses, such as amortization of intangibles and 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.

	2021	2020	2019	Percentage Change 2021 vs. 2020	2020 vs. 2019
	(In thousands, except percentages)				
GAAP and adjusted revenues	$2,408,100	$1,862,716	$2,131,278	29.3 %	(12.6)%
Adjusted EBITDA	375,539	249,237	350,903	50.7 %	(29.0)%
as a percent of adjusted revenues	*15.6 %*	*13.4 %*	*16.5 %*		

2021 Compared to 2020

Revenues increased $545.4 million from 2020 to 2021 due to the following factors:

- Higher sales volume from industrial automation, smart buildings, and broadband & 5G products resulted in a $373.1 million increase in revenues.
- Copper prices had a $117.2 million favorable impact on revenues.
- Currency translation had a $26.7 million favorable impact on revenues.
- Acquisitions contributed an estimated $37.7 million in revenues.
- Divestitures had a $9.3 million unfavorable impact on revenues.

Adjusted EBITDA increased $126.3 million in 2021 from 2020 primarily due to the leverage on higher sales volume, as discussed above. Accordingly, Adjusted EBITDA margins expanded to 15.6% from 13.4% in the year ago period.

2020 Compared to 2019

Revenues decreased $268.6 million from 2019 to 2020 due to the following factors:

- Lower sales volume, including the impact of COVID-19 and changes in channel inventory, contributed $302.7 million to the decrease in revenues.
- Currency translation had a $1.9 million unfavorable impact on revenues.
- Acquisitions increased revenues by $34.3 million.
- Copper prices had a $1.7 million favorable impact on revenues.

Adjusted EBITDA decreased $101.7 million in 2020 from 2019 primarily due to the decrease in revenues discussed above, partially offset by the benefits realized from our Cost Reduction Program.

Segment Results of Operations

For additional information regarding our segment measures, see Note 6 to the Consolidated Financial Statements.

Enterprise Solutions

	2021	2020	2019	Percentage Change 2021 vs. 2020	2020 vs. 2019
	(In thousands, except percentages)				
Segment Revenues	$1,074,426	$ 872,415	$ 946,041	23.2 %	(7.8)%
Segment EBITDA	143,236	99,333	126,925	44.2 %	(21.7)%
as a percent of segment revenues	*13.3 %*	*11.4 %*	*13.4 %*		

2021 Compared to 2020

Enterprise revenues increased $202.0 million in 2021 as compared to 2020. Increases in volume, higher copper prices, and favorable currency translation contributed $143.6 million, $50.4 million, and $8.0 million, respectively, to the increase in revenues year over year.

Enterprise EBITDA increased $43.9 million in 2021 as compared to 2020 primarily due to the leverage on higher sales volume, as discussed above. Accordingly, Adjusted EBITDA margins expanded to 13.3% from 11.4% in the year ago period.

2020 Compared to 2019

Enterprise revenues decreased $73.6 million in 2020 as compared to 2019. Decreases in volume, including the impact of COVID-19 and changes in channel inventory, and unfavorable currency translation contributed $108.1 million and $0.3 million, respectively, to the decline in revenues; partially offset by acquisitions and higher copper prices which grew revenues by $34.3 million and $0.5 million, respectively.

Enterprise EBITDA decreased $27.6 million in 2020 as compared to 2019 primarily due to the decreases in revenues discussed above, partially offset by the benefits realized from our Cost Reduction Program.

Industrial Solutions

				Percentage Change	
	2021	2020	2019	2021 vs. 2020	2020 vs. 2019
	(In thousands, except percentages)				
Segment Revenues	$1,333,674	$ 990,301	$1,185,237	34.7 %	(16.4)%
Segment EBITDA	227,946	147,626	226,110	54.4 %	(34.7)%
as a percent of segment revenues	*17.1 %*	*14.9 %*	*19.1 %*		

2021 Compared to 2020

Industrial revenues increased $343.4 million in 2021 as compared to 2020 primarily due to increases in volume; higher copper prices; acquisitions, net of disposals; and favorable currency translation of $229.5 million, $66.8 million, $28.4 million, and $18.7 million, respectively.

Industrial EBITDA increased $80.3 million in 2021 as compared to 2020 primarily as a result of the increase in revenues discussed above, partially offset by an increase in incentive compensation and investments in R&D projects as we continue our commitment to growth initiatives. Accordingly, Adjusted EBITDA margins expanded to 17.1% from 14.9% in the year ago period.

2020 Compared to 2019

Industrial revenues decreased $194.9 million in 2020 as compared to 2019 primarily due to decreases in volume, including the impact of COVID-19 and changes in channel inventory, and unfavorable currency translation, which contributed $194.5 million and $1.6 million, respectively, to the decrease in revenues; partially offset by increases in copper prices, which grew revenues $1.2 million.

Industrial EBITDA decreased $78.5 million in 2020 as compared to 2019 primarily as a result of the decline in revenues discussed above and increased investments in R&D projects as we continue our commitment to growth initiatives, partially offset by the benefits realized from our Cost Reduction Program.

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 2022 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 includes the results and cash flow activity of discontinued operations up to the July 2, 2020 disposal date consistent with the Consolidated Cash Flow Statements:

	Years Ended December 31,	
	2021	2020
	(In thousands)	
Net cash provided by (used for):		
Operating activities	$ 272,055	$ 173,364
Investing activities	(92,003)	(31,643)
Financing activities	(32,926)	(74,911)
Effects of currency exchange rate changes on cash and cash equivalents	(5,363)	9,299
Increase in cash and cash equivalents	141,763	76,109
Cash and cash equivalents, beginning of year	501,994	425,885
Cash and cash equivalents, end of year	$ 643,757	$ 501,994

Net cash provided by operating activities totaled $272.1 million for 2021 compared to $173.4 million for 2020. The increase is primarily due to the increase in earnings. In 2021, changes in operating assets and liabilities included unfavorable changes in receivables and inventories partially offset by favorable changes in accounts payable and accrued liabilities. Receivables were a use of cash of $119.0 million compared to a source of cash of $70.7 million in the prior year. Inventories were a use of cash of $93.0 million compared to $8.5 million in the prior year. Receivables and inventories increased in 2021 due to the increase in revenues. Operating working capital turns improved to 11.2x at the end of 2021 compared to 10.3x at the end of 2020.

Net cash used for investing activities totaled $92.0 million for 2021 compared to $31.6 million for 2020. Investing activities for 2021 included capital expenditures of $91.0 million, payments primarily for the acquisition of OTN Systems of $73.3 million, purchases of intangible assets of $3.6 million, cash receipts for the carrying value of the seller's note and sale of the oil and gas cable business in Brazil of $45.7 million, and cash receipts for the sale of real estate in Germany of $30.2 million. Investing activities for 2020 included capital expenditures of $90.2 million and proceeds of $54.8 million, $3.2 million, and $0.6 million from the sale of the Grass Valley disposal group, the sale of tangible property, and a working capital adjustment related to the SPC acquisition, respectively.

Net cash flows used for financing activities totaled $32.9 million for 2021 compared to $74.9 million for 2020. Financing activities for 2021 included repayments of debt obligations of $360.3 million, cash dividend payments of $9.0 million, debt issuance costs of $8.2 million, net payments related to share based compensation activities of $5.6 million, financing lease payments of $3.1 million, payments to noncontrolling interests of $2.7 million, and borrowings under credit arrangements of $356.0 million. During 2021, we completed an offering for €300.0 million aggregate principal amount of 3.375% senior subordinated notes due 2031, repurchased the €300.0 million 2025 Notes, and refinanced the Revolver - see Note 16. Financing activities for 2020 included payments under our share repurchase program of $35.0 million, acquisition earnout consideration payments of $29.3 million, cash dividend payments of $9.0 million, and net payments related to share based compensation activities of $1.4 million.

Our cash and cash equivalents balance was $643.8 million as of December 31, 2021. Of this amount, $233.9 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 18, *Income Taxes* in the accompanying notes to our consolidated financial statements.

Our outstanding debt obligations as of December 31, 2021 consisted of $1.5 billion of senior subordinated notes. As of December 31, 2021, we had no borrowings outstanding on the Revolver, and our available borrowing capacity was $274.2 million. Additional discussion regarding our various borrowing arrangements is included in Note 16 to the Consolidated Financial Statements.

At December 31, 2021, the following contractual obligations and commercial commitments were outstanding:

a. Principal payments on long-term debt of $1.5 billion, none of which is due in 2022 (see Note 16). Depending on the conditions in the credit markets, we may refinance this debt, or we may use cash from operations, including temporarily accessing our Revolving Credit Agreement, to repay this debt.

b. Interest payments on long-term debt of $353.7 million, of which $53.5 million is due in 2022.

c. Operating lease obligations of $99.9 million, of which $22.8 million is due in 2022 (see Note 12).

d. Pension and other postemployment obligations of $87.7 million, of which $13.6 million is due in 2022 (see Note 19).

e. Obligations of $5.8 million to purchase goods or services that are enforceable and legally binding on us. All of these obligations are due in 2022.

f. Standby financial letters of credit, bank guarantees, and surety bonds totaling $28.1 million, of which $25.1 million are scheduled to expire or mature in 2022. 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. 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.

<u>Revenue Recognition</u>

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, 2021 would have affected net income by approximately $2 million in 2021.

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.

In December 2019, the FASB issued ASU 2019-12, Income Taxes (Topic 740) Simplifying the Accounting for Income Taxes ("ASU 2019-12") which removes certain exceptions for investments, intra-period allocations and interim tax calculations, and adds guidance to reduce the complexity in accounting for income taxes. The Company adopted ASU 2019-12 in the first quarter of 2021 and the adoption had no material impact to the Company's consolidated financial statements.

See Note 18, *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 three reporting units within Enterprise Solutions and three 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 2021, 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 2021, we performed a quantitative assessment for all six of our reporting units. We recorded an impairment for one reporting unit included in the Industrial Solutions segment. See Note 13. The excess of the fair values over the carrying values for the other five reporting units tested under a quantitative income approach ranged from 51% - 436%. 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 11.3% to 13.7%, the 2022 to 2031 compounded annual revenue growth rates ranged from 3.8% to 9.7%, and the revenue growth rates beyond 2031 ranged from 2.0% to 3.0%. By their nature, these assumptions involve risks and uncertainties. There is inherent risk associated with using an income approach to estimate fair values. If actual results are significantly different from our estimates or assumptions, we may have to recognize additional impairment charges that could be material.

We also test our indefinite-lived intangible asset, a trademark, 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 2021. Rather, we performed a quantitative assessment for our indefinite-lived trademark in 2021. Under the quantitative assessments, we determined the fair value of the trademark using a relief from royalty methodology and compared the fair value to the carrying value. We determined that our trademark was not impaired during 2021. Significant assumptions to determine fair value included sales growth, royalty rates, and discount rates.

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 2021 net periodic benefit cost and projected benefit obligations as of December 31, 2021 of approximately $2.0 million and $38.0 million, respectively. A 50 basis point decline in the expected return on plan assets would have resulted in an increase in the 2021 net periodic benefit cost of approximately $1.8 million.

Conversely, the effect of a 50 basis point increase in the assumed discount rate would have resulted in a decrease in the 2021 net periodic benefit cost of approximately $1.6 million and a decrease in the projected benefit obligation of approximately $34.2 million as of December 31, 2021. A 50 basis point increase in the expected return on plan assets would have resulted in a decrease in the 2021 net periodic benefit cost of approximately $1.8 million.

Acquisition 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 acquisition 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.

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 by Belden Inc., a USD functional currency entity, as a net investment hedge of certain international subsidiaries. See Note 16 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 2021, we recorded approximately $1.7 million of net foreign currency transaction losses. In 2020, we recorded approximately $7.9 million of net foreign currency transaction gains.

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, 2021.

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, Mexican peso, Australian dollar, British pound, and Indian rupee.

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, 2021 or 2020. The following table presents unconditional commodity purchase obligations outstanding as of December 31, 2021. The unconditional purchase obligations will settle during 2022.

	Purchase Amount	Fair Value
	(In thousands, except average price)	
Unconditional copper purchase obligations:		
Commitment volume in pounds	4,766	
Weighted average price per pound	$ 4.38	
Commitment amounts	$ 20,889	$ 21,234

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, 2021 or 2020. The following table provides information about our financial instruments that are sensitive to changes in interest rates. The following table presents principal amounts by expected maturity date and fair value as of December 31, 2021.

	Principal Amount by Expected Maturity			Fair Value
	2022	Thereafter	Total	
	(In thousands, except interest rates)			
€200.0 million fixed-rate senior subordinated notes due 2026	$ —	$ 227,240	$ 227,240	$ 231,751
Average interest rate		4.125 %		
€450.0 million fixed-rate senior subordinated notes due 2027	$ —	$ 511,290	$ 511,290	$ 517,809
Average interest rate		3.375 %		
€350.0 million fixed-rate senior subordinated notes due 2028	$ —	$ 397,670	$ 397,670	$ 409,596
Average interest rate		3.875 %		
€300.0 million fixed-rate senior subordinated notes due 2031	$ —	340,860	$ 340,860	$ 350,080
Average interest rate		3.375 %		
Total			$ 1,477,060	$ 1,509,236

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, 2021, we had $40.5 million in accounts receivable outstanding from our largest customer. This represented approximately 10% of our total accounts receivable outstanding at December 31, 2021. Outstanding receivables are generally paid 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, 2021 and 2020, 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, 2021, 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, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, 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, 2021, 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 15, 2022 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.

Goodwill Impairment related to Tripwire Reporting Unit

Description of the Matter	At December 31, 2021, the Company had goodwill on its balance sheet aggregating $1.2 billion. As more fully described in Notes 2 and 13 to the Company's consolidated financial statements, goodwill is tested for impairment at least annually at the reporting unit level. Goodwill is assigned to reporting units on the respective acquisition dates. The Company performed a quantitative impairment assessment for all of its reporting units to determine if the fair values of these reporting units were in excess of the carrying values. An impairment charge should be recognized for the amount by which the carrying amount of goodwill exceeds the reporting unit's fair value with a charge not to exceed the total amount of goodwill allocated to that reporting unit. As a result of these assessments, the Company recognized an impairment of $131.2 million related to the Tripwire reporting unit during the year ended December 31, 2021. Auditing the Company's annual goodwill impairment test for the Tripwire reporting unit under the quantitative assessment was complex due to the judgments and estimation required in determining the fair value of the reporting unit. In particular, the fair value estimate is sensitive to significant assumptions such as the discount rate, revenue growth rate, projected operating margin, and terminal growth rate, which are sensitive to and affected by expectations about future market or economic conditions and company-specific qualitative factors.
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 preparation and review of the goodwill impairment test, significant assumptions discussed above, as used in the model, and the completeness and accuracy of the data used in the model. 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 also reconciled the fair value of the reporting unit to the carrying amount, testing the Company's determination of the assets and liabilities used within the reporting unit that are the basis for the carrying amount. 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 unprocessed changes in the form of 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, 2021, the Company recorded \$23.4 million in unprocessed changes that were recognized as a reduction of revenues and accounts receivable and \$12.5 million in unprocessed changes recognized as accrued liabilities. 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 reserves for variable consideration related to 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 comparing 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.

/s/ Ernst & Young LLP
We have served as the Company's auditor since 1993.
St. Louis, Missouri
February 15, 2022

Belden Inc.
Consolidated Balance Sheets

	December 31, 2021	December 31, 2020
	(In thousands, except par value)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 643,757	$ 501,994
Receivables, net	412,217	296,817
Inventories, net	345,354	247,298
Other current assets	65,700	52,289
Total current assets	1,467,028	1,098,398
Property, plant and equipment, less accumulated depreciation	349,814	368,620
Operating lease right-of-use assets	79,464	54,787
Goodwill	1,152,472	1,251,938
Intangible assets, less accumulated amortization	301,696	287,071
Deferred income taxes	32,321	29,536
Other long-lived assets	34,882	49,384
	$ 3,417,677	$ 3,139,734
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 384,223	$ 244,120
Accrued liabilities	334,316	276,641
Total current liabilities	718,539	520,761
Long-term debt	1,459,991	1,573,726
Postretirement benefits	120,997	160,400
Deferred income taxes	59,990	38,400
Long-term operating lease liabilities	67,225	46,398
Other long-term liabilities	34,853	42,998
Stockholders' equity:		
Common stock, par value $0.01 per share— 200,000 shares authorized; 50,335 shares issued; 44,975 and 44,643 shares outstanding at 2021 and 2020, respectively	503	503
Additional paid-in capital	833,627	823,605
Retained earnings	505,717	450,876
Accumulated other comprehensive loss	(70,566)	(191,851)
Treasury stock, at cost— 5,360 and 5,692 shares at 2021 and 2020, respectively	(313,994)	(332,552)
Total Belden stockholders' equity	955,287	750,581
Noncontrolling interest	795	6,470
Total stockholders' equity	956,082	757,051
	$ 3,417,677	$ 3,139,734

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

Belden Inc.
Consolidated Statements of Operations

	Years Ended December 31,		
	2021	2020	2019
	(In thousands, except per share amounts)		
Revenues	$ 2,408,100	$ 1,862,716	$ 2,131,278
Cost of sales	(1,553,738)	(1,199,427)	(1,337,773)
Gross profit	854,362	663,289	793,505
Selling, general and administrative expenses	(426,335)	(366,188)	(417,329)
Research and development expenses	(124,660)	(107,296)	(94,360)
Amortization of intangibles	(38,346)	(64,395)	(74,609)
Goodwill and other asset impairment	(140,461)	—	—
Operating income	124,560	125,410	207,207
Interest expense, net	(62,695)	(58,888)	(55,814)
Non-operating pension benefit (cost)	4,476	(395)	1,017
Gain on sale of note receivable	27,036	—	—
Loss on debt extinguishment	(5,715)	—	—
Income from continuing operations before taxes	87,662	66,127	152,410
Income tax expense	(25,205)	(11,724)	(42,519)
Income from continuing operations	62,457	54,403	109,891
Loss from discontinued operations, net of tax	—	(99,513)	(486,667)
Gain (loss) from disposal of discontinued operations, net of tax	1,860	(9,948)	—
Net income (loss)	64,317	(55,058)	(376,776)
Less: Net income attributable to noncontrolling interest	392	104	239
Net income (loss) attributable to Belden	63,925	(55,162)	(377,015)
Less: Preferred stock dividends	—	—	18,437
Net income (loss) attributable to Belden common stockholders	$ 63,925	$ (55,162)	$ (395,452)
Weighted average number of common shares and equivalents:			
Basic	44,802	44,778	42,203
Diluted	45,361	44,937	42,416
Basic income (loss) per share attributable to Belden common stockholders:			
Continuing operations	$ 1.39	$ 1.21	$ 2.16
Discontinued operations	—	(2.22)	(11.53)
Disposal of discontinued operations	0.04	(0.22)	—
Net income (loss)	$ 1.43	$ (1.23)	$ (9.37)
Diluted income (loss) per share attributable to Belden common stockholders:			
Continuing operations	$ 1.37	$ 1.21	$ 2.15
Discontinued operations	—	(2.22)	(11.53)
Disposal of discontinued operations	0.04	(0.22)	—
Net income (loss)	$ 1.41	$ (1.23)	$ (9.37)

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

Belden Inc.
Consolidated Statements of Comprehensive Income

	Years Ended December 31,		
	2021	2020	2019
		(In thousands)	
Net income (loss)	64,317	$ (55,058)	$ (376,776)
Foreign currency translation, net of tax	88,290	(112,562)	24,121
Adjustments to pension and postretirement liability, net of tax	31,572	(15,477)	(12,168)
Other comprehensive income (loss), net of tax	119,862	(128,039)	11,953
Comprehensive income (loss)	184,179	(183,097)	(364,823)
Less: Comprehensive income (loss) attributable to noncontrolling interest	(1,031)	498	703
Comprehensive income (loss) attributable to Belden	$ 185,210	$ (183,595)	$ (365,526)

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

Belden Inc.

Consolidated Cash Flow Statements

	Years Ended December 31,		
	2021	2020	2019
		(In thousands)	
Cash flows from operating activities:			
Net income (loss)	$ 64,317	$ (55,058)	$ (376,776)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization	87,988	108,687	139,259
Goodwill and other asset impairment	140,461	113,007	521,441
Share-based compensation	24,871	20,030	17,751
Loss on debt extinguishment	5,715	—	—
Deferred income tax expense (benefit)	3,575	(19,410)	(23,540)
Changes in operating assets and liabilities, net of the effects of exchange rate changes, acquired businesses, and disposals:			
Receivables	(119,012)	70,707	22,926
Inventories	(92,984)	(8,507)	44,477
Accounts payable	135,666	(43,567)	(41,527)
Accrued liabilities	61,241	7,374	(17,654)
Income taxes	(6,448)	(22,823)	5,497
Other assets	(12,693)	2,018	(16,118)
Other liabilities	(20,642)	906	1,157
Net cash provided by operating activities	272,055	173,364	276,893
Cash flows from investing activities:			
Capital expenditures	(90,982)	(90,215)	(110,002)
Cash from (used for) business acquisitions, net of cash acquired	(73,340)	590	(74,392)
Purchase of intangible assets	(3,650)	—	—
Proceeds from disposal of tangible assets	30,234	3,161	25
Proceeds from disposal of businesses, net of cash sold	45,735	54,821	—
Net cash used for investing activities	(92,003)	(31,643)	(184,369)
Cash flows from financing activities:			
Payments under borrowing arrangements	(360,304)	(190,000)	—
Cash dividends paid	(9,056)	(9,029)	(34,439)
Debt issuance costs paid	(8,173)	—	—
Withholding tax payments for share based-payment awards	(5,570)	(1,388)	(2,149)
Payments under financing lease obligations	(3,151)	(194)	(360)
Payments to noncontrolling interest holders	(2,682)	—	—
Payments under share repurchase program	—	(35,000)	(50,000)
Payment of earnout consideration	—	(29,300)	—
Borrowings under credit arrangements	356,010	190,000	—
Net cash used for financing activities	(32,926)	(74,911)	(86,948)
Effect of foreign currency exchange rate changes on cash and cash equivalents	(5,363)	9,299	(301)
Increase in cash and cash equivalents	141,763	76,109	5,275
Cash and cash equivalents, beginning of year	501,994	425,885	420,610
Cash and cash equivalents, end of year	$ 643,757	$ 501,994	$ 425,885

The Consolidated Cash Flow Statement includes the results of discontinued operations up to the disposal date, July 2, 2020.
The accompanying notes are an integral part of these Consolidated Financial Statements.

Belden Inc.
Consolidated Stockholders' Equity Statements

	Belden Inc. Stockholders									Non-controlling Interest	Total
	Mandatory Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Retained Earnings	Treasury Stock		Accumulated Other Comprehensive Income (Loss)		
	Shares	Amount	Shares	Amount			Shares	Amount			
	(In thousands)										
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
Cumulative effect of change in accounting principle	—	—	—	—	—	(2,916)	—	—	—	—	(2,916)
Net income (loss)	—	—	—	—	—	(55,162)	—	—	—	104	(55,058)
Other comprehensive income (loss), net of tax	—	—	—	—	—	—	—	—	(128,433)	394	(128,039)
Retirement Savings Plan stock contributions	—	—	—	—	(1,622)	—	76	4,276	—	—	2,654
Exercise of stock options, net of tax withholding forfeitures	—	—	—	—	(791)	—	7	610	—	—	(181)
Conversion of restricted stock units into common stock, net of tax withholding forfeitures	—	—	—	—	(5,967)	—	78	4,759	—	—	(1,208)
Share repurchase program	—	—	—	—	—	—	(976)	(35,000)	—	—	(35,000)
Share-based compensation	—	—	—	—	20,030	—	—	—	—	—	20,030
Common stock dividends ($0.20 per share)	—	—	—	—	—	(9,050)	—	—	—	—	(9,050)
Balance at December 31, 2020	$ —	$ —	50,335	$ 503	$ 823,605	$ 450,876	(5,692)	$ (332,552)	$ (191,851)	$ 6,470	$ 757,051
Net income	—	—	—	—	—	63,925	—	—	—	392	64,317
Other comprehensive income (loss), net of tax	—	—	—	—	—	—	—	—	121,285	(1,423)	119,862
Acquisition of noncontrolling interests	—	—	—	—	2,391	—	—	—	—	(4,644)	(2,253)
Retirement Savings Plan stock contributions	—	—	—	—	(652)	—	134	7,540	—	—	6,888
Exercise of stock options, net of tax withholding forfeitures	—	—	—	—	(1,615)	—	20	1,128	—	—	(487)
Conversion of restricted stock units into common stock, net of tax withholding forfeitures	—	—	—	—	(14,973)	—	178	9,890	—	—	(5,083)
Share-based compensation	—	—	—	—	24,871	—	—	—	—	—	24,871
Common stock dividends ($0.20 per share)	—	—	—	—	—	(9,084)	—	—	—	—	(9,084)
Balance at December 31, 2021	$ —	$ —	50,335	$ 503	$ 833,627	$ 505,717	(5,360)	$ (313,994)	$ (70,566)	$ 795	$ 956,082

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 businesses – 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.

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 2021, 2020, and 2019 we utilized Level 1 inputs to determine the fair value of cash equivalents and Level 2 and Level 3 inputs to determine the fair value of net assets acquired in business combinations (see Note 4) and for impairment testing (see Note 13). We did not have any transfers between Level 1 and Level 2 fair value measurements during 2021.

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, 2021 and 2020, 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, 2021 and 2020 totaled $23.4 million and $25.5 million, respectively. Unprocessed Changes recognized as accrued liabilities at December 31, 2021 and 2020 totaled $12.5 million and $13.0 million, respectively.

We are exposed to credit losses primarily through sales of products and services. Our expected loss allowance methodology for accounts receivable is developed using historical collection experience, current and future economic and market conditions and a review of the current status of customers' trade accounts receivables. Due to the short-term nature of such receivables, the estimate of amount of accounts receivable that may not be collected is based on aging of the accounts receivable balances and the financial condition of customers. Additionally, specific allowance amounts are established to record the appropriate provision for customers that have a higher probability of default. Our monitoring activities include timely account reconciliation, dispute resolution, payment confirmation, consideration of customers' financial condition and macroeconomic conditions. Balances are written off when determined to be uncollectible. As of December 31, 2021 and 2020, the allowance for doubtful accounts totaled $6.3 million and $5.1 million, respectively. We also recognized bad debt expense, net of recoveries, of $1.8 million, $2.4 million, and $0.1 million in 2021, 2020, and 2019, 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, 2021 and 2020 totaled $45.7 million and $32.3 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, 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 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 asset 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 2021, we did not perform a qualitative assessment over any of our reporting units.

For our annual impairment test in 2021, we performed a quantitative assessment for all six of our reporting units. 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. Based on our annual goodwill impairment test, the excess of the fair values over the carrying values for five of the six reporting units tested under a quantitative income approach ranged from 51% - 436%. The estimated fair value for the Tripwire reporting unit was $131.2 million less than its carrying value, and as such, we recognized a goodwill impairment charge of $131.2 million during the fourth quarter of 2021. For the other five reporting units, using both an income approach and market approach, we determined that there was no impairment during 2021. During 2020 and 2019, we did not recognize any goodwill impairment from continuing operations. See Note 13 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 from continuing operations in 2021, 2020, or 2019. See Note 13 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 from continuing operations in 2021, 2020, or 2019.

During the years ended December 31, 2020 and 2019, we performed impairment tests on the Grass Valley disposal group due to its overall financial performance and discontinued operations classification, which resulted in total asset impairments of $113.0 million and $521.4 million, respectively. The 2019 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. See Notes 5 and 13.

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, 2021 and 2020 totaled $55.5 million and $32.2 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.

Acquisition 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 acquisition date. As necessary, we may engage third party specialists to assist in the estimation of fair value for certain liabilities, such as 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.

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 \$12.8 million, \$11.6 million, and \$14.7 million for 2021, 2020, and 2019, 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 due to the temporary or permanent timing differences with respect to the recognition of revenues, expenses, and tax attributes for income tax purposes compared to 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.

Deferred income taxes are recognized by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases as well as net operating loss and tax credit carryforwards. 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, 2021, the valuation allowance of $68.7 million was primarily related to net operating losses and capital losses 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.

Current-Year Adoption of Accounting Pronouncements

In December 2019, the FASB issued ASU 2019-12, Income Taxes (Topic 740) Simplifying the Accounting for Income Taxes (“ASU 2019-12”) which removes certain exceptions for investments, intra-period allocations and interim tax calculations, and adds guidance to reduce the complexity in accounting for income taxes. ASU 2019-12 is effective for annual periods beginning after December 15, 2020, with early adoption permitted. The various amendments in ASU 2019-12 are applied on a retrospective basis, modified retrospective basis and prospective basis, depending upon the amendment. The impact of adopting ASU 2019-12 on our consolidated financial statements was not material.

In October 2021, the FASB issued Accounting Standards Update No. 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*. The new standard eliminates the complexity of determining the fair value of contract liabilities and delivers revenue recognition consistency for contract assets and liabilities between the acquirer and acquiree in a business combination. The ASU is effective for fiscal years beginning after December 15, 2022 and early adoption is permitted. The amendments should be applied prospectively; however, an entity that elects to early adopt in an interim period should apply the amendments to all business combinations that occurred during the fiscal year that includes that interim period. We adopted ASU 2021-08 during the fourth quarter of 2021, which resulted in an increase in consolidated revenues of $1.4 million. See Note 4.

Note 3: Revenues

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 table presents our revenues disaggregated by major product category (in thousands).

	Broadband and 5G	Cyber-Security	Industrial Automation	Smart Buildings	Total Revenues
Year Ended December 31, 2021					
Enterprise Solutions	$ 488,453	$ —	$ —	$ 585,973	$ 1,074,426
Industrial Solutions	—	106,850	1,226,824	—	1,333,674
Total	$ 488,453	$ 106,850	$ 1,226,824	$ 585,973	$ 2,408,100
Year Ended December 31, 2020					
Enterprise Solutions	$ 432,262	$ —	$ —	$ 440,155	$ 872,417
Industrial Solutions	—	110,524	879,775	—	990,299
Total	$ 432,262	$ 110,524	$ 879,775	$ 440,155	$ 1,862,716
Year Ended December 31, 2019					
Enterprise Solutions	$ 401,415	$ —	$ —	$ 544,626	$ 946,041
Industrial Solutions	—	133,039	1,052,198	—	1,185,237
Total	$ 401,415	$ 133,039	$ 1,052,198	$ 544,626	$ 2,131,278

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

	Americas	EMEA	APAC	Total Revenues
Year Ended December 31, 2021				
Enterprise Solutions	$ 785,253	$ 150,790	$ 138,383	$ 1,074,426
Industrial Solutions	781,362	344,379	207,933	1,333,674
Total	$ 1,566,615	$ 495,169	$ 346,316	$ 2,408,100
Year Ended December 31, 2020				
Enterprise Solutions	$ 636,492	$ 130,982	$ 104,943	$ 872,417
Industrial Solutions	577,929	256,673	155,697	990,299
Total	$ 1,214,421	$ 387,655	$ 260,640	$ 1,862,716
Year Ended December 31, 2019				
Enterprise Solutions	$ 695,008	$ 135,732	$ 115,301	$ 946,041
Industrial Solutions	742,563	274,030	168,644	1,185,237
Total	$ 1,437,571	$ 409,762	$ 283,945	$ 2,131,278

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. Generally, we determine standalone selling price using the prices charged to customers on a standalone basis. In arrangements where software licenses with highly variable standalone selling prices are sold with either support or professional services, we generally determine the standalone selling price of the software license using the residual approach. Typically, payments are due after control transfers, which is less than one year from satisfaction of the performance obligation.

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 to the customer, which generally occurs when the product has been shipped or delivered from our facility to our customers, the customer has legal title to the product, and we have a present right to payment for the product. We also consider any customer acceptance clauses in determining when control has transferred to the customer and typically, these clauses are not substantive.

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, 2021.

The following table presents estimated and accrued variable consideration:

	December 31, 2021	December 31, 2020
	(in thousands)	
Accrued rebates included in accrued liabilities	$ 55,525	$ 32,192
Accrued returns included in accrued liabilities	12,530	13,016
Price adjustment recognized against gross accounts receivable	23,035	25,244

Depending on the terms of an arrangement, we may defer the recognition of a portion of the consideration received because we must satisfy a future performance 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. The typical use of a time-elapsed unit of measure for support and maintenance contracts reflects the benefit and same pattern of transfer the customer receives from our services under this arrangement over the term of the contract. 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, 2021, total deferred revenue was $86.8 million, and of this amount, $60.9 million is expected to be recognized within the next twelve months, and the remaining $25.9 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, 2019	$ 70,070
New deferrals	101,066
Revenue recognized	(93,488)
Balance at December 31, 2020	$ 77,648
New deferrals	97,940
Acquisitions	7,172
Revenue recognized	(95,915)
Balance at December 31, 2021	$ 86,845

Service-type warranties represent $9.6 million of the deferred revenue balance at December 31, 2021, and of this amount $4.1 million is expected to be recognized in the next twelve months, and the remaining $5.5 million is long-term and will be recognized over a period greater than twelve months.

At December 31, 2021, we did not have any material contract assets recorded in the consolidated balance sheets.

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 were $7.1 million, $5.8 million, and $3.4 million as of December 31, 2021, 2020, and 2019, respectively. For the years ended December 31, 2021, 2020 and 2019, we recognized $20.9 million, $16.3 million, and $19.0 million of sales commissions expense in selling, general, and administrative expenses, respectively.

Note 4: Acquisitions

OTN Systems N.V.

We acquired 100% of the shares of OTN Systems on January 29, 2021 for a purchase price, net of cash acquired, of $73.3 million, which was funded with cash on hand. OTN Systems, based in Olen, Belgium, is a leading provider of easy to use and highly-reliable network solutions tailored for specific applications in harsh, mission-critical environments. The acquisition of OTN Systems supports one of our key strategic priorities related to the growing demand for industrial automation by adding proprietary technology and mission-critical hardware and software products for more complete end-to-end solutions. The results of OTN Systems have been included in our Consolidated Financial Statements from January 29, 2021, and are reported within the Industrial Solutions segment. Belden assumed $1.8 million of OTN Systems' debt as part of the transaction, which was subsequently paid on the acquisition date. A subsidiary of OTN Systems includes a noncontrolling interest. Because OTN Systems has a controlling financial interest in the subsidiary, it is consolidated into our financial statements. The results that are attributable to the noncontrolling interest holder are presented as net income (loss) attributable to noncontrolling interests in the Consolidated Statements of Operations.

The following table summarizes the estimated fair values of the assets acquired and the liabilities assumed as of January 29, 2021 (in thousands):

Receivables	$	6,009
Inventories		10,731
Other current assets		768
Property, plant, and equipment		602
Intangible assets		39,930
Goodwill		41,749
Operating lease right-of-use assets		4,144
Other long-lived assets		416
Total assets acquired	$	104,349
Accounts payable	$	6,884
Accrued liabilities		8,735
Long-term debt		1,841
Postretirement benefits		3,581
Deferred income taxes		2,980
Long-term operating lease liabilities		3,271
Other long-term liabilities		3,692
Total liabilities assumed	$	30,984
Net assets		73,365
Noncontrolling interests		20
Net assets attributable to Belden	$	73,345

The fair value of acquired receivables is $6.0 million, which is equivalent to its gross contractual amount.

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 fair values assigned to each class of acquired assets and assumed liabilities could materially affect the results of our operations.

For purposes of the above allocation, we based our estimate of the fair values for the acquired inventory, intangible assets, and postretirement benefits 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 our 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 the expansion of industrial automation product offerings in complete end-to-end solutions. 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	$	26,400	6.8
Customer relationships		6,200	15.0
Sales backlog		3,600	5.0
Trademarks		3,070	14.8
Non-compete agreements		660	2.0
Total intangible assets subject to amortization	$	39,930	
Intangible assets not subject to amortization:			
Goodwill	$	41,749	
Total intangible assets not subject to amortization	$	41,749	
Total intangible assets	$	81,679	
Weighed average amortization period			8.5

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. The useful life of the non-compete agreements was based on the term of the agreements.

Our consolidated revenues and income (loss) before taxes for the year ended December 31, 2021 included $37.6 million and $(1.8) million, respectively, from OTN Systems. For the year ended December 31, 2021, loss before taxes included $5.1 million of amortization of intangible assets, $3.0 million of severance and other restructuring costs, and $2.4 million of cost of sales related to the adjustment of acquired inventory to fair value for OTN Systems.

The following table illustrates the unaudited pro forma effect on operating results as if the OTN Systems acquisition had been completed January 1, 2020.

	Years Ended December 31,			
		2021		2020
	(In thousands, except per share data) (Unaudited)			
Revenues	$	2,409,851	$	1,900,646
Net income (loss) attributable to Belden common stockholders		65,377		(59,150)
Diluted income (loss) per share attributable to Belden common stockholders	$	1.44	$	(1.32)

The above unaudited pro forma financial information is presented for informational 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.

Opterna International Corp.

Our acquisition of Opterna International Corp. (Opterna) in 2019 included potential earn-out consideration. As of the acquisition date, we estimated the fair value of the earn-out to be $5.8 million. The earn-out period ended in 2021, and the financial targets tied to the earn-out were not achieved. We reduced the earn-out liability to zero and recognized a $5.8 million benefit in Selling, General and Administrative Expenses during the year ended December 31, 2021. This benefit was excluded from Segment EBITDA of our Enterprise Solutions segment.

Note 5: Disposals

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.

Brazil Oil & Gas Cable Business

During the first quarter of 2021, we committed to a plan to sell our oil and gas cable business in Brazil that met all of the criteria to classify the assets and liabilities of this business, formerly part of the Industrial Solutions segment, as held for sale. At such time, the carrying value of the disposal group exceeded the fair value less costs to sell, which we determined based upon the expected sale price, by $3.4 million. Therefore, we recognized an impairment charge equal to this amount in the first quarter of 2021. The impairment charge was excluded from Segment EBITDA of our Industrial Solutions segment. We completed the sale of our oil and gas cable business in Brazil during the second quarter of 2021 for $10.9 million, net of cash delivered with the business.

Grass Valley

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 reported within discontinued operations. We wrote down the carrying value of Grass Valley and recognized asset impairments totaling $113.0 million and $521.4 million in 2020 and 2019, respectively. 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.

We completed the sale of Grass Valley to Black Dragon Capital on July 2, 2020 and recognized a loss of $9.9 million, net of $7.5 million income tax expense. The terms of the sale included gross cash consideration of $120.0 million, or approximately $56.2 million net of cash delivered with the business. The sale also included deferred consideration consisting of a $175.0 million seller’s note that is expected to mature in 2025, up to $88 million in PIK (payment-in-kind) interest on the seller’s note, and $178.0 million in potential earnout payments. Based upon a third party valuation specialist using certain assumptions in a Monte Carlo analysis, the estimated fair value of the seller’s note is $34.9 million, which we recorded in Other Long-Lived Assets. We accounted for the earnout under a loss recovery approach and did not record an asset as of the disposal date. Any subsequent recognition of an earnout will be based on the gain contingency guidance.

The seller’s note accrues PIK interest at an annual rate of 8.5%. During the year ended December 31, 2021, the seller’s note accrued interest of $13.9 million, which we reserved for based on our expected loss allowance methodology. During 2021, we sold the seller's note to a third party for $62.0 million and recognized a gain on sale of approximately $27.0 million.

The following table summarizes the operating results of the disposal group up to the July 2, 2020 disposal date for the years ended December 31, 2020 and 2019, respectively:

	Years Ended December 31,	
	2020	2019
	(In thousands)	
Revenues	$ 109,195	$ 360,496
Cost of sales	(70,199)	(208,173)
Gross profit	38,996	152,323
Selling, general and administrative expenses	(39,947)	(93,796)
Research and development expenses	(15,083)	(37,172)
Amortization of intangibles	—	(12,782)
Asset impairment of discontinued operations	(113,007)	(521,441)
Interest expense, net	(432)	(819)
Non-operating pension cost	(169)	(221)
Loss before taxes	$ (129,642)	$ (513,908)

The disposal group recognized depreciation and amortization expense of approximately $0.0 million and $23.7 million during the years ended December 31, 2020 and 2019, respectively. The disposal group also had capital expenditures of approximately $16.7 million and $29.4 million during the years ended December 31, 2020 and 2019, respectively. Furthermore, the disposal group incurred stock-based compensation expense/(credits) of $(0.9) million and $0.9 million during the years ended December 31, 2020 and 2019, respectively. The disposal group did not have any significant non-cash charges for investing activities during the years ended December 31, 2020 and 2019.

Note 6: Operating Segments and Geographic Information

We are organized around two global businesses: Enterprise Solutions and Industrial Solutions. Each of the global businesses 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. 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 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.

Operating Segment Information

Enterprise Solutions

	Years ended December 31,		
	2021	2020	2019
		(In thousands)	
Segment revenues	$ 1,074,426	$ 872,415	$ 946,041
Segment EBITDA	143,236	99,333	126,925
Depreciation expense	21,594	20,655	19,771
Amortization of intangibles	17,595	21,662	22,324
Amortization of software development intangible assets	94	245	175
Adjustments related to acquisitions and divestitures	(6,828)	125	592
Severance, restructuring, and acquisition integration costs	13,800	7,720	10,808
Acquisition of property, plant and equipment	36,726	25,223	42,289
Segment assets	563,141	462,615	487,125

Industrial Solutions

	Years ended December 31,		
	2021	2020	2019
		(In thousands)	
Segment revenues	$ 1,333,674	$ 990,301	$ 1,185,237
Segment EBITDA	227,946	147,626	226,110
Depreciation expense	24,346	21,815	20,638
Amortization of intangibles	20,751	42,733	52,285
Amortization of software development intangible assets	2,806	1,576	350
Adjustments related to acquisitions and divestitures	1,792	—	—
Severance, restructuring, and acquisition integration costs	10,092	4,538	15,736
Goodwill and other asset impairment	140,461	—	—
Acquisition of property, plant and equipment	47,401	44,675	35,189
Segment assets	652,188	522,637	504,482

Total Segments

	Years ended December 31,		
	2021	2020	2019
		(In thousands)	
Segment revenues	$ 2,408,100	$ 1,862,716	$ 2,131,278
Segment EBITDA	371,182	246,959	353,035
Depreciation expense	45,940	42,470	40,409
Amortization of intangibles	38,346	64,395	74,609
Amortization of software development intangible assets	2,900	1,821	525
Adjustments related to acquisitions and divestitures	(5,036)	125	592
Severance, restructuring, and acquisition integration costs	23,892	12,258	26,544
Goodwill and other asset impairment	140,461	—	—
Acquisition of property, plant and equipment	84,127	69,898	77,478
Segment assets	1,215,329	985,252	991,607

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,		
	2021	2020	2019
		(In thousands)	
Segment Revenues and Consolidated Revenues	$ 2,408,100	$ 1,862,716	$ 2,131,278
Total Segment EBITDA	$ 371,182	$ 246,959	$ 353,035
Goodwill and other asset impairment	(140,461)	—	—
Depreciation expense	(45,940)	(42,470)	(40,409)
Amortization of intangibles	(38,346)	(64,395)	(74,609)
Severance, restructuring, and acquisition integration costs (1)	(23,892)	(12,258)	(26,544)
Amortization of software development intangible assets	(2,900)	(1,821)	(525)
Adjustments related to acquisitions and divestitures (2)	5,036	(125)	(592)
Eliminations	(119)	(480)	(3,149)
Consolidated operating income	124,560	125,410	207,207
Interest expense, net	(62,695)	(58,888)	(55,814)
Non-operating pension benefit (cost)	4,476	(395)	1,017
Gain on sale of note receivable	27,036	—	—
Loss on debt extinguishment	(5,715)	—	—
Consolidated income from continuing operations before taxes	$ 87,662	$ 66,127	$ 152,410

(1) See Note 15, *Severance, Restructuring, and Acquisition Integration Activities,* for details.

(2) In 2021, we collected $2.2 million of receivables associated with the sale of Grass Valley and acquisition of SPC that were previously written off, reduced the Opterna earn-out liability by $5.8 million, recognized cost of sales of $2.3 million related to purchase accounting adjustments of acquired inventory to fair value for the OTN Systems acquisition, and recognized a $0.6 million loss on the sale of tangible assets. In 2020 and 2019, we collectively recognized $0.1 million and $0.6 million, respectively, of cost of sales related to acquisition accounting adjustments of acquired inventory to fair value for both our SPC and Opterna acquisitions.

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

	Years Ended December 31,		
	2021	2020	2019
		(In thousands)	
Total segment assets	$ 1,215,329	$ 985,252	$ 991,607
Cash and cash equivalents	643,757	501,994	407,480
Goodwill	1,152,472	1,251,938	1,243,669
Intangible assets, less accumulated amortization	301,696	287,071	339,505
Deferred income taxes	32,321	29,536	25,216
Corporate assets	72,102	83,943	24,147
Assets of discontinued operations	—	—	375,135
Total assets	$ 3,417,677	$ 3,139,734	$ 3,406,759
Total segment acquisition of property, plant and equipment	$ 84,127	$ 69,898	$ 77,478
Corporate acquisition of property, plant and equipment	6,855	3,605	3,110
Discontinued operations acquisition of property, plant and equipment	—	16,712	29,414
Total acquisition of property, plant and equipment	$ 90,982	$ 90,215	$ 110,002

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, 2021, 2020, and 2019 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.

	United States	Canada	China	Germany	All Other	Total
	(In thousands, except percentages)					
Year ended December 31, 2021						
Revenues	$1,273,239	$ 191,493	$ 149,036	$ 113,529	$ 680,803	$2,408,100
Percent of total revenues	53 %	8 %	6 %	5 %	28 %	100 %
Long-lived assets	$ 181,002	$ 12,666	$ 46,776	$ 37,208	$ 106,986	$ 384,638
Year ended December 31, 2020						
Revenues	$1,015,340	$ 119,700	$ 111,835	$ 91,187	$ 524,654	$1,862,716
Percent of total revenues	55 %	6 %	6 %	5 %	28 %	100 %
Long-lived assets	$ 163,731	$ 32,063	$ 44,824	$ 63,100	$ 114,286	$ 418,004
Year ended December 31, 2019						
Revenues	$1,167,033	$ 162,975	$ 109,522	$ 92,913	$ 598,835	$2,131,278
Percent of total revenues	55 %	8 %	5 %	4 %	28 %	100 %
Long-lived assets	$ 152,214	$ 16,452	$ 40,247	$ 48,272	$ 101,179	$ 358,364

Major Customer

Revenues generated in both the Enterprise Solutions and Industrial Solutions segments from our largest customer were approximately $374.8 million (16% of revenues), $271.6 million (15% of revenues), and $328.2 million (15% of revenues) for the years ended December 31, 2021, 2020, and 2019, respectively. At December 31, 2021 and 2020, we had $40.5 million and $17.5 million in accounts receivable outstanding from this customer, which represented approximately 10% and 6% of our total accounts receivable balance as of December 31, 2021 and 2020, respectively.

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, 2021, 2020, or 2019.

Certain subsidiaries of Opterna included noncontrolling interests, which generated an immaterial amount of Opterna's annual revenues. Because we had a controlling financial interest in these subsidiaries, they were consolidated into our financial statements, and the results that were attributable to the noncontrolling interest holders were presented as net income (loss) attributable to noncontrolling interests in the Consolidated Statements of Operations. In 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 was paid in 2021. In November 2021, we purchased the remaining noncontrolling interests for a purchase price of $2.3 million. As of December 31, 2021, Opterna does not include any noncontrolling interests.

A subsidiary of OTN Systems includes a noncontrolling interest. Because we have a controlling financial interest in the subsidiary, it is consolidated into our financial statements. This subsidiary that includes a noncontrolling interest is not material to our consolidated financial statements as of or for the years ended December 31, 2021, 2020 or 2019.

Note 8: Income Per Share

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

	Years Ended December 31,		
	2021	2020	2019
		(In thousands)	
Numerator:			
Income from continuing operations	$ 62,457	$ 54,403	$ 109,891
Less: Net income attributable to noncontrolling interest	392	104	239
Less: Preferred stock dividends	—	—	18,437
Income from continuing operations attributable to Belden common stockholders	62,065	54,299	91,215
Add: Loss from discontinued operations, net of tax	—	(99,513)	(486,667)
Add: Gain (loss) on disposal of discontinued operations, net of tax	1,860	(9,948)	—
Net income (loss) attributable to Belden common stockholders	$ 63,925	$ (55,162)	$ (395,452)
Denominator:			
Weighted average shares outstanding, basic	44,802	44,778	42,203
Effect of dilutive common stock equivalents	559	159	213
Weighted average shares outstanding, diluted	45,361	44,937	42,416

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, 2021, 2020, and 2019, diluted weighted average shares outstanding exclude outstanding equity awards of 1.1 million, 1.5 million, and 1.2 million, respectively, which are anti-dilutive. In addition, for the years ended December 31, 2021, 2020, and 2019, diluted weighted average shares outstanding do not include outstanding equity awards of 0.2 million, 0.4 million, and 0.3 million, respectively, because the related performance conditions have not been satisfied. Furthermore, for the year ended December 31, 2019, diluted weighted average shares outstanding do not include the weighted average impact of preferred shares that were convertible into 3.7 million common shares 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: Credit Losses

Effective January 1, 2020, we adopted ASU 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments prospectively. This ASU replaces the incurred loss impairment model with an expected credit loss impairment model for financial instruments, including trade receivables. The amendment requires entities to consider forward-looking information to estimate expected credit losses, resulting in earlier recognition of losses for receivables that are current or not yet due, which were not considered under the previous accounting guidance. Upon adoption, we recorded a noncash cumulative effect adjustment to retained earnings of $2.9 million. Of this amount, $1.0 million related to our continuing operations and $1.9 million related to our discontinued operations.

We are exposed to credit losses primarily through sales of products and services. Our expected loss allowance methodology for accounts receivable is developed using historical collection experience, current and future economic and market conditions and a review of the current status of customers' trade accounts receivables. Due to the short-term nature of such receivables, the estimate of accounts receivable that may not be collected is based upon the aging of accounts receivable balances and the financial condition of customers. Additionally, specific allowance amounts are established to record the appropriate provision for customers that have a higher probability of default. Our monitoring activities include timely account reconciliation, dispute resolution, payment confirmation, consideration of customers' financial condition and macroeconomic conditions. Balances are written off when determined to be uncollectible.

Estimates are used to determine the allowance, which is based upon an assessment of anticipated payments as well as other historical, current, and future information that is reasonably available. The following table presents the activity in the allowance for doubtful accounts for the years ended December 31, 2021 and 2020 (in thousands).

Balance at December 31, 2019	$	2,569
Adoption adjustment		1,011
Current period provision		2,282
Currency impact		39
Write-offs		(114)
Recoveries collected		(637)
Balance at December 31, 2020	$	5,150
Current period provision		1,960
Currency impact		(74)
Disposals		(190)
Recoveries collected		(227)
Write-offs		(367)
Balance at December 31, 2021	$	6,252

Note 10: Inventories

The major classes of inventories were as follows:

	December 31, 2021	December 31, 2020
	(In thousands)	
Raw materials	$ 157,306	$ 106,514
Work-in-process	43,642	32,011
Finished goods	190,090	141,042
Gross inventories	391,038	279,567
Excess and obsolete reserves	(45,684)	(32,269)
Net inventories	$ 345,354	$ 247,298

Note 11: Property, Plant and Equipment

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

	December 31, 2021	December 31, 2020
	(In thousands)	
Land and land improvements	$ 27,579	$ 29,321
Buildings and leasehold improvements	113,281	136,427
Machinery and equipment	622,002	608,618
Computer equipment and software	150,229	137,512
Construction in process	66,407	63,589
Gross property, plant and equipment	979,498	975,467
Accumulated depreciation	(629,684)	(606,847)
Net property, plant and equipment	$ 349,814	$ 368,620

Depreciation Expense

We recognized depreciation expense in income from continuing operations of $45.9 million, $42.5 million, and $40.4 million in 2021, 2020, and 2019, respectively.

Sale-Leaseback

During the fourth quarter of 2021, we sold certain real estate in Germany as part of a sale and leaseback transaction for €24.5 million (approximately $27.8 million) and recognized a $0.6 million loss on the sale. The lease is for a term of 10 years and as of December 31, 2021, had a total right-of-use asset balance of $25.3 million. When the assets met the held for sale criteria during the third quarter of 2021, we performed a recoverability test and determined that the carrying values of the assets were not recoverable and as a result, recognized a $2.3 million impairment charge to write them down to fair value. The impairment charge was excluded from Segment EBITDA of our Industrial Solutions segment.

Asset Impairment

During the first quarter of 2021, we committed to a plan to sell our oil and gas business in Brazil and recognized an impairment charge of $3.4 million (includes a goodwill impairment of $1.7 million). During the second quarter of 2021, we completed the sale of this business. See Note 5.

During the first quarter of 2021, we also performed a recoverability test over certain held and used long-lived assets in our Industrial Solutions segment. We determined that the carrying values of the assets were not recoverable and recognized a $3.6 million impairment charge to write them down to fair value. This impairment charge was excluded from Segment EBITDA of our Industrial Solutions segment.

Note 12: 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 15 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, 2021 or 2020, 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.

We are party to a lease guarantee, whereby Belden has covenanted the lease payments for one of Snell Advanced Media's (SAM) property leases through its 2035 expiration date. The lease guarantee was executed in 2018 following the acquisition of SAM, which we subsequently sold on July 2, 2020 as part of the Grass Valley disposal group (see Note 5). This lease guarantee was retained by Belden and not transferred to Black Dragon Capital as part of the sale of Grass Valley. Belden would be required to make lease payments only if the primary obligor, Black Dragon Capital, fails to make the payments. As of December 31, 2021, the SAM lease has approximately $20.0 million of lease payments remaining. We have not recorded a liability associated with this guarantee.

The components of lease expense were as follows:

	Years Ended December 31,		
	2021	**2020**	**2019**
		(In thousands)	
Operating lease cost	$ 20,340	$ 14,348	$ 14,622
Finance lease cost			
Amortization of right-of-use asset	$ 534	$ 133	$ 142
Interest on lease liabilities	14	17	22
Total finance lease cost	$ 548	$ 150	$ 164

Supplemental cash flow information related to leases was as follows:

	Years Ended December 31,		
	2021	**2020**	**2019**
		(In thousands)	
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flows from operating leases	$ 17,641	$ 15,489	$ 14,594
Operating cash flows from finance leases	15	16	25
Financing cash flows from finance leases	3,151	158	258

Supplemental balance sheet information related to leases was as follows:

	December 31,	
	2021	**2020**
	(In thousands, except lease term and discount rate)	
Operating leases:		
Total operating lease right-of-use assets	$ 79,464	$ 54,787
Accrued liabilities	$ 18,176	$ 14,742
Long-term operating lease liabilities	67,225	46,398
Total operating lease liabilities	$ 85,401	$ 61,140
Finance leases:		
Other long-lived assets, at cost	$ 3,682	$ 764
Accumulated depreciation	(563)	(483)
Other long-lived assets, net	$ 3,119	$ 281

Weighted Average Remaining Lease Term		
Operating leases	6 years	5 years
Finance leases	4 years	3 years
Weighted Average Discount Rate		
Operating leases	5.0%	6.6 %
Finance leases	4.3%	4.9 %

The following table summarizes maturities of lease liabilities as of December 31, 2021 (in thousands):

2022	$	22,838
2023		18,738
2024		15,307
2025		14,015
2026		10,987
Thereafter		17,967
Total	$	99,852

The following table summarizes maturities of lease liabilities as of December 31, 2020 (in thousands):

2021	$	19,250
2022		16,305
2023		12,552
2024		9,516
2025		8,718
Thereafter		8,901
Total	$	75,242

Note 13: Intangible Assets

The carrying values of intangible assets were as follows:

	December 31, 2021			December 31, 2020		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
		(In thousands)			(In thousands)	
Goodwill	$ 1,152,472	$ —	$ 1,152,472	$ 1,251,938	$ —	$ 1,251,938
Definite-lived intangible assets subject to amortization:						
Developed technology	$ 471,931	$ (383,922)	$ 88,009	$ 428,187	$ (369,849)	$ 58,338
Customer relationships	297,395	(143,197)	154,198	295,382	(128,796)	166,586
Trademarks	70,619	(41,771)	28,848	65,861	(36,539)	29,322
Backlog	14,580	(11,827)	2,753	11,421	(11,421)	—
In-service research and development	11,550	(10,997)	553	11,536	(9,774)	1,762
Non-compete agreements	618	(283)	335	—	—	—
Total intangible assets subject to amortization	$ 866,693	$ (591,997)	$ 274,696	$ 812,387	$ (556,379)	$ 256,008
Indefinite-lived intangible assets not subject to amortization:						
Trademarks	$ 27,000	$ —	$ 27,000	$ 31,063	$ —	$ 31,063
Total intangible assets not subject to amortization	$ 27,000	$ —	$ 27,000	$ 31,063	$ —	$ 31,063
Intangible assets	$ 893,693	$ (591,997)	$ 301,696	$ 843,450	$ (556,379)	$ 287,071

<u>Segment Allocation of Goodwill and Trademarks</u>

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, 2019	$ 470,031	$ 773,638	$ 1,243,669
Acquisitions and purchase accounting adjustments	2,420	—	2,420
Translation impact	2,296	3,553	5,849
Balance at December 31, 2020	$ 474,747	$ 777,191	$ 1,251,938
Acquisitions and purchase accounting adjustments	—	41,749	41,749
Impairment	—	(132,843)	(132,843)
Translation impact	(1,506)	(6,866)	(8,372)
Balance at December 31, 2021	$ 473,241	$ 679,231	$ 1,152,472

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

	Enterprise Solutions	Industrial Solutions	Consolidated
		(In thousands)	
Balance at December 31, 2019	$ 27,000	$ 13,106	$ 40,106
Reclassify to definite-lived	—	(9,043)	(9,043)
Balance at December 31, 2020	$ 27,000	$ 4,063	$ 31,063
Reclassify to definite-lived	—	(4,063)	(4,063)
Balance at December 31, 2021	$ 27,000	$ —	$ 27,000

Annual Impairment Test

The annual measurement date for our goodwill and indefinite-lived intangible assets impairment test is our fiscal November month-end. For our 2021 goodwill impairment test, we performed a quantitative assessment for all six of our reporting units 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 for five of the six reporting units were in excess of their carrying values; therefore, we did not record any goodwill impairment for these reporting units. The estimated fair value for the Tripwire reporting unit in our Industrial Solutions segment was $131.2 million less than its carrying value, and as such, we recognized a goodwill impairment charge of $131.2 million during the fourth quarter of 2021. For the Tripwire reporting unit, we determined the estimated fair value by calculating the present value of estimated future cash flows, which was based in part on the assumed proceeds from a divestiture of Tripwire. On February 7, 2022, we signed an agreement to sell Tripwire. See Note 26. We did not recognize any goodwill impairment from continuing operations in 2020 or 2019 based upon the results of our annual goodwill impairment testing.

For our annual impairment test in 2021, the excess of the fair values over the carrying values for the reporting units other than Tripwire ranged from 51% - 436%. 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 assessments, the discount rates ranged from 11.3% to 13.7%, the 2022 to 2031 compounded annual revenue growth rates ranged from 3.8% to 9.7%, and the revenue growth rates beyond 2031 ranged from 2.0% to 3.0%. By their nature, these assumptions involve risks and uncertainties. There is inherent risk associated with using an income approach to estimate fair values. If actual results are significantly different from our estimates or assumptions, we may have to recognize additional impairment charges that could be material.

We test our indefinite-lived intangible asset, a trademark, 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 2021. Rather, we performed a quantitative assessment over our indefinite-lived trademark in 2021. Under the quantitative assessments, we determined the fair value of the trademark using a relief from royalty methodology and compared the fair value to the carrying value. Significant assumptions to determine fair value included sales growth, royalty rates, and discount rates. We did not recognize any indefinite-lived intangible asset impairment charges in 2021, 2020, or 2019.

Disposal Group Impairment

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, previously included in our Enterprise Solutions segment, was 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). During 2020, we wrote down the carrying value of Grass Valley and recognized asset impairments totaling $113.0 million. 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 5.

Amortization Expense

We recognized amortization expense in income from continuing operations of $41.2 million, $66.2 million, and $74.6 million in 2021, 2020, and 2019, respectively. We expect to recognize annual amortization expense of $38.1 million in 2022, $36.1 million in 2023, $34.0 million in 2024, $29.5 million in 2025, and $24.9 million in 2026 related to our intangible assets balance as of December 31, 2021.

The weighted-average amortization period for our customer relationships, developed technology, trademarks, and in-service research and development is 18.2 years, 9.0 years, 8.8 years, and 5.0 years, respectively.

At the beginning of 2021, we re-evaluated the useful life of a certain trademark in our Industrial Solutions segment and concluded that an indefinite life for this trademark was no longer appropriate. We have estimated a useful life of five years for the trademark and will re-evaluate this estimate if and when our expected use of the trademark changes. We began amortizing the trademark in the first quarter of 2021, which resulted in amortization expense of $0.8 million for the year ended December 31, 2021. As of December 31, 2021, the net book value of this trademark was $3.3 million.

Note 14: Accrued Liabilities

The carrying values of accrued liabilities were as follows:

	December 31, 2021	December 31, 2020
	(In thousands)	
Wages, severance and related taxes	$ 100,324	$ 65,892
Deferred revenue	60,946	53,371
Accrued rebates	55,525	32,192
Accrued interest	20,847	20,610
Employee benefits	25,290	27,707
Lease liabilities	18,324	14,840
Other (individual items less than 5% of total current liabilities)	53,060	62,029
Accrued liabilities	$ 334,316	$ 276,641

Note 15: Severance, Restructuring, and Acquisition Integration Activities

Cost Reduction Program

We have executed a cost reduction program to streamline the organizational structure and invest in technology to drive productivity. We recognized $5.8 million, $4.0 million, and $19.6 million of severance and other restructuring costs for this program during the years ended December 31, 2021, 2020, and 2019, respectively. These costs were incurred by both the Enterprise Solutions and Industrial Solutions segments. The cost reduction program is substantially complete and has delivered a reduction in selling, general, and administrative expenses of approximately $60 million on an annual basis. We expect to recognize costs of approximately $3 million for this program in 2022.

Acquisition Integration Program

We are integrating our recent acquisitions such as OTN Systems, SPC, and Opterna with our existing businesses. The restructuring and integration activities are focused on achieving desired cost savings by consolidating existing and acquired facilities and other support functions. We recognized $12.6 million, $4.9 million, and $6.1 million of severance and other restructuring costs for this program during the years ended December 31, 2021, 2020, and 2019, respectively. These costs were incurred by both the Enterprise Solutions and Industrial Solutions segments. We do not expect to incur significant incremental costs for this program in 2022.

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, 2021			
Enterprise Solutions	$ 1,312	$ 12,488	$ 13,800
Industrial Solutions	4,119	5,973	10,092
Total	$ 5,431	$ 18,461	$ 23,892
Year Ended December 31, 2020			
Enterprise Solutions	$ 1,345	$ 6,374	$ 7,719
Industrial Solutions	1,706	2,833	4,539
Total	$ 3,051	$ 9,207	$ 12,258
Year Ended December 31, 2019			
Enterprise Solutions	$ 5,018	$ 5,790	$ 10,808
Industrial Solutions	15,736	—	15,736
Total	$ 20,754	$ 5,790	$ 26,544

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,		
	2021	2020	2019
		(In thousands)	
Cost of sales	$ 11,308	$ 704	$ 3,425
Selling, general and administrative expenses	12,584	11,554	23,119
Total	$ 23,892	$ 12,258	$ 26,544

Accrued Severance

The table below sets forth severance activity included in accrued liabilities that occurred for the Cost Reduction Program as well as the Acquisition Integration Program described above.

	Years ended December 31, 2021	2020
	(In thousands)	
Balance at beginning of year	$ 7,085	$ 19,575
New charges	2,060	2,529
Cash payments	(1,798)	(4,483)
Foreign currency translation	49	(89)
Other adjustments	—	(4,147)
Balance at the end of Q1	7,396	$ 13,385
New charges	458	4,660
Cash payments	(1,023)	(4,795)
Foreign currency translation	(4)	(132)
Other adjustments	(59)	(1,420)
Balance at the end of Q2	$ 6,768	$ 11,698
New charges	63	2,060
Cash payments	(941)	(3,968)
Foreign currency translation	(2)	(156)
Other adjustments	(197)	(1,541)
Balance at the end of Q3	$ 5,691	$ 8,093
New charges	1,541	992
Cash payments	(587)	(1,823)
Foreign currency translation	3	(95)
Other adjustments	(440)	(82)
Balance at year-end	$ 6,208	$ 7,085

The other adjustments above were the result of changes in estimates. The company has experienced higher than expected voluntary turnover and as a result, certain previously approved severance actions were not taken.

Note 16: Long-Term Debt and Other Borrowing Arrangements

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

	December 31, 2021	2020
	(In thousands)	
Revolving credit agreement due 2026	$ —	$ —
Senior subordinated notes:		
2.875% Senior subordinated notes due 2025	—	367,110
4.125% Senior subordinated notes due 2026	227,240	244,740
3.375% Senior subordinated notes due 2027	511,290	550,665
3.875% Senior subordinated notes due 2028	397,670	428,295
3.375% Senior subordinated notes due 2031	340,860	—
Total senior subordinated notes	1,477,060	1,590,810
Less unamortized debt issuance costs	(17,069)	(17,084)
Long-term debt	$ 1,459,991	$ 1,573,726

Revolving Credit Agreement due 2026

In June 2021, we entered into an amended and restated Revolving Credit Agreement that provides a $300.0 million multi-currency asset-based revolving credit facility (the Revolver). The maturity date of the Revolver is June 2, 2026. The borrowing base under the Revolver includes eligible accounts receivable; inventory; and property, plant and equipment of certain of our subsidiaries in the United States, Canada, Germany, the United Kingdom and the Netherlands. 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. Outstanding borrowings in the U.S. and Canada may also, at our election, be priced on a base rate plus a spread that ranges from 0.25% — 0.75%, depending on 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 combined borrowing base or our borrowing base availability is less than $20.0 million, we are subject to a fixed charge coverage ratio covenant. We paid approximately $2.3 million of fees when we amended the Revolver, which are being amortized over the remaining term of the Revolver. As of December 31, 2021, we had no borrowings outstanding on the Revolver, and our available borrowing capacity was $274.2 million.

In April 2020, we borrowed $190.0 million on our Revolver out of an abundance of caution due to the initial uncertainties arising from the COVID-19 pandemic. As a result of improved and sufficient liquidity and cash flow, we fully repaid the borrowings during 2020 and as of December 31, 2020, we had no borrowings outstanding on the Revolver.

Senior Subordinated Notes

We had outstanding €300.0 million aggregate principal amount of 2.875% senior subordinated notes due 2025 (the 2025 Notes). In September 2021, we repurchased the full €300.0 million 2025 Notes outstanding for cash consideration of €300.0 million ($358.5 million), including a prepayment penalty, and recognized a $5.7 million loss on debt extinguishment including the write-off of unamortized debt issuance costs.

We have outstanding €200.0 million 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, 2021 is $227.2 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 2031, 2028, and 2027 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.

We have outstanding €450.0 million 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, 2021 is $511.3 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 2031, 2028, 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 January 15 and July 15 of each year.

We have outstanding €350.0 million 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, 2021 is $397.7 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 2031, 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.

In July 2021, we completed an offering for €300.0 million ($356.0 million at issuance) aggregate principal amount of 3.375% senior subordinated notes due 2031 (the 2031 Notes). The carrying value of the 2031 Notes as of December 31, 2021 is $340.9 million. The 2031 Notes are guaranteed on a senior subordinated basis by our current and future domestic subsidiaries. The 2031 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 January 15 and July 15 of each year, commencing January 15, 2022. We paid approximately $5.9 million of fees associated with the issuance of the 2031 Notes, which are being amortized over the life of the 2031 Notes using the effective interest method. We used the net proceeds from this offering, along with cash on hand, to fund the full redemption of the 2025 Notes - see further discussion above.

The senior subordinated notes due 2026, 2027, 2028, and 2031 are redeemable after October 15, 2021, July 15, 2022, March 15, 2023, and July 15, 2026 respectively, at the following redemption prices as a percentage of the face amount of the notes:

Senior Subordinated Notes due							
2026		2027		2028		2031	
Year	Percentage	Year	Percentage	Year	Percentage	Year	Percentage
2021	102.063 %	2022	101.688 %	2023	101.938 %	2026	101.688 %
2022	101.375 %	2023	101.125 %	2024	101.292 %	2027	100.844 %
2023	100.688 %	2024	100.563 %	2025	100.646 %	2028	100.422 %
2024 and thereafter	100.000 %	2025 and thereafter	100.000 %	2026 and thereafter	100.000 %	2029 and thereafter	100.000 %

Fair Value of Long-Term Debt

The fair value of our senior subordinated notes as of December 31, 2021 was approximately $1,509.2 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 $1,477.1 million as of December 31, 2021.

Maturities

Maturities on outstanding long-term debt and other borrowings during each of the five years subsequent to December 31, 2021 are as follows (in thousands):

2022	$ —
2023	—
2024	—
2025	—
2026	227,240
Thereafter	1,249,820
	$ 1,477,060

Note 17: Net Investment Hedge

All of our euro denominated notes were issued by Belden Inc., a USD functional currency entity. As of December 31, 2021, €767.8 million 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 operation against adverse changes in the euro exchange rate. The transaction gain or loss is reported in the translation adjustment section of other comprehensive income. For the years ended December 31, 2021, 2020, and 2019, the transaction gain/(loss) associated with the net investment hedge reported in other comprehensive income was $67.6 million, $(56.2) million, and $26.6 million, respectively. During 2020, we de-designated €532.2 million of our outstanding debt that was previously designated as a net investment hedge. After the de-designation, transaction gains or losses associated with this €532.2 million of debt are reported in income from continuing operations.

Note 18: Income Taxes

	Years ended December 31,		
	2021	2020	2019
		(in thousands)	
Income (loss) before taxes:			
United States operations	$ 60,806	$ (117,819)	$ 42,833
Foreign operations	26,856	183,946	109,577
Income before taxes	$ 87,662	$ 66,127	$ 152,410
Income tax expense (benefit):			
Currently payable			
United States federal	$ 4,375	$ 273	$ 21,893
United States state and local	3,108	91	3,090
Foreign	13,634	11,511	13,859
	21,117	11,875	38,842
Deferred			
United States federal	13,204	(1,754)	7,567
United States state and local	5,205	(2,310)	(1,205)
Foreign	(14,321)	3,913	(2,685)
	4,088	(151)	3,677
Income tax expense	$ 25,205	$ 11,724	$ 42,519

In addition to the above income tax expense associated with continuing operations, we also recorded an income tax benefit associated with discontinued operations of $1.9 million, $22.6 million, and $27.2 million, in 2021, 2020, and 2019, respectively.

	Years Ended December 31,		
	2021	2020	2019
Effective income tax rate reconciliation from continuing operations:			
United States federal statutory rate	21.0%	21.0%	21.0%
State and local income taxes	8.5%	(2.6)%	1.2%
Impact of change in tax contingencies	(1.3)%	2.3%	—%
Foreign income tax rate differences	1.9%	(38.2)%	(8.6)%
Impact of change in deferred tax asset valuation allowance	(49.4)%	2.3%	9.5%
Domestic permanent differences and tax credits	45.6%	33.3%	4.7%
Impact of share-based compensation	2.5%	1.4%	0.1%
Impact of CARES act	—%	(1.8)%	—%
	28.8%	17.7%	27.9%

In 2021, the most significant difference between the U.S. federal statutory tax rate and our effective tax rate was the impact of a change in the deferred tax asset valuation allowance, primarily due to the release of a valuation allowance against the foreign tax credits in the U.S. and a pension deferred tax asset in a foreign jurisdiction.

An additional significant difference between the U.S. federal statutory tax rate and our effective tax rate was the impact of domestic permanent differences and tax credits. We recognized a total income tax expense from domestic permanent differences and tax credits of $39.8 million in 2021, primarily associated with a goodwill impairment in the U.S., and our foreign income inclusions.

Foreign tax rate differences resulted in an income tax expense (benefit) of $1.7 million, $(25.3) million, and $(13.1) million in 2021, 2020, and 2019, respectively. Additionally, in 2021, 2020, and 2019, our income tax expense was reduced by $3.1 million, $4.0 million, and $3.9 million, respectively, due to a tax holiday for our operations in St. Kitts. The tax holiday in St. Kitts is scheduled to expire in 2023.

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 intent to permanently reinvest the earnings of our non-U.S. subsidiaries in those operations and for continued non-U.S. growth opportunities.

The components of deferred income were as follows:

	December 31,	
	2021	2020
	(In thousands)	
Components of deferred income tax balances:		
Deferred income tax liabilities:		
Plant, equipment, and intangibles	$ (105,986)	$ (92,271)
Right of use asset	(19,139)	(17,610)
	(125,125)	(109,881)
Deferred income tax assets:		
Postretirement, pensions, and stock compensation	32,139	35,394
Reserves and accruals	19,617	24,388
Net operating loss, capital loss, and tax credit carryforwards	94,537	107,028
Lease liability	19,881	18,515
Valuation allowances	(68,719)	(84,308)
	97,455	101,017
Net deferred income tax liability	$ (27,670)	$ (8,864)

The net decrease in deferred tax assets related to net operating loss, capital loss, and tax credit carryforwards is primarily due to the utilization of foreign tax credits during the year.

The net decrease in deferred tax valuation allowances is primarily due to the release of the valuation allowance against the foreign tax credit as we expect we will have sufficient foreign source income to utilize the foreign tax credits as a result of tax planning strategies. The remaining valuation allowances are primarily related to the capital losses in the U.S. and net operating losses in foreign jurisdictions.

As of December 31, 2021, we had $163.9 million of gross net operating loss carryforwards and $17.2 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: $1.4 million in 2021, $12.9 million between 2022 and 2024, and $99.8 million between 2025 and 2041. Net operating loss with an indefinite carryforward period total $49.8 million. Of the $163.9 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 $102.2 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 $17.2 million will expire as follows: $0.6 million in 2021, $1.1 million between 2022 and 2024, and $11.1 million between 2025 and 2041. Tax credit carryforwards with an indefinite carryforward period total $4.4 million. We have determined, based on the weight of all available evidence, both positive and negative, that we will utilize $12.0 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.

As of December 31, 2021, we had $227.1 million of gross capital loss carryforwards in the U.S. with a full valuation allowance as we do not expect to be able to utilize the capital loss prior to expiration.

The following tables summarize our net operating losses carryforwards and tax credit carryforwards as of December 31, 2021 by jurisdiction:

		Net Operating Loss Carryforwards
		(In thousands)
Australia	$	10,134
Belgium		5,069
Germany		14,718
Netherlands		3,975
Other		16,547
United Kingdom		11,737
United States - Federal and various states		101,670
Total	$	163,850

		Tax Credit Carryforwards
		(In thousands)
Belgium	$	1,088
Canada		663
United States		15,416
Total	$	17,167

In 2021, we recognized a net $2.8 million decrease to reserves for uncertain tax positions. A reconciliation of the beginning and ending amounts of unrecognized tax benefits is as follows:

		2021		2020
		(In thousands)		
Balance at beginning of year	$	8,573	$	6,779
Additions based on tax positions related to the current year		422		548
Additions for tax positions of prior years		168		1,574
Reductions for tax positions of prior years - Settlement		(3,264)		(328)
Reduction for tax positions of prior years - Statute of limitations		(78)		—
Balance at end of year	$	5,821	$	8,573

The balance of $5.8 million at December 31, 2021 reflects tax positions that, if recognized, would impact our effective tax rate.

Our practice is to recognize interest and penalties related to uncertain tax positions in interest expense and operating expenses, respectively. We have approximately $0.0 million and $0.2 million accrued for the payment of interest and penalties as of December 31, 2021 and 2020, respectively.

Our federal tax return for the tax years 2017 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 19: 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. The U.S. defined benefit pension plan is closed to new entrants. 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 and stock contributions by the Company based on either hours worked by the employee or a percentage of the employee's compensation. Defined contribution expense for 2021, 2020, and 2019 was $13.6 million, $10.0 million, and $12.1 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 2021	Pension Benefits 2020	Other Benefits 2021	Other Benefits 2020
	(In thousands)			
Change in benefit obligation:				
Benefit obligation, beginning of year	$ (492,925)	$ (461,352)	$ (29,498)	$ (29,470)
Service cost	(3,953)	(3,930)	(33)	(33)
Interest cost	(7,512)	(9,729)	(727)	(809)
Participant contributions	(143)	(73)	(4)	(5)
Actuarial gain (loss)	19,778	(42,284)	1,391	(110)
Acquisitions and divestitures	(12,886)	(910)	—	—
Settlements	5,855	26,970	—	—
Curtailments	—	236	—	—
Plan amendments	—	(226)	—	—
Foreign currency exchange rate changes	7,226	(15,345)	(227)	(427)
Benefits paid	12,726	13,718	1,473	1,356
Benefit obligation, end of year	$ (471,834)	$ (492,925)	$ (27,625)	$ (29,498)

Years Ended December 31,	Pension Benefits 2021	Pension Benefits 2020	Other Benefits 2021	Other Benefits 2020
	(In thousands)			
Change in plan assets:				
Fair value of plan assets, beginning of year	$ 361,802	$ 355,726	$ —	$ —
Actual return on plan assets	32,467	32,470	—	—
Employer contributions	11,618	6,393	1,469	1,351
Plan participant contributions	143	73	4	5
Acquisitions and divestitures	9,339	—	—	—
Settlements	(5,790)	(26,945)	—	—
Foreign currency exchange rate changes	(2,827)	7,803	—	—
Benefits paid	(12,726)	(13,718)	(1,473)	(1,356)
Fair value of plan assets, end of year	$ 394,026	$ 361,802	$ —	$ —
Funded status, end of year	$ (77,808)	$ (131,123)	$ (27,625)	$ (29,498)
Amounts recognized in the balance sheets:				
Prepaid benefit cost	$ 20,177	$ 4,780	$ —	$ —
Accrued benefit liability, current	(3,173)	(3,558)	(1,440)	(1,443)
Accrued benefit liability, noncurrent	(94,812)	(132,345)	(26,185)	(28,055)
Net funded status	$ (77,808)	$ (131,123)	$ (27,625)	$ (29,498)

The accumulated benefit obligation for all defined benefit pension plans was $494.7 million and $518.4 million at December 31, 2021 and 2020, 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 $265.5 million, $261.3 million, and $167.5 million, respectively, as of December 31, 2021 and $463.2 million, $459.2 million, and $297.8 million, respectively, as of December 31, 2020.

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 $27.6 million and $0.0 million, respectively, as of December 31, 2021 and were $29.5 million and $0.0 million, respectively, as of December 31, 2020. The following table provides the components of net periodic benefit costs for the plans.

	Pension Benefits			Other Benefits		
Years Ended December 31,	**2021**	**2020**	**2019**	**2021**	**2020**	**2019**
			(In thousands)			
Components of net periodic benefit cost:						
Service cost	$ 3,953	$ 3,930	$ 3,668	$ 33	$ 33	$ 35
Interest cost	7,512	9,729	12,261	727	809	960
Expected return on plan assets	(16,337)	(16,357)	(15,699)	—	—	—
Amortization of prior service cost	110	190	169	—	—	—
Settlement loss (gain)	(18)	3,153	(7)	—	—	—
Other adjustments	(191)	—	—	—	—	—
Net loss (gain) recognition	3,764	2,930	1,432	(43)	(59)	(133)
Net periodic benefit cost (income)	$ (1,207)	$ 3,575	$ 1,824	$ 717	$ 783	$ 862

We recorded settlement losses totaling $3.2 million during 2020. 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 Years Ended December 31,		Other Benefits Years Ended December 31,	
	2021	**2020**	**2021**	**2020**
Weighted average assumptions for benefit obligations at year end:				
Discount rate	2.0 %	1.5 %	2.9 %	2.5 %
Salary increase	3.3 %	3.3 %	N/A	N/A
Cash balance interest credit rate	4.7 %	4.6 %	N/A	N/A
Weighted average assumptions for net periodic cost for the year:				
Discount rate	1.5 %	2.2 %	2.5 %	2.9 %
Salary increase	3.2 %	3.5 %	N/A	N/A
Cash balance interest credit rate	4.6 %	4.0 %	N/A	N/A
Expected return on assets	4.6 %	4.9 %	N/A	N/A
Assumed health care cost trend rates:				
Health care cost trend rate assumed for next year	N/A	N/A	5.4 %	5.5 %
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	2027	2026

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 50-90% in asset protection investments and 10-50% 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, 2021				December 31, 2020			
	Fair Market Value at December 31, 2021	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Investments Measured at Net Asset Value	Fair Market Value at December 31, 2020	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Investments Measured at Net Asset Value
	(In thousands)				(In thousands)			
Asset Category:								
Equity securities(a)								
U.S. equities fund	$ 77,687	$ 2,913	$ —	$ 74,774	$ 86,059	$ 3,012	$ —	$ 83,047
Non-U.S. equities fund	77,299	6,267	—	71,032	61,630	5,602	—	56,028
Debt securities(b)								
Government bond fund	64,255	—	731	63,524	98,418	—	772	97,646
Corporate bond fund	108,729	—	11,507	97,222	82,434	—	12,150	70,284
Fixed income fund(c)	16,939	—	—	16,939	7,320	—	—	7,320
Liability driven investment fund(d)	22,713	—	—	22,713	—	—	—	—
Other investments(e)	15,103	—	—	15,103	17,367	—	—	17,367
Cash & equivalents	11,301	5,271	—	6,030	8,574	3,230	—	5,344
Total	$ 394,026	$ 14,451	$ 12,238	$ 367,337	$ 361,802	$ 11,844	$ 12,922	$ 337,036

(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.

(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.

(c) This category includes guaranteed insurance contracts and annuity policies.

(d) This category includes investments in funds that are designed to provide leveraged exposure to changes in interest rates. The fund purchases shares of funds that invest in government bonds, debt repurchase agreements, total return swaps and interest rate swaps.

(e) 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.

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, 2021 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)	
2022	$ 19,363	$ 1,460
2023	20,383	1,458
2024	23,199	1,463
2025	20,531	1,468
2026	21,461	1,472
2027-2031	108,900	7,463
Total	$ 213,837	$ 14,784

We anticipate contributing $11.8 million and $1.5 million to our pension and other postretirement plans, respectively, during 2022.

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, 2021 and the changes in these amounts during the year ended December 31, 2021 are as follows.

	Pension Benefits	Other Benefits
	(In thousands)	
Components of accumulated other comprehensive loss:		
Net actuarial loss (gain)	$ 39,995	$ (1,770)
Net prior service cost	2,661	—
	$ 42,656	$ (1,770)

	Pension Benefits	Other Benefits
	(In thousands)	
Changes in accumulated other comprehensive loss:		
Net actuarial loss (gain), beginning of year	$ 80,671	$ (436)
Amortization of actuarial gain (loss)	(3,764)	43
Actuarial gain	(19,778)	(1,391)
Asset gain	(16,130)	—
Settlement gain recognized	18	—
Other adjustments	191	—
Currency impact	(1,213)	14
Net actuarial loss (gain), end of year	$ 39,995	$ (1,770)
Prior service cost, beginning of year	$ 2,798	$ —
Amortization of prior service cost	(110)	—
Currency impact	(27)	—
Prior service cost, end of year	$ 2,661	$ —

Note 20: 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, 2019	$ (18,225)	$ (45,193)	$ (63,418)
Other comprehensive loss attributable to Belden before reclassifications	(123,101)	(20,800)	(143,901)
Amounts reclassified from accumulated other comprehensive income	10,145	5,323	15,468
Net current period other comprehensive loss attributable to Belden	(112,956)	(15,477)	(128,433)
Balance at December 31, 2020	$ (131,181)	$ (60,670)	$ (191,851)
Other comprehensive loss attributable to Belden before reclassifications	$ 90,690	$ 28,653	$ 119,343
Amounts reclassified from accumulated other comprehensive income	(977)	2,919	1,942
Net current period other comprehensive loss attributable to Belden	89,713	31,572	121,285
Balance at December 31, 2021	$ (41,468)	$ (29,098)	$ (70,566)

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

	Amount Reclassified from Accumulated Other Comprehensive Income (Loss) (2)	Affected Line Item in the Consolidated Statements of Operations and Comprehensive Income
	(In thousands)	
Amortization of pension and other postretirement benefit plan items:		
Actuarial losses	$ 3,721	(1)
Prior service cost	110	(1)
Total before tax	3,831	
Tax benefit	(912)	
Total net of tax	$ 2,919	

(1) The amortization of these accumulated other comprehensive income (loss) components are included in the computation of net periodic benefit costs (see Note 19).

(2) In addition, we reclassified $1.0 million of accumulated foreign currency translation gains associated with the sale of our oil and gas cable business in Brazil.

Note 21: 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, 2021	2020	2019
		(In thousands)	
Total share-based compensation cost	$ 24,871	$ 19,171	$ 16,802
Income tax benefit	5,919	4,563	3,999

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.

During the year ended December 31, 2020, certain restricted stock units with performance vesting conditions were modified as a result of approved changes to the performance targets. There were no other changes to the terms of the restricted stock units. The modification was applicable to all employees who were previously granted the affected restricted stock units. Prior to the modification, the performance targets were not expected to be achieved. Therefore, we had not recognized any expense for these restricted stock units on a cumulative basis. As of the modification date, we expected to recognize total incremental compensation expense as a result of the modification of $4.4 million. The expense will be recognized over the applicable service periods, which extend to 2023.

	Years Ended December 31,		
	2021	2020	2019
	(In thousands, except weighted average fair value and assumptions)		
Weighted-average fair value of SARs granted	$ 18.30	$ 18.29	$ 22.31
Total intrinsic value of SARs exercised	1,581	545	354
Tax benefit from SARs exercised	327	26	176
Weighted-average fair value of restricted stock units granted	51.76	41.75	64.61
Total fair value of restricted stock units vested	12,623	6,600	10,325
Expected volatility	45.34 %	37.55 %	35.05 %
Expected term (in years)	5.7	5.7	5.7
Risk-free rate	0.70 %	1.44 %	2.56 %
Dividend yield	0.44 %	0.39 %	0.32 %

	SARs				Restricted Stock 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, 2021	1,311	$ 64.06	n/a	n/a	953	$ 52.50
Granted	205	44.93	n/a	n/a	335	51.76
Exercised or converted	(155)	42.47	n/a	n/a	(269)	46.86
Forfeited or expired	(117)	68.59	n/a	n/a	(55)	48.61
Outstanding at December 31, 2021	1,244	$ 63.18	4.7	$ 9,582	964	$ 50.08
Vested or expected to vest at December 31, 2021	313	$ 48.46	8.7	$ 5,399		
Exercisable or convertible at December 31, 2021	931	$ 68.12	3.4	$ 4,183		

At December 31, 2021, the total unrecognized compensation cost related to all nonvested awards was $25.7 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 22: Share Repurchases

Our Board of Directors previously authorized a 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 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. During 2020, we repurchased 1.0 million shares of our common stock under the share repurchase program for an aggregate cost of $35.0 million at an average price per share of $35.83. During 2021, we did not repurchase shares of our common stock under the share repurchase program.

Note 23: 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 seven are distributors, constitute in aggregate approximately 42%, 40%, and 39% of revenues in 2021, 2020, and 2019, respectively.

Unconditional Commodity Purchase Obligations

At December 31, 2021, we were committed to purchase approximately 4.8 million pounds of copper at an aggregate fixed cost of $20.9 million. At December 31, 2021, this fixed cost was $0.3 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 27% of our labor force is covered by collective bargaining agreements at various locations around the world. Approximately 18% of our labor force is covered by collective bargaining agreements that we expect to renegotiate during 2022.

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, 2021 are considered representative of their respective fair values. The fair value of our senior subordinated notes at December 31, 2021 and 2020 was approximately $1,509.2 million and $1,633.7 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 $1,477.1 million and $1,590.8 million as of December 31, 2021 and 2020, respectively.

Note 24: Contingent Liabilities

General

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, 2021, we were party to unused standby letters of credit, bank guarantees, and surety bonds totaling $17.8 million, $6.9 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 25: Supplemental Cash Flow Information

Supplemental cash flow information is as follows:

	Years Ended December 31, 2021	2020	2019
	(In thousands)		
Income tax refunds received	$ 6,120	$ 4,460	$ 4,695
Income taxes paid	(40,139)	(25,259)	(40,760)
Interest paid	(54,176)	(53,029)	(51,160)

Note 26: Subsequent Events

Definitive Agreement to Divest Tripwire

On February 7, 2022, we signed a definitive agreement to divest Tripwire for $350 million in cash. The transaction is expected to close in the first quarter of 2022. During the fourth quarter of 2021, we recognized a goodwill impairment charge for the Tripwire reporting unit of $131.2 million, representing the reporting unit's excess carrying value over its present value of estimated future cash flows, which was based in part on the assumed proceeds from the divestiture. The impairment charge was excluded from Segment EBITDA of our Industrial Solutions segment.

The following table provides the major classes of assets and liabilities of the Tripwire disposal group:

	December 31, 2021	December 31, 2020
	(In thousands)	
Assets:		
Cash and cash equivalents	$ 2,194	$ 1,328
Receivables, net	28,773	26,001
Inventories, net	150	126
Other current assets	7,418	9,798
Property, plant and equipment, less accumulated depreciation	6,250	7,588
Operating lease right-of-use assets	3,893	5,151
Goodwill	331,024	462,202
Intangible assets, less accumulated amortization	63,541	67,979
Deferred income taxes	834	800
Other long-lived assets	5,325	2,653
Total assets of Tripwire disposal group	$ 449,402	$ 583,626
Liabilities:		
Accounts payable	$ 6,458	$ 4,868
Accrued liabilities	56,208	61,769
Deferred income taxes	10,964	12,599
Long-term operating lease liabilities	5,257	7,019
Other long-term liabilities	20,192	17,214
Total liabilities of Tripwire disposal group	$ 99,079	$ 103,469

The Tripwire disposal group also had $3.4 million and $3.5 million of accumulated other comprehensive income as of December 31, 2021 and 2020, respectively.

The Tripwire disposal group had revenues of $106.8 million, $110.5 million, and $133.0 million for the years ended December 31, 2021, 2020, and 2019, respectively. The Tripwire disposal group had losses before taxes of $(139.1) million, $(24.8) million and $(16.0) million for the years ended December 31, 2021, 2020, and 2019, respectively. In 2021, loss before taxes includes a goodwill impairment charge of $131.2 million. In addition, the Tripwire disposal group recognized depreciation and amortization expense of $11.9 million, $39.4 million, and $47.9 million during the years ended December 31, 2021, 2020, and 2019, respectively.

Acquisition of macmon secure GmbH

On January 17, 2022, we acquired macmon secure GmbH (Macmon), a leading provider of products and services that secure network infrastructures in a variety of mission critical industries, for approximately $43.3 million, net of cash acquired. The acquisition was funded with cash on hand. Headquartered in Berlin, Germany, Macmon brings proven products and technologies that protect network infrastructure and extend our offerings in the areas of segmentation, zoning and access control.

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 OTN Systems which was acquired in 2021. The acquired business operations excluded from our evaluation constituted approximately 3% of our total assets as of December 31, 2021 and 2% and (1)% of our revenues and operating income for the year ended December 31, 2021, respectively. The operations of the acquired business will be included in our 2022 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, 2021.

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, 2021. 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, 2021, the Company's internal control over financial reporting was effective.

Our internal controls over financial reporting as of December 31, 2021 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, 2021 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, 2021, 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, 2021, 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 OTN Systems, which are included in the 2021 consolidated financial statements of the Company and constituted 3% of total assets as of December 31, 2021 and 2% and (1)% of revenues and operating income for the year then ended, respectively. 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 OTN Systems.

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, 2021 and 2020, 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, 2021, and the related notes and the financial statement schedule listed in the Index at Item 15(a) and our report dated February 15, 2022 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 15, 2022

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information regarding directors is incorporated herein by reference to “Item I-Election of Nine 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 2023 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, 2021” 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 2021 and 2020” and “Public Accounting Firm Information-Audit Committee’s Pre-Approval Policies and Procedures” as described in the Proxy Statement.

Our independent registered public accounting firm is Ernst & Young LLP, St. Louis, MO, Auditor Firm ID: 42

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, 2021 and December 31, 2020

   Consolidated Statements of Operations for Each of the Three Years in the Period Ended December 31, 2021

   Consolidated Statements of Comprehensive Income for Each of the Three Years in the Period Ended December 31, 2021

   Consolidated Cash Flow Statements for Each of the Three Years in the Period Ended December 31, 2021

   Consolidated Stockholders' Equity Statements for Each of the Three Years in the Period Ended December 31, 2021

   Notes to Consolidated Financial Statements

2. **Financial Statement Schedule**

   Schedule II – Valuation and Qualifying Accounts

	Beginning Balance	ASU 2016-13 Adoption Adjustment	Charged to Costs and Expenses	Divestitures/ Acquisitions	Charge Offs	Recoveries	Currency Movement	Ending Balance
					(In thousands)			
Accounts Receivable —								
Allowance for Doubtful Accounts:								
2021	$ 5,150	$ —	$ 1,960	$ (190)	$ (367)	$ (227)	$ (74)	$ 6,252
2020	2,569	1,011	2,282	—	(114)	(637)	39	5,150
2019	3,137	—	159	368	(969)	(86)	(40)	2,569
Inventories —								
Excess and Obsolete Allowances:								
2021	$ 32,269	$ —	$ 10,673	$ 3,927	$ —	$ (915)	$ (270)	$ 45,684
2020	21,245	—	15,915	—	(4,540)	(597)	246	32,269
2019	17,364	—	6,403	452	(2,333)	(606)	(35)	21,245
Deferred Income Tax Asset —								
Valuation Allowance:								
2021	$ 84,308	$ —	$ 865	$ 25,664	$ (406)	$ (41,463)	$ (249)	$ 68,719
2020	48,251	—	3,142	33,003	(303)	(114)	329	84,308
2019	37,235	—	12,356	330	—	(1,629)	(41)	48,251

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 3.875% Senior Subordinated Notes due 2028	March 16, 2018 Form 8-K, Exhibit 4.1
4.5	Indenture relating to 3.375% Senior Subordinated Notes due 2031	August 3, 2021 Form 8-K, Exhibit 4.1
4.6	Description of the Registrant's Securities Registered Under Section 12 of the Securities Exchange Act of 1934	August 3, 2020 Form 10-Q, Exhibit 4.1
10.1	Trademark License Agreement	Filed herewith
10.2*	Belden Inc. 2011 Long Term Incentive Plan, as amended	April 6,2016 Proxy Statement, Appendix II
10.3*	Belden Inc. 2021 Long Term Incentive Plan	April 8, 2021 Proxy Statement, Appendix II
10.4*	Form of Stock Appreciation Rights Award	Filed herewith
10.5*	Form of Performance Stock Units Award	Filed herewith
10.6*	Form of Restricted Stock Units Award	Filed herewith
10.7*	Belden Inc. Annual Cash Incentive Plan, as amended and restated	February 16, 2021 Form 10-K, Exhibit 10.7
10.8*	2004 Belden CDT Inc. Non-Employee Director Deferred Compensation Plan	December 21, 2004 Form 8-K, Exhibit 10.1
10.9*	Belden Supplemental Excess Defined Benefit Plan	February 16, 2021 Form 10-K, Exhibit 10.9
10.10*	Belden Supplemental Excess Defined Contribution Plan	February 16, 2021 Form 10-K, Exhibit 10.10
10.11*	Executive Severance Plan	July 31, 2020 Form 8-K, Exhibit 10.1
10.12*	Form of Business Protection Agreement with each of the Executive Officers	July 31, 2020 Form 8-K, Exhibit 10.3
10.13*	Belden Inc. 2021 Employee Stock Purchase Plan	April 8, 2021 Proxy Statement, Appendix III
10.14*	Form of Indemnification Agreement with each of the Directors and Officers	March 1, 2007 Form 10-K, Exhibit 10.39

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.
10.15	Second Amended and Restated Credit Agreement	June 2, 2021, Form 8-K, Exhibit 10.1
10.16	Purchase Agreement, dated July 14, 2021, by and among Belden Inc., the Guarantors named therein and Deutsche Bank AG	July 14, 2021 Form 8-K, Exhibit 10.1
14.1	Code of Ethics	August 25, 2020 Form 8-K, Exhibit 14.1
21.1	List of Subsidiaries of Belden Inc.	Filed herewith
23.1	Consent of Independent Registered Accounting Firm	Filed herewith
24.1	Powers of Attorney from Members of the Board of Directors	Filed herewith
31.1	Rule 13a-14(a)/15d-14(a) Certification of the Chief Executive Officer	Filed herewith
31.2	Rule 13a-14(a)/15d-14(a) Certification of the Chief Financial Officer	Filed herewith
32.1	Section 1350 Certification of the Chief Executive Officer	Filed herewith
32.2	Section 1350 Certification of the Chief Financial Officer	Filed herewith
101	The following financial statements from the Company's Annual Report on Form 10-K for the year ended December 31, 2021, 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, 2021, 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/ ROEL VESTJENS

Roel Vestjens

President and Chief Executive Officer

Date: February 15, 2022

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.

/s/ ROEL VESTJENS Roel Vestjens	President and Chief Executive Officer	February 15, 2022
/s/ JEREMY PARKS Jeremy Parks	Senior Vice President, Finance, and Chief Financial Officer	February 15, 2022
/s/ DOUGLAS R. ZINK Douglas R. Zink	Vice President and Chief Accounting Officer	February 15, 2022
/s/ DAVID ALDRICH* David Aldrich	Lead Independent Director and Chairman	February 15, 2022
/s/ LANCE C. BALK* Lance C. Balk	Director	February 15, 2022
/s/ STEVEN W. BERGLUND* Steven W. Berglund	Director	February 15, 2022
/s/ DIANE D. BRINK* Diane D. Brink	Director	February 15, 2022
/s/ JUDY L. BROWN* Judy L. Brown	Director	February 15, 2022
/s/ NANCY CALDERON* Nancy Calderon	Director	February 15, 2022
/s/ BRYAN C. CRESSEY* Bryan C. Cressey	Director	February 15, 2022
/s/ JONATHAN KLEIN* Jonathan Klein	Director	February 15, 2022
/s/ GREGORY J. MCCRAY* Gregory J. McCray	Director	February 15, 2022
/s/ GEORGE MINNICH* George Minnich	Director	February 15, 2022

/s/ ROEL VESTJENS
*By Roel Vestjens, Attorney-in-fact

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