Quad/Graphics, Inc.
Form 10-K
February 21, 2018
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K
T ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2017
or
¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to
Commission File Number 001-34806
QUAD/GRAPHICS, INC.
(Exact name of registrant as specified in its charter)

Wisconsin	39-1152983
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
N61 W23044 Harry's Way, Sussex, Wisconsin 53089-3995	(414) 566-6000
(Address of principal executive offices) (Zip Code)	(Registrant's telephone number, including area code)

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

Title of Class	Name of Each Exchange on Which Registered
Class A Common Stock, par value $0.025 per share	The New York Stock Exchange, LLC

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 x 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 x
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 x No ¨
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ¨
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ¨
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 x	Accelerated filer o
Non-accelerated filer o	Smaller reporting company o
(Do not check if a smaller reporting company)	Emerging growth company o

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

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

The aggregate market value of the class A common stock (based on the closing price of $22.92 per share on the New York Stock Exchange, LLC) on June 30, 2017, the last business day of the registrant's most recently completed second fiscal quarter, held by non-affiliates was $702,668,352. The registrant's class B common stock is not listed on a national securities exchange or traded in an organized over-the-counter market, but each share of the registrant's class B common stock is convertible into one share of the registrant's class A common stock.

Indicate the number of shares outstanding of each of the issuer's classes of common stock as of the latest practicable date.

Class	Outstanding as of February 16, 2018
Class A Common Stock	38,866,987
Class B Common Stock	13,841,703
Class C Common Stock	—

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the registrant's 2018 Annual Meeting of Shareholders are incorporated by reference into Part III of this Form 10-K.

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Forward-Looking Statements

To the extent any statements in this Annual Report on Form 10-K contain information that is not historical, these statements are forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements relate to, among other things, the objectives, goals, strategies, beliefs, intentions, plans, estimates, prospects, projections and outlook of Quad/Graphics, Inc. (the "Company" or "Quad/Graphics"), and can generally be identified by the use of words such as "may," "will," "expect," "intend," "estimate," "anticipate," "plan," "foresee," "believe" or "continue" or the negatives of these terms, variations on them and other similar expressions. In addition, any statements that refer to expectations, projections or other characterizations of future events or circumstances are forward-looking statements.

These forward-looking statements are not guarantees of future performance and are subject to risks, uncertainties and other factors, some of which are beyond the control of the Company. These risks, uncertainties and other factors could cause actual results to differ materially from those expressed or implied by those forward-looking statements. Among risks, uncertainties and other factors that may impact Quad/Graphics are those described in Part I, Item 1A, "Risk Factors," of this Annual Report on Form 10-K, as such may be amended or supplemented in Part II, Item 1A, "Risk Factors," of the Company's subsequently filed Quarterly Reports on Form 10-Q, and the following:

- The impact of decreasing demand for printed materials and significant overcapacity in the highly competitive commercial printing industry creates downward pricing pressures and potential under-utilization of assets;
- The impact of electronic media and similar technological changes, including digital substitution by consumers;
- The inability of the Company to reduce costs and improve operating efficiency rapidly enough to meet market conditions;
- The impact of changing future economic conditions;
- The failure of clients to perform under contracts or to renew contracts with clients on favorable terms or at all;
- The impact of increased business complexity as a result of the Company's transformation to a marketing solutions provider;
- The impact of regulatory matters and legislative developments or changes in laws, including changes in cyber-security, privacy and environmental laws;
- The impact of fluctuations in costs (including labor and labor-related costs, energy costs, freight rates and raw materials) and the impact of fluctuations in the availability of raw materials;
- The failure to attract and retain qualified production personnel;
- The impact of changes in postal rates, service levels or regulations;
- The fragility and decline in overall distribution channels, including newspaper distribution channels;
- The failure to successfully identify, manage, complete and integrate acquisitions and investments;
- The impact of risks associated with the operations outside of the United States, including costs incurred or reputational damage suffered due to improper conduct of its employees, contractors or agents;

- Significant capital expenditures may be needed to maintain the Company's platform and processes and to remain technologically and economically competitive;

- The impact of the various restrictive covenants in the Company's debt facilities on the Company's ability to operate its business;

- The impact on the holders of Quad/Graphics' class A common stock of a limited active market for such shares and the inability to independently elect directors or control decisions due to the voting power of the class B common stock; and

- The impact of an other than temporary decline in operating results and enterprise value that could lead to non-cash impairment charges due to the impairment of property, plant and equipment and other intangible assets.

Quad/Graphics cautions that the foregoing list of risks, uncertainties and other factors is not exhaustive and you should carefully consider the other factors detailed from time to time in Quad/Graphics' filings with the United States Securities and Exchange Commission ("SEC") and other uncertainties and potential events when reviewing the Company's forward-looking statements.

Because forward-looking statements are subject to assumptions and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. You are cautioned not to place undue reliance on such statements, which speak only as of the date of this Annual Report on Form 10-K. Except to the extent required by the federal securities laws, Quad/Graphics undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

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PART I

Item 1. Business

Overview

Quad/Graphics is a leading marketing solutions provider. The Company leverages its strong print foundation as part of a much larger, robust integrated marketing platform that helps marketers and content creators improve the efficiency and effectiveness of their marketing spend across offline and online media channels. With a consultative approach, worldwide capabilities, leading-edge technology and single-source simplicity, the Company believes it has the resources and knowledge to help a wide variety of clients in multiple vertical industries, including retail, publishing and healthcare.

Quad/Graphics was founded in Pewaukee, Wisconsin, as a Wisconsin corporation, in 1971 by the late Harry V. Quadracci. As of December 31, 2017, the Company had approximately 21,100 full-time equivalent employees in North America, South America, Europe and Asia, and served a diverse base of approximately 6,900 clients from 147 facilities located in 17 countries, as well as investments in printing operations in Brazil and India.

The Company is on a transformative journey that it describes in evolutions. Each new evolution expands the Company's offerings and creates enhanced value for its clients. Quad 1.0 covered a period of tremendous organic growth that began with its founding in 1971. During this 40-year period, the Company grew rapidly through greenfield growth, built a premier manufacturing and distribution platform equipped with the latest technology, established its reputation as one of the industry's foremost innovators and created a Company culture based on strong values that remains in place today.

Quad 2.0 began in 2010 and continues today with Quad/Graphics' ongoing role as a disciplined industry consolidator. Quad/Graphics saw an opportunity to participate in industry consolidation in response to economic and industry pressures following the Great Recession of 2008 and 2009, which severely impacted print volumes. Through a series of consolidating acquisitions, the Company was able to enhance and expand its product offerings, while removing inefficient and underutilized capacity, pulling out costs and transitioning work to more efficient facilities.

Quad 3.0 evolved when the seismic shifts in today's multichannel marketing environment provided the opportunity for Quad/Graphics to expand its offering as a marketing solutions provider to create greater value for its clients in two distinct ways:

- The Company will continue to leverage its strong print foundation and expand its integrated marketing platform to help marketers and content creators create, integrate, deploy and measure content more efficiently and effectively.

- To fuel Quad 3.0, the Company is supported by an engaged workforce with the latest in manufacturing technology to drive continued productivity improvements. The Company believes this will strengthen its core manufacturing platform to be the strongest and most sustainable platform in the industry, with the goal of remaining the industry's high-quality, low-cost producer.

More information regarding Quad/Graphics is available on the Company's website at www.QG.com. Quad/Graphics is not including the information contained on or available through its website as part of, or incorporating such information by reference into, this Annual Report on Form 10-K. The Company's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to those reports are made available to the public at no charge through a link appearing on the Company's website. Quad/Graphics provides access to such materials through its website as soon as reasonably practicable after electronically filing such material

with, or furnishing it to, the SEC.

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Industry and Competition

According to a September 2017 Dun & Bradstreet First Research report, the U.S. advertising services industry is forecasted to grow at an annual compounded rate of 4% between 2017 and 2021, as compared to the printing industry which is in secular decline. This opportunity for growth supports Quad/Graphics' 3.0 transformation and a review of both the marketing services and printing industries is set forth below.

The marketing services industry is highly fragmented. According to the September 2017 Dun & Bradstreet First Research report, the top 50 companies in the U.S. advertising and marketing services industry generate less than 40% of industry revenue. Services in this industry include advertising for print, broadcast and online media (about 25% of industry sales); public relations (12%); and direct marketing (10%). Other services include display advertising, media buying (reselling advertising time or space), and media representation (selling advertising time or space on behalf of media outlet owners). The U.S. advertising and marketing services industry includes about 38,000 establishments (single-location companies and units of multi-location companies), with combined annual revenue of about $100 billion.

The commercial print industry is also highly fragmented. According to the June 2017 Printing in the U.S. IBISWorld industry report, the United States commercial printing industry, in the aggregate, generates an estimated $76 billion in annual revenue, employs nearly 400,000 people and is comprised of approximately 46,000 companies. The report also states that the four largest printing companies account for less than 15% of total commercial print industry annual revenue in the United States, with Quad/Graphics being the second largest. Although there has been significant industry consolidation, particularly in the past decade, the largest 400 U.S. printers represent less than half of the total industry revenue in the U.S., according to the December 2017 Printing Impressions PI400 rankings.

In addition to being highly fragmented, competition in the printing industry remains intense, and the Company believes that there are indicators of heightened competitive pressures. The industry has excess manufacturing capacity created by continued declines in industry volumes which, in turn, have created accelerated downward pricing pressures. The Company faces competition due to the increased accessibility and quality of digital alternatives to traditional delivery of printed documents through the online distribution and hosting of media content, and the digital distribution of documents and data. The Company faces competition from print management firms that look to streamline processes and reduce the overall print spend of the Company's clients. The Company believes the commercial print industry has moved toward a demand for shorter print runs, faster product turnaround and increased production efficiency of products with lower page counts and increased complexity. This, combined with increases in postage expenses and the increased use of alternative digital marketing technologies, has led to excess manufacturing capacity in the print industry, and this excess capacity has allowed certain larger printers, like Quad/Graphics, with economies of scale, strong balance sheets and access to capital markets, the ability to install more efficient equipment, take advantage of consolidating acquisition opportunities to remove excess, inefficient and/or underutilized capacity, and reduce overall costs.

Competition in both the marketing services and print industries is affected by real gross domestic product growth, as economic activity and advertising spending are key drivers of consumer demand. In times of economic prosperity, advertisers may increase spending to build brand awareness and to drive sales. Conversely, in times of global economic uncertainty and budget pressures, advertisers may reduce spending or shift their spend to other forms of media. For print specifically, magazine publishers, facing diminished advertising pages, reduce total page counts; catalog marketers reduce page counts, circulation and frequency of print campaigns; retailers curb investments in store inventory and cut back on retail insert newspaper circulation and advertising; and other advertisers reduce their direct mail volume, particularly in the banking, insurance, credit card, real estate and nonprofit industries. It is possible that these customers instead decide to move advertising spend to digital alternatives.

Marketing services providers face pressure to satisfy major clients' needs, as the win or loss of a major client account can impact revenue significantly. Another challenge facing marketing service providers relates to public concern and general annoyance with advertising methods. For example, data collection of personal information for marketing purposes is an issue under scrutiny from federal legislation, and marketing service providers can face restrictions on certain types of data they collect.

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The Company faces competition in the advertising and marketing services industry based on access to a skilled workforce, pricing, adapting quickly to new technology, creating unique and effective campaigns and offering superior customer service. Across Quad/Graphics' range of printed products, competition is based on total price of printing, materials and distribution; quality; distribution capabilities; customer service; access to a highly skilled workforce; availability to schedule work on appropriate equipment; on-time production and delivery; and state-of-the-art technology to meet a client's business objectives, including the ability to adopt new technology quickly.

As consumer media consumption habits change, marketing services providers face increased demand to offer complete marketing services across both traditional and digital channels. As new advertising channels emerge, marketing services providers must offer not only traditional marketing services, such as for television, newspapers, print publications and radio, but they must also offer services for digital channels, such as mobile, internet search, internet display and video, to create effective multichannel campaigns for their clients.

Quad/Graphics believes that traditional business users of print and print-related services are focused on generating and tracking the highest returns on their marketing spend. The Company believes that its clients receive the greatest return on their marketing and advertising dollars when they effectively use data to go after the appropriate customers and integrate digital alternatives with customized print products in a targeted, multichannel marketing campaign driven by an overall marketing strategy. Quad/Graphics believes it is well positioned to help its clients navigate through this changing media landscape and create innovative ways to connect online and offline channels.

Seasonality

The Company is subject to seasonality in its quarterly results as net sales and operating income are higher in the third and fourth quarters of the calendar year as compared to the first and second quarters. The fourth quarter is typically the highest seasonal quarter for cash flows from operating activities and Free Cash Flow due to the reduction of working capital requirements that reach peak levels during the third quarter. Seasonality is driven by increased magazine advertising page counts, retail inserts, catalogs and books primarily due to back-to-school and holiday-related advertising and promotions. The Company expects this seasonality impact to continue.

Strategy

Quad/Graphics believes employee pride, combined with a relentless quest to create a better way, builds the opportunity to invent new ideas that drive improved performance and shared success for all. To accomplish this vision, Quad/Graphics remains focused on its consistent mission to achieve the following:

Walk in the Shoes of Clients

The Company reinforces that all employees, regardless of job title, are part of Quad/Graphics' client experience team. As such, all employees are responsible for meeting the needs of its clients every day, making it easy to work with Quad/Graphics, and making the client experience enjoyable at every touchpoint. In Quad 3.0, the Company is focused on supplementing client print-execution conversations with consultative solutions that will improve a client's business through process efficiencies and marketing spend effectiveness. To accomplish this, a key component of Quad/Graphics' client-facing strategy is to strengthen relationships at different levels inside a client's organization so the Company can better understand, anticipate and satisfy a client's needs. In Quad 3.0, Quad/Graphics seeks to become an invaluable strategic partner for its clients, helping them successfully navigate today's constantly changing multichannel media landscape through innovative data-driven solutions, created and executed across multiple channels. The Company also believes its proactive thought leadership in key issues facing its clients, such as integrating marketing services and postal reform, will foster loyalty to the Quad/Graphics brand.

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Grow the Business Profitably

Key components of this strategy center on Quad/Graphics' ability to grow in Quad 3.0, at a time when industry headwinds continue, and are as follows:

- Ongoing innovation and investment to integrate offline and online media, in support of the Company's Quad 3.0 value proposition of helping clients create, integrate, deploy and measure content more efficiently and market more effectively. This includes process investments to help clients optimize workflows through audit and discovery services; streamlined content creation to help reduce overall production and distribution costs and improve speed-to-market; and platform investments in variable printing and data management to bridge the traditional analog and digital marketing worlds to help clients precisely segment, execute and measure more personal, one-on-one relevant brand experiences via multichannel campaigns that engage consumers at the right place and time to generate greater market penetration and lift in response.

- Organic growth, in which the Company leverages knowledge from existing client relationships in key growth vertical industries to develop complementary products and services that help brand owners market more efficiently and effectively across media channels. Quad/Graphics is also focused on ensuring it has the right talent in the best positions to have strategic marketing conversations with its clients that facilitate understanding their needs, developing tailored solutions and growing market share.

- Disciplined acquisitions, that take many different forms. For example, the Company intends to continue to transform its existing product lines while expanding into higher growth product and service categories that help bolster the Company's ability to create value for its clients, as well as pursue value-driven industry consolidating acquisitions and/or acquisitions that help accelerate the Company's transformation in Quad 3.0.

Strengthen the Core

Quad/Graphics uses a disciplined return on capital framework and historically has made significant investments in its print manufacturing platform and data management capabilities that have resulted in what it believes is the most integrated, automated, efficient, innovative and modern manufacturing platform and distribution network in the industry. The Company's continued focus to strengthen its core manufacturing platform through investments to streamline, automate and improve efficiencies and throughput, while reducing labor costs, promotes sustainable cash flow and continued value creation. Further, a commitment to Lean Enterprise and a disciplined culture of continuous improvement is a high priority throughout the Company and supports its goal of strengthening the production and distribution functions for core product lines to remain the industry's high-quality, low-cost producer.

Engage Employees

Quad/Graphics' strategy to engage employees builds upon its mission to attract, retain and develop employees throughout their entire career journey with the Company. All three elements combine to support Quad/Graphics' ongoing Quad 3.0 transformation, and build on key aspects of its distinct and transparent corporate culture. This includes strong and lasting Company values, an organization-wide entrepreneurial spirit and opportunity-seeking mentality where employees are encouraged to take pride and ownership in their work, take advantage of continuous learning programs to advance in their careers, share knowledge by mentoring others and innovate solutions to drive performance. With the encouragement to do things differently, be something greater and create a better way, the Company believes its employees are more fully engaged in producing better results for clients and advancing the Company's strategic goals, while supporting community activities, initiatives and organizations that impact the quality of life near Quad/Graphics facilities. As Quad/Graphics continues to expand its integrated marketing platform in Quad 3.0, the Company believes this creates possibilities for each employee that are advantageously distinct from

other employers.

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Enhance Financial Strength and Create Shareholder Value

Quad/Graphics follows a disciplined approach to maintaining and enhancing financial strength to create shareholder value, which is essential given ongoing printing industry challenges. This key strategic goal is centered on the Company's ability to maximize net earnings, Free Cash Flow and operating margins; maintain consistent financial policies to ensure a strong balance sheet, liquidity level and access to capital; and retain the financial flexibility needed to strategically allocate and deploy capital as circumstances change. The priorities for capital allocation and deployment are adjusted based on prevailing circumstances and what the Company thinks is best for shareholder value creation at any particular point in time. Those priorities currently include the following: (1) deleveraging the Company's balance sheet through debt and pension liability reductions; (2) making compelling investments that drive profitable organic growth and productivity in the Company's current business, as well as executing on acquisitions through a disciplined approach that includes expansion into higher-growth products and services that help accelerate the Company's transformation in Quad 3.0, and pursuing value-driven industry consolidation; and (3) returning capital to shareholders through dividends and share repurchases.

Competitive Advantages

Quad/Graphics' primary strategic goals are powered by three key competitive advantages that the Company believes distinguishes itself from its competitors: a commitment to ongoing innovation, a commitment to platform excellence, and a commitment to its people and lasting culture.

Commitment to Ongoing Innovation

At the forefront of innovation for more than 46 years, Quad/Graphics believes its commitment to ongoing innovation drives its vision to create a better way.

In Quad 3.0, the Company will continue to innovate through an expanded integrated marketing platform to help clients create, integrate and measure offline and online media more efficiently and effectively. One of the ways the Company will achieve this vision is through continued expansion of its BlueSoHo business, which offers multichannel marketing services with an emphasis on helping brands work smarter, produce faster and be more agile. As an independent brand, BlueSoHo also enables Quad/Graphics to capture new business among brand owners who understand the benefits of fully orchestrated cross-media programs. Specifically, BlueSoHo helps plan, produce and activate marketing campaigns in the channels most likely to drive engagement and response with the goal of turning shoppers into buyers and buyers into loyal brand advocates. To strengthen its integrated marketing platform, Quad/Graphics seeks out strategic partnerships with companies on the cutting edge of digital marketing. These partnerships bring together a company that is an expert at optimizing spend offline, with companies that are doing the same online, using robust analytics to deliver highly-relevant, consistent messages—at scale—to consumers across print and digital channels.

To further support its marketing solutions thought leadership, Quad/Graphics conducts annual quantitative research called, Customer Focus®™. This extensive survey, conducted by a third party, provides consumer insight on singular and integrated media usage. The survey reveals the unique characteristics of special demographic, generational, gender and socio-economic groups and how they consume advertising and marketing messaging, and their attitudes and engagement preferences in a number of industry segments. According to survey data, print remains a strong driver across generations. This active response to print has influenced magazine publishers to increase usage of custom product covers to enhance reader engagement and retailers who primarily use digital channels—such as online-only retailers, or electronic-retailers—to incorporate print into their marketing strategy. Further, Quad/Graphics is able to combine the insights from Customer Focus®™ and use its proprietary segmentation tool, called Accelerated Insights®, to leverage client data and create hyper-personalized online and offline campaigns. The ability to generate content that

is relevant to the consumer is one way the Company believes it can help its clients influence consumer behavior, lift response and enhance return on investment.

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In Quad 3.0, the Company remains committed to innovation throughout its print manufacturing and distribution processes to better serve its clients and remain the industry's high-quality, low-cost producer. Over the last five years, Quad/Graphics has invested an average of 2.7% of its annual net sales for capital expenditures. This investment has resulted in what the Company believes is the most advanced and efficient platform in the industry and has allowed the Company to reduce the amount invested in recent years without impacting its leading technological excellence.

To improve internal processes, enhance client service levels and further drive efficiencies, the Company has consistently focused on the rapid adoption of technological innovations. In the early years, the Company integrated its imaging, manufacturing and distribution networks into a single platform using a networked information technology infrastructure. This platform—connected via Quad/Graphics' own Smartools® proprietary enterprise resource planning ("ERP") system—provides seamless, real-time information flow across sales and estimating, production planning, scheduling, manufacturing, warehousing, logistics, invoicing, reporting and customer service. In Quad 3.0, the Company extended its spirit of innovation with business process management tools that further simplify and improve existing internal workflows. This includes pricing, job specifications and client acceptance to streamlining and automating the hand-offs between departments throughout the entire order workflow through invoicing. Quad/Graphics has also applied robotic process automation to automatable tasks to streamline data processing and report generation. This allows employees to focus on value-adding tasks, while the robotic process completes the transactional, repetitive functions. Quad/Graphics also leverages artificial intelligence ("AI") where appropriate, for example in labor management, scheduling and predictive maintenance where AI is used to better predict when machine maintenance is needed.

A commitment to innovation and creating a better way to do business has also helped to expand Quad/Graphics vertically-integrated non-print capabilities, such as data management, imaging, logistics and distribution, ink manufacturing (Chemical Research\Technology), paper procurement, and equipment research and design. This approach to business gives the Company a competitive advantage in delivering lower costs for its clients, enhancing customer service levels and allowing substantial control over critical links in the overall print supply chain to help it control the quality, cost and availability of key inputs in the printing process. In addition, QuadMed, the Company's health and wellness subsidiary, was founded in 1990 to create a better way to address the Company's own employees' needs for quality, cost-effective healthcare. Today, QuadMed provides employer-sponsored healthcare solutions on a national level to employers of all sizes, including private and public sector companies. These solutions include, but are not limited to, on-site and near-site healthcare clinics, occupational health services, telemedicine, and health and wellness programs.

Commitment to Platform Excellence

Quad/Graphics continues to invest in equipment and leading-edge technology to ensure its manufacturing platform remains the strongest and most sustainable in the printing industry and that it continues to support a vast range of traditional and digital print solutions, finishing techniques and distribution capabilities to create value for its clients in Quad 3.0. At the same time, the Company has continued to strengthen its platform by removing excess, under-utilized capacity and by consolidating work into facilities where it can achieve the greatest manufacturing and distribution efficiencies. Over the past seven years, the Company has closed 41 manufacturing plants representing nearly 13 million square feet of under-utilized production capacity. This commitment to consolidating work into fewer facilities to maximize capacity is one key way Quad/Graphics maintains platform excellence and remains the industry's high-quality, low-cost producer.

The Company has continuously invested in its print manufacturing platform through modern equipment and automation, which reduces labor costs, maximizes labor productivity and increases throughput. The Company's investment in its manufacturing platform has consistently been based on evaluating the economic useful life of the underlying equipment rather than focusing on the potential mechanical life of the equipment. This discipline is critical

in an industry in which technological change can create obsolescence well before the end of the mechanical life of equipment. To remain the industry's high-quality, low-cost producer, Quad/Graphics makes a concerted effort to treat all costs as variable and maintains a stringent focus on achieving productivity improvements and sustainable cost reductions through a variety of Continuous Improvement and Lean Enterprise programs in both manufacturing and administrative areas.

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Another key aspect of the Company's modern manufacturing platform is the combination of its footprint of mega plants (facilities greater than one million square feet) that produce a number of different products under one roof; mega zones where multiple facilities in close geographic proximity are managed as one large facility; and smaller strategically located facilities. The Company has continued to evolve its platform by equipping facilities to be product line agnostic, which enables the Company to maximize equipment utilization. Quad/Graphics believes that the large plant size of certain of its key printing facilities allows the Company to drive savings in certain product lines (such as publications and catalogs) due to economies of scale and from investments in automation and technology.

Quad/Graphics is also able to leverage the volume of products running through its plants for further client distribution savings by coordinating and consolidating shipments from single mega plants or multiple plants that create a mega zone, and then routing those shipments directly to thousands of local newspapers, United States Postal Service ("USPS") processing facilities or other distribution facilities. In addition, each major United States metropolitan area is within one day's drive of at least one of the Company's strategically located facilities, providing its clients the flexibility to print closest to their end consumers.

Postal rates are a significant component of many clients' cost structures, and Quad/Graphics believes that postal costs influence the number of pieces that its clients print and mail. Therefore, the Company has invested significantly in its mail preparation and distribution capabilities to mitigate increasing postage costs, and to help clients successfully navigate the ever-changing postal environment. The Company performs an analysis of mail list data as part of its logistics services, which allows it to reduce client freight costs for shipments to newsstands and postal centers, while providing a high level of dependability and rapid response times that are crucial to the delivery of time-sensitive materials. Further, the Company manages mail distribution of most of its clients' products to maximize efficiency and reduce these costs, and its co-mail program is the largest in the print industry, based on information published by or otherwise made available from competitors. Quad/Graphics' co-mail program involves the sorting and bundling of printed products to be mailed to consumers, in order to facilitate better integration with the USPS. In return, the USPS offers significant work-sharing discounts for this sorting, bundling and drop-shipping. Quad/Graphics co-mailed approximately 4.0 billion publications, catalogs and direct marketing pieces in 2017. Due to the continuously increasing costs of utilizing the USPS and to help control costs for its customers, Quad/Graphics has launched a pilot project revolving around alternate delivery strategies for customers' products that result in Quad/Graphics managing delivery directly to the consumer and bypassing the USPS as a delivery method.

The Company is in the midst of a three-year plan to transform some of its platform from conventional web offset presses to modern digital presses that will give marketers and publishers a full range of options to produce and deliver relevant direct mail and other commercial products faster and more cost-effectively. For example:

- The Company has invested in its technology-enabled direct mail platform to provide innovative front-end toolsets and data workflows; industry-best back-end logistics and postal optimization; and a diverse production platform that is highly leveraged on personalization technologies serving the needs of today's leading marketers. Personalization and targeting create the opportunity to reach the right recipients with a relevant message at the right time which, in turn, helps its clients increase consumer response rates, maximize their return on print spending and reduce overall costs. Built over many years, Quad/Graphics' data-driven, one-to-one direct marketing platform includes in-house capabilities to analyze mailing list data, demographic data, consumer transaction data and other consumer-specific data to help its clients create targeted and personalized printed materials.

- The Company also continues to transform its book platform through the rapid implementation of digital press technology and integrated systems, and the creation of On-Q™, a proprietary demand-driven ordering system that helps clients better manage ordering and inventory. Quad/Graphics is helping book publishers with increased customization and versioning capabilities; faster time-to-market; reduced waste, inventories and obsolescence; and lower fixed costs.

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- Recent investments in digital press technology for QuadPackaging, the Company's high-end folding carton packaging business, has enabled it to enter markets in which it previously was not as competitive, such as private label packaging. With its digital press platform, QuadPackaging is able to cost-competitively accommodate shorter runs with quicker turns.

Commitment to People and Lasting Culture

Quad/Graphics believes that its employees do not just make a difference—they are the difference. The Company believes this is a key competitive advantage that is not easily replicated by its competitors given its long-standing culture.

Quad/Graphics believes that its distinct corporate culture, which evolved from a core set of values conceived by the late founder Harry V. Quadracci, drives thoughtful decision-making, especially with regard to its disciplined approach to managing operations, creating solutions that redefine print in a multichannel media marketplace, and better positioning the Company to prevail in the dynamic and competitive printing industry. The Company fosters an entrepreneurial environment by inspiring and empowering employees to own projects and enact solutions that advance the Company's goals. Employees in the United States also may have a beneficial ownership interest in Quad/Graphics through Company stock held in an employee stock ownership plan, enhancing their sense of ownership. The Company believes that it is this sense of employee engagement and distinct corporate culture that drives its disciplined approach to all aspects of its business.

The Company demonstrates its commitment to employee engagement in a variety of ways, including the following:

- Offering employees a competitive compensation and benefits package;
- Providing employees with a safe work environment with robust safety training and accountability programs;
- Offering continuous learning and career advancement opportunities, such as through registered mechanical and electrical apprenticeship programs, youth apprenticeship programs, the Company's own Accelerated Career Training program for production employees, digital media training, affinity groups and leadership development training;
- Promoting employee health and wellness through a variety of personal improvement programs and facilities, including the Company's own QuadMed primary care clinics;
- Acting on employee feedback garnered through regular surveys and open forums at department and company-wide meetings;
- Offering an employee referral program and investing in technology and improved processes to facilitate an easy hiring and on-boarding process; and
- Fostering pride through employee recognition programs, employee and family events, community outreach activities and support, a history of environmental commitments, such as effective management of resources and reducing waste, and adhering to a published code of ethics.

Quad/Graphics is led by an experienced management team with a proven track record in the printing industry that is committed to preserving the Company's values-based culture. The senior management team includes individuals with long tenure with the Company augmented with seasoned industry talent realized through strategic hiring or recent acquisitions, further supplemented by managers and employees committed to advancing print solutions in coordination with the ever-evolving multichannel media landscape. The Company believes the experience and

stability of senior management, paired with next-generation entrepreneurially minded employees, will contribute to its long-term success as it continues on its path forward.

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Quad/Graphics also enjoys a competitive advantage in consistent, stable leadership that is focused on making decisions in the best long-term interest of the Company. It is able to do this because of the Quadracci family voting control, which enables the Company to manage its strategy and disciplined financial policy by being able to make decisions today that could benefit the Company years from now and avoid the pitfalls of short-term decision making that could potentially jeopardize the stability and longevity of the Company.

Quad/Graphics' leaders believe in a disciplined financial approach to maximize earnings and Free Cash Flow, and to maintain a strong balance sheet. Continuous Improvement and Lean Manufacturing methodologies are among the tools that Quad/Graphics uses to improve manufacturing productivity, simplify and streamline processes and to ultimately maximize operating margins. The Company applies these same methodologies to its selling, general and administrative functions to create a truly Lean Enterprise. The Company has been working diligently to lower its cost structure by consolidating its manufacturing platform into its most efficient facilities, as well as realizing purchasing, mailing and logistics efficiencies by centralizing and consolidating print manufacturing volumes and eliminating redundancies in its administrative and corporate operations. Quad/Graphics believes that its focused efforts to be the high-quality, low-cost producer generates increased Free Cash Flow and allows the Company to maintain a strong balance sheet through debt and pension liability reductions. The Company's disciplined financial approach also allows it to maintain sufficient liquidity as well as to reduce refinancing risk, with the nearest significant debt maturity not occurring until January 2021.

Segments

Quad/Graphics is a leading marketing solutions provider. The Company leverages its strong print foundation as part of a much larger, robust integrated marketing platform that helps marketers and content creators improve the efficiency and effectiveness of their marketing spend across offline and online media channels. The Company's operating and reportable segments are aligned with how the chief operating decision maker of the Company currently manages the business. The Company's operating and reportable segments, including their product and service offerings, and a "Corporate" category are as follows:

- United States Print and Related Services
- International
- Corporate

United States Print and Related Services

The United States Print and Related Services segment is predominantly comprised of the Company's United States printing operations and is managed as one integrated platform. This includes retail inserts, publications, catalogs, special interest publications, journals, direct mail, books, directories, in-store marketing and promotion, packaging, newspapers, custom print products, other commercial and specialty printed products and global paper procurement, together with marketing and other complementary services, , including consumer insights, audience targeting, personalization, media planning and placement, process optimization, campaign planning and creation, pre-media production, videography, photography, digital execution, print execution and logistics. This segment also includes the manufacture of ink. The United States Print and Related Services segment accounted for approximately 91%, 91% and 92% of Quad/Graphics' consolidated net sales in 2017, 2016 and 2015, respectively.

International

The International segment consists of the Company's printing operations in Europe and Latin America, including operations in England, France, Germany, Poland, Argentina, Colombia, Mexico and Peru, as well as investments in

printing operations in Brazil and India. This segment provides printed products and marketing and other complementary services consistent with the United States Print and Related Services segment. The International segment accounted for approximately 9%, 9% and 8% of the Company's consolidated net sales in 2017, 2016 and 2015, respectively.

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Corporate

Corporate consists of unallocated general and administrative activities and associated expenses including, in part, executive, legal and finance, as well as certain expenses and income from frozen employee retirement plans, such as pension benefit plans.

For additional financial information by segment and geographic area, see Note 21, "Segment Information," and Note 22, "Geographic Area and Product Information," to the consolidated financial statements, respectively, in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K. For a discussion of the risks attendant to the Company's foreign operations, see the risk factor titled "There are risks associated with the Company's operations outside of the United States" in Item 1A, "Risk Factors," of this Annual Report on Form 10-K.

Clients

Quad/Graphics enjoys long-standing relationships with a diverse base of clients, which includes both national and regional corporations in North America, South America, Europe and Asia. The Company's clients include industry-leading blue chip companies that operate in a wide range of industries and serve both businesses and consumers, including retailers, publishers and direct marketers. The Company's relationships with its largest clients average around 20 years in duration.

In 2017, Quad/Graphics served approximately 6,900 clients, and its 10 largest clients accounted for approximately 16% of consolidated sales, with none representing more than 5% individually. The Company believes that its large and diverse client base, broad geographic coverage and extensive range of printing and print-related capabilities are competitive strengths.

Patents, Trademarks and Trade Names

Quad/Graphics operates research and development facilities that support the development of new equipment, process improvements, raw materials and content management, and distribution technologies to better meet client needs and improve operating efficiencies. The Company continues to innovate within the printing and print-related industry and, as a result, has developed what it believes to be one of the most powerful patent portfolios in the print industry.

Quad/Graphics currently holds or has rights to commercialize a wide variety of worldwide patents and applications relating to its business. The Company intends to continue to file patent applications that it believes will help ensure the continued strength of the Company and its portfolio. Additionally, the Company markets products, services and capabilities under a number of trademarks and trade names. Quad/Graphics aggressively defends its intellectual property rights and intends to continue to do so in the future.

Raw Materials

The primary raw materials that Quad/Graphics uses in its print business are paper, ink and energy. At this time, the Company's supply of raw materials is readily available from numerous vendors; however, based on market conditions, that could change in the future. The Company generally buys these raw materials based upon market prices that are established with the vendor as part of the procurement process.

The majority of paper used by the Company is supplied directly by its clients. For those clients that do not directly supply their own paper, the Company makes use of its purchasing efficiencies to supply paper by negotiating with leading paper vendors, uses a wide variety of paper grades, weights and sizes, and does not rely on any one vendor. In addition, the Company generally includes price adjustment clauses in sales contracts for paper and other critical raw

materials in the printing process. Although these clauses generally mitigate paper price risk, higher paper prices and tight paper supplies may have an impact on client demand for printed products. The Company's working capital requirements, including the impact of seasonality, are partially mitigated through the direct purchasing of paper by its clients.

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The Company produces the majority of ink used in its print production, allowing it to control the quality, cost and supply of key inputs. Raw materials for the ink manufacturing process are purchased externally from a variety of vendors.

The Company generally cannot pass on to clients the impact of higher electric and natural gas energy prices on its manufacturing costs, and increases in energy prices result in higher manufacturing costs for certain of its operations. The Company mitigates its risk through natural gas hedges when appropriate. In its logistic operations, however, the Company is able to pass a substantial portion of any increase in fuel prices directly to its clients.

Environmental Stewardship

As the owner, lessee or operator of various real properties and facilities, Quad/Graphics is subject to various federal, state and local environmental laws and regulations, including those relating to air emissions; waste generation, handling, management and disposal; sanitary and storm water discharge; and remediation of contaminated sites. Historically, compliance with these laws and regulations has not had a material adverse effect on the Company's results of operations, financial position or cash flows. Compliance with existing or new environmental laws and regulations may require the Company to make future expenditures.

Quad/Graphics strives to be the leader in the printing industry in adopting new technologies and processes to minimize the Company's impact on the environment. The Company believes it has long been known for its environmental stewardship. Quad/Graphics' proactive approach to incorporate holistic practices has also positively impacted operating costs through the reduction of waste, energy use, and emissions, as well as through the implementation of water conservation solutions. The Company has also undertaken steps to reduce greenhouse gas emissions from its manufacturing processes and to improve fuel efficiency and reduce emissions in its fleet of Company-owned tractor trailers.

Employees

As of December 31, 2017, Quad/Graphics had approximately 21,100 full-time equivalent employees in North America, South America, Europe and Asia. Within the United States, there were approximately 17,400 full-time equivalent employees, of which approximately 600 were covered by a collective bargaining agreement. Outside of the United States, there were approximately 3,700 full-time equivalent employees, of which approximately 1,200 were either governed by an industry-wide agreement, by a collective bargaining agreement or through a works council or similar arrangement. Quad/Graphics believes that its employee relations are good and that the Company maintains an employee-centric culture.

Business Acquisitions

There were no acquisitions completed during the year ended December 31, 2017. For additional information related to the Company's prior acquisition activity, see Note 2, "Acquisitions and Strategic Investments," to the consolidated financial statements in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K.

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Executive Officers of Quad/Graphics

The following table sets forth the names, ages (as of February 16, 2018) and positions of Quad/Graphics' executive officers.

Name	Age	Position
J. Joel Quadracci	49	Chairman, President and Chief Executive Officer
Eric N. Ashworth	52	Executive Vice President of Product Solutions and Market Strategy, and President of BlueSoHo
Renee B. Badura	54	Executive Vice President of Sales
David A. Blais	55	Executive Vice President of Global Procurement and Platform Strategy
Thomas J. Frankowski	57	Executive Vice President and Chief Operating Officer
David J. Honan	49	Executive Vice President and Chief Financial Officer
Jennifer J. Kent	46	Executive Vice President of Administration and General Counsel
Kelly A. Vanderboom	43	Executive Vice President, President of Logistics and Treasurer
Steven D. Jaeger	53	Vice President and Chief Information Officer
Anne M. Bauer	53	Executive Director and Chief Accounting Officer

Mr. Quadracci has served as the Chairman, President and Chief Executive Officer of Quad/Graphics since January 2010. He previously served as President and Chief Executive Officer from July 2006 to January 2010, President from January 2005 to July 2006 and has served as a director of Quad/Graphics since 2003. Mr. Quadracci joined Quad/Graphics in 1991 and, prior to becoming President and Chief Executive Officer, served in various capacities, including Sales Manager, Regional Sales Strategy Director, Vice President of Print Sales, Senior Vice President of Sales & Administration, and President and Chief Operating Officer. Mr. Quadracci is the brother of Kathryn Quadracci Flores, a director of the Company, and the brother-in-law of Christopher B. Harned, a director of the Company.

Mr. Ashworth has served as Executive Vice President of Product Solutions and Market Strategy, and President of BlueSoHo since April 2016. He previously served as President of BlueSoHo and Media Solutions from August 2015 to April 2016. Prior to joining Quad/Graphics, Mr. Ashworth was President of SGK, Inc. (formerly Schawk, Inc.) from July 2012 to July 2015, Chief Growth and Strategy Officer of SGK from September 2009 to July 2012 and Global Chief Growth Officer of Anthem Worldwide (a division of SGK) from November 2003 to September 2009. Prior thereto, Mr. Ashworth was Co-founder and President of BlueMint Associates from June 2002 through November 2003, after serving in various marketing related roles since 1992.

Ms. Badura has served as Executive Vice President of Sales since June 2015. She previously served as Vice President of Omnichannel Sales Strategy from February 2014 to June 2015, as Regional Vice President of Sales-Midwest for Marketing Solutions from January 2012 to February 2014, as Vice President of Sales - East Coast for Magazines and Catalogs from April 2007 to December 2011, as Vice President of Sales - West Coast from January 2004 to March 2007 and in various other capacities since she joined Quad/Graphics in 1986.

Mr. Blais has served as Executive Vice President of Global Procurement and Platform Strategy since March 2014. He previously served as Executive Vice President of Sales and Client Services from January 2012 to March 2014 and as Executive Vice President and President of Magazines and Catalogs from July 2010 to January 2012. Mr. Blais was Senior Vice President of Sales & Administration from May 2005 to July 2010, Quad/Graphics' Vice President of Operations from 1999 to May 2005 and in various other capacities since he joined Quad/Graphics in 1984.

Mr. Frankowski has served as Executive Vice President and Chief Operating Officer since March 2014. He previously served as Executive Vice President of Manufacturing Operations and President of Europe from July 2010 to March 2014. Prior thereto, Mr. Frankowski was Senior Vice President of Manufacturing from 2004 to July 2010, President of Quad/Graphics Europe, Quad/Graphics' Polish subsidiary, from 2008 to July 2010, and he served in various other capacities since he joined Quad/Graphics in 1979.

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Mr. Honan has served as Executive Vice President and Chief Financial Officer since January 2015. He previously served as Vice President and Chief Financial Officer from March 2014 to January 2015, Vice President and Chief Accounting Officer from July 2010 to March 2014, Vice President and Corporate Controller from December 2009 to July 2010 and as the Company's Corporate Controller from when he joined Quad/Graphics in May 2009 until December 2009. Prior to joining Quad/Graphics, Mr. Honan served as Vice President, General Manager and Chief Financial Officer of Journal Community Publishing Group, a subsidiary of media conglomerate Journal Communications Inc., for five years. Before joining Journal Community Publishing Group, Mr. Honan worked in executive-level roles in investor relations and corporate development at Newell Rubbermaid, a global marketer of consumer and commercial products. Prior thereto, Mr. Honan worked at the accounting firm Arthur Andersen LLP for 11 years.

Ms. Kent has served as Executive Vice President of Administration and General Counsel since June 2015. She previously served as Vice President and General Counsel from December 2013 to June 2015 and as the Company's Assistant General Counsel from when she joined Quad/Graphics in August 2010 until December 2013. Prior to joining Quad/Graphics, Ms. Kent held various positions in the legal department at Harley-Davidson Motor Company from March 2003 to July 2010. Prior thereto, Ms. Kent served as an Assistant United States Attorney for the Eastern District of Wisconsin and practiced law at Foley & Lardner LLP, a Milwaukee-based law firm.

In February 2018, Mr. Vanderboom was promoted to Executive Vice President, President of Logistics and Treasurer. He previously served as Vice President and Treasurer and President of Logistics from March 2014 to February 2018, Quad/Graphics' Vice President & Treasurer from 2008 to March 2014 and as its Treasurer from 2007 to 2008. Prior to becoming Quad/Graphics' Treasurer, Mr. Vanderboom served as Director of Treasury, Risk & Planning from 2006 until 2007, as Controller of Quad/Graphics' Distribution and Facilities departments from 2004 until 2006, and in various other capacities since he joined Quad/Graphics in 1993.

Mr. Jaeger has served as Vice President and Chief Information Officer since November 2015. He previously served as Executive Vice President, President of Direct Marketing and Chief Information Officer from November 2014 to November 2015, as Executive Vice President, President of Direct Marketing and Media Solutions and Chief Information Officer from March 2014 to November 2014, as Corporate Vice President of Information and Technology for Quad/Graphics since 2013, Vice President of Information Systems and Infrastructure from 2007 to 2012 and as President of Quad/Direct since August 2007. Prior thereto, Mr. Jaeger had been Quad/Graphics' Vice President of Information Systems from 1998 to 2006 and had worked in various other capacities since he joined the Company in 1994. Prior to joining Quad/Graphics, Mr. Jaeger worked for Andersen Consulting for eight years.

Ms. Bauer has served as Executive Director and Chief Accounting Officer since March 2017. She previously served as Director - Corporate Controller of the Company from May 2016 until March 2017. She joined the Company in September 2011, serving as Director of Corporate Accounting until May 2016. Prior to joining Quad/Graphics, Ms. Bauer held various accounting positions at Journal Communications, Inc. during her 18 years there, including Vice President and Controller from June 2000 until September 2011.

Executive officers of the Company are elected by and serve at the discretion of the Company's Board of Directors. Other than described above, there are no family relationships between any directors or executive officers of Quad/Graphics.

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Item 1A. Risk Factors

You should carefully consider each of the risks described below, together with all of the other information contained in this Annual Report on Form 10-K, before making an investment decision with respect to Quad/Graphics' securities. If any of the following risks develop into actual events, the Company's business, financial condition or results of operations could be materially and adversely affected, and you may lose all or part of your investment.

Quad/Graphics operates in a highly competitive industry.

Quad/Graphics operates primarily in the commercial print portion of the printing industry. The printing industry, with approximately 46,000 companies in the United States, is highly fragmented and competitive. Although there has been significant industry consolidation, particularly in the past decade, the largest 400 U.S. printers represent less than half of the total industry revenue in the U.S., according to the December 2017 Printing Impressions PI400 rankings. As such, the Company competes for business not only with large and mid-sized printers, but also with smaller regional printers and the growing forms of digital alternatives to print. In certain circumstances, due primarily to factors such as freight rates and client preference for local services, printers with better access to certain regions of a given country may be preferred by clients in such regions.

The printing industry continues to experience a reduction in demand for printed materials and overcapacity due to various factors including the Great Recession of 2008 and 2009, which severely impacted volumes, and competition from alternative sources of communication, including email, electronic readers, interactive television and electronic retailing and other digital formats. Specifically, there is a sustained and increasing shift of digital substitution by marketers and advertisers, to both replace and augment campaigns that were historically focused on print. The impacts of overcapacity and intense competition have led to continued downward pricing pressures. Printing industry revenues may continue to decrease in the future. Some of the industries that the Company services have been subject to consolidation efforts, leading to a smaller number of potential clients. Furthermore, if the smaller clients of Quad/Graphics are consolidated with larger companies using other printing companies, the Company could lose its clients to competing printing companies.

The advertising and marketing services industries are highly competitive and are expected to remain so. The U.S. advertising and marketing services industry includes about 38,000 establishments (single-location companies and units of multi-location companies), with combined annual revenue of about $100 billion. Any failure on the part of the Company to compete effectively in the markets it serves could have a material adverse effect on its results of operations, financial condition or cash flows and could require changes to the way it conducts its business or require it to reassess strategic alternatives involving its operations.

Significant downward pricing pressure and decreasing demand for printing services caused by factors outside of the Company's control may adversely affect the Company.

The Company has experienced significant downward pricing pressures for printing services in the past, and pricing for printing services has declined significantly in recent years. Such pricing may continue to decline from current levels. In addition, demand for printing services has decreased in recent years and may continue to decrease. Any increases in the supply of printing services or decreases in demand could cause prices to continue to decline, and prolonged periods of low prices, weak demand and/or excess supply could have a material adverse effect on the Company's business growth, results of operations and liquidity.

The impact of electronic media and similar technological changes, including the substitution of printed products for digital content, may continue to adversely affect the results of the Company's operations.

The media landscape is experiencing rapid change due to the impact of electronic media and digital content on printed products. Improvements in the accessibility and quality of digital media through the online distribution and hosting of media content, mobile technologies, e-reader technologies, electronic retailing and the digital distribution of documents and data has resulted and may continue to result in increased consumer substitution. Continued consumer acceptance of such digital media, as an alternative to print materials, is uncertain and difficult to predict and may

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decrease the demand for the Company's printed products, result in reduced pricing for its printing services and additional excess capacity in the printing industry, and adversely affect the results of the Company's operations.

As competition increases among retail-based customers, they may enter into business combinations or alliances and establish companies in other market segments to expand their businesses. In addition, new and enhanced technologies, including search, web and infrastructure computing services, digital content, and electronic devices, affect the customers' reliance on the use of printed materials. The internet facilitates competitive entry and comparison shopping, and the reliance on digital retailing may reduce the Company's sales and profits.

Quad/Graphics may not be able to reduce costs and improve its operating efficiency rapidly enough to meet market conditions.

Because the markets in which the Company competes are highly competitive, Quad/Graphics will need to continue to improve its operating efficiency in order to maintain or improve its profitability. There can be no assurance that the Company's continuing cost reduction efforts will continue to be beneficial to the extent anticipated, or that the estimated productivity, cost savings or cash flow improvements will be realized as anticipated or at all. If the Company's efforts are not successful, it could have an adverse effect on the Company's operations and competitive position. In addition, the need to reduce ongoing operating costs have and, in the future, may continue to result in significant up-front costs to reduce workforce, close or consolidate facilities, or upgrade equipment and technology.

Future declines in economic conditions may adversely affect the Company's results of operations.

In general, demand for the Company's products and services is highly related to general economic conditions in the markets Quad/Graphics' clients serve. Declines in economic conditions in the United States or in other countries in which the Company operates may adversely impact the Company's financial results, and these impacts may be material. Because such declines in demand are difficult to predict, the Company or the industry may have increased excess capacity as a result. An increase in excess capacity has resulted, and may continue to result, in declines in prices for the Company's products and services. In addition, a prolonged decline in the global economy and an uncertain economic outlook has and could further reduce the demand in the printing industry. Economic weakness and constrained advertising spending have resulted, and may in the future result, in decreased revenue, operating margin, earnings and growth rates and difficulty in managing inventory levels and collecting accounts receivable. The Company has experienced, and expects to experience in the future, excess capacity and lower demand due to economic factors affecting consumers' and businesses' spending behavior. Uncertainty about future economic conditions makes it difficult for the Company to predict results of operations, financial position and cash flows and to make strategic decisions regarding the allocation and deployment of capital.

Quad/Graphics' business depends substantially on customer contract renewals and/or customer retention. Any contract non-renewals, renewals on different terms and conditions or decline in the Company's customer retention or expansion could materially adversely affect Quad/Graphics' results of operations, financial condition and cash flows.

The Company has historically derived a significant portion of its revenue from long-term contracts with significant clients as the Company progresses through Quad 3.0. If the Company loses significant clients, is unable to renew such contracts on similar terms and conditions, or at all, or is not awarded new long-term contracts with important clients in the future, its results of operations, financial condition and cash flows may be adversely affected.

The Company is exposed to risks of loss in the event of nonperformance by its clients. Some of the Company's clients are highly leveraged or otherwise subject to their own operating and regulatory risks. Even if the Company's credit review and analysis mechanisms work properly, the Company may experience financial losses and loss of future business if its clients become bankrupt, insolvent or otherwise are unable to pay the Company for its work performed.

Any increase in the nonpayment or nonperformance by clients could adversely affect the Company's results of operations and financial condition.

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Certain industries in which the Company's clients operate are experiencing consolidation. When client consolidation occurs, it is possible that the volume of work performed by the Company for a client after the consolidation will be less than it was before the consolidation or that the client's work will be completely moved to competitors. In addition, new and enhanced technologies, including search, web and infrastructure computing services, digital content, and electronic devices, may affect customers. The internet facilitates competitive entry and comparison shopping, and the reliance on digital retailing may reduce customers' volume. Any such reduction or loss of work could adversely affect the Company's results of operations and financial condition.

Quad/Graphics' transformation to a marketing solutions provider increases the complexity of the Company's business, and if the Company is unable to successfully adapt its business processes as required by these new markets, the Company will be at a competitive disadvantage and its ability to grow will be adversely affected.

As the Company expands its integrated marketing platform, the overall complexity of the Company's business increases at an accelerated rate and the Company becomes subject to different market dynamics. The new markets into which Quad/Graphics is expanding, or may expand, may have different characteristics from the markets in which the Company historically competed. These different characteristics may include, among other things, demand volume requirements, demand seasonality, product generation development rates, client concentrations and performance and compatibility requirements. The Company's failure to make the necessary adaptations to its business model to address these different characteristics, complexities and new market dynamics could adversely affect the Company's operating results.

Quad/Graphics may suffer a data-breach of sensitive information. If Quad/Graphics' efforts to protect the security of such information are unsuccessful, any such failure may result in costly government enforcement actions and private litigation, and the Company's sales and reputation could suffer.

Quad/Graphics and its clients are subject to various United States and foreign cyber-security laws, which require the Company to maintain adequate protections for electronically held information. The Company may not be able to anticipate techniques used to gain access to Quad/Graphics' systems or facilities, the systems of the Company's clients or vendors, or implement adequate prevention measures. Moreover, unauthorized parties may attempt to access Quad/Graphics' systems or facilities, or the systems of the Company's clients or vendors, through fraud or deception. In the event and to the extent that a data breach occurs, such breach could have an adverse effect on the Company's business and results of operations. Complying with these various laws could cause Quad/Graphics to incur substantial costs or require changes to the Company's business practices in a manner adverse to Quad/Graphics' business.

Quad/Graphics may be adversely affected by increases in its operating costs, including the cost and availability of raw materials, labor-related costs, fuel and other energy costs and freight rates.

The primary raw materials that Quad/Graphics uses in its print business are paper, ink and energy. The price of such raw materials has fluctuated over time and has caused fluctuations in the Company's net sales and cost of sales. This volatility may continue and Quad/Graphics may experience increases in the costs of its raw materials in the future as prices in the overall paper, ink and energy markets are expected to remain beyond its control.

The majority of paper used by the Company is supplied by its clients. For those clients that do not directly supply their own paper, the Company generally includes price adjustment clauses in sales contracts for paper and other critical raw materials in the printing process. Although these clauses generally mitigate paper price risk, higher paper prices and tight paper supplies may have an impact on client demand for printed products. If Quad/Graphics passes along increases in the cost of paper and the price of the Company's products and services increases as a result, client demand could be adversely affected, and thereby, negatively impact Quad/Graphics' financial performance. If the Company is unable to continue to pass along increases in the cost of paper to its clients, future increases in paper costs would

adversely affect its margins and profits.

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Due to the significance of paper in the Company's print business, it is dependent on the availability of paper. In periods of high demand, certain paper grades have been in short supply, including grades used in the Company's business. In addition, during periods of tight supply, many paper producers allocate shipments of paper based upon historical purchase levels of customers. Additionally, the declining number of paper suppliers in the United States and Canada has resulted in a contraction in the overall paper manufacturing industry. This contraction of suppliers may cause overall supply issues, may cause certain paper grades to be in short supply or unavailable, and may cause paper prices to substantially increase.

The U.S. Department of Commerce and the International Trade Association are in the process of conducting an investigation into determining if U.S. based manufacturers of uncoated groundwood paper are being disadvantaged as compared to their Canadian competitors due to subsidies from the federal government of Canada. Additionally, the investigation is looking into allegations the Canadian paper manufacturers are improperly exporting less expensive paper into the United States. If the United States Department of Commerce decides to impose a countervailing duty and/or an anti-dumping duty, suppliers for uncoated groundwood paper have announced that they will add these duties to the price of their products.

Those costs could be passed along directly to the consumers of uncoated groundwood paper. This is compounded by the fact that, currently, the United States paper manufacturers only are capable of supplying approximately one-third of the demand for uncoated groundwood paper in the United States. The other two-thirds is supplied by Canadian mills. Therefore, U.S.-based producers have to import a substantial portion of their uncoated groundwood paper needs. The end result is U.S. based producers may be required to pay any resulting higher prices or reduce their demand for uncoated groundwood paper to meet the supply that is available from U.S. paper mills. This could lead to a significant drop in demand for products printed on uncoated groundwood paper in the United States.

Although historically Quad/Graphics generally has not experienced significant difficulty in obtaining adequate quantities of paper, continued decline in suppliers, changes as referenced above in United States import or trade regulations, or other unforeseen developments in the overall paper markets could result in a decrease in the supply of paper and could adversely affect the Company's revenues or profits. In addition, the Company may not be able to resell waste paper and other by-products or the prices received for their sale may decline substantially.

Quad/Graphics is dependent upon the vendors within the Company's supply chain to maintain a steady supply of inventory, parts and materials. Many of the Company's products are dependent upon a limited number of vendors, and significant disruptions could adversely affect operations. Under recent market conditions, including the tightening credit market, it is possible that one or more of the Company's vendors will be unable to fulfill their operating obligations due to financial hardships, liquidity issues or other reasons related to the prolonged market recovery.

The Company generally cannot pass along increases in the cost of ink and energy to its clients. If the Company is unable to pass along increases in the cost of ink and energy, future increases in these items would adversely affect its margins and profits. Even if Quad/Graphics is able to pass along increases in the costs of ink and energy and the price of the Company's products and services increases as a result, client demand could be adversely affected, and thereby, negatively impact Quad/Graphics' financial performance.

Labor represents a significant component of the cost structure of Quad/Graphics. Increases in wages, salaries and benefits, such as medical, dental, pension and other post-retirement benefits, may impact the Company's financial performance. Changes in interest rates, investment returns or the regulatory environment may impact the amounts the Company will be required to contribute to the pension plans that it sponsors and may affect the solvency of these pension plans. Quad/Graphics may be unable to achieve labor productivity targets, to retain employees or labor may not be adequately available in locations in which the Company operates, which could negatively impact the Company's financial performance.

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Freight rates and fuel costs also represent a significant component of the Company's cost structure. In general, the Company has been able to pass along increases in the cost of freight and fuel to many of its clients. If the Company is not able to pass along a substantial portion of increases in freight rates or in the price of fuel, future increases in these items would adversely impact the Company's margin and profits. If Quad/Graphics passes along increases in the cost of freight and fuel and the price of the Company's products and services increases as a result, client demand could be adversely affected, and thereby, negatively impact Quad/Graphics' financial performance.

Failure to attract and retain qualified production personnel could materially adversely affect the Company's business, competitive position, financial condition and results of operations.

Quad/Graphics continues to be substantially dependent on its production personnel to print the Company's products in a cost-effective and efficient manner that allows the Company to obtain new customers and to drive sales from the Company's existing customers. Quad/Graphics believes that there is significant competition for production personnel with the skills and technical knowledge that the Company requires. The Company's ability to continue efficient operations, reduce production costs, and consolidate operations will depend, in large part, on the Company's success in recruiting, training, integrating and retaining sufficient numbers of production personnel to support the Company's production, cost savings and consolidation targets. New hires require significant training and it may take significant time before they achieve full productivity. In addition, an increase in the wages paid by competing employers could result in an increase in the wage rates that the Company must pay. As a result, Quad/Graphics may incur significant costs to attract, train and retain employees, including significant expenditures related to salaries and benefits, and the Company may lose new, as well as existing, employees to competitors or other companies before the Company realizes the benefit of its investment in recruiting and training them. The Company's recent hires and planned hires may not become productive as quickly as the Company expects, and the Company may be unable to hire or retain sufficient numbers of qualified individuals in the markets where the Company does business or plans to do business. In addition, due to turnover of production personnel, a large percentage of employees will be new to the Company. If the Company is unable to hire and train sufficient numbers of effective production personnel, the Company's business would be adversely affected.

Changes in postal rates, postal regulations and postal services may adversely impact customers' demand for print products and services.

Postal costs are a significant component of the cost structures of many of the Company's clients and potential clients. Postal rate changes and USPS regulations that result in higher overall costs can influence the volume that these clients will be willing to print and ultimately send through the USPS.

Integrated distribution with the postal service is an important component of the Company's business. Any material change in the current service levels provided by the postal service could impact the demand that clients have for print services. The USPS continues to experience financial problems. Without increased revenues or action by Congress to reform the USPS' cost structure, these losses will continue into the future. As a result of these financial difficulties, the USPS has come under increased pressure to adjust its postal rates and service levels. Additional price increases may result in customers reducing mail volumes and exploring the use of alternative methods for delivering a larger portion of their products, such as continued diversion to the internet and other alternative media channels in order to ensure that they stay within their expected postage budgets.

The USPS does offer "work-share" discounts that provide incentives to co-mail and place product as far down the mail-stream as possible. Discounts are earned as a result of less handling of the mail, and therefore, lower costs for the USPS. As a result, Quad/Graphics has made substantial investments in co-mailing technology and equipment to ensure customers benefit from these discounts. As the USPS reacts to its financial difficulties, it often revises design standards for mail entering its system. These design standards often increase costs for customers and, in turn, decrease

the value of the cost reductions that the Company's co-mailing services provide. If the incentives to co-mail are decreased by USPS regulations, the overall cost to mail printed products will increase and may result in print volumes declining.

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Current federal law limits postal rate increases (outside of an "exigent circumstance") to the increase in the Consumer Price Index ("CPI"). This cap works to ensure funding stability and predictability for mailers. However, that same federal statute requires the Postal Regulatory Commission ("PRC") to conduct a review of the overall rate-making structure for the USPS. The results of that study found that the current rate structure has been partially successful in meeting the USPS' goals. The current system does result in predictable and stable rate making. However, the PRC also concluded that the current rate structure does not meet USPS' revenue needs and lacks pricing efficiency. As a result, the PRC has proposed a new rate making structure that will provide the USPS with additional pricing flexibility over the current CPI cap. This proposal is currently under consideration and is open for public comments. The proposed rates may result in a substantially altered rate structure for mailers. There is a great deal of uncertainty as to the outcome of this review as the PRC issued a Notice of Proposed Rulemaking with comments due on March 1, 2018. Any newly revised rates that would be effective as a result of new rules issued by the PRC may include a higher rate cap or potentially the elimination of a rate cap altogether, which will result in no restrictions on the USPS' ability to increase rates from year to year. That kind of rate-making flexibility may lead to price spikes for mailers and may also reduce the incentive for the USPS to continue to take out costs and instead continue to rely on postage to cover the costs of an outdated postal service that does not reflect the industry's ability or willingness to pay. The end result may be reduced demand for printed products as customers may move more aggressively into other delivery methods such as the many digital and mobile options now available to consumers.

The fragility of and decline in overall distribution channels, including newspaper distribution channels, may adversely impact customers' access to cost effective distribution of their advertising materials, and therefore may adversely impact the Company's business.

The distribution channels of print products and services, including the newspaper industry, face significant competition from other sources of news, information and entertainment content delivery, and if overall distribution channels, including newspaper distribution channels, continue to decline, the Company's customers may be adversely impacted by the lack of access to cost effective distribution of their advertising materials. In turn, this decline in cost effective distribution channels may force customers to use other avenues of distribution that may be at significantly higher cost, which may decrease customer demand for the Company's products and services, and thus adversely affect Quad/Graphics financial condition, results of operations and cash flows.

If Quad/Graphics fails to identify, manage, complete and integrate acquisitions, investment opportunities or other significant transactions, it may adversely affect the Company's future results.

As part of Quad/Graphics' growth strategy, the Company may pursue acquisitions of, investment opportunities in, or other significant transactions with, companies that are complementary to the Company's business. In order to pursue this strategy successfully, the Company must identify attractive acquisition or investment opportunities, successfully complete the transaction, some of which may be large and complex, and manage post-closing issues such as integration of the acquired company or employees. Quad/Graphics may not be able to identify or complete appealing acquisition or investment opportunities given the intense competition for these transactions. Even if the Company identifies and completes suitable corporate transactions, the Company may not be able to successfully address inherent risks in a timely manner, or at all. These inherent risks include, among other things: (1) failure to successfully integrate the purchased operations, technologies, products or services and maintain uniform standard controls, policies and procedures; (2) substantial unanticipated integration costs; (3) loss of key employees including those of the acquired business; (4) diversion of management's attention from other operations; (5) failure to retain the clients of the acquired business; (6) failure to achieve any projected synergies and performance targets; (7) additional debt and/or assumption of known or unknown liabilities; (8) potential dilutive issuances of equity securities; and (9) a write-off of goodwill, client lists, other intangibles and amortization of expenses. If the Company fails to successfully integrate an acquisition, the Company may not realize all or any of the anticipated benefits of the acquisition, and Quad/Graphics' future results of operations could be adversely affected. In addition, the diversion of management's attention from the

Company's other operations due to these acquisitions and integration effort could adversely affect its business and have a negative financial impact.

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There are risks associated with the Company's operations outside of the United States.

Although the substantial majority of the Company's business activity takes place in the United States, a portion of Quad/Graphics net sales are derived from operations in foreign countries. The Company's products and services are sold primarily throughout North America, South America and Europe. In addition, the Company strategically sources packaging product manufacturing over multiple end markets in Central America and Asia. The Company's printing operations located in Europe and Latin America include operations in England, France, Germany, Poland, Argentina, Colombia, Mexico and Peru, as well as investments in printing operations in Brazil and India. Net sales from the Company's wholly-owned subsidiaries outside of the United States accounted for approximately 9% of its consolidated net sales for the years ended December 31, 2017 and 2016, and 8% of its consolidated net sales for the year ended December 31, 2015.

As a result, the Company is subject to the risks inherent in conducting business outside of the United States, including, but not limited to: the impact of economic and political instability; fluctuations in currency values, foreign-currency exchange rates, devaluation and conversion restrictions; exchange control regulations and other limits on the Company's ability to import raw materials or finished product; tariffs and other trade barriers; trade restrictions and economic embargoes by the United States or other countries; social unrest, acts of terrorism, force majeure, war or other armed conflicts; inflation and fluctuations in interest rates; language barriers; difficulties in staffing, training, employee retention and managing international operations; logistical and communications challenges; differing local business practices and cultural consideration; restrictions on the ability to repatriate funds; foreign ownership restrictions and the potential for nationalization or expropriation of property or other resources; longer accounts receivable payment cycles; potential adverse tax consequences and being subject to different legal and regulatory regimes that may preclude or make more costly certain initiatives or the implementation of certain elements of its business strategy. Any international expansion or acquisition that the Company undertakes could amplify these risks related to operating outside of the United States.

Quad/Graphics is exposed to the economic and political conditions in Argentina. The Argentine economy has experienced significant volatility in recent decades, characterized by periods of low or negative growth, high and variable levels of inflation and currency devaluation. As a consequence, the Company's business and operations have been, and could be in the future, affected from time to time to varying degrees by economic and political developments and other material events affecting the Argentine economy. The majority of the Company's employees in Argentina are covered by a collective bargaining agreement. A strike, work stoppage or other form of labor protest in Argentina in the future could disrupt the Company's Argentina operations and result in a material adverse impact to the Company's Argentina operations' financial condition, results of operations and cash flows, which could force the Company to reassess its strategic alternatives involving operations in Argentina. In addition, on March 25, 2015, due to deteriorating economic conditions, including inflation and currency devaluation, combined with uncertain political conditions, declining print volumes and labor challenges, the Company's Argentina subsidiaries, Anselmo L. Morvillo S.A. ("Morvillo") and World Color Argentina, S.A. (the "Argentina Subsidiaries") commenced bankruptcy restructuring proceedings with a goal of consolidating operations. The Company completed such consolidation and emerged from bankruptcy; however, the Company's Argentina operations' repayment and other obligations resulting from such consolidation, if not successfully completed as and when due, may result in an adverse effect on the Company's Argentina operations' financial position and cash flows. As of December 31, 2017, the Company had $23.2 million of total assets in Argentina, representing 0.9% of Quad/Graphics consolidated total assets. For the year ended December 31, 2017, the Company recognized $54.0 million of net sales in Argentina, representing 1.3% of Quad/Graphics consolidated net sales.

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Quad/Graphics may incur costs or suffer reputational damage due to improper conduct of its employees, contractors or agents.

The Company could be adversely affected by engaging in business practices that are in violation of United States and foreign anti-corruption laws, including the United States Foreign Corrupt Practices Act. The Company operates in parts of the world with developing economies that have experienced governmental corruption to some degree, and in certain circumstances, strict compliance with anti-corruption laws may conflict with local customs and practices. In certain countries, the Company does substantial business with government entities or instrumentalities, which creates increased risk of a violation of the Foreign Corrupt Practices Act and international laws. There can be no assurance that all of the Company's employees, contractors or agents, including those representing the Company in countries where practices which violate anti-corruption laws may be customary, will not take actions that violate Quad/Graphics' policies and procedures. The failure to comply with the laws governing international business practices may result in substantial penalties and fines. For additional information, see Note 10, "Commitments and Contingencies — Litigation," to the consolidated financial statements in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K.

The Company is heavily dependent on its Chief Executive Officer, its management team and skilled personnel and, if the Company is unable to retain or motivate such personnel or hire qualified personnel, the Company may not be able to compete effectively.

The Company's future success depends on its continuing ability to identify, hire, develop, motivate and retain its Chief Executive Officer, the management team and skilled personnel for all areas of the organization. The Company's continued ability to compete effectively depends on its ability to attract new employees and retain and motivate its existing employees.

Quad/Graphics and its facilities are subject to various consumer protection and privacy laws and regulations, and will become subject to additional laws and regulations in the future. If Quad/Graphics' efforts to comply with such laws or protect the security of information are unsuccessful, any failure may subject the Company to material liability, require it to incur material costs or otherwise adversely affect its results of operations as a result of compliance with such laws, costly enforcement actions and private litigation.

The nature of the Company's business includes the receipt and storage of information about the Company's clients, vendors and the end-users of Quad/Graphics' products and services. Quad/Graphics and its clients are subject to various United States and foreign consumer protection, information security, data privacy and "do not mail" requirements at the federal, states, provincial and local levels. Quad/Graphics is subject to many legislative and regulatory laws and regulations around the world concerning data protection and privacy. In addition, the interpretation and application of consumer and data protection laws in the United States and elsewhere are often fluid and uncertain. To the extent that the Company or its clients become subject to additional or more stringent requirements or that the Company is not successful in its efforts to comply with existing requirements or protect the security of information, demand for the Company's services may decrease and the Company's reputation may suffer, which could adversely affect the Company's results of operations. In addition, such laws may be interpreted and applied in a manner inconsistent with Quad/Graphics' internal policies. If so, the Company could suffer costly enforcement actions (including an order requiring changes to Quad/Graphics' data practices) and private litigation, which could have an adverse effect on the Company's business and results of operations. Complying with these various laws could cause Quad/Graphics to incur substantial costs or require changes to the Company's business practices in a manner adverse to Quad/Graphics' business.

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If Quad/Graphics is not able to take advantage of technological developments in the printing industry on a timely basis, the Company may experience a decline in the demand for its services, be unable to implement its business strategy and experience reduced profits.

The printing industry is experiencing rapid change as new digital technologies are developed that offer clients an array of choices for their marketing and publication needs. In order to grow and remain competitive, the Company will need to adapt to future changes, especially with regard to technology, to enhance the Company's existing offerings and introduce new offerings to address the changing demands of clients. If Quad/Graphics is unable to meet future challenges from competing technologies on a timely basis or at an acceptable cost, the Company could lose clients to competitors. In general, the development of new communication channels inside and outside the printing and media solutions industry requires the Company to anticipate and respond to the varied and continually changing demands of clients. The Company may not be able to accurately predict technological trends or the success of new services in the market.

Changes in the legal and regulatory environment could limit the Company's business activities, increase its operating costs, reduce demand for its products or result in litigation.

The conduct of the Company's businesses is subject to various laws and regulations administered by federal, state and local government agencies in the United States, as well as to foreign laws and regulations administered by government entities and agencies in markets in which the Company operates. These laws and regulations and interpretations thereof may change, sometimes dramatically, as a result of political, economic or social events, such as the election of the new administration. Such regulatory environment changes may include changes in taxation requirements, accounting and disclosure standards, immigration laws and policy, environmental laws, and requirements of United States and foreign occupational health and safety laws. Changes in laws, regulations or governmental policy and the related interpretations may alter the environment in which Quad/Graphics does business, and therefore, may impact its results or increase its costs or liabilities.

In addition, the Company and its subsidiaries are party to a variety of legal and environmental remediation obligations arising in the normal course of business, as well as environmental remediation and related indemnification proceedings in connection with certain historical activities, former facilities and contractual obligations of acquired businesses. Permits are required for the operation of certain parts of the Company's business, and these permits are subject to renewal, modification and, in some circumstances, revocation. Due to regulatory complexities, uncertainties inherent in litigation and the risk of unidentified contaminants on current and former properties, the potential exists for remediation, liability and indemnification costs to differ materially from the costs the Company has estimated. Quad/Graphics cannot assure you that the Company's costs in relation to these matters will not exceed its established liabilities or otherwise have an adverse effect on its results of operations.

Various laws and regulations addressing climate change are being considered at the federal and state levels. Proposals under consideration include limitations on the amount of greenhouse gas that can be emitted (so-called "caps") together with systems of trading allowed emissions capacities. The impacts of such proposals could have a material adverse impact on the Company's financial condition and results of operations.

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If QuadMed, LLC, a wholly-owned subsidiary of the Company, fails to comply with applicable healthcare laws and regulations, the Company could face substantial penalties, and its business, reputation, operations, prospects and financial condition of the Company's subsidiary could be adversely affected.

QuadMed, LLC ("QuadMed") provides employer-sponsored healthcare solutions on a national level to employers of all sizes, including the Company and other private and public-sector companies. These solutions include, but are not limited to, on-site and near-site healthcare clinics, occupational health services, telemedicine, and health and wellness programs. The healthcare industry is heavily regulated, constantly evolving and subject to significant change and fluctuation. The U.S. federal and state healthcare laws and regulations that impact the QuadMed subsidiary business include, among others:

- The Health Insurance Portability and Accountability and the Health Information Technology for Economic and Clinical Health Acts, which, in general and among other things, establish comprehensive federal standards with respect to privacy, security and transmission of individually identifiable health information and impose requirements for the use of standardized electronic transactions with respect to transmission of such information;
- the laws and regulations administered and enforced by the Food and Drug Administration, including the Federal Food Drug and Cosmetics Act, Controlled Substances Act and other federal statutes and regulations;
- the federal Anti-Kickback Statute, which generally prohibits, among other things, soliciting, receiving or providing remuneration to induce the referral of an individual for an item or service or the purchasing or ordering of an item or service for which payment may be made under federal healthcare programs;
- the federal false claims laws, which generally prohibit, among other things, knowingly presenting or causing to be presented claims for payment from third-party payors that are false or fraudulent;
- state law equivalents of each of these federal laws, such as anti-kickback and false claims laws that may apply to items or services reimbursed by any third-party payor, including commercial insurers, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not be preempted by applicable federal laws, thus complicating compliance efforts; and
- state prohibitions on the Corporate Practice of Medicine (many of these state laws differ from one another in significant ways and are not preempted by federal law).

The Company has significant liabilities with respect to defined benefit pension plans that could grow in the future and cause the Company to incur additional costs.

As a result of the 2010 acquisition of World Color Press, Inc. ("World Color Press"), the Company assumed frozen single employer defined benefit pension plans for certain of its employees in the United States. The majority of the plans' assets are held in North American and global equity securities and debt securities. The asset allocation as of December 31, 2017, was approximately 41% equity securities and 59% debt securities.

As of December 31, 2017, the Company had underfunded pension liabilities of $84.1 million for single employer defined benefit plans in the United States. Under current United States pension law, pension funding deficits are generally required to be funded over a seven-year period. These pension deficits may increase or decrease depending on changes in the levels of interest rates, pension plan investment performance, pension legislation and other factors. Declines in global debt and equity markets would increase the Company's potential pension funding obligations. Any significant increase in the Company's required contributions could have a material adverse impact on its business, financial condition, results of operations and cash flows.

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In addition to the single employer defined benefit plans described above, the Company has previously participated in multiemployer pension plans ("MEPPs") in the United States, including the Graphic Communications International Union - Employer Retirement Fund ("GCIU") and the Graphic Communications Conference of the International Brotherhood of Teamsters National Pension Fund ("GCC"). Prior to the acquisition of World Color Press by Quad/Graphics, World Color Press received notice that certain plans in which it participated were in critical status, as defined in Section 432 of the Internal Revenue Code of 1986, as amended (the "Internal Revenue Code"). As a result, the Company could have been subject to increased contribution rates associated with these plans or other MEPPs suffering from declines in their funding levels. Due to the significantly underfunded status of the United States multiemployer plans and the potential increased contribution rates, the Company withdrew from participation in these multiemployer plans and has replaced these pension benefits with a Company-sponsored "pay as you go" defined contribution plan, which is historically the form of retirement benefit provided to the Company's employees.

As of December 31, 2017, the Company estimates and has recorded in its financial statements a pre-tax withdrawal liability for all United States multiemployer plans of $28.2 million in the aggregate. During the fourth quarter of 2016, the Company and the GCC reached a settlement agreement for all claims, with scheduled payments until February 2024. The Company is currently in litigation with the GCIU trustees to determine the amount and duration of the withdrawal payments for the GCIU. Arbitration proceedings with the GCIU have been completed, both sides have appealed the arbitrator's ruling, and litigation in Federal court has commenced. Until litigation with the GCIU trustees is concluded, the exact amount of the withdrawal liability will not be known, and, as such, a difference from the recorded estimate could have an adverse effect on the Company's results of operations, financial position and cash flows.

Quad/Graphics may be required to make capital expenditures to sustain its platform and processes and to remain technologically and economically competitive, which may increase its costs or disrupt its operations.

The Company may need to make significant capital expenditures as it develops and continues to maintain its platform and processes. The Company also may be required to make capital expenditures to develop and integrate new technologies to remain technologically and economically competitive. In order to accomplish this effectively, the Company will need to deploy its resources efficiently, maintain effective cost controls and bear potentially significant market and raw material risks. If the Company's revenues decline, it may impact the Company's ability to expend the capital necessary to develop and implement new technology and be economically competitive. Debt or equity financing, or cash generated from operations, may not be available or sufficient for these requirements or for other corporate purposes or, if debt or equity financing is available, it may not be on terms favorable to the Company. In addition, even if capital is available to the Company, there is risk that the Company's vendors will have discontinued the production of parts needed for repairs, replacements or improvements to the Company's existing manufacturing platform, leading the Company to expend more capital than expected to perform such repairs, replacements or improvements.

Quad/Graphics' debt facilities include various covenants imposing restrictions that may affect the Company's ability to operate its business.

On September 1, 1995, and as last amended on November 24, 2014, Quad/Graphics entered into a senior secured note agreement (the "Master Note and Security Agreement") pursuant to which the Company has issued over time senior notes in an aggregate principal amount of $1.1 billion in various tranches. As of December 31, 2017, the borrowings outstanding under the Master Note and Security Agreement were $123.6 million. On April 28, 2014, and as last amended on February 10, 2017, the Company entered into a senior secured credit facility (the "Senior Secured Credit Facility,") which includes three different loan facilities: a Term Loan A, a Term Loan B, and a revolving credit facility. The $725.0 million revolving credit facility and the $375.0 million Term Loan A mature on January 4, 2021. The $300.0 million Term Loan B matures on April 27, 2021. As of December 31, 2017, the borrowings outstanding

under the Senior Secured Credit Facility were $560.4 million. On April 28, 2014, the Company also issued $300.0 million aggregate principal amount of its unsecured 7.0% senior notes due May 1, 2022 ("Senior Unsecured Notes,"), of which $243.5 million remained outstanding as of December 31, 2017.

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The Company's various lending arrangements include certain financial covenants. In addition to the financial covenants, the debt facilities also include certain limitations on acquisitions, indebtedness, liens, dividends and repurchases of capital stock. As of December 31, 2017, the Company was in compliance with all financial covenants in its debt agreements. While the Company currently expects to be in compliance in future periods with all of the financial covenants, there can be no assurance that these covenants will continue to be met. The Company's failure to maintain compliance with the covenants could prevent the Company from borrowing additional amounts and could result in a default under any of the debt agreements. Such default could cause the outstanding indebtedness to become immediately due and payable, by virtue of cross-acceleration or cross-default provisions.

Quad/Graphics may be adversely affected by interest rates, particularly floating interest rates, and foreign exchange rates.

As of December 31, 2017, 33% of the Company's borrowings were subject to variable interest rates. As a result, the Company is exposed to market risks associated with fluctuations in interest rates, and increases in interest rates could adversely affect the Company.

The Company entered into a $250.0 million interest rate swap on February 7, 2017. The swap was designated as a cash flow hedge as its purpose is to reduce the variability of cash flows from interest payments related to a portion of Quad/Graphics' variable-rate debt. The swap effectively converts $250.0 million of the Company's variable-rate debt based on one-month London Interbank Offered Rate ("LIBOR") to a fixed rate of 3.64% (including a 1.75% spread on underlying debt at December 31, 2017). The variable interest rate resets monthly, and the swap is a five year arrangement, maturing on February 28, 2022.

Because a portion of the Company's operations are outside of the United States, significant revenues and expenses are denominated in local currencies. Although operating in local currencies may limit the impact of currency rate fluctuations on the results of operations of the Company's non-United States subsidiaries and business units, fluctuations in such rates may affect the translation of these results into the Company's consolidated financial statements. To the extent revenues and expenses are not in the applicable local currency, the Company may enter into foreign exchange forward contracts to hedge the currency risk. There can be no assurance, however, that the Company's efforts at hedging will be successful. There is always a possibility that attempts to hedge currency risks will lead to greater losses than predicted.

Quad/Graphics' revenue, operating income and cash flows are subject to cyclical and seasonal variations.

The Company's business is seasonal, with Quad/Graphics recognizing the majority of its operating income in the third and fourth quarters of the financial year, primarily as a result of the increased magazine advertising page counts and retail inserts, catalogs and books from back-to-school and holiday-related advertising and promotions. The fourth quarter is typically the highest seasonal quarter for cash flows from operating activities and Free Cash Flow due to the reduction of working capital requirements that reach peak levels during the third quarter. If the Company does not successfully manage the increased workflow, necessary increases in paper and ink inventory, production capacity flows and other business elements during these high seasons of activity, this seasonality could adversely affect the Company's cash flows and results of operations.

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Holders of class A common stock are not able to independently elect directors of Quad/Graphics or control any of the Company's management policies or business decisions or its decisions to issue additional shares, declare and pay dividends or enter into corporate transactions because the holders of class A common stock have substantially less voting power than the holders of the Company's class B common stock, all of which is owned by certain members of the Quadracci family, trusts for their benefit or other affiliates of Quad/Graphics, whose interests may be different from the holders of class A common stock.

The Company's outstanding stock is divided into two classes of common stock: class A common stock ("class A stock") and class B common stock ("class B stock"). The class B stock has ten votes per share on all matters and the class A stock is entitled to one vote per share. As of February 16, 2018, the class B stock constitutes approximately 78% of Quad/Graphics' total voting power. As a result, holders of class B stock are able to exercise a controlling influence over the Company's business, have the power to elect its directors and indirectly control decisions such as whether to issue additional shares, declare and pay dividends or enter into corporate transactions. All of the class B stock is owned by certain members of the Quadracci family or trusts for their benefit, whose interests may differ from the interests of the holders of class A stock.

Approximately 93% of the outstanding class B stock is held of record by the Quad/Graphics Voting Trust, and that constitutes approximately 73% of the Company's total voting power. The trustees of the Quad/Graphics Voting Trust have the authority to vote the stock held by the Quad/Graphics Voting Trust. Accordingly, the trustees of the Quad/Graphics Voting Trust are able to exercise a controlling influence over the Company's business, have the power to elect its directors and indirectly control decisions such as whether to issue additional shares, declare and pay dividends or enter into corporate transactions.

Quad/Graphics is a controlled company within the meaning of the rules of The New York Stock Exchange, LLC ("NYSE") and, as a result, it relies on exemptions from certain corporate governance requirements that provide protection to shareholders of other companies.

Since the Quad/Graphics Voting Trust owns more than 50% of the total voting power of the Company's stock, the Company is considered a controlled company under the corporate governance listing standards of the NYSE. As a controlled company, an exception under the NYSE listing standards exempts the Company from the obligation to comply with certain of the NYSE's corporate governance requirements, including the requirements:

- that a majority of the Company's Board of Directors consist of independent directors, as defined under the rules of the NYSE;

- that the Company have a corporate governance and nominating committee that is composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities; and

- that the Company have a compensation committee that is composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities.

Accordingly, for so long as Quad/Graphics is a controlled company, holders of class A stock will not have the same protections afforded to shareholders of companies that are subject to all of the corporate governance requirements of the NYSE.

Currently, there is a limited active market for Quad/Graphics' class A common stock and, as a result, shareholders may be unable to sell their class A common stock without losing a significant portion of their investment.

The Company's class A common stock has been traded on the NYSE under the symbol "QUAD" since July 6, 2010. However, there is currently a limited active market for the class A common shares. The Company cannot predict the extent to which investor interest in the Company will lead to the development of an active trading market for its class A common stock on the NYSE or how liquid that market will become. If a more active trading market does not develop, shareholders may have difficulty selling any class A common stock without negatively affecting the stock price, and thereby, losing a significant portion of their investment.

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Furthermore, in response to recent public focus on dual class capital structures, certain stock index providers are implementing limitations on the inclusion of dual class share structures in their indices. If these restrictions increase, they may impact who buys and holds the Company's stock.

An other than temporary decline in operating results and enterprise value could lead to non-cash impairment charges due to the impairment of property, plant and equipment and other intangible assets.

The Company has a material amount of property, plant, equipment and other intangible assets on its balance sheet, due in part to acquisitions. As of December 31, 2017, the Company had the following long-lived assets on its consolidated balance sheet included in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K:

- Property, plant and equipment of $1,377.6 million; and

- Other intangible assets, primarily representing the value of customer relationships acquired, of $43.4 million.

As of December 31, 2017, these assets represented approximately 58% of the Company's total assets. The Company assesses impairment of property, plant and equipment and other intangible assets based upon the expected future cash flows of the respective assets. These valuations include management's estimates of sales, profitability, cash flow generation, capital structure, cost of debt, interest rates, capital expenditures and other assumptions. A decline in expected profitability, significant negative industry or economic trends, inability to effectively integrate acquired businesses, unexpected significant changes or planned changes in use of the assets or in entity structure, and divestitures may adversely impact the assumptions used in the valuations. As a result, the recoverability of these assets could be called into question, and the Company could be required to write down or write off these assets. Such an occurrence could have a material adverse effect on the Company's results of operations and financial position.

The Company may not be able to utilize deferred tax assets to offset future taxable income.

As of December 31, 2017, the Company had deferred tax assets, net of valuation allowances, of $152.8 million. The Company expects to utilize the deferred tax assets to reduce consolidated income tax liabilities in future taxable years. However, the Company may not be able to fully utilize the deferred tax assets if its future taxable income and related income tax liability is insufficient to permit their use. In addition, in the future, the Company may be required to record a valuation allowance against the deferred tax assets if the Company believes it is unable to utilize them, which would have an adverse effect on the Company's results of operations and financial position.

Quad/Graphics may be adversely affected by strikes and other labor protests.

As of December 31, 2017, Quad/Graphics had a total of approximately 21,100 full-time equivalent employees, of which approximately 1,800 were covered by an industry wide agreement, a collective bargaining agreement or through a works council or similar arrangement. As of December 31, 2017, the Company had five collective bargaining agreements in the United States and nine agreements outside of the United States that are either industry-wide individual collective bargaining agreements or works councils or similar arrangements.

While the Company believes its employee relations are good and that the Company maintains an employee-centric culture, and there has not been any material disruption in operations resulting from labor disputes, the Company cannot be certain that it will be able to maintain a productive and efficient labor environment. The Company cannot predict the outcome of any future negotiations relating to the renewal of the collective bargaining agreements, nor can

there be any assurance that work stoppages, strikes or other forms of labor protests pending the outcome of any future negotiations will not occur. A strike or other forms of labor protest affecting a series of major plants in the future could materially disrupt the Company's operations and result in a material adverse impact on its financial condition, results of operations and cash flows, which could force the Company to reassess its strategic alternatives involving certain of its operations.

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Item 1B. Unresolved Staff Comments

The Company has no unresolved staff comments to report pursuant to this item.

Item 2. Properties

Quad/Graphics' corporate office is located in Sussex, Wisconsin. The Company owned or leased 147 facilities located in 17 countries including manufacturing operations, warehouses and office space totaling approximately 28,980,000 square feet, of which approximately 21,770,000 is owned space and approximately 7,210,000 is leased space as of December 31, 2017. In addition to these owned and leased facilities, the Company has investments in printing operations located in Brazil and India.

Within the United States Print and Related Services segment, the Company operated 55 owned or leased manufacturing facilities encompassing approximately 21,578,000 square feet as of December 31, 2017. Within the International segment, the Company operated eight owned or leased manufacturing facilities encompassing approximately 1,820,000 square feet as of December 31, 2017. The following table lists the Company's operating locations with manufacturing facilities totaling over 500,000 square feet as of December 31, 2017:

Locations	Square Feet	Property Type	Segment
Lomira, Wisconsin, United States	2,174,000	Owned	United States Print and Related Services
Martinsburg, West Virginia, United States	2,123,000	Owned	United States Print and Related Services
Sussex, Wisconsin, United States	1,970,000	Owned	United States Print and Related Services
Hartford, Wisconsin, United States	1,682,000	Owned	United States Print and Related Services
Oklahoma City, Oklahoma, United States	1,128,000	Owned	United States Print and Related Services
Versailles, Kentucky, United States	1,065,000	Owned	United States Print and Related Services
Saratoga Springs, New York, United States	1,034,000	Owned	United States Print and Related Services
West Allis, Wisconsin, United States	913,000	Owned	United States Print and Related Services
The Rock, Georgia, United States	797,000	Owned	United States Print and Related Services
Wyszkow, Poland	709,000	Owned	International
Franklin, Kentucky, United States	617,000	Owned	United States Print and Related Services
Effingham, Illinois, United States	564,000	Owned	United States Print and Related Services
Merced, California, United States	539,000	Owned	United States Print and Related Services
Taunton, Massachusetts, United States	513,000	Owned/Leased	United States Print and Related Services
Pewaukee, Wisconsin, United States	504,000	Owned/Leased	United States Print and Related Services

Item 3. Legal Proceedings

Quad/Graphics is subject to various legal actions, administrative proceedings and claims arising out of the ordinary course of business. Quad/Graphics believes that such unresolved legal actions, proceedings and claims will not materially adversely affect its results of operations, financial condition or cash flows. For additional information, see Note 10, "Commitments and Contingencies — Litigation," to the consolidated financial statements in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K.

Item 4. Mine Safety Disclosures

Not applicable.

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PART II

Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Capital Stock and Dividends

Quad/Graphics' authorized capital stock consists of 80.0 million shares of class A stock, 80.0 million shares of class B stock, 20.0 million shares of class C common stock and 0.5 million shares of preferred stock. The Company's outstanding capital stock as of December 31, 2017, consisted of 38.2 million shares of class A stock, 13.8 million shares of class B stock and no shares of class C common stock or preferred stock. As of February 16, 2018, there were 3,020 record holders of the class A stock and 22 record holders of the class B stock.

The Company's class A stock is listed on the NYSE under the symbol "QUAD". The class A stock is entitled to one vote per share. The Company's class B stock is held by certain members of the Quadracci family or trusts for their benefit (and can only be voluntarily transferred to the Company or to a member of the Quadracci "family group" as defined in the Company's amended and restated articles of incorporation; and any transfer in violation of the Company's amended and restated articles of incorporation results in the automatic conversion of such class B stock into class A stock). The class B stock is entitled to ten votes per share. Each share of class B stock may, at the option of the holder, be converted at any time into one share of class A stock. There is no public trading market for the class B stock.

Pursuant to the Company's amended and restated articles of incorporation, each outstanding class of common stock has equal rights with respect to cash dividends. Pursuant to the Company's debt facilities, the Company is subject to limitations on dividends and repurchases of capital stock. If the Company's total leverage ratio is greater than 3.00 to 1.00 (as defined in the Company's Senior Secured Credit Facility), the Company is prohibited from making greater than $120.0 million of annual dividend payments, capital stock repurchases and certain other payments. If the total leverage ratio is less than 3.00 to 1.00, there are no such restrictions. For the twelve months ended December 31, 2017, the Company's total leverage ratio was 2.06 to 1.00.

The high and low closing sales prices of the Company's class A stock during each quarter and the quarterly dividends paid per share of each class of common stock then outstanding during the years ended December 31, 2017 and 2016, are contained in the chart below:

			Class A Closing Stock Prices			
	Dividends Paid		2017		2016	
	2017	2016	High	Low	High	Low
First Quarter	$0.30	$0.30	$27.66	$22.10	$13.61	$7.85
Second Quarter	0.30	0.30	27.98	21.91	23.29	11.93
Third Quarter	0.30	0.30	23.27	18.35	29.18	23.07
Fourth Quarter	0.30	0.30	23.98	20.92	28.13	23.26

Securities Authorized For Issuance Under Equity Compensation Plans

See Part III, Item 12, "Security Ownership of Certain Beneficial Owners and Management and Related Shareholder Matters," of this Annual Report on Form 10-K for certain information regarding the Company's equity compensation plans.

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Issuer Purchases of Equity Securities

Information about the Company's repurchases of its class A stock during the three months ended December 31, 2017, were as follows:

Period	Issuer Purchases of Equity Securities			
	Total Number of Shares Purchased[1]	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs[1]	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs[2]
October 1, 2017 to October 31, 2017	—	—	—	79,158,311
November 1, 2017 to November 30, 2017	—	—	—	79,158,311
December 1, 2017 to December 31, 2017	2,418 [3]	—	—	79,158,311
Total	2,418		—	

(1) Represents shares of the Company's class A stock.

(2) On September 6, 2011, the Company's Board of Directors authorized a share repurchase program of up to $100.0 million of the Company's outstanding class A stock. Under the authorization, share repurchases may be made at the Company's discretion, from time to time, in the open market and/or in privately negotiated transactions as permitted by federal securities laws and other legal requirements. The timing, manner, price and amount of any repurchase will depend on economic and market conditions, share price, trading volume, applicable legal requirements and other factors. The program may be suspended or discontinued at any time. During the year ended December 31, 2017, the Company repurchased 200,605 shares of its class A common stock at a weighted average price of $18.89 per share for a total purchase price of $3.8 million. During the year ended December 31, 2016, the Company repurchased 984,190 shares of its class A stock at a weighted average price of $8.96 per share for a total purchase price of $8.8 million. As of December 31, 2017, there were $79.2 million of authorized repurchases remaining under the program.

(3) Represents 2,418 shares of class A stock transferred from an employee to the Company to satisfy tax withholding requirements in connection with the vesting of restricted stock under the Quad/Graphics, Inc. 2010 Omnibus Incentive Plan ("Omnibus Plan") during December 2017.

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Stock Performance Information

The following graph compares cumulative shareholder return on Quad/Graphics' class A stock since December 31, 2012, as compared to the Standard & Poor's ("S&P") MidCap 400 Index and a selected peer group of companies over the same period. Due to the diversity of its product and service offerings, the Company does not believe that any single published industry index is appropriate for comparing stockholder return. As such, the Company has compiled a peer group to use in the below performance graph, incorporating companies from different industries, including commercial printing, marketing services and publishing.

The graph assumes a $100.00 investment and that all dividends are reinvested. The returns of each peer group company have been weighted to reflect their relative market capitalizations. The comparison in the graph below is based upon historical stock performance and should not be considered indicative of future stockholder returns.

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Indexed Returns

	Base Period 12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017
Quad/Graphics, Inc.	$ 100.00	$ 139.78	$ 124.46	$ 54.90	$ 168.04	$ 149.01
S&P MidCap 400 Index	100.00	133.50	146.54	143.35	173.08	201.20
Peer Group [1]	100.00	170.76	173.77	161.97	156.90	168.25

[1] The following companies were included in the Peer Group:

Acxiom Corp.	InnerWorkings, Inc.
Alliance Data Systems Corp.	LSC Communications, Inc. [c]
Cenveo, Inc.	McClatchy Co.
Deluxe Corp.	Meredith Corp.
R.R. Donnelley & Sons Co. [a]	Scholastic Corp.
Gannett Co., Inc. [b]	John Wiley & Sons, Inc.
Harte Hanks, Inc.	

[a] Adjusted for reverse split and spin offs of LSC Communications, Inc. and Donnelley Financial Solutions, Inc.

[b] Included from June 23, 2015, when Gannett Co., Inc. spun off from its parent company

[c] Included from October 1, 2016, when LSC Communications, Inc. spun off from R.R. Donnelley & Sons Co.

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Item 6. Selected Financial Data

The selected consolidated statements of operations data for the years ended December 31, 2017, 2016 and 2015, and the selected consolidated balance sheets data at December 31, 2017 and 2016, are derived from the audited consolidated financial statements of the Company included in Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K. The selected financial data includes the results of operations of acquired businesses prospectively from their respective acquisition dates. For additional information related to the Company's acquisition activity, see Note 2, "Acquisitions and Strategic Investments," to the consolidated financial statements in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K. The selected consolidated statements of operations data for the years ended December 31, 2014 and 2013, and the consolidated balance sheets data at December 31, 2015, 2014 and 2013, are derived from audited consolidated financial statements not included herein.

SELECTED FINANCIAL DATA
(In millions, except per share data)

	2017	2016	2015	2014	2013
Consolidated Statements of Operations Data:					
Net sales	$4,131.4	$4,329.5	$4,597.1	$4,777.6	$4,712.7
Operating income (loss)	164.9	122.4	(830.0)	141.3	142.2
Net earnings (loss)[1] [2]	$107.2	$44.9	$(641.9)	$18.6	$32.5
Earnings (loss) per diluted share[2]	$2.07	$0.90	$(13.40)	$0.38	$0.65
Consolidated Balance Sheets Data:					
Total assets	$2,452.4	$2,570.1	$2,847.5	$4,008.8	$4,103.6
Long-term debt and capital lease obligations (excluding current portion)	917.2	1,038.7	1,249.6	1,309.4	1,258.2
Other Financial Data:					
Dividends per share of common stock	$1.20	$1.20	$1.20	$1.20	$1.20

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(1) Includes restructuring, impairment and transaction-related charges of $61.2 million, $80.6 million, $164.9 million, $67.3 million and $95.3 million for the years ended December 31, 2017, 2016, 2015, 2014 and 2013, respectively. Includes goodwill impairment charges of $808.3 million ($542.4 million, net of tax) for the year ended December 31, 2015. Excludes net loss attributable to non-controlling interests of $0.3 million and $1.6 million for the years ended December 31, 2014 and 2013, respectively.

(2) Includes a $28.8 million net income tax benefit recorded during the year ended December 31, 2017, as a result of the 2017 Tax Cuts and Jobs Act. See Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," and Note 14, "Income Taxes," to the Company's consolidated financial statements in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K for further discussion.

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

The following discussion of the financial condition and results of operations of Quad/Graphics should be read together with the Quad/Graphics' audited consolidated financial statements for each of the three years in the period ended December 31, 2017, including the notes thereto, included in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K. This discussion contains forward-looking statements that reflect the Company's plans, estimates and beliefs. The Company's actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to these differences include, but are not limited to, those discussed in "Forward-Looking Statements" and Part I, Item 1A, "Risk Factors," included earlier within this Annual Report on Form 10-K.

Management's discussion and analysis of financial condition and results of operations is provided as a supplement to the Company's consolidated financial statements and accompanying notes to help provide an understanding of the Company's financial condition, the changes in the Company's financial condition and the Company's results of operations. This discussion and analysis is organized as follows:

- Overview. This section includes a general description of the Company's business and segments, an overview of key performance metrics the Company's management measures and utilizes to evaluate business performance, and an overview of trends affecting the Company, including management's actions related to the trends.

- Results of Operations. This section contains an analysis of the Company's results of operations by comparing the results for (1) the year ended December 31, 2017, to the year ended December 31, 2016; and (2) the year ended December 31, 2016, to the year ended December 31, 2015. The comparability of the Company's results of operations between periods was impacted by acquisitions, including the 2015 acquisitions of Marin's International, S.A. ("Marin's"), Copac Global Packaging, Inc. ("Copac") and Specialty Finishing, Inc. ("Specialty"). The results of operations of all acquisitions are included in the Company's consolidated results prospectively from their respective acquisition dates. Forward-looking statements providing a general description of recent and projected industry and Company developments that are important to understanding the Company's results of operations are included in this section. This section also provides a discussion of EBITDA and EBITDA margin, financial measures that the Company uses to assess the performance of its business that are not prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP").

- Liquidity and Capital Resources. This section provides an analysis of the Company's capitalization, cash flows, a statement about off-balance sheet arrangements and a discussion and table of outstanding debt and commitments. Forward-looking statements important to understanding the Company's financial condition are included in this section. This section also provides a discussion of Free Cash Flow and Debt Leverage Ratio, non-GAAP financial measures that the Company uses to assess liquidity and capital allocation and deployment.

- Critical Accounting Policies and Estimates. This section contains a discussion of the accounting policies that the Company's management believes are important to the Company's financial condition and results of operations, as well as allowances and reserves that require significant judgment and estimates on the part of the Company's management. In addition, all of the Company's significant accounting policies, including critical accounting policies, are summarized in Note 1, "Basis of Presentation and Summary of Significant Accounting Policies," to the consolidated financial statements in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K.

- New Accounting Pronouncements.

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Overview

Business Overview

Quad/Graphics is a leading marketing solutions provider. The Company leverages its strong print foundation as part of a much larger, robust integrated marketing platform that helps marketers and content creators improve the efficiency and effectiveness of their marketing spend across offline and online media channels. With a consultative approach, worldwide capabilities, leading-edge technology and single-source simplicity, the Company believes it has the resources and knowledge to help a wide variety of clients in multiple vertical industries, including retail, publishing and healthcare. The Company's operating and reportable segments are aligned with how the chief operating decision maker of the Company currently manages the business. The Company's reportable and operating segments are summarized below.

The United States Print and Related Services segment is predominantly comprised of the Company's United States printing operations and is managed as one integrated platform. This includes retail inserts, publications, catalogs, special interest publications, journals, direct mail, books, directories, in-store marketing and promotion, packaging, newspapers, custom print products, other commercial and specialty printed products and global paper procurement, together with marketing and other complementary services, including consumer insights, audience targeting, personalization, media planning and placement, process optimization, campaign planning and creation, pre-media production, videography, photography, digital execution, print execution and logistics. This segment also includes the manufacture of ink. The United States Print and Related Services segment accounted for approximately 91% of the Company's consolidated net sales during the year ended December 31, 2017.

The International segment consists of the Company's printing operations in Europe and Latin America, including operations in England, France, Germany, Poland, Argentina, Colombia, Mexico and Peru, as well as investments in printing operations in Brazil and India. This segment provides printed products and marketing and other complementary services consistent with the United States Print and Related Services segment. The International segment accounted for approximately 9% of the Company's consolidated net sales during the year ended December 31, 2017.

Corporate consists of unallocated general and administrative activities and associated expenses including, in part, executive, legal and finance, as well as certain expenses and income from frozen employee retirement plans, such as pension benefit plans.

Key Performance Metrics Overview

The Company's management believes the ability to generate net sales growth, profit increases and positive cash flow, while maintaining the appropriate level of debt, are key indicators of the successful execution of the Company's business strategy and will increase shareholder value. The Company uses period over period net sales growth, EBITDA, EBITDA margin, net cash provided by operating activities, Free Cash Flow and Debt Leverage Ratio as metrics to measure operating performance, financial condition and liquidity. EBITDA, EBITDA margin, Free Cash Flow and Debt Leverage Ratio are non-GAAP financial measures (see the definitions of EBITDA, EBITDA margin and the reconciliation of net earnings (loss) to EBITDA in the "Results of Operations" section below, and see the definitions of Free Cash Flow and Debt Leverage Ratio, the reconciliation of net cash provided by operating activities to Free Cash Flow, and the calculation of Debt Leverage Ratio in the "Liquidity and Capital Resources" section below).

Net sales growth. The Company uses period over period net sales growth as a key performance metric. The Company's management assesses net sales growth based on the ability to generate increased net sales through

increased sales to existing clients, sales to new clients, sales of new or expanded solutions to existing and new clients and opportunities to expand sales through strategic investments, including acquisitions.

EBITDA and EBITDA margin. The Company uses EBITDA and EBITDA margin as metrics to assess operating performance. The Company's management assesses EBITDA and EBITDA margin based on the ability to increase revenues while controlling variable expense growth.

Net cash provided by operating activities. The Company uses net cash provided by operating activities as a metric to assess liquidity. The Company's management assesses net cash provided by operating activities based on the ability to meet recurring cash obligations while increasing available cash to fund cash restructuring requirements related to cost reduction activities, as well as to fund capital expenditures, debt service requirements, World Color Press single employer pension plan contributions, World Color Press MEPPs withdrawal liabilities, acquisitions and other investments in future growth, shareholder dividends and share repurchases. Net cash provided by operating activities can be significantly impacted by the timing of non-recurring or infrequent receipts or expenditures.

Free Cash Flow. The Company uses Free Cash Flow as a metric to assess liquidity and capital deployment. The Company's management assesses Free Cash Flow as a measure to quantify cash available for strengthening the balance sheet (debt reduction), for strategic capital allocation and deployment through investments in the business (acquisitions and strategic investments) and for returning capital to the shareholders (dividends and share repurchases). The priorities for capital allocation and deployment will change as circumstances dictate for the business, and Free Cash Flow can be significantly impacted by the Company's restructuring activities and other unusual items.

Debt Leverage Ratio. The Company uses the Debt Leverage Ratio as a metric to assess liquidity and the flexibility of its balance sheet. Consistent with other liquidity metrics, the Company monitors the Debt Leverage Ratio as a measure to determine the appropriate level of debt the Company believes is optimal to operate its business, and accordingly, to quantify debt capacity available for strategic capital allocation and deployment through investments in the business (capital expenditures, acquisitions and strategic investments), for strengthening the balance sheet (pension liability reduction), and for returning capital to the shareholders (dividends and share repurchases). The priorities for capital allocation and deployment will change as circumstances dictate for the business, and the Debt Leverage Ratio can be significantly impacted by the amount and timing of large expenditures requiring debt financing, as well as changes in profitability.

Overview of Trends Affecting Quad/Graphics

Quad/Graphics is a leading marketing solutions provider. Opportunity for growth within the U.S. advertising services industry supports Quad/Graphics 3.0 transformation. The Company leverages its strong print foundation as part of a much larger, robust integrated marketing platform that helps marketers and content creators improve the efficiency and effectiveness of their marketing spend across offline and online media channels. With a consultative approach, worldwide capabilities, leading-edge technology and single-source simplicity, the Company believes it has the resources and knowledge to help a wide variety of clients in multiple vertical industries, including retail, publishing and healthcare.

From a marketing services perspective, media channel proliferation continues, and consumers remain in control of where, when and how they buy their products and services. This trend has contributed to marketers' and publishers' need for solutions to efficiently and effectively coordinate and measure both digital and traditional channels.

From a printing industry perspective, competition remains highly fragmented and intense, and the Company believes that there are indicators of heightened competitive pressures. The industry has excess manufacturing capacity created by continued declines in industry volumes which, in turn, has created accelerated downward pricing pressures. In addition, digital delivery of documents and data, including the online distribution and hosting of media content and mobile technologies, offer alternatives to traditional delivery of printed documents. Increasing consumer acceptance

of digital delivery of content has resulted in marketers and publishers allocating their marketing and advertising spend across the expanding selection of digital delivery options, which further reduces printing demand and contributes to industry overcapacity. The Company also faces competition from print management firms, which look to streamline processes and reduce the overall print spend of the Company's clients, as well as from strategic marketing firms focused on helping businesses integrate multiple channels into their marketing campaigns.

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The Company believes that a disciplined approach for capital management and a strong balance sheet are critical to be able to invest in profitable growth opportunities and technological advances, thereby providing the highest return for shareholders. Management balances the use of cash between deleveraging the Company's balance sheet (through reduction in debt and pension obligations), compelling investment opportunities (through capital expenditures, acquisitions and strategic investments) and returns to shareholders (through share repurchases and a quarterly dividend of $0.30 per share).

The Company remains disciplined with its debt leverage. The Company's consolidated debt and capital leases decreased by $166 million during the year ended December 31, 2017, primarily due to cash provided by operating activities. Since the Company completed the World Color Press acquisition in July 2010, the Company has reduced debt and capital leases by $775 million and has reduced the obligations for pension, postretirement and MEPPs by $450 million, for a total obligation reduction since July of 2010 of over $1.2 billion.

The Company makes continuous progress on integrating and streamlining all aspects of its business, thereby lowering its cost structure by consolidating its manufacturing platform into its most efficient facilities, as well as realizing purchasing, mailing and logistics efficiencies by centralizing and consolidating print manufacturing volumes and eliminating redundancies in its administrative and corporate operations. These efforts include the deployment of the Company's Smartools® systems to streamline workflows and improve data visibility across the consolidated platform, and cost reductions through Lean Manufacturing and Continuous Improvement initiatives, both on the production floor and with administrative support, in order to achieve improved efficiencies, reduce waste, lower overall operating costs, enhance quality and timeliness and create a safer work environment for the Company's employees. The Company continues to focus on proactively aligning its cost structure to the realities of the top-line pressures it faces in the printing industry through sustainable continuous improvement programs. Restructuring actions initiated by the Company beginning in 2010 have resulted in the announcement of 41 plant closures and have reduced headcount by approximately 11,800 employees through December 31, 2017. The Company intends to continue reducing costs, as evidenced by the fourth quarter of 2017 announcements of four plant closures that ceased operations in December 2017 and the first quarter of 2018.

Integrated distribution with the postal service is an important component of the Company's business. Any material change in the current service levels provided by the postal service could impact the demand that clients have for print services. The USPS continues to experience financial problems. Without action by Congress to reform the USPS' financial stability and remove unnecessary and costly congressional mandates, pressure on postal rates will continue to mount. Additionally, without reforms to address the systemic overall cost structure of the USPS, these losses will continue into the future, and the benefits from Congressional postal reform legislation will be short-lived. In 2006, the Postal Accountability and Enhancement Act ("PAEA"), created the predictable postal price-setting process in place today that is tied directly to the Consumer Price Index for All Urban Consumers. PAEA requires the PRC to review the price setting process after ten years. The PRC initiated this review in December 2016. In December 2017, the PRC issued a Notice of Proposed Rulemaking, with comments due on March 1, 2018. Any newly revised rates that would be effective as a result of new rules issued by the PRC may include a higher rate cap, or potentially the elimination of a rate cap altogether, which will result in no restrictions on the USPS' ability to increase rates from year to year. This may lead to price spikes for mailers and may also reduce the incentive for the USPS to continue to take out costs and instead continue to rely on postage to cover the costs of an outdated postal service that does not reflect the industry's ability or willingness to pay. The end result may be reduced demand for printed products as customers may move more aggressively into other delivery methods, such as the many digital and mobile options now available to consumers.

The Company has invested significantly in its mail preparation and distribution capabilities to mitigate the impact of increases in postage costs, and to help clients successfully navigate the ever-changing postal environment. Through its data analytics, unique software to merge mailstreams on a large scale, advanced finishing capabilities and technology,

and in-house transportation and logistics operations, the Company manages the mail preparation and distribution of most of its clients' products to maximize efficiency, to enable on-time and consistent delivery and to partially reduce these costs; however, the net impact of increasing postal costs may create a decrease in client demand for print and mail products.

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Another key aspect of the Company's modern manufacturing platform is the combination of its footprint of mega plants (facilities greater than 1.0 million square feet) that produce a number of different products under one roof; mega zones where multiple facilities in close geographic proximity are managed as one large facility; and smaller strategically located facilities. The Company has continued to evolve its platform, equipping facilities to be product line agnostic, which enables the Company to maximize equipment utilization. Quad/Graphics believes that the large plant size of certain of its key printing facilities allows the Company to drive savings in certain product lines (such as publications and catalogs) due to economies of scale and from investments in automation and technology.

2017

In 2017, the Company continued to make strategic investments that support its 3.0 transformation.

To strengthen its integrated marketing platform, Quad/Graphics continued to add client-side talent to its team — individuals who understand the unique challenges facing retailers, marketers and publishers and can build solutions to help drive client business results. The Company also continued to strengthen its strategic partnerships with agencies, such as Rise Interactive, that specialize in online channels. When combined with the expertise of its BlueSoHo multichannel agency, Quad/Graphics believes it is well-positioned to create greater value for its clients by helping them create, integrate, deploy and measure content more efficiently and effectively across a variety of channels.

The Company continued to make strategic investments in its core print platform as part of its ongoing commitment to maintaining the most efficient, automated and dependable manufacturing and distribution platform in the industry. These investments help fuel Quad/Graphics' 3.0 transformation and sustain its high-quality, low-cost producer position in the industry. These investments include the following:

- Direct Marketing Platform: The Company continued to strengthen its Direct Marketing platform through the addition of state-of-the-art digital press technology capable of producing 100% variable content in full color cost-effectively on a mass scale. With this technology, the Company can help its clients increase consumer engagement and response, and improve return on marketing investment. In 2017, the Company installed a Hewlett-Packard T490 digital press in its Midwest Digital Print Supercenter in Pewaukee, Wisconsin, to complement its existing Hewlett-Packard T410 press in Pewaukee. Quad/Graphics also invested in additional high-resolution inkjet print modules for offset presses in its Pewaukee and Effingham, Illinois, facilities. These modules are integrated into existing offset presses to give marketers the opportunity to create high-quality variable images in-line with static four-color print at high speeds.

- Commercial and Specialty Platform: The Company also invested in state-of-the-art digital and offset press technology to enhance its Commercial and Specialty Platform, which increasingly serves national clients in a variety of industries, including restaurants. These investments include a Fuji J press for its Woburn, Massachusetts facility, and a Heidelberg Speedmaster XL 106 eight-color perfecting sheetfed press, in its Burlington, Wisconsin, facility. Both presses are ideal for short-run and print-on-demand work, including promotional items.

- QuadPackaging Platform: In 2017, the Company more than doubled high-end packaging production capacity by moving its Dominican Republic operations into a newer, larger facility in Santo Domingo, close to where products are manufactured to improve timeliness and cost-efficiency. The facility features several new and/or upgraded pieces of equipment including a new Heidelberg Speedmaster XL 106 press, a rebuilt Heidelberg Speedmaster XL 105 press, two new Bobst Visioncut LE Diecutters, and a Marquip roll sheeting machine for cutting its own sheets of paper. QuadPackaging's Spartanburg, South Carolina, facility also installed a new Heidelberg Speedmaster XL 106 press and a new digital Fuji J press for short runs and/or variable printing in the folded carton market.

- In-Store Marketing Platform: Quad/Graphics' Europe, located in Poland, invested in a Heidelberg VLF (Very Large Format) sheetfed press for its In-Store Marketing group. The press is used to produce various types of packaging and

floor displays with complex shapes and structures, serving the food, cosmetics, chemical, motor, textile and other industries. In the United States, Quad/Graphics' Tempt in-store

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marketing group replaced two digital presses with two next generation Inca X3 presses, which print faster and feature more advanced automation to reduce operator error.

- Book Platform: The Company invested in a 64-page manroland LITHOMAN web offset press for its Versailles, Kentucky, plant. The high-speed press produces optimal quality with reduced production cycle times and waste, and complements the facility's short-run digital press capabilities. It also lowers the break-even point between traditional offset and digital printing so the Company can cost-effectively produce run lengths ranging from one copy to millions of copies. The Company also upgraded three of Versailles plant's five Hewlett-Packard digital presses to increase their top speeds from 600 feet-per-minute to 1,000 feet-per-minute, essentially adding the capacity of two additional presses. Further, it added a case-in machine for digital print finishing and continues to invest in its proprietary information technology solutions, including On-QTM a demand-driven ordering system that helps clients better manage ordering and inventory.

- Magazine, Catalog and Retail Platform: The Company continues to enhance productivity and offset labor shortages by using automation, including automated guided vehicles (driverless forktrucks) for moving work-in-process and finished goods and automated palletizers to stack product at the end of a finishing line at high speeds. In 2017, capital investments included 10 additional automated guided vehicles, for a total of 40 in its Sussex, Wisconsin mega plant, and 20 automated palletizers for a total of more than 100 company-wide.

2016

To strengthen its marketing services, the Company seeks out strategic partnerships with companies on the cutting edge of marketing solutions and, in 2016, partnered with, and made a minority investment in, Rise Interactive, a digital marketing agency. The strategic investment brings together a company that is adept at optimizing spend offline, with a company that is doing the same online, using robust analytics to deliver highly-relevant, consistent messages to consumers across print and digital channels. The strategic investment in Rise Interactive will enable both Quad/Graphics and Rise Interactive to accelerate growth through co-innovation that delivers more value to their collective clients.

Quad/Graphics made a number of strategic investments in 2016 to strengthen its core print platform and create further value for its clients. Highlights include the following:

- Direct Mail Platform: The Company announced that it will transform its Westampton, New Jersey, direct marketing production plant into an East Coast Digital Print Supercenter specializing in personalized, high-response direct marketing solutions. The expansion adds new technology that will enhance both the efficiency and effectiveness of direct marketers' efforts to reach individual consumers with superior-quality, cost effective, hyperpersonalized direct mail pieces on a mass scale. The Company's East Coast Digital Print Supercenter will include two new Hewlett-Packard Indigo 12000 digital presses. In addition, the Supercenter also will operate several other digital presses as well as offset presses with upgraded inkjet technology, and install two new high-speed letter inserters to enhance lettershop operations. The East Coast Digital Supercenter compliments Quad Graphics' existing Midwest Digital Print Supercenter in Pewaukee, Wisconsin, which recently added a Hewlett-Packard Indigo 12000 digital press; and Quad/Graphics Effingham, Illinois direct mail production facility, which recently expanded its personalization capabilities with the installation of a new Hewlett-Packard C800 four-color variable inkjet print module system.

- Commercial and Specialty Platform: The Company announced it will add state-of-the-art digital printing capabilities in its Dallas, Texas plant with two new digital presses. A new Fuji J Press is a digital print press offering the quality, reliability and consistency of offset printing in addition to full variable one-to-one data management. The Fuji J Press is complemented by a Kodak NexPress for short-run, quick-turn workflows. Finishing equipment will also be

installed including a Horizon StitchLiner 5500 saddle stitching system and two fully automated Horizon perfect binders as well as a folder, a flatcutter and a shrinkwrapper. Lastly, the Dallas plant will have expanded kitpacking and fulfillment solutions to simplify

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the management and distribution of finished products, integrated from order entry to doorstep delivery. This transformation will help Quad/Graphics better serve the next generation of marketers and brand owners in a variety of industry verticals, including retail, travel and hospitality, fast casual restaurants and automotive. While the Dallas, Texas plant will close in the first quarter of 2018, the state-of-the-art equipment will be re-installed in other Commercial and Specialty plants.

- Book Platform: Quad/Graphics has invested in multiple high-speed color digital web presses as part of a strategy to transform the Company's book platform to the widest, most productive digital web presses available in the marketplace today. The Company is committed to helping book publishers produce and deliver books on demand, bringing zero inventory and just-in-time delivery closer to reality. The Company will continue to invest in its book platform to match its clients' changing needs and redefine the book supply chain through increased customization and versioning capabilities, faster time to market, reduced waste, inventories and obsolescence and lower fixed costs.

2015

- The Company completed the acquisition of Specialty on August 25, 2015, for a net purchase price of$61 million, excluding acquired cash. Specialty is a full-service paperboard folding carton manufacturer and logistics provider located in Omaha, Nebraska.

- The Company completed the acquisition of Copac on April 14, 2015, for a net purchase price of $59 million, excluding acquired cash. Copac is a leading international provider of innovative packaging and supply chain solutions, including turnkey packaging design, production and fulfillment services across a range of end markets, headquartered in Spartanburg, South Carolina. Copac manufactures products such as folding cartons, labels, inserts, tags and specialty envelopes, and has production facilities in Spartanburg and Santo Domingo, Dominican Republic, as well as strategically sourcing packaging product manufacturing over multiple end markets in Central America and Asia, giving it a global footprint.

- The Company completed the acquisition of Marin's on February 3, 2015, for a net purchase price of $21 million, excluding acquired cash. Marin's is a worldwide leader in the point-of-sale display industry and specializes in the research and design of display solutions, headquartered in Paris, France. Marin's products are produced by a global network of licensees, including Quad/Graphics, as well as one wide-format digital print, kitting and fulfillment facility in Paris. Marin's uses its own European-based sales force and the global licensees to sell its patented product portfolio.

The Company is subject to seasonality in its quarterly results as net sales and operating income are higher in the third and fourth quarters of the calendar year as compared to the first and second quarters. The fourth quarter is typically the highest seasonal quarter for cash flows from operating activities and Free Cash Flow due to the reduction of working capital requirements that reach peak levels during the third quarter. Seasonality is driven by increased magazine advertising page counts, retail inserts, catalogs and books primarily due to back-to-school and holiday-related advertising and promotions. The Company expects this seasonality impact to continue in future years.

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Results of Operations for the Year Ended December 31, 2017, Compared to the Year Ended December 31, 2016

Summary Results

The Company's operating income, operating margin, net earnings (computed using a 40% normalized tax rate) and diluted earnings per share for the year ended December 31, 2017, changed from the year ended December 31, 2016, as follows (dollars in millions, except per share data):

	Operating Income	Operating Margin	Net Earnings	Diluted Earnings Per Share
For the year ended December 31, 2016	$ 122.4	2.8 %	$ 44.9	$ 0.90
2017 restructuring, impairment and transaction-related charges [1]	(61.2)	(1.5)%	(36.7)	(0.71)
2016 restructuring, impairment and transaction-related charges [2]	80.6	1.9 %	48.4	0.97
Interest expense [3]	N/A	N/A	3.7	0.07
2017 loss on debt extinguishment [4]	N/A	N/A	(1.6)	(0.03)
2016 gain on debt extinguishment [5]	N/A	N/A	(8.5)	(0.17)
Income taxes [6]	N/A	N/A	41.8	0.81
Investments in unconsolidated entities, net of tax [7]	N/A	N/A	1.4	0.03
Operating income [8]	23.1	0.8 %	13.8	0.20
For the year ended December 31, 2017	$ 164.9	4.0 %	$ 107.2	$ 2.07

(1) Restructuring, impairment and transaction-related charges of $61.2 million ($36.7 million, net of tax) incurred during the year ended December 31, 2017, included the following:

a. $26.9 million of employee termination charges related to workforce reductions through facility consolidations and voluntary and involuntary separation programs;

b. $12.0 million of impairment charges, including $6.7 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Waseca, Minnesota; Columbus, Ohio; and Taunton, Massachusetts, as well as other capacity reduction restructuring activities; and $5.3 million of impairment charges for land and building related to the Waseca, Minnesota and Taunton, Massachusetts plant closures;

c. $3.1 million of transaction-related charges, consisting of professional service fees for business acquisition and divestiture activities;

d. $19.2 million of various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges, net of $7.1 million in gains from the sale of the Atglen, Pennsylvania; Dickson, Tennessee; East Greenville, Pennsylvania; Lenexa, Kansas; and Marengo, Iowa plants, and a $1.2 million gain from the Company's Argentina Subsidiaries' settlements with vendors through bankruptcy proceedings. Other restructuring charges also included a $6.7 million loss on the sale of a business and an $0.8 million non-cash pension settlement charge related to lump-sum pension payments.

The Company expects to incur additional restructuring and integration costs in future reporting periods in connection with eliminating excess manufacturing capacity and properly aligning its cost structure in conjunction with the Company's acquisitions and strategic investments, and other cost reduction programs.

(2)

Restructuring, impairment and transaction-related charges of $80.6 million ($48.4 million, net of tax) incurred during the year ended December 31, 2016, included the following:

a. $12.9 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs;

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b. $26.8 million of impairment charges, including $14.7 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Atglen, Pennsylvania; Augusta, Georgia; East Greenville, Pennsylvania; Monroe, New Jersey; Woodstock, Illinois; and Queretaro, Mexico, as well as other capacity reduction restructuring activities; and $12.1 million of impairment charges for land and building related to the Atglen, Pennsylvania plant closure;

c. $2.2 million of transaction-related charges, consisting of professional service fees for business acquisition and divestiture activities;

d. $0.1 million of acquisition-related integration costs; and

e. $38.6 million of various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges. Other restructuring charges also included an $11.2 million adjustment to its MEPPs withdrawal liability and a $7.0 million non-cash pension settlement charge related to lump-sum pension payments.

(3) Interest expense decreased $6.1 million ($3.7 million, net of tax) during the year ended December 31, 2017, to $71.1 million. This change was due to lower average debt levels in the year ended December 31, 2017, as compared to the year ended December 31, 2016.

(4) A $2.6 million loss on debt extinguishment ($1.6 million, net of tax) was recognized during the year ended December 31, 2017, from the refinancing of the Senior Secured Credit Facility, completed on February 10, 2017.

(5) A $14.1 million gain on debt extinguishment ($8.5 million, net of tax) was recognized during the year ended December 31, 2016, primarily from the repurchase of $56.5 million aggregate principal amount of Senior Unsecured Notes.

(6) The $41.8 million decrease in income taxes as calculated in the following table is primarily due to a $28.8 million tax benefit related to the reduced federal rate applied to net domestic deferred tax liabilities in accordance with the Tax Cuts and Jobs Act and a $21.0 million tax benefit from the release of valuation allowances primarily related to foreign credits, partially offset by a $7.1 million decreased tax benefit of domestic deductions. See Note 14, "Income Taxes," to the consolidated financial statements in Part II, Item 8 of this Annual Report on Form 10-K for further information on income taxes.

	Year Ended December 31,		
	2017	2016	$ Change
Earnings before income taxes and equity in loss of unconsolidated entities	$91.2	$59.3	$31.9
40% normalized tax rate	40.0 %	40.0 %	40.0 %
Income tax expense at 40% normalized tax rate	36.5	23.7	12.8
Less: Income tax (benefit) expense from the consolidated statements of operations	(16.0)	13.0	(29.0)
Impact of income taxes	$52.5	$10.7	$41.8

(7) The decrease in net loss attributable to investments in unconsolidated entities, net of tax, of $1.4 million during the year ended December 31, 2017, was related to a decrease in losses at the Company's Brazilian joint venture investment in Plural Industria Gráfica Ltda ("Plural").

(8)

Operating income, excluding restructuring, impairment and transaction-related charges, increased $23.1 million ($13.8 million, net of tax) primarily due to the following: (1) a $44.6 million decrease in depreciation and amortization expense; (2) a $19.4 million vacation reserve reduction from an employee vacation policy change; (3) $6.8 million in lower legal expenses; (4) a $5.0 million gain from a property insurance claim; and (5) savings from cost reduction initiatives, including employee-related costs. These impacts were partially offset by lower print volume and pricing due to ongoing industry pressures and a $10.4 million benefit in 2016 that did not repeat in 2017 related to the collection of a previously written-off vendor receivable.

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Operating Results

The following table sets forth certain information from the Company's consolidated statements of operations on an absolute dollar basis and as a relative percentage of total net sales for each noted period, together with the relative percentage change in such information between the periods set forth below:

	Year Ended December 31,					
	2017		2016			
	(dollars in millions)					
	Amount	% of Net Sales	Amount	% of Net Sales	$ Change	% Change
Net sales:						
Products	$3,529.0	85.4 %	$3,717.1	85.9 %	$(188.1)	(5.1)%
Services	602.4	14.6 %	612.4	14.1 %	(10.0)	(1.6)%
Total net sales	4,131.4	100.0%	4,329.5	100.0%	(198.1)	(4.6)%
Cost of sales:						
Products	2,827.3	68.4 %	2,971.0	68.6 %	(143.7)	(4.8)%
Services	432.1	10.5 %	423.8	9.8 %	8.3	2.0 %
Total cost of sales	3,259.4	78.9 %	3,394.8	78.4 %	(135.4)	(4.0)%
Selling, general & administrative expenses	413.4	10.0 %	454.6	10.5 %	(41.2)	(9.1)%
Depreciation and amortization	232.5	5.6 %	277.1	6.4 %	(44.6)	(16.1)%
Restructuring, impairment and transaction-related charges	61.2	1.5 %	80.6	1.9 %	(19.4)	(24.1)%
Total operating expenses	3,966.5	96.0 %	4,207.1	97.2 %	(240.6)	(5.7)%
Operating income	$164.9	4.0 %	$122.4	2.8 %	$42.5	34.7 %

Net Sales

Product sales decreased $188.1 million, or 5.1%, for the year ended December 31, 2017, compared to the year ended December 31, 2016, primarily due to a $141.6 million decrease in product sales in the Company's core print and specialty print product lines due to ongoing industry volume and pricing pressures and a $47.1 million decrease from pass-through paper sales, partially offset by $0.6 million in positive foreign exchange impacts.

Service sales, which primarily consist of imaging, logistics, distribution and medical services, decreased $10.0 million, or 1.6%, for the year ended December 31, 2017, compared to the year ended December 31, 2016, primarily due to a $9.7 million decrease in logistics sales resulting from lower print shipment volume.

Cost of Sales

Cost of product sales decreased $143.7 million, or 4.8%, for the year ended December 31, 2017, compared with the year ended December 31, 2016, primarily due to the following: (1) lower print and paper volume; (2) an $8.5 million vacation reserve reduction from an employee vacation policy change; and (3) cost reduction initiatives. These reductions were partially offset by a $10.4 million benefit in 2016 that did not repeat in 2017 related to the collection of a previously written-off vendor receivable.

Cost of product sales as a percentage of net sales decreased to 68.4% for the year ended December 31, 2017, from 68.6% for the year ended December 31, 2016, primarily due to the reasons provided above.

Cost of service sales increased $8.3 million, or 2.0%, for the year ended December 31, 2017, compared with the year ended December 31, 2016, primarily due to increased shipment cost.

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Cost of service sales as a percentage of net sales increased to 10.5% for the year ended December 31, 2017, from 9.8% for the year ended December 31, 2016, primarily due to the reasons provided above.

Selling, General and Administrative Expenses

Selling, general and administrative expenses decreased $41.2 million, or 9.1%, for the year ended December 31, 2017, compared with the year ended December 31, 2016, primarily due to the following: (1) a $10.9 million vacation reserve reduction from an employee vacation policy change; (2) a $6.8 million decrease in legal expenses; (3) a $5.0 million gain from a property insurance claim; and (4) savings from cost reduction initiatives, including employee-related costs. Selling, general and administrative expenses as a percentage of net sales decreased from 10.5% for the year ended December 31, 2016, to 10.0% for the year ended December 31, 2017, primarily due to the reasons stated above.

Depreciation and Amortization

Depreciation and amortization decreased $44.6 million, or 16.1%, for the year ended December 31, 2017, compared with the year ended December 31, 2016, due to a $32.4 million decrease in amortization expense, primarily related to customer relationship intangibles becoming fully amortized in the second quarter of 2016; and a $12.2 million decrease in depreciation expense from property, plant and equipment becoming fully depreciated over the past year and a decrease in purchases of property, plant and equipment in 2017 compared to 2016.

Restructuring, Impairment and Transaction-Related Charges

Restructuring, impairment and transaction-related charges decreased $19.4 million, or 24.1%, for the year ended December 31, 2017, compared with the year ended December 31, 2016, primarily due to the following: (1) a $14.8 million decrease in impairment charges; (2) a $0.1 million decrease in acquisition-related integration costs; and (3) a $19.4 million decrease in other restructuring charges. These decreases were partially offset by a $14.0 million increase in employee termination charges and a $0.9 million increase in transaction-related charges.

Restructuring, impairment and transaction-related charges of $61.2 million incurred in the year ended December 31, 2017, included the following: (1) $26.9 million of employee termination charges related to workforce reductions through facility consolidations and voluntary and involuntary separation programs; (2) $12.0 million of impairment charges, including $6.7 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Waseca, Minnesota; Columbus, Ohio; and Taunton, Massachusetts, as well as other capacity reduction restructuring activities; and $5.3 million of impairment charges for land and building related to the Waseca, Minnesota and Taunton, Massachusetts plant closures; (3) $3.1 million of transaction-related charges consisting of professional service fees related to business acquisition and divestiture activities; and (4) $19.2 million of various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges, net of $7.1 million in gains from the sale of the Atglen, Pennsylvania; Dickson, Tennessee; East Greenville, Pennsylvania; Lenexa, Kansas; and Marengo, Iowa plants, and a $1.2 million gain from the Company's Argentina Subsidiaries' settlements with vendors through bankruptcy proceedings. Other restructuring charges also included a $6.7 million loss on the sale of a business and an $0.8 million non-cash pension settlement charge related to lump-sum pension payments.

Restructuring, impairment and transaction-related charges of $80.6 million incurred in the year ended December 31, 2016, included the following: (1) $12.9 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $26.8 million of impairment charges, including $14.7 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Atglen, Pennsylvania; Augusta, Georgia; East Greenville, Pennsylvania; Monroe, New Jersey; Woodstock, Illinois; and Queretaro, Mexico, as well as other capacity reduction restructuring

activities; and $12.1 million of impairment charges for land and building related to the Atglen, Pennsylvania plant closure; (3) $2.2 million of transaction-related charges consisting of professional service fees related to business acquisition and divestiture activities; (4) $0.1 million of acquisition-related integration costs; and (5) $38.6 million of various other restructuring charges, including costs to maintain and exit closed facilities, lease exit charges,

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an $11.2 million adjustment to its MEPPs withdrawal liability and a $7.0 million non-cash pension settlement charge related to lump-sum pension payments.

EBITDA and EBITDA Margin—Consolidated

EBITDA and EBITDA margin for the year ended December 31, 2017, compared to the year ended December 31, 2016, were as follows:

	Year Ended December 31,			
	2017		2016	
	Amount	% of Net Sales	Amount	% of Net Sales
	(dollars in millions)			
EBITDA and EBITDA margin	$394.8	9.6 %	$412.2	9.5 %

EBITDA decreased $17.4 million for the year ended December 31, 2017, compared to the year ended December 31, 2016, primarily due to lower print volume and pricing due to ongoing industry pressures and a $10.4 million benefit in 2016 that did not repeat in 2017 related to the collection of a previously written-off vendor receivable. These impacts were partially offset by the following: (1) $19.4 million of decreased restructuring, impairment and transaction-related charges; (2) a $19.4 million vacation reserve reduction from an employee vacation policy change; (3) $6.8 million in lower legal expenses; (4) a $5.0 million gain from a property insurance claim; and (5) savings from cost reduction initiatives, including employee-related costs.

EBITDA is defined as net earnings (loss) excluding (1) interest expense, (2) income tax expense (benefit) and (3) depreciation and amortization. EBITDA margin represents EBITDA as a percentage of net sales. EBITDA and EBITDA margin are presented to provide additional information regarding Quad/Graphics' performance. Both are important measures by which Quad/Graphics gauges the profitability and assesses the performance of its business. EBITDA and EBITDA margin are not measures of financial performance in accordance with GAAP. EBITDA and EBITDA margin should not be considered alternatives to net earnings (loss) as a measure of operating performance or to cash flows provided by operating activities as a measure of liquidity. Quad/Graphics' calculation of EBITDA and EBITDA margin may be different from the calculations used by other companies, and therefore, comparability may be limited. A reconciliation of EBITDA to net earnings for the years ended December 31, 2017 and 2016, was as follows:

	Year Ended December 31,	
	2017	2016
	(dollars in millions)	
Net earnings[(1)]	$ 107.2	$ 44.9
Interest expense	71.1	77.2
Income tax (benefit) expense	(16.0)	13.0
Depreciation and amortization	232.5	277.1
EBITDA	$ 394.8	$ 412.2

(1) Net earnings included the following:

a. Restructuring, impairment and transaction-related charges of $61.2 million and $80.6 million for the years ended December 31, 2017 and 2016, respectively;

b. Loss on debt extinguishment of $2.6 million for the year ended December 31, 2017;

c. Gain on debt extinguishment of $14.1 million for the year ended December 31, 2016; and

d. Equity in loss of unconsolidated entities of $1.4 million for the year ended December 31, 2016.

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United States Print and Related Services

The following table summarizes net sales, operating income, operating margin and certain items impacting comparability within the United States Print and Related Services segment:

	Year Ended December 31,			
	2017	2016		
	(dollars in millions)			
	Amount	Amount	$ Change	% Change
Net sales:				
Products	$3,156.9	$3,335.1	$(178.2)	(5.3)%
Services	583.2	591.9	(8.7)	(1.5)%
Operating income (including restructuring, impairment and transaction-related charges)	194.3	186.1	8.2	4.4 %
Operating margin	5.2 %	4.7 %	N/A	N/A
Restructuring, impairment and transaction-related charges	$53.6	$59.3	$(5.7)	(9.6)%

Net Sales

Product sales for the United States Print and Related Services segment decreased $178.2 million, or 5.3%, for the year ended December 31, 2017, compared to the year ended December 31, 2016, primarily due to a $137.6 million decrease in product sales in the Company's core print and specialty print product lines (predominantly due to ongoing volume and pricing pressures from excess capacity in the printing industry) and a $40.6 million decrease in pass-through paper sales.

Service sales for the United States Print and Related Services segment decreased $8.7 million, or 1.5%, for the year ended December 31, 2017, compared to the year ended December 31, 2016, primarily due to an $8.4 million decrease in logistic sales resulting from lower print shipment volume.

Operating Income

Operating income for the United States Print and Related Services segment increased $8.2 million, or 4.4%, for the year ended December 31, 2017, compared to the year ended December 31, 2016, primarily due to the following: (1) a $41.6 million decrease in depreciation and amortization; (2) a $19.4 million vacation reserve reduction due to an employee vacation policy change; (3) a $5.7 million decrease in restructuring, impairment and transaction-related charges; (4) a $5.0 million gain from a property insurance claim; and (5) savings from cost reduction initiatives, including employee-related costs. These impacts were partially offset by lower print volume and pricing and a $10.4 million benefit in 2016 that did not repeat in 2017 related to the collection of a previously written-off vendor receivable.

The operating margin for the United States Print and Related Services segment increased to 5.2% for the year ended December 31, 2017, from 4.7% for the year ended December 31, 2016, primarily due to the reasons provided above.

Restructuring, Impairment and Transaction-Related Charges

Restructuring, impairment and transaction-related charges for the United States Print and Related Services segment for the year ended December 31, 2017, were $53.6 million, consisting of: (1) $21.7 million of employee termination charges related to workforce reductions through facility consolidations and voluntary and involuntary separation

programs; (2) $11.5 million of impairment charges, including $6.2 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Waseca, Minnesota; Columbus, Ohio; and Taunton, Massachusetts, as well as other capacity reduction restructuring activities; and $5.3 million of impairment charges for land and building related to the Waseca, Minnesota and Taunton, Massachusetts plant closures; and (3) $19.4 million of various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges, net of $7.1 million in gains from the sale of the Atglen, Pennsylvania; Dickson, Tennessee; East Greenville, Pennsylvania; Lenexa, Kansas; and Marengo, Iowa plants. Other restructuring charges also included a $6.7 million loss on the sale of a business.

Restructuring, impairment and transaction-related charges for the United States Print and Related Services segment for the year ended December 31, 2016, were $59.3 million, consisting of: (1) $10.5 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $25.9 million of impairment charges, including $13.8 million for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Atglen, Pennsylvania; Augusta, Georgia; East Greenville, Pennsylvania; Monroe, New Jersey; and Woodstock, Illinois, as well as other capacity reduction restructuring activities; and $12.1 million of land and building impairment related to the Atglen, Pennsylvania plant closure; (3) $0.1 million of acquisition-related integration costs; and (4) $22.8 million various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges.

International

The following table summarizes net sales, operating income, operating margin, certain items impacting comparability and equity in loss of unconsolidated entities within the International segment:

	Year Ended December 31, 2017 Amount	Year Ended December 31, 2016 Amount	$ Change	% Change
	(dollars in millions)			
Net sales:				
Products	$372.1	$382.0	$ (9.9)	(2.6)%
Services	19.2	20.5	(1.3)	(6.3)%
Operating income (including restructuring, impairment and transaction-related charges)	19.6	13.5	6.1	45.2 %
Operating margin	5.0 %	3.4 %	N/A	N/A
Restructuring, impairment and transaction-related charges (income)	$3.3	$(1.1)	$ 4.4	nm
Equity in loss of unconsolidated entities	—	1.4	(1.4)	(100.0)%

Net Sales

Product sales for the International segment decreased $9.9 million, or 2.6%, for the year ended December 31, 2017, compared to the year ended December 31, 2016, primarily due to a $6.5 million decrease in pass-through paper sales and a $4.0 million decrease in volume and pricing, primarily in Peru, partially offset by $0.6 million in favorable foreign exchange impacts, primarily in Europe.

Service sales for the International segment decreased $1.3 million, or 6.3%, for the year ended December 31, 2017, compared to the year ended December 31, 2016, primarily due to a decrease in logistics revenue in Europe.

Operating Income

Operating income for the International segment increased $6.1 million, or 45.2%, for the year ended December 31, 2017, compared to the year ended December 31, 2016, primarily due to a $7.4 million increase in operating income, primarily in Europe and Mexico, and a $3.1 million decrease in depreciation and amortization expense, partially offset by a $4.4 million increase in restructuring and impairment expenses;

Restructuring, Impairment and Transaction-Related Charges (Income)

Restructuring, impairment and transaction-related charges (income) for the International segment for the year ended December 31, 2017, were $3.3 million, consisting of the following: (1) $4.7 million of employee termination charges related to workforce reductions through facility consolidations and voluntary and involuntary separation programs; (2) $0.5 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations; and (3) $(1.9) million of various other restructuring income primarily related to the Company's Argentina Subsidiaries' gain from settlements with vendors through bankruptcy proceedings, partially offset by charges to maintain and exit closed facilities.

Restructuring, impairment and transaction-related charges (income) for the International segment for the year ended December 31, 2016, were $(1.1) million, consisting of the following: (1) $1.4 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $0.9 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Queretaro, Mexico; (3) $0.1 million of transaction-related charges; and (4) $(3.5) million of other restructuring income primarily related to the Company's Argentina Subsidiaries' gain from settlements with vendors through bankruptcy proceedings and a gain on the sale of the Pilar, Argentina plant.

Equity in Loss of Unconsolidated Entities

Investments in entities where Quad/Graphics has the ability to exert significant influence, but not control, are accounted for using the equity method of accounting. The Company holds a 49% ownership interest in Plural, a commercial printer based in São Paulo, Brazil. The equity in loss of unconsolidated entities in the International segment decreased $1.4 million for the year ended December 31, 2017, compared to the year ended December 31, 2016, due to a decrease in losses from the Company's investment in Plural.

Unrestricted Subsidiaries

Unrestricted subsidiaries as defined in the Senior Unsecured Notes indenture represented less than 2.0% of total consolidated net sales for the year ended December 31, 2017.

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Corporate

The following table summarizes unallocated operating expenses presented as Corporate:

	Year Ended December 31, 2017	2016		
	(dollars in millions)			
	Amount	Amount	$ Change	% Change
Operating expenses (including restructuring, impairment and transaction-related charges)	$49.0	$ 77.2	$(28.2)	(36.5)%
Restructuring, impairment and transaction-related charges	4.3	22.4	(18.1)	(80.8)%

Operating Expenses

Corporate operating expenses decreased $28.2 million, or 36.5%, for the year ended December 31, 2017, compared with the year ended December 31, 2016, primarily due to an $18.1 million decrease in restructuring, impairment and transaction-related charges, an $8.0 million decrease in legal expenses and a $4.6 million decrease in incentive compensation expense.

Restructuring, Impairment and Transaction-Related Charges

Corporate restructuring, impairment and transaction-related charges for the year ended December 31, 2017, were $4.3 million, consisting of the following: (1) $0.5 million of employee termination charges related to workforce reductions through facility consolidations and voluntary and involuntary separation programs; (2) $2.1 million of transaction-related charges which primarily included professional service fees; and (3) $1.7 million of other restructuring charges, including an $0.8 million non-cash pension settlement charge related to lump-sum pension payments.

Corporate restructuring, impairment and transaction-related charges for the year ended December 31, 2016, were $22.4 million, consisting of the following: (1) $1.0 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $2.1 million of transaction-related charges which primarily included professional service fees; and (3) $19.3 million of other restructuring charges, including an $11.2 million adjustment to its MEPPs withdrawal liability and a $7.0 million non-cash pension settlement charge related to lump-sum pension payments.

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Results of Operations for the Year Ended December 31, 2016, Compared to the Year Ended December 31, 2015

Summary Results

The Company's operating income (loss), operating margin, net earnings (loss) (computed using a 40% normalized tax rate) and diluted earnings (loss) per share for the year ended December 31, 2016, changed from the year ended December 31, 2015, as follows (dollars in millions, except per share data):

	Operating Income(Loss)	Operating Margin	Net Earnings (Loss)	Diluted Earnings (Loss) Per Share
For the year ended December 31, 2015	$ (830.0)	(18.1)%	$ (641.9)	$ (13.40)
2016 restructuring, impairment and transaction-related charges (1)	(80.6)	(1.9)%	(48.4)	(0.97)
2015 restructuring, impairment and transaction-related charges (2)	164.9	3.6 %	108.0	2.25
2015 goodwill impairment (3)	808.3	17.6 %	542.4	11.32
Interest expense (4)	N/A	N/A	6.7	0.13
2016 gain on debt extinguishment (5)	N/A	N/A	8.5	0.17
Income taxes (6)	N/A	N/A	28.8	0.58
Investments in unconsolidated entities, net of tax (7)	N/A	N/A	4.9	0.10
Operating income (8)	59.8	1.6 %	35.9	0.72
For the year ended December 31, 2016	$ 122.4	2.8 %	$ 44.9	$ 0.90

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(1) Restructuring, impairment and transaction-related charges of $80.6 million ($48.4 million, net of tax) incurred during the year ended December 31, 2016, included the following:

a. $12.9 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs;

b. $26.8 million of impairment charges, including $14.7 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Atglen, Pennsylvania; Augusta, Georgia; East Greenville, Pennsylvania; Monroe, New Jersey; Woodstock, Illinois; and Queretaro, Mexico, as well as other capacity reduction restructuring activities; and $12.1 million of impairment charges for land and building related to the Atglen, Pennsylvania plant closure;

c. $2.2 million of transaction-related charges, consisting of professional service fees for business acquisition and divestiture activities;

d. $0.1 million of acquisition-related integration costs; and

e. $38.6 million of various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges. Other restructuring charges also included an $11.2 million adjustment to its MEPPs withdrawal liability and a $7.0 million non-cash pension settlement charge related to lump-sum pension payments.

The Company expects to incur additional restructuring and integration costs in future reporting periods in connection with eliminating excess manufacturing capacity and properly aligning its cost structure in conjunction with the Company's acquisitions and strategic investments, and other cost reduction programs.

(2) Restructuring, impairment and transaction-related charges of $164.9 million incurred during the year ended December 31, 2015, included the following:

a. $42.1 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs;

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b. $95.3 million of impairment charges, including the following: (1) $54.7 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations including Atlanta, Georgia; Augusta, Georgia; Dickson, Tennessee; East Greenville, Pennsylvania; Loveland, Colorado; and Queretaro, Mexico, as well as other capacity reduction restructuring initiatives; (2) $18.6 million of investment-related impairment charges, primarily related to $16.7 million of impairment charges to reduce the book value of the Company's equity method investment in Quad/Graphics Chile S.A. ("Chile") to fair value (see Note 8, "Equity Method Investments in Unconsolidated Entities," to the consolidated financial statements in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K, for additional details related to the impairment of the Company's equity method investment in Chile); (3) $12.7 million of land and building impairment charges primarily related to the Augusta, Georgia and East Greenville, Pennsylvania plant closures; (4) $7.1 million of customer relationship intangible asset impairments; and (5) $2.2 million of impairment charges recorded for property, plant and equipment and other intangible assets as a result of the restructuring proceedings in Argentina for the Company's Argentina Subsidiaries;

c. $(6.7) million of transaction-related charges (income), including a $10.0 million non-recurring gain as a result of Courier Corporation's ("Courier") termination of the agreement pursuant to which Quad/Graphics was to acquire Courier, partially offset by $3.3 million of professional service fees, including fees for the terminated acquisition of Courier and the acquisitions of Marin's, Copac and Specialty;

d. $5.1 million of acquisition-related integration costs primarily related to preparing existing facilities to meet new production requirements resulting from work transferring from closed plants, as well as other costs related to the integration of the acquired companies; and

e. $29.1 million of various other restructuring charges, including a $6.0 million non-cash and nondeductible expense to recognize accumulated foreign exchange losses on the sale of the Chile equity method investment and lease exit charges related to closed facilities, as well as other costs to maintain and exit closed facilities.

(3) Pre-tax non-cash goodwill impairment charges of $808.3 million ($542.4 million, net of tax) were recorded during the year ended December 31, 2015, of which $778.3 million related to the United States Print and Related Services segment and $30.0 million related to the International segment.

(4) Interest expense decreased $11.2 million ($6.7 million, net of tax) during the year ended December 31, 2016, to $77.2 million. This change was due to lower average debt levels in the year ended December 31, 2016, as compared to the year ended December 31, 2015.

(5) A non-recurring $14.1 million gain on debt extinguishment ($8.5 million, net of tax) was recognized during the year ended December 31, 2016, primarily from the repurchase of $56.5 million aggregate principal amount of Senior Unsecured Notes.

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(6) The $28.8 million benefit of income taxes as calculated in the following table is primarily due to the following: (1) $13.3 million of increased taxable income in foreign jurisdictions where the Company was able to use operating loss carryforwards; (2) $8.0 million increased domestic deductions and (3) $4.7 million from increased state deferred tax assets. See Note 14, "Income Taxes," to the consolidated financial statements in Part II, Item 8 of this Annual Report on Form 10-K for further information on income taxes.

	Year Ended December 31,		
	2016	2015	$ Change
Earnings (loss) before income taxes and equity in loss of unconsolidated entities	$59.3	$(918.4)	$977.7
Goodwill impairment charges	—	808.3	(808.3)
Nondeductible equity method investment impairment	—	16.7	(16.7)
Nondeductible foreign exchange losses on the sale of investment	—	6.0	(6.0)
Income (loss) subject to income taxes	59.3	(87.4)	146.7
40% normalized tax rate	40.0 %	40.0 %	40.0 %
Income tax expense (benefit) at 40% normalized tax rate	23.7	(35.0)	58.7
Plus: tax benefit related to goodwill impairment charges (Note 14)	—	(265.9)	265.9
	23.7	(300.9)	324.6
Less: Income tax expense (benefit) from the consolidated statements of operations	13.0	(282.8)	295.8
Impact of income taxes	$10.7	$(18.1)	$28.8

(7) The decrease in net loss attributable to investments in unconsolidated entities, net of tax, of $4.9 million during the year ended December 31, 2016, was primarily related to a $4.1 million decrease in losses from unconsolidated entities at the Company's investment in Plural, the Company's Brazilian joint venture, and a $0.8 million decrease in losses at the Company's investment in Chile that was sold on July 31, 2015.

(8) Operating income (loss), excluding restructuring, impairment and transaction-related charges and goodwill impairment charges, increased $59.8 million ($35.9 million, net of tax) primarily due to the following: (1) lower costs primarily associated with production cost reduction initiatives; (2) a $48.2 million decrease in depreciation and amortization expense; (3) the 2016 collection of a $10.4 million vendor receivable that was written-off in the fourth quarter of 2015 due to collectability concerns; and (4) the additional earnings on sales generated from acquisitions. These impacts were partially offset by the following: (1) lower print volume and pricing in product lines owned more than a year; (2) a $6.3 million increase in selling, general and administrative expenses primarily due to increased incentive compensation and legal expenses; and (3) a $4.0 million vacation expense reduction in 2015 due to a vacation policy change that did not repeat in 2016.

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Operating Results

The following table sets forth certain information from the Company's consolidated statements of operations on an absolute dollar basis and as a relative percentage of total net sales for each noted period, together with the relative percentage change in such information between the periods set forth below:

	Year Ended December 31,					
	2016		2015			
	(dollars in millions)					
	Amount	% of Net Sales	Amount	% of Net Sales	$ Change	% Change
Net sales:						
Products	$3,717.1	85.9 %	$3,949.7	85.9 %	$(232.6)	(5.9)%
Services	612.4	14.1 %	647.4	14.1 %	(35.0)	(5.4)%
Total net sales	4,329.5	100.0%	4,597.1	100.0 %	(267.6)	(5.8)%
Cost of sales:						
Products	2,971.0	68.6 %	3,213.5	69.9 %	(242.5)	(7.5)%
Services	423.8	9.8 %	466.8	10.2 %	(43.0)	(9.2)%
Total cost of sales	3,394.8	78.4 %	3,680.3	80.1 %	(285.5)	(7.8)%
Selling, general & administrative expenses	454.6	10.5 %	448.3	9.7 %	6.3	1.4 %
Depreciation and amortization	277.1	6.4 %	325.3	7.1 %	(48.2)	(14.8)%
Restructuring, impairment and transaction-related charges	80.6	1.9 %	164.9	3.6 %	(84.3)	(51.1)%
Goodwill impairment	—	— %	808.3	17.6 %	(808.3)	nm
Total operating expenses	4,207.1	97.2 %	5,427.1	118.1 %	(1,220.0)	(22.5)%
Operating income (loss)	$122.4	2.8 %	$(830.0)	(18.1)%	$952.4	nm

Net Sales

Product sales decreased $232.6 million, or 5.9%, for the year ended December 31, 2016, compared to the year ended December 31, 2015, primarily due to the following: (1) a $172.9 million decrease in product sales in the Company's core print and specialty print product lines owned more than a year predominantly due to ongoing industry volume and pricing pressures; (2) a $97.3 million decrease from pass-through paper sales; and (3) $26.1 million in negative foreign exchange impacts. These decreases were partially offset by a $63.7 million sales increase from acquisitions.

Service sales, which primarily consist of imaging, logistics and distribution services, decreased $35.0 million, or 5.4%, for the year ended December 31, 2016, compared to the year ended December 31, 2015, primarily due to a $25.0 million decrease in logistics sales resulting from lower print shipment volume and lower fuel prices and $6.9 million in decreased sales of print imaging services.

Cost of Sales

Cost of product sales decreased $242.5 million, or 7.5%, for the year ended December 31, 2016, compared with the year ended December 31, 2015, primarily due to the following: (1) lower costs primarily associated with production cost reduction initiatives; (2) lower print volume in product lines owned more than a year; and (3) the 2016 collection of a $10.4 million vendor receivable that was written-off in the fourth quarter of 2015 due to collectability concerns. These reductions were partially offset by the following: (1) increased cost of product sales resulting from acquisitions; and (2) a $4.0 million vacation expense reduction in 2015 due to a vacation policy change that did not repeat in 2016.

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Cost of product sales as a percentage of net sales decreased to 68.6% for the year ended December 31, 2016, from 69.9% for the year ended December 31, 2015, primarily due to the reasons provided above.

Cost of service sales decreased $43.0 million, or 9.2%, for the year ended December 31, 2016, compared with the year ended December 31, 2015, primarily due to lower logistics volume and overall cost reduction initiatives.

Cost of service sales as a percentage of net sales decreased to 9.8% for the year ended December 31, 2016, from 10.2% for the year ended December 31, 2015, primarily due to the reasons provided above.

Selling, General and Administrative Expenses

Selling, general and administrative expenses increased $6.3 million, or 1.4%, for the year ended December 31, 2016, compared with the year ended December 31, 2015, due to the following: (1) a $21.2 million increase in incentive compensation expense; (2) a $10.7 million increase in legal expenses due to 2016 reserves established and favorable settlements of legal claims in 2015 that did not repeat in 2016; (3) a $4.6 million increase in foreign currency losses; (4) a $3.8 million increase in bad debt expense; and (5) a $3.4 million decrease in gains on the sale of property, plant and equipment. These increases were partially offset by a $30.1 million decrease in employee-related costs and a $7.4 million decrease in general administrative expenses primarily due to the Company's cost reduction initiatives. Selling, general and administrative expenses as a percentage of net sales increased from 9.7% for the year ended December 31, 2015, to 10.5% for the year ended December 31, 2016, primarily due to lower net sales and the reasons stated above.

Depreciation and Amortization

Depreciation and amortization decreased $48.2 million, or 14.8%, for the year ended December 31, 2016, compared with the year ended December 31, 2015, due to a $28.9 million decrease in amortization expense, predominantly related to customer relationship intangibles becoming fully amortized in the second quarter of 2016, and a $19.3 million decrease in depreciation expense from property, plant and equipment becoming fully depreciated over the past year.

Restructuring, Impairment and Transaction-Related Charges

Restructuring, impairment and transaction-related charges decreased $84.3 million, or 51.1%, for the year ended December 31, 2016, compared with the year ended December 31, 2015, primarily due to the following: (1) a $68.5 million decrease in impairment charges; (2) a $29.2 million decrease in employee termination charges; and (3) a $5.0 million decrease in acquisition-related integration costs. These decreases were partially offset by a $9.5 million increase in other restructuring charges and an $8.9 million increase in transaction-related charges.

Restructuring, impairment and transaction-related charges of $80.6 million incurred in the year ended December 31, 2016, included the following: (1) $12.9 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $26.8 million of impairment charges, including $14.7 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Atglen, Pennsylvania; Augusta, Georgia; East Greenville, Pennsylvania; Monroe, New Jersey; Woodstock, Illinois; and Queretaro, Mexico, as well as other capacity reduction restructuring activities; and $12.1 million of impairment charges for land and building related to the Atglen, Pennsylvania plant closure; (3) $2.2 million of transaction-related charges consisting of professional service fees related to business acquisition and divestiture activities; (4) $0.1 million of acquisition-related integration costs; and (5) $38.6 million of various other restructuring charges, including costs to maintain and exit closed facilities, lease exit charges, an $11.2 million adjustment to its MEPPs withdrawal liability and a $7.0 million non-cash pension settlement charge

related to lump-sum pension payments.

Restructuring, impairment and transaction-related charges of $164.9 million incurred in the year ended December 31, 2015, included the following: (1) $42.1 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $95.3 million of impairment charges,

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including $54.7 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Atlanta, Georgia; Augusta, Georgia; Dickson, Tennessee; East Greenville, Pennsylvania; Loveland, Colorado; and Queretaro, Mexico, as well as other capacity reduction restructuring initiatives; $18.6 million of investment-related impairment charges, primarily related to $16.7 million of impairment charges to reduce the book value of the Company's equity method investment in Chile to fair value (see Note 8, "Equity Method Investments in Unconsolidated Entities," for additional details related to the impairment of the Company's equity method investment in Chile); $12.7 million of land and building impairment charges primarily related to the Augusta, Georgia and East Greenville, Pennsylvania plant closures; $7.1 million of customer relationship intangible asset impairments and $2.2 million of impairment charges recorded for property, plant and equipment and other intangible assets as a result of the restructuring proceedings in Argentina for the Company's Argentina Subsidiaries; (3) $(6.7) million of transaction-related charges (income), which includes a $10.0 million non-recurring gain as a result of Courier's termination of the agreement pursuant to which Quad/Graphics was to acquire Courier, partially offset by $3.3 million of professional service fees for the terminated acquisition of Courier and the acquisitions of Marin's, Copac and Specialty; (4) $5.1 million of acquisition-related integration costs primarily related to preparing existing facilities to meet new production requirements resulting from work transferring from closed plants, as well as other costs related to the integration of the acquired companies; and (5) $29.1 million of other restructuring charges, including costs to maintain and exit closed facilities, lease exit charges, and a $6.0 million non-cash expense to recognize accumulated foreign exchange losses on the sale of the Chile equity method investment.

Goodwill Impairment

On March 25, 2015, due to deteriorating economic conditions, including inflation and currency devaluation, combined with uncertain political conditions, declining print volumes and labor challenges, the Company's Argentina Subsidiaries (included within the Latin America reporting unit) commenced bankruptcy restructuring proceedings with a goal of consolidating operations. The Company conducted an interim goodwill impairment assessment of the Latin America reporting unit, which included comparing the carrying amount of net assets, including goodwill, to its respective fair value as of March 31, 2015, the date of the interim assessment. As a result of the interim goodwill impairment assessment as well as the annual impairment test as of October 31, 2015, the Company's International segment recorded non-cash nondeductible goodwill impairment charges of $30.0 million in the year ended December 31, 2015, primarily including a $23.3 million non-cash goodwill impairment charge for the Latin America reporting unit.

Due to the decline in the Company's stock price in the third quarter of 2015, an interim goodwill impairment test of the three reporting units in the United States Print and Related Services segment was performed as of July 31, 2015. As a result of the interim goodwill impairment assessment as well as the annual impairment test as of October 31, 2015, the Company's United States Print and Related Services segment recorded pre-tax non-cash goodwill impairment charges of $778.3 million ($512.4 million after tax) in the year ended December 31, 2015, that included impairment charges of $640.8 million, $118.9 million and $18.6 million in the Core Print and Related Services reporting unit, the Specialty Print and Related Services reporting unit and the Other United States Products and Services reporting unit, respectively.

In total, the Company recorded pre-tax non-cash goodwill impairment charges of $808.3 million ($542.4 million after tax) in the year ended December 31, 2015.

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EBITDA and EBITDA Margin—Consolidated

EBITDA and EBITDA margin for the year ended December 31, 2016, compared to the year ended December 31, 2015, were as follows:

	Year Ended December 31,			
	2016		2015	
	Amount	% of Net Sales	Amount	% of Net Sales
	(dollars in millions)			
EBITDA and EBITDA margin	$412.2	9.5 %	$(511.0)	(11.1)%

EBITDA increased $923.2 million for the year ended December 31, 2016, compared to the year ended December 31, 2015, primarily due to the following: (1) an $808.3 million non-cash goodwill impairment charge recorded in 2015 that did not repeat in 2016; (2) $84.3 million of decreased restructuring, impairment and transaction-related charges; (3) lower costs primarily associated with production cost reduction initiatives; (4) the 2016 collection of a $10.4 million vendor receivable that was written-off in the fourth quarter of 2015 due to collectability concerns; and (5) the additional earnings on sales generated from acquisitions. These impacts were partially offset by the following: (1) lower print volume and pricing in product lines owned more than a year; (2) a $6.3 million increase in selling, general and administrative expenses primarily due to an increase in incentive compensation and legal expenses; and (3) a $4.0 million vacation expense reduction in 2015 due to a vacation policy change that did not repeat in 2016.

EBITDA is defined as net earnings (loss) excluding (1) interest expense, (2) income tax expense (benefit) and (3) depreciation and amortization. EBITDA margin represents EBITDA as a percentage of net sales. EBITDA and EBITDA margin are presented to provide additional information regarding Quad/Graphics' performance. Both are important measures by which Quad/Graphics gauges the profitability and assesses the performance of its business. EBITDA and EBITDA margin are not measures of financial performance in accordance with GAAP. EBITDA and EBITDA margin should not be considered alternatives to net earnings (loss) as a measure of operating performance or to cash flows provided by operating activities as a measure of liquidity. Quad/Graphics' calculation of EBITDA and EBITDA margin may be different from the calculations used by other companies, and therefore, comparability may be limited. A reconciliation of EBITDA to net earnings (loss) for the years ended December 31, 2016 and 2015, was as follows:

	Year Ended December 31,	
	2016	2015
	(dollars in millions)	
Net earnings (loss)[1]	$ 44.9	$ (641.9)
Interest expense	77.2	88.4
Income tax expense (benefit)	13.0	(282.8)
Depreciation and amortization	277.1	325.3
EBITDA	$ 412.2	$ (511.0)

(1) Net earnings (loss) included the following:

a. Restructuring, impairment and transaction-related charges of $80.6 million and $164.9 million for the years ended December 31, 2016 and 2015, respectively;

b. A non-cash goodwill impairment charge of $808.3 million for the year ended December 31, 2015;

c. Gain on debt extinguishment of $14.1 million for the year ended December 31, 2016; and

d. Equity in loss of unconsolidated entities of $1.4 million and $6.3 million for the years ended December 31, 2016 and 2015, respectively.

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United States Print and Related Services

The following table summarizes net sales, operating income (loss), operating margin and certain items impacting comparability within the United States Print and Related Services segment:

	Year Ended December 31,			
	2016	2015		
	(dollars in millions)			
	Amount	Amount	$ Change	% Change
Net sales:				
Products	$3,335.1	$3,580.1	$(245.0)	(6.8)%
Services	591.9	628.5	(36.6)	(5.8)%
Operating income (loss) (including restructuring, impairment and transaction-related charges and goodwill impairment)	186.1	(706.1)	892.2	nm
Operating margin	4.7%	(16.8)%	N/A	N/A
Restructuring, impairment and transaction-related charges	$59.3	$101.4	$(42.1)	(41.5)%
Goodwill impairment	—	778.3	(778.3)	nm

Net Sales

Product sales for the United States Print and Related Services segment decreased $245.0 million, or 6.8%, for the year ended December 31, 2016, compared to the year ended December 31, 2015, primarily due to a $198.5 million decrease in product sales in the Company's core print and specialty print product lines owned more than a year, predominantly due to ongoing volume and pricing pressures from excess capacity in the printing industry, and a $108.9 million decrease in pass-through paper sales, partially offset by a $62.4 million increase in net sales from acquisitions.

Service sales for the United States Print and Related Services segment decreased $36.6 million, or 5.8%, for the year ended December 31, 2016, compared to the year ended December 31, 2015, primarily due to a $26.6 million decrease in logistics sales resulting from lower print shipment volume and lower fuel prices and $6.9 million in decreased sales of print imaging services.

Operating Income (Loss)

Operating income (loss) for the United States Print and Related Services segment increased $892.2 million for the year ended December 31, 2016, compared to the year ended December 31, 2015, primarily due to the following: (1) a $778.3 million non-cash goodwill impairment charge recorded in 2015 that did not repeat in 2016; (2) lower costs primarily associated with production cost reduction initiatives; (3) a $42.1 million decrease in restructuring, impairment and transaction-related charges; (4) the 2016 collection of a $10.4 million vendor receivable that was written-off in the fourth quarter of 2015 due to collectability concerns; and (5) the additional earnings on sales generated from acquisitions. These impacts were partially offset by the following: (1) lower print volume and pricing in product lines owned more than a year; and (2) a $4.0 million vacation expense reduction in 2015 due to a vacation policy change that did not repeat in 2016.

The operating margin for the United States Print and Related Services segment increased to 4.7% for the year ended December 31, 2016, from negative 16.8% for the year ended December 31, 2015, primarily due to the reasons provided above.

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Restructuring, Impairment and Transaction-Related Charges

Restructuring, impairment and transaction-related charges for the United States Print and Related Services segment for the year ended December 31, 2016, were $59.3 million, consisting of: (1) $10.5 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $25.9 million of impairment charges, including $13.8 million for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Atglen, Pennsylvania; Augusta, Georgia; East Greenville, Pennsylvania; Monroe, New Jersey; and Woodstock, Illinois, as well as other capacity reduction restructuring activities; and $12.1 million of land and building impairment related to the Atglen, Pennsylvania plant closure; (3) $0.1 million of acquisition-related integration costs; and (4) $22.8 million various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges.

Restructuring, impairment and transaction-related charges for the United States Print and Related Services segment for the year ended December 31, 2015, were $101.4 million, consisting of the following: (1) $27.3 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $50.7 million of impairment charges, including $33.5 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Atlanta, Georgia; Augusta, Georgia; Dickson, Tennessee; East Greenville, Pennsylvania; and Loveland, Colorado, as well as other capacity reduction restructuring initiatives; $11.2 million of land and building impairment charges primarily related to the Augusta, Georgia and East Greenville, Pennsylvania plant closures and $6.0 million of customer relationship intangible asset impairments; (3) $4.6 million of acquisition-related integration costs primarily related to preparing existing facilities to meet new production requirements resulting from work transferring from closed plants, as well as other costs related to the integration of the acquired companies; and (4) $18.8 million of other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges.

Goodwill Impairment

Due to the decline in the Company's stock price in the third quarter of 2015, an interim goodwill impairment test of the three reporting units in the United States Print and Related Services segment was performed as of July 31, 2015. As a result of the interim goodwill impairment assessment, as well as the annual impairment test as of October 31, 2015, the Company's United States Print and Related Services segment recorded pre-tax non-cash goodwill impairment charges of $778.3 million ($512.4 million after tax) in the year ended December 31, 2015, that included impairment charges of $640.8 million, $118.9 million and $18.6 million in the Core Print and Related Services reporting unit, the Specialty Print and Related Services reporting unit and the Other United States Products and Services reporting unit, respectively.

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International

The following table summarizes net sales, operating income (loss), operating margin, certain items impacting comparability and equity in loss of unconsolidated entities within the International segment:

	Year Ended December 31,			
	2016	2015		
	(dollars in millions)			
	Amount	Amount	$ Change	% Change
Net sales:				
Products	$382.0	$369.6	$ 12.4	3.4 %
Services	20.5	18.9	1.6	8.5 %
Operating income (loss) (including restructuring, impairment and transaction-related charges and goodwill impairment)	13.5	(63.4)	76.9	nm
Operating margin	3.4 %	(16.3)%	N/A	N/A
Restructuring, impairment and transaction-related charges (income)	$(1.1)	$38.8	$ (39.9)	(102.8)%
Goodwill impairment	—	30.0	(30.0)	nm
Equity in loss of unconsolidated entities	1.4	6.3	(4.9)	(77.8)%

Net Sales

Product sales for the International segment increased $12.4 million, or 3.4%, for the year ended December 31, 2016, compared to the year ended December 31, 2015, primarily due to a $27.0 million net increase in price and volume primarily in Argentina, Mexico, Colombia, Europe and Peru, an $11.5 million increase in pass-through paper sales, partially offset by $26.1 million in negative foreign exchange impacts primarily in Argentina, Mexico, Peru and Colombia.

Service sales for the International segment increased $1.6 million, or 8.5%, for the year ended December 31, 2016, compared to the year ended December 31, 2015, primarily due to an increase in logistics revenue in Europe.

Operating Income (Loss)

Operating income (loss) for the International segment increased $76.9 million for the year ended December 31, 2016, compared to the year ended December 31, 2015, primarily due to the following: (1) a $39.9 million decrease in restructuring and impairment expenses; (2) a $30.0 million non-cash goodwill impairment charge recorded in 2015 that did not repeat in 2016; and (3) a $7.0 million increase in operating income primarily in Mexico and Europe.

Restructuring, Impairment and Transaction-Related Charges (Income)

Restructuring, impairment and transaction-related charges (income) for the International segment for the year ended December 31, 2016, were $(1.1) million, consisting of the following: (1) $1.4 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $0.9 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, including Queretaro, Mexico; (3) $0.1 million of transaction-related charges; (4) $(3.5) million of other restructuring income primarily related to the Company's Argentina Subsidiaries' gain from settlements with vendors through bankruptcy proceedings and a gain on the sale of the Pilar, Argentina plant.

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Restructuring, impairment and transaction-related charges for the International segment for the year ended December 31, 2015, were $38.8 million, consisting of the following: (1) $7.3 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $22.8 million of impairment charges, including $16.7 million of impairment charges to reduce the book value of the Company's equity method investment in Chile to fair value (see Note 8, "Equity Method Investments in Unconsolidated Entities," for additional details related to the impairment of the Company's equity method investment in Chile); $2.2 million of impairment charges primarily related to the restructuring proceedings in Argentina for the Company's Argentina Subsidiaries for land, building, machinery and equipment and other intangible assets; $1.5 million of land and building impairment charges; $1.3 million of impairment charges for machinery and equipment no longer being utilized in production, as well as other capacity reduction restructuring initiatives; and $1.1 million of customer relationship intangible asset impairments; and (3) $8.7 million of other restructuring charges, primarily related to the $6.0 million non-cash expense to recognize accumulated foreign exchange losses on the sale of the Chile equity method investment.

Goodwill Impairment

On March 25, 2015, due to deteriorating economic conditions, including inflation and currency devaluation, combined with uncertain political conditions, declining print volumes and labor challenges, the Company's Argentina Subsidiaries (included within the Latin America reporting unit) commenced bankruptcy restructuring proceedings with a goal of consolidating operations. The Company conducted an interim goodwill impairment assessment of the Latin America reporting unit, which included comparing the carrying amount of net assets, including goodwill, to its respective fair value as of March 31, 2015, the date of the interim assessment. As a result of the interim goodwill impairment assessment as well as the annual impairment test as of October 31, 2015, the Company's International segment recorded non-cash nondeductible goodwill impairment charges of $30.0 million in the year ended December 31, 2015, primarily including a $23.3 million non-cash goodwill impairment charge for the Latin America reporting unit.

Equity in Loss of Unconsolidated Entities

Investments in entities where Quad/Graphics has the ability to exert significant influence, but not control, are accounted for using the equity method of accounting. The Company holds a 49% ownership interest in Plural, a commercial printer based in São Paulo, Brazil. The Company also held a 50% interest in a joint venture based in Chile that was acquired as part of the World Color Press acquisition until July 31, 2015, when the investment was sold. The equity in loss of unconsolidated entities in the International segment decreased $4.9 million for the year ended December 31, 2016, compared to the year ended December 31, 2015, primarily due to a $4.1 million decrease in losses from unconsolidated entities at the Company's investment in Plural, the Company's Brazilian joint venture, and a $0.8 million decrease in losses at the Company's investment in Chile that was sold on July 31, 2015.

Unrestricted Subsidiaries

Unrestricted subsidiaries as defined in the Senior Unsecured Notes indenture represented less than 2.0% of total consolidated net sales for the year ended December 31, 2016.

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Corporate

The following table summarizes unallocated operating expenses presented as Corporate:

	Year Ended December 31,			
	2016	2015		
	(dollars in millions)			
	Amount	Amount	$ Change	% Change
Operating expenses (including restructuring, impairment and transaction-related charges)	$77.2	$ 60.5	$ 16.7	27.6 %
Restructuring, impairment and transaction-related charges	22.4	24.7	(2.3)	(9.3)%

Operating Expenses

Corporate operating expenses increased $16.7 million, or 27.6%, for the year ended December 31, 2016, compared with the year ended December 31, 2015, primarily due to a $15.2 million increase in incentive compensation expenses and a $8.0 million increase in legal expenses, partially offset by cost reduction initiatives and a $2.3 million decrease in restructuring, impairment and transaction-related charges, which included a $10.0 million non-recurring gain in 2015 as a result of Courier's termination of the agreement pursuant to which Quad/Graphics was to acquire Courier.

Restructuring, Impairment and Transaction-Related Charges

Corporate restructuring, impairment and transaction-related charges for the year ended December 31, 2016, were $22.4 million, consisting of the following: (1) $1.0 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $2.1 million of transaction-related charges which primarily included professional service fees; and (3) $19.3 million of other restructuring charges, including an $11.2 million adjustment to its MEPPs withdrawal liability and a $7.0 million non-cash pension settlement charge related to lump-sum pension payments.

Corporate restructuring, impairment and transaction-related charges for the year ended December 31, 2015, were $24.7 million, consisting of the following: (1) $7.5 million of employee termination charges related to workforce reductions through facility consolidations and involuntary separation programs; (2) $21.8 million of impairment charges, including $19.9 million of impairment charges for corporate equipment and $1.9 million of investment related impairment charges; (3) $(6.7) million of transaction-related charges (income), which includes the $10.0 million non-recurring gain from Courier, partially offset by $3.3 million of professional service fees, including fees for the terminated acquisition of Courier and the acquisitions of Marin's, Copac and Specialty; (4) $0.3 million of acquisition-related integration costs primarily related to professional fees; and (5) $1.8 million of other restructuring charges.

Liquidity and Capital Resources

The Company utilizes cash flows from operating activities and borrowings under its credit facilities to satisfy its liquidity and capital requirements. At December 31, 2017, the Company had cash and cash equivalents of $64.3 million. In addition to cash and cash equivalents, the Company has $686.1 million of unused capacity under its revolving credit arrangement at December 31, 2017, which is net of $38.9 million of issued letters of credit. The Company believes its expected future cash flows from operating activities, $686.1 million of unused capacity under the revolving credit arrangement and available cash on hand provide sufficient resources to fund ongoing operating

requirements and the integration and restructuring requirements related to acquired operations, as well as future capital expenditures, debt and pension service requirements, investments in future growth to create value for its shareholders, shareholder dividends and share repurchases. There were no borrowings under the $725.0 million revolving credit facility as of December 31, 2017, and peak borrowings were $50.8 million during the year ended December 31, 2017.

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Net Cash Provided by Operating Activities

Year Ended December 31, 2017, Compared to Year Ended December 31, 2016

Net cash provided by operating activities was $344.0 million for the year ended December 31, 2017, compared to $352.5 million for the year ended December 31, 2016, resulting in an $8.5 million decrease in cash provided by operating activities. The decrease was primarily due to a $29.9 million decrease in cash flows from changes in operating assets and liabilities, partially offset by a $21.4 million increase in cash from earnings.

Year Ended December 31, 2016, Compared to Year Ended December 31, 2015

Net cash provided by operating activities was $352.5 million for the year ended December 31, 2016, compared to $348.1 million for the year ended December 31, 2015, resulting in a $4.4 million increase in cash provided by operating activities. The increase was primarily due to a $12.6 million increase in cash from earnings, partially offset by an $8.2 million decrease in cash flows from changes in operating assets and liabilities.

Net Cash Used in Investing Activities

Year Ended December 31, 2017, Compared to Year Ended December 31, 2016

Net cash used in investing activities was $37.3 million for the year ended December 31, 2017, compared to $84.4 million for the year ended December 31, 2016, resulting in a $47.1 million decrease in cash used in investing activities. The decrease was primarily due to the following: (1) a $20.2 million decrease in purchases of property, plant and equipment; (2) a $14.1 million increase in proceeds from the sale of a business; (3) a $9.9 million decrease in cost method investments; and (4) an $8.0 million increase in proceeds from insurance claims. These decreases were partially offset by a $7.3 million increase in a loan to an unconsolidated entity.

Year Ended December 31, 2016, Compared to Year Ended December 31, 2015

Net cash used in investing activities was $84.4 million for the year ended December 31, 2016, compared to $216.7 million for the year ended December 31, 2015, resulting in a $132.3 million decrease in cash used in investing activities. The decrease was primarily due to the following: (1) a $143.4 million decrease in cash payments related to acquisitions of businesses, as the Marin's, Copac and Specialty acquisitions were completed in 2015, and there were no acquisitions of businesses in 2016; and (2) a $26.9 million decrease in purchases of property, plant and equipment. These decreases were partially offset by $13.3 million of increased receipts of restricted cash during 2015 and $10.5 million of proceeds received during 2015 for the sale of the Company's 50% ownership interest in Chile.

Net Cash Used in Financing Activities

Year Ended December 31, 2017, Compared to Year Ended December 31, 2016

Net cash used in financing activities was $251.7 million for the year ended December 31, 2017, compared to $269.3 million for the year ended December 31, 2016, resulting in a $17.6 million decrease in cash used in financing activities. The decrease was primarily due to a $54.9 million decrease in net repayments of debt and lease obligations in 2017 as compared to 2016, and a $5.0 million decrease in treasury stock purchases. These decreases were partially offset by the following: (1) $27.7 million of decreased proceeds from stock options exercised; (2) $4.6 million of increased payments of debt issuance costs and financing fees; and (3) $4.6 million of increased equity awards redeemed to pay employees' tax obligations.

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Year Ended December 31, 2016, Compared to Year Ended December 31, 2015

Net cash used in financing activities was $269.3 million for the year ended December 31, 2016, compared to $127.9 million for the year ended December 31, 2015, resulting in a $141.4 million increase in cash used in financing activities. The increase was primarily due to a $159.0 million increase in net repayments of debt and lease obligations in 2016 as compared to 2015 and $8.8 million of purchases of treasury stock in 2016, offset by $28.1 million of increased proceeds from stock options exercised in 2016.

Free Cash Flow

Free Cash Flow is defined as net cash provided by operating activities less purchases of property, plant and equipment.

The Company's management assesses Free Cash Flow as a measure to quantify cash available for (1) strengthening the balance sheet (debt reduction), (2) strategic capital allocation and deployment through investments in the business (acquisitions and strategic investments) and (3) returning capital to the shareholders (dividends and share repurchases). The priorities for capital allocation and deployment will change as circumstances dictate for the business, and Free Cash Flow can be significantly impacted by the Company's restructuring activities and other unusual items.

Free Cash Flow is a non-GAAP measure. Free Cash Flow should not be considered an alternative to cash flows provided by operating activities as a measure of liquidity. Quad/Graphics' calculation of Free Cash Flow may be different from similar calculations used by other companies, and therefore, comparability may be limited.

Free Cash Flow for the years ended December 31, 2017, 2016 and 2015, was as follows:

	Year Ended December 31,		
	2017	2016	2015
	(dollars in millions)		
Net cash provided by operating activities	$344.0	$352.5	$348.1
Less: purchases of property, plant and equipment	(85.9)	(106.1)	(133.0)
Free Cash Flow	$258.1	$246.4	$215.1

Free Cash Flow increased $11.7 million for the year ended December 31, 2017, compared to the year ended December 31, 2016, due to a $20.2 million decrease in capital expenditures, offset by an $8.5 million decrease in net cash provided by operating activities primarily attributable to a decrease in cash flows from changes in operating assets and liabilities.

Free Cash Flow increased $31.3 million for the year ended December 31, 2016, compared to the year ended December 31, 2015, due to the following: (1) a $26.9 million decrease in capital expenditures; and (2) a $4.4 million increase in net cash provided by operating activities primarily attributable to an increase in cash from earnings.

See the "Net Cash Provided by Operating Activities" section above for further explanations of the changes in operating cash flows and the "Net Cash Used in Investing Activities" section above for further explanations of the changes in purchases of property, plant and equipment.

Debt Leverage Ratio

The Debt Leverage Ratio is defined as total debt and capital lease obligations divided by the sum of the following: (1) the last twelve months of EBITDA (see the definition of EBITDA and the reconciliation of net earnings (loss) to EBITDA in the "Results of Operations" section above); (2) restructuring, impairment and transaction-related charges; (3) loss (gain) on debt extinguishment; and (4) equity in loss of unconsolidated entities.

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The Company uses the Debt Leverage Ratio as a metric to assess liquidity and the flexibility of its balance sheet. Consistent with other liquidity metrics, the Company monitors the Debt Leverage Ratio as a measure to determine the appropriate level of debt the Company believes is optimal to operate its business, and accordingly, to quantify debt capacity available for strategic capital allocation and deployment through investments in the business (capital expenditures, acquisitions and strategic investments), for strengthening the balance sheet (pension liability reduction), and for returning capital to the shareholders (dividends and share repurchases). The priorities for capital allocation and deployment will change as circumstances dictate for the business, and the Debt Leverage Ratio can be significantly impacted by the amount and timing of large expenditures requiring debt financing, as well as changes in profitability.

The Debt Leverage Ratio is a non-GAAP measure, and should not be considered an alternative to cash flows provided by operating activities as a measure of liquidity. Quad/Graphics' calculation of the Debt Leverage Ratio may be different from similar calculations used by other companies and, therefore, comparability may be limited.

The Debt Leverage Ratio calculated below differs from both the total leverage ratio and senior secured leverage ratio included in the Company's debt covenant calculations (see Note 12, "Debt," to the consolidated financial statements in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K for further information on debt covenants). The total leverage ratio included in the Company's debt covenants includes letters of credit as debt, excludes non-cash stock-based compensation expense from EBITDA and includes the equity in loss of unconsolidated entity in EBITDA. Similarly, the senior secured leverage ratio included in the Company's debt covenants includes and excludes the same adjustments as the total leverage ratio, in addition to the exclusion of the outstanding balance of the Senior Unsecured Notes.

The Debt Leverage Ratio as of December 31, 2017 and 2016, was as follows:

	December 31, 2017	December 31, 2016
	(dollars in millions)	
Total debt and capital lease obligations on the consolidated balance sheets	$964.8	$ 1,130.8
Divided by: EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio	$458.6	$ 480.1
Debt Leverage Ratio[1]	2.10 x	2.36 x

(1) The Company had $64 million in cash at December 31, 2017, $54 million higher than the Company's typical year-end cash balance of approximately $10 million. The Debt Leverage Ratio would have been 1.99x if the $54 million of excess cash was used to further pay down debt at December 31, 2017.

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The calculation of EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio for the years ended December 31, 2017 and 2016, was as follows:

	Year Ended December 31,	
	2017	2016
	(dollars in millions)	
Net earnings	$ 107.2	$ 44.9
Interest expense	71.1	77.2
Income tax (benefit) expense	(16.0)	13.0
Depreciation and amortization	232.5	277.1
EBITDA	$ 394.8	$ 412.2
Restructuring, impairment and transaction-related charges	61.2	80.6
Loss (gain) on debt extinguishment	2.6	(14.1)
Equity in loss of unconsolidated entities	—	1.4
EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio	$ 458.6	$ 480.1

The Debt Leverage Ratio decreased 0.26x at December 31, 2017, compared to December 31, 2016, primarily due to a $166.0 million decrease in debt and capital lease obligations, partially offset by $21.5 million of decreased EBITDA, as adjusted for purposes of calculating the Debt Leverage Ratio. The Debt Leverage Ratio at December 31, 2017, of 2.10x is within management's desired target Debt Leverage Ratio range of 2.0x to 2.5x; however, the Company operates at times above the Debt Leverage Ratio target range depending on the timing of compelling strategic investment opportunities and seasonal working capital needs.

Description of Significant Outstanding Debt Obligations as of December 31, 2017

As of December 31, 2017, the Company utilized a combination of debt instruments to fund cash requirements, including the following:

- Senior Secured Credit Facility:

  $725.0 million revolving credit facility (no outstanding balance as of December 31, 2017);

  $375.0 million Term Loan A ($281.3 million outstanding as of December 31, 2017); and

  $300.0 million Term Loan B ($279.1 million outstanding as of December 31, 2017);

- Senior Unsecured Notes ($243.5 million outstanding as of December 31, 2017); and

- Master Note and Security Agreement ($123.6 million outstanding as of December 31, 2017).

Senior Secured Credit Facility

The Senior Secured Credit Facility consists of three different loan facilities. The first facility is a revolving credit facility in the amount of $725.0 million with a term of just under four years maturing on January 4, 2021. The second facility is a Term Loan A in the aggregate amount of $375.0 million with a term of just under four years maturing on January 4, 2021, subject to certain required amortization. The third facility is a Term Loan B in the amount of $300.0 million with a term of seven years maturing on April 27, 2021, subject to certain required amortization.

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The Company completed the second amendment to the Company's Senior Secured Credit Facility on February 10, 2017. This second amendment was completed to reduce the size of the revolving credit facility and Term Loan A and to extend the Company's debt maturity profile while maintaining the Company's current cost of borrowing and covenant structure. The revolving credit facility was lowered to a maximum borrowing amount of $725.0 million from $850.0 million, and the Term Loan A was lowered to an aggregate amount of $375.0 million from $450.0 million. This amendment to the Senior Secured Credit Facility did not have an impact on the Company's quarterly financial covenant requirements.

Borrowings under the revolving credit facility and Term Loan A made under the Senior Secured Credit Facility at December 31, 2017, bear interest at 1.75% in excess of reserve adjusted LIBOR, or 0.75% in excess of an alternate base rate. The weighted average interest rate for the revolving credit facility was 3.04% and the weighted average interest rate for the Term Loan A loans was 3.01% at December 31, 2017, and interest is payable monthly. Borrowings under the Term Loan B at December 31, 2017, bear interest at 3.25% in excess of reserve adjusted LIBOR, with a LIBOR floor of 1.00%, or 2.25% in excess of an alternative base rate at the Company's option. The weighted average interest rate for the Term Loan B was 4.39% at December 31, 2017, and interest is payable monthly.

The Senior Secured Credit Facility is secured by substantially all of the unencumbered assets of the Company. The Senior Secured Credit Facility also requires the Company to provide additional collateral to the lenders in certain limited circumstances.

Senior Unsecured Notes

The Company received $294.8 million in net proceeds from the sale of the $300.0 million Senior Unsecured Notes, after deducting the initial purchasers' discounts and commissions. The Senior Unsecured Notes bear interest at 7.00%, and interest is payable semi-annually. The Senior Unsecured Notes are due May 1, 2022.

The Company repurchased $56.5 million of its Senior Unsecured Notes in the open market, resulting in a net gain on debt extinguishment of $14.3 million, during the year ended December 31, 2016. All repurchased Senior Unsecured Notes were canceled. The Company used cash flows from operating activities and borrowings under its revolving credit facility to fund the repurchases. These repurchases were primarily completed to efficiently reduce debt balances and interest expense based on current LIBOR rates.

Each of the Company's existing and future domestic subsidiaries that is a borrower or guarantees indebtedness under the Company's Senior Secured Credit Facility or that guarantees certain of the Company's other indebtedness or indebtedness of the Company's restricted subsidiaries (other than intercompany indebtedness) fully and unconditionally guarantee or, in the case of future subsidiaries, will guarantee, on a joint and several basis, the Senior Unsecured Notes (the "Guarantor Subsidiaries"). All of the current Guarantor Subsidiaries are 100% owned by the Company. Guarantor Subsidiaries will be automatically released from these guarantees upon the occurrence of certain events, including the following: (1) the designation of any of the Guarantor Subsidiaries as an unrestricted subsidiary; (2) the release or discharge of any guarantee or indebtedness that resulted in the creation of the guarantee of the Senior Unsecured Notes by any of the Guarantor Subsidiaries; or (3) the sale or disposition, including the sale of substantially all the assets, of any of the Guarantor Subsidiaries.

Master Note and Security Agreement (sometimes referred to as senior notes)

On September 1, 1995, and as last amended on November 24, 2014, the Company entered into the Master Note and Security Agreement pursuant to which the Company issued over time senior notes in an aggregate principal amount of $1.1 billion in various tranches, of which $123.6 million was outstanding as of December 31, 2017. The weighted average interest rate for the senior notes was 7.43% at December 31, 2017, which is fixed to maturity, and interest is

payable semiannually. Principal payments commenced September 1997 and extend through April 2031 in various tranches. The notes are collateralized by certain United States land, buildings and press and finishing equipment under the terms of the Master Note and Security Agreement.

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The Company redeemed $60.1 million of its senior notes under the Master Note and Security Agreement, resulting in a net loss on debt extinguishment of $0.2 million, during the year ended December 31, 2016. All tendered senior notes under the Master Note and Security Agreement were canceled. The Company used cash flows from operating activities and borrowings under its revolving credit facility to fund the tender. The tender was primarily completed to reallocate debt to the lower interest rate revolving credit facility and thereby reduce interest expense based on current LIBOR rates.

Covenants and Compliance

The Company's various lending arrangements include certain financial covenants (all financial terms, numbers and ratios are as defined in the Company's debt agreements). Among these covenants, the Company was required to maintain the following as of December 31, 2017:

- Total Leverage Ratio. On a rolling twelve-month basis, the total leverage ratio, defined as total consolidated debt to consolidated EBITDA, shall not exceed 3.75 to 1.00 (for the twelve months ended December 31, 2017, the Company's total leverage ratio was 2.06 to 1.00).

- Senior Secured Leverage Ratio. On a rolling twelve-month basis, the senior secured leverage ratio, defined as senior secured debt to consolidated EBITDA, shall not exceed 3.50 to 1.00 (for the twelve months ended December 31, 2017, the Company's senior secured leverage ratio was 1.55 to 1.00).

- Minimum Interest Coverage Ratio. On a rolling twelve-month basis, the minimum interest coverage ratio, defined as consolidated EBITDA to consolidated cash interest expense, shall not be less than 3.50 to 1.00 (for the twelve months ended December 31, 2017, the Company's minimum interest coverage ratio was 7.03 to 1.00).

The indenture underlying the Senior Unsecured Notes contains various covenants, including, but not limited to, covenants that, subject to certain exceptions, limit the Company's and its restricted subsidiaries' ability to incur and/or guarantee additional debt; pay dividends, repurchase stock or make certain other restricted payments; enter into agreements limiting dividends and certain other restricted payments; prepay, redeem or repurchase subordinated debt; grant liens on assets; enter into sale and leaseback transactions; merge, consolidate, transfer or dispose of substantially all of the Company's consolidated assets; sell, transfer or otherwise dispose of property and assets; and engage in transactions with affiliates.

The Company was in compliance with all financial covenants in its debt agreements as of December 31, 2017. While the Company currently expects to be in compliance in future periods with all of the financial covenants, there can be no assurance that these covenants will continue to be met. The Company's failure to maintain compliance with the covenants could prevent the Company from borrowing additional amounts and could result in a default under any of the debt agreements. Such default could cause the outstanding indebtedness to become immediately due and payable, by virtue of cross-acceleration or cross-default provisions.

In addition to those covenants, the Senior Secured Credit Facility also includes certain limitations on acquisitions, indebtedness, liens, dividends and repurchases of capital stock, including the following:

- If the Company's total leverage ratio is greater than 3.00 to 1.00 (as defined in the Senior Secured Credit Facility), the Company is prohibited from making greater than $120.0 million of annual dividend payments, capital stock repurchases and certain other payments. If the total leverage ratio is less than 3.00 to 1.00, there are no such restrictions.

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If the Company's senior secured leverage ratio is greater than 3.00 to 1.00 or the Company's total leverage ratio is greater than 3.50 to 1.00 (these ratios as defined in the Senior Secured Credit Facility), the Company is prohibited from voluntarily prepaying any of the Senior Unsecured Notes and from voluntarily prepaying any other unsecured or subordinated indebtedness, with certain exceptions (including any mandatory prepayments on the Senior Unsecured Notes or any other unsecured or subordinated debt). If

the senior secured leverage ratio is less than 3.00 to 1.00 and the total leverage ratio is less than 3.50 to 1.00, there are no such restrictions.

Net Pension Obligations

The net underfunded pension and MEPPs obligations decreased by $50.0 million during the year ended December 31, 2017, from $162.3 million at December 31, 2016, to $112.3 million at December 31, 2017. This $50.0 million decrease in overall pension obligations was despite a $20.7 million increase attributable to a 39 basis point decline in the pension discount rate from 3.91% at December 31, 2016, to 3.52% at December 31, 2017. The Company was able to reduce its pension obligations during 2017, despite the negative impact from the discount rate, due to the following:

(1) Achieved an actual return on plan assets of 14.3% during the year ended December 31, 2017, which exceeded the expected return on plan assets assumption of 6.5%.

(2) Made payments totaling $24.0 million to the MEPPs.

(3) Facilitated lump-sum pension payments to terminated vested participants. During 2017, the Company settled $23.3 million of pension liabilities for $21.4 million of pension payouts. Payments to eligible participants who elected to receive a lump-sum pension payment were funded from existing pension plan assets and constituted a settlement of the Company's pension liabilities with respect to these participants.

The Company continues to focus on reducing pension obligations through cash contributions to the plans, lump-sum settlements and plan design changes.

Share Repurchase Program

On September 6, 2011, the Company's Board of Directors authorized a share repurchase program of up to $100.0 million of the Company's outstanding class A stock. Under the authorization, share repurchases may be made at the Company's discretion, from time to time, in the open market and/or in privately negotiated transactions as permitted by federal securities laws and other legal requirements. The timing, manner, price and amount of any repurchase will depend on economic and market conditions, share price, trading volume, applicable legal requirements and other factors. The program may be suspended or discontinued at any time. During the year ended December 31, 2017, the Company repurchased 200,605 shares of its class A common stock at a weighted average price of $18.89 per share for a total purchase price of $3.8 million. During the year ended December 31, 2016, the Company repurchased 984,190 shares of its class A common stock at a weighted average price of $8.96 per share for a total purchase price of $8.8 million. There were no share repurchases during the year ended December 31, 2015. As of December 31, 2017, there were $79.2 million of authorized repurchases remaining under the program.

Risk Management

For a discussion of the Company's exposure to market risks and management of those market risks, see Item 7A, "Quantitative and Qualitative Disclosures About Market Risk," of this Annual Report on Form 10-K.

Off-Balance Sheet Arrangements

Except as set forth below in the Contractual Obligations and Other Commitments table and in Note 13, "Lease Obligations," to the consolidated financial statements in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K (including operating leases and future interest on debt and capital leases to be incurred), the Company has no off-balance sheet arrangements, financings or special purpose entities that the

Company expects to have a material current or future effect on financial condition, changes in financial condition, results of operations, liquidity, capital expenditures, capital resources or significant components of sales or expenses.

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Contractual Obligations and Other Commitments

The Company's contractual cash obligations at December 31, 2017, were as follows (in millions):

	Payments Due by Period						
	Total	2018	2019	2020	2021	2022	Thereafter
Debt obligations[1]	$1,145.8	$93.1	$80.9	$114.2	$571.6	$259.9	$ 26.1
Operating lease obligations	154.0	43.1	34.5	26.2	14.8	10.4	25.0
Pension benefits[2]	68.2	8.5	17.5	13.0	13.5	15.7	—
Capital lease obligations[3]	21.2	6.5	5.0	4.1	3.6	1.6	0.4
Purchase obligations[4]	32.5	32.5	—	—	—	—	—
Total[5][6]	$1,421.7	$183.7	$137.9	$157.5	$603.5	$287.6	$ 51.5

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(1) During 2017, the Company paid in advance the full amount of required amortization payments on its Term Loan A, totaling $72.7 million for the years ended December 31, 2018 and 2019, and through the first quarter ended March 31, 2020. The Company also paid in advance the full amount of required amortization payments on its Term Loan B, totaling $9.0 million for the years ended December 31, 2018, 2019 and 2020. Debt obligations include $188.6 million for anticipated future interest payments, and exclude $10.3 million and $1.4 million for future amortization of debt issuance costs and original issue discount, respectively. With respect to the variable interest rate portions of the debt, the interest amounts were calculated by applying the December 31, 2017 weighted average interest rate to determine the value of future interest payments. For the Master Note and Security Agreement, the weighted average interest rate of the notes was applied to the average principal balance outstanding for each time period. Amounts included in "Thereafter" include principal payments and estimated interest expense through April 2031.

(2) For the pension benefits, contributions and benefit payments to be funded from Company assets included in the table have been actuarially estimated over a five year period. While benefit payments under these benefit plans are expected to continue beyond 2022, the Company believes that an estimate beyond this period is unreasonable. The contractual obligations table above does not include a $28.2 million estimated withdrawal liability for the United States World Color Press MEPPs due to the uncertainty with the amount and timing of GCIU potential withdrawal liability payments. During 2018, the Company is scheduled to make minimum payments of $8.8 million for the MEPPs, pending no settlement or conclusion to the litigation with the GCIU trustees. See Note 16, "Employee Retirement Plans," to the consolidated financial statements in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K for further discussion of the MEPPs withdrawal.

(3) Capital lease obligations include $1.9 million for anticipated future interest payments.

(4) Purchase obligations consist primarily of $22.3 million in firm commitments to purchase press and finishing equipment, as well as $10.2 million of other purchase obligations.

(5) The contractual obligations table above does not include reserves for uncertain tax positions recorded in accordance with the accounting guidance on uncertainties in income taxes. The Company has taken tax positions for which the ultimate amount and the year(s) any necessary payments will be made that pertain to those tax positions is uncertain. The reserve for uncertain tax positions prior to interest and penalties was $21.6 million as of December 31, 2017, of which $14.6 million was included in other long-term liabilities, $6.2 million was included in deferred income taxes and $0.8 million was included in accrued liabilities in the consolidated balance sheets. The Company has also recorded reserves for interest and penalties related to uncertain tax positions of $3.3 million and $0.5 million, respectively, as of December 31, 2017.

(6) The contractual obligations table above does not include the share repurchase program as no repurchases are required under the program. See the "Share Repurchase Program" section above for further discussion, including the maximum potential cash payments under the program.

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Critical Accounting Policies and Estimates