Quad/Graphics, Inc.
Form 10-Q
August 01, 2018
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-Q
x QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended June 30, 2018
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)

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

Large accelerated filer 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. o
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ¨ No x
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 July 27, 2018
Class A Common Stock	38,118,828
Class B Common Stock	13,556,858

Class C Common Stock —

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PART I — FINANCIAL INFORMATION

ITEM 1. Condensed Consolidated Financial Statements (Unaudited)

QUAD/GRAPHICS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(in millions, except per share data)
(UNAUDITED)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Net sales				
Products	$803.4	$819.4	$1,604.5	$1,673.7
Services	212.1	143.8	378.5	288.1
Total net sales	1,015.5	963.2	1,983.0	1,961.8
Cost of sales				
Products	664.4	663.4	1,329.6	1,345.8
Services	162.3	101.6	289.5	200.3
Total cost of sales	826.7	765.0	1,619.1	1,546.1
Operating expenses				
Selling, general and administrative expenses	99.2	104.3	186.1	202.9
Depreciation and amortization	58.3	58.5	114.5	117.2
Restructuring, impairment and transaction-related charges	10.4	5.3	35.3	14.5
Total operating expenses	994.6	933.1	1,955.0	1,880.7
Operating income	20.9	30.1	28.0	81.1
Interest expense	18.4	17.6	35.7	35.8
Net pension income	(3.1)	(2.6)	(6.2)	(5.2)
Loss on debt extinguishment	—	—	—	2.6
Earnings (loss) before income taxes and equity in (earnings) loss of unconsolidated entity	5.6	15.1	(1.5)	47.9
Income tax (benefit) expense	(3.7)	8.3	(7.0)	15.0
Earnings before equity in (earnings) loss of unconsolidated entity	9.3	6.8	5.5	32.9
Equity in (earnings) loss of unconsolidated entity	(0.2)	0.1	(0.5)	0.8
Net earnings	9.5	6.7	6.0	32.1
Net earnings attributable to noncontrolling interests	(0.1)	—	(0.1)	—
Net earnings attributable to Quad/Graphics common shareholders	$9.4	$6.7	$5.9	$32.1
Earnings per share attributable to Quad/Graphics common shareholders				
Basic	$0.19	$0.14	$0.12	$0.65
Diluted	$0.18	$0.13	$0.11	$0.62
Dividends declared per share	$0.30	$0.30	$0.60	$0.60
Weighted average number of common shares outstanding				
Basic	50.8	49.5	50.5	49.3
Diluted	52.5	51.7	52.3	51.6

See accompanying Notes to Condensed Consolidated Financial Statements (Unaudited).

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QUAD/GRAPHICS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(in millions)
(UNAUDITED)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Net earnings	$9.5	$6.7	$6.0	$32.1
Other comprehensive income (loss)				
Translation adjustments	(15.6)	3.7	(10.0)	11.4
Interest rate swap adjustments	1.4	(1.1)	5.1	(0.7)
Other comprehensive income (loss), before tax	(14.2)	2.6	(4.9)	10.7
Income tax impact related to items of other comprehensive income (loss)	(0.4)	0.3	(1.2)	0.3
Other comprehensive income (loss), net of tax	(14.6)	2.9	(6.1)	11.0
Total comprehensive income (loss)	(5.1)	9.6	(0.1)	43.1
Less: comprehensive (income) loss attributable to noncontrolling interests	(0.1)	—	(0.1)	—
Comprehensive income (loss) attributable to Quad/Graphics common shareholders	$(5.2)	$9.6	$(0.2)	$43.1

See accompanying Notes to Condensed Consolidated Financial Statements (Unaudited).

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QUAD/GRAPHICS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(in millions)
(UNAUDITED)

	June 30, 2018	December 31, 2017
ASSETS		
Cash and cash equivalents	$8.9	$ 64.4
Receivables, less allowances for doubtful accounts of $27.0 million at June 30, 2018, and $28.9 million at December 31, 2017	510.4	552.5
Inventories	290.7	246.5
Prepaid expenses and other current assets	68.1	45.1
Total current assets	878.1	908.5
Property, plant and equipment—net	1,306.8	1,377.6
Goodwill	56.1	—
Other intangible assets—net	128.5	43.4
Equity method investment in unconsolidated entity	3.5	3.6
Other long-term assets	96.9	119.3
Total assets	$2,469.9	$ 2,452.4
LIABILITIES AND SHAREHOLDERS' EQUITY		
Accounts payable	$396.1	$ 381.6
Accrued liabilities	272.1	316.7
Short-term debt and current portion of long-term debt	36.9	42.0
Current portion of capital lease obligations	5.4	5.6
Total current liabilities	710.5	745.9
Long-term debt	993.2	903.5
Capital lease obligations	12.3	13.7
Deferred income taxes	44.9	41.9
Other long-term liabilities	205.7	225.0
Total liabilities	1,966.6	1,930.0
Commitments and contingencies (Note 8)		
Shareholders' equity		
Preferred stock	—	—
Common stock, Class A	1.0	1.0
Common stock, Class B	0.4	0.4
Common stock, Class C	—	—
Additional paid-in capital	854.5	861.1
Treasury stock, at cost	(55.0)	(52.8)
Accumulated deficit	(182.7)	(162.9)
Accumulated other comprehensive loss	(133.4)	(124.4)
Quad/Graphics' shareholders' equity	484.8	522.4
Noncontrolling interests	18.5	—
Total shareholders' equity and noncontrolling interests	503.3	522.4
Total liabilities and shareholders' equity	$2,469.9	$ 2,452.4

See accompanying Notes to Condensed Consolidated Financial Statements (Unaudited).

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QUAD/GRAPHICS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)
(UNAUDITED)

	Six Months Ended June 30,	
	2018	2017
OPERATING ACTIVITIES		
Net earnings	$6.0	$32.1
Adjustments to reconcile net earnings to net cash provided by operating activities:		
Depreciation and amortization	114.5	117.2
Employee stock ownership plan contribution	22.3	—
Impairment charges	11.5	0.7
Amortization of debt issuance costs and original issue discount	1.7	1.8
Loss on debt extinguishment	—	2.6
Stock-based compensation	9.1	9.7
Gain from property insurance claims	(18.3)	(5.0)
Gain on the sale or disposal of property, plant and equipment	(2.1)	(7.1)
Deferred income taxes	1.1	6.4
Equity in (earnings) loss of unconsolidated entity	(0.5)	0.8
Changes in operating assets and liabilities—net of acquisitions	(104.8)	(47.0)
Net cash provided by operating activities	40.5	112.2
INVESTING ACTIVITIES		
Purchases of property, plant and equipment	(53.8)	(42.8)
Proceeds from the sale of property, plant and equipment	8.9	21.8
Proceeds from property insurance claims	14.5	5.0
Loan to an unconsolidated entity	—	(5.0)
Acquisition of businesses—net of cash acquired	(71.4)	—
Net cash used in investing activities	(101.8)	(21.0)
FINANCING ACTIVITIES		
Proceeds from issuance of long-term debt	—	375.0
Payments of long-term debt	(21.5)	(409.2)
Payments of capital lease obligations	(3.4)	(4.2)
Borrowings on revolving credit facilities	896.6	270.6
Payments on revolving credit facilities	(791.9)	(287.4)
Payments of debt issuance costs and financing fees	—	(4.7)
Purchases of treasury stock	(36.7)	—
Proceeds from stock options exercised	4.0	2.4
Equity awards redeemed to pay employees' tax obligations	(7.5)	(5.9)
Payment of cash dividends	(32.2)	(31.7)
Other financing activities	—	(4.1)
Net cash provided by (used in) financing activities	7.4	(99.2)
Effect of exchange rates on cash and cash equivalents	(1.6)	(0.5)
Net decrease in cash and cash equivalents	(55.5)	(8.5)
Cash and cash equivalents at beginning of period	64.4	19.2

Cash and cash equivalents at end of period	$8.9	$10.7

See accompanying Notes to Condensed Consolidated Financial Statements (Unaudited).

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QUAD/GRAPHICS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018
(In millions, except share and per share data and unless otherwise indicated)

Note 1. Basis of Presentation

The accompanying unaudited condensed consolidated financial statements for Quad/Graphics, Inc. and its subsidiaries (the "Company" or "Quad/Graphics") have been prepared by the Company pursuant to the rules and regulations for interim financial information of the United States Securities and Exchange Commission ("SEC"). Certain information and footnote disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") have been omitted pursuant to such SEC rules and regulations. These unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated annual financial statements as of and for the year ended December 31, 2017, and notes thereto included in the Company's latest Annual Report on Form 10-K filed with the SEC on February 21, 2018.

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 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.

The financial information contained herein reflects all adjustments, in the opinion of management, necessary for a fair presentation of the Company's results of operations for the three and six months ended June 30, 2018 and 2017. All of these adjustments are of a normal recurring nature, except as otherwise noted. All intercompany transactions have been eliminated in consolidation. These unaudited condensed consolidated financial statements include estimates and assumptions of management that affect the amounts reported in the condensed consolidated financial statements. Actual results could differ from these estimates.

Revenue Recognition

On January 1, 2018, the Company adopted Accounting Standards Update 2014-09, "Revenue from Contracts with Customers" ("Topic 606"), which provides revised guidance on recognizing revenue from contracts with customers. The Company adopted Topic 606 using the modified retrospective approach and applied the guidance to those contracts which were not completed as of January 1, 2018. This means that Topic 606 has been applied to the 2018 financial statements and disclosures going forward, but that prior period financial statements and disclosures reflect the revenue recognition standard of Topic 605, Revenue from Contracts with Customers. See Note 2, "Revenue Recognition," for additional accounting policy and transition disclosures.

Pension Plans

On January 1, 2018, the Company adopted Accounting Standards Update 2017-07 "Compensation—Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost" ("ASU 2017-07"), which provides revised guidance on how to present the components of net pension income in the statement of operations. As a result of the adoption of ASU 2017-07, the Company has reported $3.1 million and $6.2 million of net pension income during the three and six months ended June 30, 2018, respectively, and has

reclassified net pension income of $2.6 million and $5.2 million for the three and six months ended June 30, 2017, respectively, to a line outside the subtotal of operating income, resulting in no impact to net earnings. The Company has adopted ASU 2017-07 retrospectively and has utilized the practical expedient that permits the use of the amounts disclosed in previous filings for net pension income as the estimation basis for the presentation of the prior comparative periods. There are no service costs associated with the Company's pension plans due to their frozen status. See Note 13, "Employee Retirement Plans," for the components of net pension income.

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(In millions, except share and per share data and unless otherwise indicated)

Note 2. Revenue Recognition

The Company recognizes its products and services revenue based on when the transfer of control passes to the customer or when the service is completed and accepted by the customer.

The effects of the adjustments to the December 31, 2017 consolidated balance sheet for the modified retrospective adoption of Topic 606, were as follows:

	December 31, 2017 As Reported	Topic 606 Adjustments	Opening Balance at January 1, 2018
Prepaid expenses and other current assets	$ 45.1	$ 2.3	$ 47.4
Other long-term assets	119.3	2.0	121.3
Deferred income taxes	41.9	1.1	43.0
Accumulated deficit	(162.9)	3.2	(159.7)

The adoption of Topic 606 did not have a material effect on the consolidated financial statements. In adopting Topic 606, the timing of recognition changed for certain variable consideration paid to customers and costs to obtain contracts with customers.

Revenue Disaggregation

The following table provides information about disaggregated revenue by the Company's operating segments and major products and services offerings:

	United States Print and Related Services	International	Total
Three months ended June 30, 2018			
Catalog, publications, retail inserts, books and directories	$ 556.8	$ 84.3	$641.1
Direct mail and other printed products	148.1	7.1	155.2
Other	6.9	0.2	7.1
Total Products	711.8	91.6	803.4
Logistics services	103.6	4.4	108.0
Imaging, marketing services and other services	104.1	—	104.1
Total Services	207.7	4.4	212.1
Total Net Sales	$ 919.5	$ 96.0	$1,015.5
Three months ended June 30, 2017			
Catalog, publications, retail inserts, books and directories	$ 571.2	$ 80.5	$651.7

Direct mail and other printed products	148.2	5.6	153.8
Other	13.7	0.2	13.9
Total Products	733.1	86.3	819.4
Logistics services	92.5	4.6	97.1
Imaging, marketing services and other services	46.7	—	46.7
Total Services	139.2	4.6	143.8
Total Net Sales	$ 872.3	$ 90.9	$963.2

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NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018
(In millions, except share and per share data and unless otherwise indicated)

Revenue Disaggregation (Continued)

	United States Print and Related Services	International	Total
Six months ended June 30, 2018			
Catalog, publications, retail inserts, books and directories	$1,120.0	$ 169.8	$1,289.8
Direct mail and other printed products	284.7	16.0	300.7
Other	13.7	0.3	14.0
Total Products	1,418.4	186.1	1,604.5
Logistics services	201.4	9.6	211.0
Imaging, marketing services and other services	167.5	—	167.5
Total Services	368.9	9.6	378.5
Total Net Sales	$1,787.3	$ 195.7	$1,983.0
Six months ended June 30, 2017			
Catalog, publications, retail inserts, books and directories	$1,170.6	$ 164.2	$1,334.8
Direct mail and other printed products	296.9	12.9	309.8
Other	28.7	0.4	29.1
Total Products	1,496.2	177.5	1,673.7
Logistics services	186.6	9.8	196.4
Imaging, marketing services and other services	91.7	—	91.7
Total Services	278.3	9.8	288.1
Total Net Sales	$1,774.5	$ 187.3	$1,961.8

Nature of Products and Services

The products offering is predominantly comprised of the Company's print operations which 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.

The Company considers its logistic operations as services, which include the delivery of printed material. The Services offering also includes revenues related to the Company's imaging operations, which include digital content management, photography, color services, page production, marketing services, media planning and placement, facilities management and medical services.

Performance Obligations

At contract inception, the Company assesses the products and services promised in its contracts with customers and identifies performance obligations for each promise to transfer to the customer a product or service that is distinct. To

identify the performance obligations, the Company considers the goods or services promised in the contract regardless of whether they are explicitly stated or are implied by customary business practices. The Company determined that the following distinct products and services represent separate performance obligations:

•Pre-Press Services
•Print
•Other Services

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For Pre-Press and Other Services, the Company recognizes revenue at point-in-time upon completion of the performed service and acceptance by the customer. The Company considers transfer of control to occur once the service is performed as the Company has right to payment and the customer has legal title and risk and reward of ownership.

The Company recognizes its Print revenues upon transfer of title and the passage of risk of loss, which is point-in-time upon shipment to the customer, and when there is a reasonable assurance as to collectability. Revenues related to the Company's logistics operations, which includes the delivery of printed material, are included in the Print performance obligation and are also recognized at point-in-time as services are completed. Under agreements with certain customers, products may be stored by the Company for future delivery. In these situations, the Company may receive warehouse management fees for the services it provides. Revenue from warehouse management fees was immaterial for the three and six months ended June 30, 2018 and 2017.

Certain revenues earned by the Company require judgment to determine if revenue should be recorded gross as principal or net of related costs as an agent. Billings for third-party shipping and handling costs, primarily in the Company's logistics operations, and out-of-pocket expenses are recorded gross in net sales and cost of sales in the condensed consolidated statements of operations. Many of the Company's operations process materials, primarily paper, that may be supplied directly by customer or may be purchased by the Company and sold to customers. No revenue is recognized for customer-supplied paper. Revenues for the Company-supplied paper are recognized on a gross basis. In some instances, the Company will deliver print work for a customer and bill the customer for postage. In these cases, the Company is acting as an agent and billings are recorded on a net basis in net sales.

Significant Payment Terms

Payment terms and conditions for contracts with customers vary. The Company typically offers standard terms of net 30 days. It is not the Company's standard business practice to offer extended payment terms longer than one year. The Company may offer cash discounts or prepayment and extended terms depending on certain facts and circumstances. As such, when the timing of the Company's delivery of products and services differs from the timing of payment, the Company will record either a contract asset or a contract liability.

Variable Consideration

When evaluating the transaction price, the Company analyzes on a contract by contract basis all applicable variable considerations and non-cash consideration and also performs a constraint analysis. The nature of the Company's contracts give rise to variable consideration, including, volume rebates, credits, discounts, and other similar items that generally decrease the transaction price. These variable amounts generally are credited to the customer, based on achieving certain levels of sales activity, when contracts are signed, or making payments within specific terms.

Product returns are not significant because the products are customized; however, the Company accrues for the estimated amount of customer allowances at the time of sale based on historical experience and known trends.

When the transaction price requires allocation to multiple performance obligations, the Company uses the estimated stand-alone selling prices using the adjusted market assessment approach.

Costs to Obtain Contracts

In accordance with Topic 606, the Company capitalizes certain sales incentives of the sales compensation packages for costs that are directly attributed to being awarded a customer contract or renewal and would not have been incurred had the contract not been obtained. The Company also defers certain contract acquisition costs paid to the customer at contract inception. Costs to obtain contracts with a duration of less than one year are expensed as incurred. For all contract costs with contracts over one year, the Company amortizes the costs to obtain contracts on a straight-line basis over the estimated life of the contract and reviews quarterly for impairment. At January 1, 2018, the Company had $23.5 million in contract costs for contracts that were

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FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018
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not completed as of that date. For the six months ended June 30, 2018, the Company incurred additional contract costs of $4.1 million, amortized $4.4 million, and consequently, the balance of contract costs were $23.2 million as of June 30, 2018.

Practical Expedients

The Company has elected to apply the following practical expedients allowed under Topic 606:

- For certain performance obligations related to print contracts, the Company has elected not to disclose the value of unsatisfied performance obligations for the following: (1) contracts that have an original expected length of one year or less; (2) contracts where revenue is recognized as invoiced; or (3) contracts with variable consideration related to unsatisfied performance obligations. The Company had approximately $676.6 million in volume commitments in contracts that extend beyond one year as of June 30, 2018. The Company expects to recognize approximately 14% of these volume commitments in contracts as revenue by the end of 2018, an additional 50% by the end of 2020, and the balance thereafter.

- The Company expenses costs to obtain contracts as incurred when the contract duration is less than one year.

- The transaction amount is not adjusted for a significant financing component as the period between transfer of the products or services and payment is less than one year.

- The Company accounts for shipping and handling activities, which includes postage, that occur after control of the related products or services transfers to the customer as fulfillment activities and are therefore recognized at time of shipping.

- The Company excludes from its transaction price any amounts collected from customers for sales taxes.

Note 3. Acquisitions and Strategic Investments

2018 Ivie & Associates Acquisition

The Company completed the acquisition of Ivie & Associates ("Ivie") on February 21, 2018, for $90.0 million cash paid, which is subject to a potential earn-out of up to an additional $16.0 million, to the extent that certain financial metrics are achieved post-integration. Ivie is headquartered in Flower Mound, Texas and provides a full array of marketing services, including creative and production services, studio services, sourcing, procurement, staff enhancement, media services, public relations, digital services, technology solutions and project management for many leading brands throughout the world. The preliminary purchase price of $105.4 million, includes $13.6 million of acquired cash and an estimated $15.4 million of future cash payments related to the acquisition. Included in the preliminary purchase price allocation are $78.6 million of identifiable other intangible assets, which are amortized over their estimated useful lives, ranging from three to eight years, and $29.3 million of goodwill, of which $27.4 million is deductible for tax purposes. The preliminary allocation of the purchase price is based on valuations performed to determine the fair value of the net assets as of the acquisition date. The purchase price, as well as the purchase price allocation, is subject to the completion of the final valuation of the net assets acquired. The net assets

acquired, excluding acquired cash, were classified as Level 3 in the valuation hierarchy (see Note 11, "Financial Instruments and Fair Value Measurements," for the definition of Level 3 inputs). Ivie's operations are included in the United States Print and Related Services segment.

2018 Rise Interactive Investment

On March 14, 2018, the Company increased its equity position in Rise Interactive ("Rise") from 19% to 57% for the conversion of $9.3 million of loans to equity ownership and $8.7 million cash paid. The Company had historically accounted for Rise as a cost method investment. Rise is a digital marketing agency headquartered in Chicago, Illinois, that specializes in digital media, analytics and customer experience, and helps enterprise marketers see, shape, and act on opportunities in digital media.

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(In millions, except share and per share data and unless otherwise indicated)

The Company has consolidated the results of Rise as of the date the Company obtained controlling financial interest in Rise and accounts for the 43% portion of Rise's results not owned by the Company as noncontrolling interest in the condensed consolidated financial statements. The preliminary fair value of the assets and liabilities of, and noncontrolling interests in, Rise is estimated to be $48.4 million, including $13.7 million of acquired cash. Also included in the preliminary fair value allocation are $20.6 million of identifiable other intangible assets, which are amortized over their estimated useful lives, ranging from five to six years, and $26.8 million of goodwill, which is not deductible for tax purposes. The preliminary allocation of the fair value is based on initial valuations performed to determine the fair value of the net assets as of the acquisition date. The fair value, as well as the fair value allocation, is subject to the completion of the final valuation of the net assets of the business. The net assets, excluding cash, were classified as Level 3 in the valuation hierarchy (see Note 11, "Financial Instruments and Fair Value Measurements," for the definition of Level 3 inputs). Rise's operations are included in the United States Print and Related Services segment.

Note 4. Restructuring, Impairment and Transaction-Related Charges

The Company recorded restructuring, impairment and transaction-related charges for the three and six months ended June 30, 2018 and 2017, as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Employee termination charges	$2.5	$3.0	$13.1	$5.9
Impairment charges	3.6	0.3	11.5	0.7
Transaction-related charges	0.1	0.4	0.8	1.2
Integration costs	0.1	—	0.2	—
Other restructuring charges	4.1	1.6	9.7	6.7
Total	$10.4	$5.3	$35.3	$14.5

The costs related to these activities have been recorded in the condensed consolidated statements of operations as restructuring, impairment and transaction-related charges. See Note 18, "Segment Information," for restructuring, impairment and transaction-related charges by segment.

Restructuring Charges

The Company began a restructuring program in 2010 related to eliminating excess manufacturing capacity and properly aligning its cost structure. The Company has announced a total of 42 plant closures and has reduced headcount by approximately 12,600 employees since 2010. The Company recorded the following charges as a result of plant closures and other restructuring programs:

- Employee termination charges of $2.5 million and $13.1 million were recorded during the three and six months ended June 30, 2018, respectively, and $3.0 million and $5.9 million were recorded during the three and six months ended June 30, 2017, respectively. The Company reduced its workforce through facility consolidations and separation

programs.

- Integration costs of $0.1 million and $0.2 million were recorded during the three and six months ended June 30, 2018, respectively, which related to costs primarily for the integration of acquired companies. There were no integration costs recorded during the three and six months ended June 30, 2017.

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- Other restructuring charges of $4.1 million and $9.7 million were recorded during the three and six months ended June 30, 2018, which consisted of the following: (1) $0.4 million and $2.6 million, respectively, of lease exit charges; (2) $0.2 million and $1.0 million, respectively, of equipment and infrastructure removal costs from closed plants; (3) $3.4 million and $5.6 million, respectively, of vacant facility carrying costs, net of a $2.2 million gain from the sale of the San Ixhuatepec, Mexico facility during the six months ended June 30, 2018; and (4) $0.1 million and $0.5 million, respectively, of other restructuring charges.

Other restructuring charges of $1.6 million and $6.7 million were recorded during the three and six months ended June 30, 2017, respectively, which consisted of the following: (1) $0.2 million and $3.4 million, respectively, of lease exit charges primarily related to the closures of the Huntington Beach, California; and Manassas, Virginia plants; (2) $0.4 million and $1.6 million, respectively, of equipment and infrastructure removal costs from closed plants; and (3) $1.0 million and $1.7 million, respectively, of vacant facility carrying costs, net of a $3.4 million and a $7.1 million gain on the sale of facilities during the three and six months ended June 30, 2017, respectively. The Atglen, Pennsylvania; Dickson, Tennessee; and Lenexa, Kansas plants were sold during the second quarter of 2017; and the East Greenville, Pennsylvania and Marengo, Iowa plants were sold during the first quarter of 2017.

The restructuring charges recorded were based on plans that have been committed to by management and were, in part, based upon management's best estimates of future events. Changes to the estimates may require future restructuring charges and adjustments to the restructuring liabilities. The Company expects to incur additional restructuring charges related to these and other initiatives.

Impairment Charges

The Company recognized impairment charges of $3.6 million and $11.5 million during the three and six months ended June 30, 2018, respectively, which consisted of $3.6 million and $9.1 million, respectively, for machinery and equipment no longer being utilized in production as a result of facility consolidations, as well as other capacity reduction restructuring activities, and $2.4 million of land and building impairment charges during the six months ended June 30, 2018.

The Company recognized impairment charges of $0.3 million and $0.7 million during the three and six months ended June 30, 2017, respectively, for machinery and equipment no longer being utilized in production as a result of facility consolidations, as well as other capacity reduction restructuring activities.

The fair values of the impaired assets were determined by the Company to be Level 3 under the fair value hierarchy (see Note 11, "Financial Instruments and Fair Value Measurements," for the definition of Level 3 inputs) and were estimated based on internal discounted cash flow estimates, quoted market prices where available and independent appraisals, as appropriate. These assets were adjusted to their estimated fair values at the time of impairment.

Transaction-Related Charges

The Company incurs transaction-related charges primarily consisting of professional service fees related to business acquisition and divestiture activities. Transaction-related charges of $0.1 million and $0.8 million were recorded during the three and six months ended June 30, 2018, respectively, and $0.4 million and $1.2 million were recorded

during the three and six months ended June 30, 2017, respectively. The transaction-related charges were expensed as incurred in accordance with the applicable accounting guidance on business combinations.

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Restructuring Reserves

Activity impacting the Company's restructuring reserves for the six months ended June 30, 2018, was as follows:

	Employee Termination Charges	Impairment Charges	Transaction-Related Charges	Integration Costs	Other Restructuring Charges	Total
Balance at December 31, 2017	$ 17.6	$ —	$ 0.4	$ 0.2	$ 11.3	$29.5
Expense	13.1	11.5	0.8	0.2	9.7	35.3
Cash payments	(18.9)	—	(1.1)	(0.2)	(13.0)	(33.2)
Non-cash adjustments/reclassifications	(1.9)	(11.5)	—	—	0.5	(12.9)
Balance at June 30, 2018	$ 9.9	$ —	$ 0.1	$ 0.2	$ 8.5	$18.7

The Company's restructuring reserves at June 30, 2018, included a short-term and a long-term component. The short-term portion included $14.5 million in accrued liabilities (see Note 12, "Accrued Liabilities and Other Long-Term Liabilities") and $0.5 million in accounts payable in the condensed consolidated balance sheets as the Company expects these reserves to be paid within the next twelve months. The long-term portion of $3.7 million is included in other long-term liabilities (see Note 12, "Accrued Liabilities and Other Long-Term Liabilities") in the condensed consolidated balance sheets.

Note 5. Goodwill and Other Intangible Assets

Goodwill

Goodwill represents the excess of the purchase price over the fair value of identifiable net assets acquired in a business combination. Goodwill is assigned to specific reporting units and is tested annually for impairment as of October 31 or more frequently if events or changes in circumstances indicate that it is more likely than not that the fair value of a reporting unit is below its carrying value.

The Company recorded preliminary goodwill within the United States Print and Related Services segment related to acquisitions completed during the six months ended June 30, 2018. The amount of preliminary goodwill is subject to the completion of the final valuation of the net assets acquired. Activity impacting goodwill for the six months ended June 30, 2018, was as follows:

	United States Print and Related Services	International	Total
Balance at December 31, 2017	$ —	$ —	$—
Ivie acquisition (see Note 3)	29.3	—	29.3
Rise acquisition (see Note 3)	26.8	—	26.8
Balance at June 30, 2018	$ 56.1	$ —	$56.1

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The accumulated goodwill impairment losses and the carrying value of goodwill at June 30, 2018, and December 31, 2017, were as follows:

	June 30, 2018			December 31, 2017		
	United States Print and Related Services	International	Total	United States Print and Related Services	International	Total
Goodwill	$834.4	$ 30.0	$864.4	$778.3	$ 30.0	$808.3
Accumulated goodwill impairment loss	(778.3)	(30.0)	(808.3)	(778.3)	(30.0)	(808.3)
Ending Balance	$56.1	$ —	$56.1	$—	$ —	$—

Other Intangible Assets

The components of finite-lived intangible assets at June 30, 2018, and December 31, 2017, were as follows:

	June 30, 2018				December 31, 2017			
	Weighted Average Amortization Period (Years)	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Weighted Average Amortization Period (Years)	Gross Carrying Amount	Accumulated Amortization	Net Book Value
Trademarks, patents, licenses and agreements	6	$ 59.6	$ (16.7)	$ 42.9	7	$ 24.0	$ (13.5)	$ 10.5
Capitalized software	5	12.0	(2.9)	9.1	5	2.8	(2.3)	0.5
Acquired technology	5	2.0	(2.0)	—	5	2.0	(2.0)	—
Customer relationships	6	514.3	(437.8)	76.5	6	460.8	(428.4)	32.4
Total		$ 587.9	$ (459.4)	$ 128.5		$ 489.6	$ (446.2)	$ 43.4

During the six months ended June 30, 2018, the gross carrying amount of other intangible assets increased primarily due to $99.2 million of acquired identifiable finite-lived intangible assets as discussed in Note 3, "Acquisitions and Strategic Investments." The gross carrying amount and accumulated amortization within other intangible assets—net in the condensed consolidated balance sheets at June 30, 2018, and December 31, 2017, differs from the value originally recorded at acquisition due to impairment charges recorded in prior years and the effects of currency fluctuations since the purchase date.

Other intangible assets are evaluated for potential impairment whenever events or circumstances indicate that the carrying value may not be recoverable. There were no impairment charges recorded on finite-lived intangible assets for the three and six months ended June 30, 2018 and 2017.

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Amortization expense for other intangible assets was $8.2 million and $14.0 million for the three and six months ended June 30, 2018, respectively, and $4.6 million and $9.1 million for the three and six months ended June 30, 2017, respectively. The estimated future amortization expense related to other intangible assets as of June 30, 2018, was as follows:

	Amortization Expense
Remainder of 2018	$ 19.5
2019	32.0
2020	26.6
2021	21.6
2022	19.8
2023 and thereafter	9.0
Total	$ 128.5

Note 6. Inventories

The components of inventories at June 30, 2018, and December 31, 2017, were as follows:

	June 30, 2018	December 31, 2017
Raw materials and manufacturing supplies	$ 170.6	$ 128.7
Work in process	49.8	43.6
Finished goods	70.3	74.2
Total	$ 290.7	$ 246.5

Note 7. Property, Plant and Equipment

The components of property, plant and equipment at June 30, 2018, and December 31, 2017, were as follows:

	June 30, 2018	December 31, 2017
Land	$ 116.5	$ 122.5
Buildings	909.3	924.5
Machinery and equipment	3,587.2	3,617.1
Other[1]	197.7	197.5
Construction in progress	53.5	33.0
Property, plant and equipment—gross	$ 4,864.2	$ 4,894.6
Less: accumulated depreciation	(3,557.4)	(3,517.0)
Property, plant and equipment—net	$ 1,306.8	$ 1,377.6

(1) Other consists of computer equipment, vehicles, furniture and fixtures, leasehold improvements and communication-related equipment.

The Company recorded impairment charges of $3.6 million and $11.5 million for the three and six months ended June 30, 2018, respectively, and $0.3 million and $0.7 million for the three and six months ended June 30, 2017,

respectively, to reduce the carrying amounts of certain property, plant and equipment no longer utilized in production to fair value (see Note 4, "Restructuring, Impairment and Transaction-Related Charges," for further discussion on impairment charges).

The Company recognized depreciation expense of $50.1 million and $100.5 million for the three and six months ended June 30, 2018, respectively, and $53.9 million and $108.1 million for the three and six months ended June 30, 2017, respectively.

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Assets Held for Sale

The Company considered certain closed facilities for held for sale classification on the condensed consolidated balance sheets. The net book value of assets held for sale was $8.7 million as of June 30, 2018, and there were no assets held for sale as of December 31, 2017. These assets were carried at the lesser of original cost or fair value, less the estimated costs to sell. The fair values were determined by the Company to be Level 3 under the fair value hierarchy (see Note 11, "Financial Instruments and Fair Value Measurements," for the definition of Level 3 inputs) and were estimated based on internal discounted cash flow estimates, quoted market prices when available and independent appraisals as appropriate. Assets held for sale were included in prepaid expenses and other current assets in the condensed consolidated balance sheets.

Note 8. Commitments and Contingencies

Litigation

The Company is named as a defendant in various lawsuits in which claims are asserted against the Company in the normal course of business. The liabilities, if any, which ultimately result from such lawsuits are not expected by management to have a material impact on the condensed consolidated financial statements of the Company.

In April 2016, the Company self-reported to the SEC and the Department of Justice ("DOJ") certain Foreign Corrupt Practices Act ("FCPA") issues, and a resulting internal investigation, related to its operations managed from Peru. These operations had approximate annual sales ranging from $95.0 million to $135.0 million from the date that the Company acquired those operations in July 2010 until the date the issues were discovered. The self-reported issues were identified by the Company's financial internal controls. The Company, under the oversight of its Audit Committee and Board of Directors, proactively initiated an investigation into this matter with the assistance of external legal counsel and external forensic accountants. Additional compliance issues arising out of the Peru subsidiary have been identified during the course of the investigation and are known to the SEC and DOJ. During the course of its internal investigation, the Company has also identified, and self-reported to the DOJ and SEC, transactions raising similar issues involving certain sales made in its Quad/Tech China operations. For the period 2011 through 2015, the approximate annual sales of these China operations ranged from $2.0 million to $3.0 million. During the course of its internal investigation, the Company has also identified and informed the Office of Foreign Assets Control ("OFAC"), the DOJ and SEC, of certain transactions involving Cuba, and continues to investigate the propriety of such transactions under United States trade sanctions. In connection with this investigation, the Company has made, and continues to evaluate, certain enhancements to its compliance program. The Company is fully cooperating with the OFAC, the SEC and the DOJ. At this time, the Company does not anticipate any material adverse effect on its business or financial condition as a result of this matter.

Environmental Reserves

The Company is subject to various laws, regulations and government policies relating to health and safety, to the generation, storage, transportation, and disposal of hazardous substances, and to environmental protection in general. The Company provides for expenses associated with environmental remediation obligations when such amounts are

probable and can be reasonably estimated. Such reserves are adjusted as new information develops or as circumstances change. The environmental reserves are not discounted. The Company believes it is in compliance with such laws, regulations and government policies in all material respects. Furthermore, the Company does not anticipate that maintaining compliance with such environmental statutes will have a material impact upon the Company's condensed consolidated financial position.

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Note 9. Debt

The components of long-term debt as of June 30, 2018, and December 31, 2017, were as follows:

	June 30, 2018	December 31, 2017
Master note and security agreement	$105.3	$ 123.6
Term loan A—$375.0 million due January 2021	281.3	281.3
Term loan B—$300.0 million due April 2021	279.3	279.1
Revolving credit facility—$725.0 million due January 2021	107.7	—
Senior unsecured notes—$300.0 million due May 2022	243.5	243.5
International term loan—$20.8 million	12.4	14.9
International revolving credit facility—$16.0 million	6.4	9.8
Equipment term loans	2.2	2.4
Other	0.8	1.2
Debt issuance costs	(8.8)	(10.3)
Total debt	$1,030.1	$ 945.5
Less: short-term debt and current portion of long-term debt	(36.9)	(42.0)
Long-term debt	$993.2	$ 903.5

Fair Value of Debt

Based upon the interest rates available to the Company for borrowings with similar terms and maturities, the fair value of the Company's total debt was approximately $1.0 billion at June 30, 2018, and at December 31, 2017. The fair value determination of the Company's total debt was categorized as Level 2 in the fair value hierarchy (see Note 11, "Financial Instruments and Fair Value Measurements," for the definition of Level 2 inputs).

2017 Senior Secured Credit Facility Amendment

The Company completed the second amendment to the Company's April 28, 2014 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 amendment resulted in a loss on debt extinguishment of $2.6 million during the six months ended June 30, 2017.

The revolving credit facility was lowered to a maximum borrowing amount of $725.0 million with a term of just under four years, maturing on January 4, 2021. The Term Loan A was lowered to an aggregate amount of $375.0 million with a term of just under four years, maturing on January 4, 2021, subject to certain required amortization. Borrowings under the revolving credit facility and Term Loan A loans made under the Senior Secured Credit Facility bear interest at 1.75% in excess of reserve adjusted London Interbank Offered Rate ("LIBOR"), or 0.75% in excess of an alternate base rate. This amendment to the Senior Secured Credit Facility does not have an impact on the quarterly financial covenant requirements the Company is subject to.

The Senior Secured Credit Facility remains 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.

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Debt Issuance Costs

Activity impacting the Company's debt issuance costs for the six months ended June 30, 2018, was as follows:

	Capitalized Debt Issuance Costs
Balance at December 31, 2017	$ 10.3
Amortization of debt issuance costs	(1.5)
Balance at June 30, 2018	$ 8.8

2017 Loss on Debt Extinguishment

The Company incurred $4.7 million in debt issuance costs in conjunction with the second amendment to the Company's Senior Secured Credit Facility. In accordance with the accounting guidance for the treatment of debt issuance costs in a debt extinguishment, of the $4.7 million in new debt issuance costs, $3.2 million was classified as a reduction of long-term debt in the condensed consolidated balance sheets and $1.5 million was expensed and was classified as loss on debt extinguishment in the condensed consolidated statements of operations during the six months ended June 30, 2017.

The loss on debt extinguishment recorded during the six months ended June 30, 2017, was comprised of the following:

	Loss on Debt Extinguishment
Debt issuance costs from April 28, 2014 debt financing arrangement	$ 1.1
Debt issuance costs from February 10, 2017 debt financing arrangement	1.5
Total	$ 2.6

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 June 30, 2018:

- 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 June 30, 2018, the Company's total leverage ratio was 2.27 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 June 30, 2018, the Company's senior secured leverage ratio was 1.75 to 1.00).

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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 June 30, 2018, the Company's minimum interest coverage ratio was 6.87 to 1.00).

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The indenture underlying the Company's $300.0 million aggregate principal amount of unsecured 7.0% senior notes due May 1, 2022, (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.

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.

- 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.

Note 10. Income Taxes

The Company records income tax (benefit) expense on an interim basis. The estimated annual effective income tax rate is adjusted quarterly, and items discrete to a specific quarter are reflected in income tax (benefit) expense for that interim period. For 2018, the estimated annual effective income tax rate incorporates the relevant provisions of the Tax Cuts and Jobs Act of 2017 (the "Tax Act"), including, but not limited to, the 21% United States federal corporate rate.

The effective income tax rate for the interim period can differ from the statutory tax rate, as it reflects discrete items, such as changes in the liability for unrecognized tax benefits related to the establishment and settlement of income tax exposures and benefits related to share-based compensation. During the six months ended June 30, 2018, the Company recorded an income tax benefit of $6.6 million from a decrease in the liability for unrecognized tax benefits.

The Company's liability for unrecognized tax benefits as of June 30, 2018, was $17.6 million. The Company anticipates a $4.0 million decrease to its liability for unrecognized tax benefits within the next twelve months due to the resolution of income tax audits or statute expirations.

The SEC staff issued Staff Accounting Bulletin No. 118 ("SAB 118"), which provides guidance on accounting for the tax effects of the Tax Act. SAB 118 provides a measurement period that should not extend beyond one year from the

Tax Act enactment date of December 22, 2017, for companies to complete the accounting for the enactment of the Tax Act under Accounting Standards Codification 740 ("ASC 740").

The Company was able to reasonably estimate certain effects of the Tax Act as of December 31, 2017, and has not changed the preliminary estimates as of June 30, 2018. The Company was unable to reasonably estimate effects of the Tax Act related to the global intangible low taxed income ("GILTI") and related impact on valuation allowances as of December 31, 2017. Because of the complexity of the new GILTI tax rules, the Company continues to evaluate this provision of the Tax Act and the application of ASC 740 and did not record a provisional adjustment during the six months ended June 30, 2018.

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Note 11. Financial Instruments and Fair Value Measurements

Certain assets and liabilities are required to be recorded at fair value on a recurring basis, while other assets and liabilities are recorded at fair value on a nonrecurring basis, generally as a result of acquisitions or impairment charges. Fair value is determined based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. GAAP also classifies the inputs used to measure fair value into the following hierarchy:

Level 1: Quoted prices in active markets for identical assets or liabilities.

Level 2: Quoted prices in active markets for similar assets or liabilities, quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs other than quoted prices that are observable for the asset or liability.

Level 3: Unobservable inputs for the asset or liability. There were no Level 3 recurring measurements of assets or liabilities as of June 30, 2018.

Interest Rate Swap

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 LIBOR to a fixed rate of 3.64% (including a 1.75% spread on underlying debt at June 30, 2018). The variable interest rate resets monthly and the swap is a five year arrangement, maturing on February 28, 2022.

The Company classifies the interest rate swap as Level 2 because the inputs into the valuation model are observable or can be derived or corroborated utilizing observable market data at commonly quoted intervals. The interest rate swap was highly effective as of June 30, 2018; therefore, the increase in fair value of $1.4 million and $5.1 million during the three and six months ended June 30, 2018, respectively; and the decrease in fair value of $1.1 million and $0.7 million during the three and six months ended June 30, 2017, respectively, is shown as a change in other comprehensive income (loss) in the condensed consolidated statements of comprehensive income (loss). No amount of ineffectiveness has been recorded into earnings related to this cash flow hedge. The fair value of the interest rate swap was an asset of $7.2 million as of June 30, 2018, and an asset of $2.1 million as of December 31, 2017, and was recorded in prepaid expenses and other current assets in the condensed consolidated balance sheets.

The net payment of interest under the terms of the interest rate swap totaled an expense of $0.2 million during the six months ended June 30, 2018, and an expense of $0.6 million and $0.8 million during the three and six months ended June 30, 2017, respectively. There was no interest paid under the terms of the interest rate swap during the three months ended June 30, 2018. The payments have been recognized as an adjustment to interest expense in the condensed consolidated statements of operations.

Foreign Exchange Contracts

The Company has operations in countries that have transactions outside their functional currencies and periodically enters into foreign exchange contracts. These contracts are used to hedge the net exposures of changes in foreign currency exchange rates and are designated as either cash flow hedges or fair value hedges. Gains or losses on net foreign currency hedges are intended to offset losses or gains on the underlying net exposures in an effort to reduce the earnings volatility resulting from fluctuating foreign currency exchange rates. There were no open foreign currency exchange contracts as of June 30, 2018.

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Natural Gas Forward Contracts

The Company periodically enters into natural gas forward purchase contracts to hedge against increases in commodity costs. The Company's commodity contracts qualified for the exception related to normal purchases and sales during the three and six months ended June 30, 2018 and 2017, as the Company takes delivery in the normal course of business.

Debt

The Company measures fair value on its debt instruments using interest rates available to the Company for borrowings with similar terms and maturities and is categorized as Level 2. See Note 9, “Debt,” for the fair value of the Company’s debt as of June 30, 2018.

Nonrecurring Fair Value Measurements

In addition to assets and liabilities that are recorded at fair value on a recurring basis, the Company is required to record certain assets and liabilities at fair value on a nonrecurring basis, generally as a result of acquisitions or the remeasurement of assets resulting in impairment charges. See Note 3, "Acquisitions and Strategic Investments," for further discussion on acquisitions. See Note 4, "Restructuring, Impairment and Transaction-Related Charges" and Note 7, "Property, Plant and Equipment" for further discussion on impairment charges recorded as a result of the remeasurement of certain long-lived assets.

Other Estimated Fair Value Measurements

The Company records the fair value of its forward contracts and pension plan assets on a recurring basis. The fair value of cash and cash equivalents, receivables, inventories, accounts payable and accrued liabilities approximate their carrying values as of June 30, 2018, and December 31, 2017.

Note 12. Accrued Liabilities and Other Long-Term Liabilities

The components of accrued and other long-term liabilities as of June 30, 2018, and December 31, 2017, were as follows:

	June 30, 2018			December 31, 2017		
	Accrued Liabilities	Other Long-Term Liabilities	Total	Accrued Liabilities	Other Long-Term Liabilities	Total
Employee-related liabilities [1]	$120.2	$ 62.7	$182.9	$152.1	$ 67.4	$219.5
Single employer pension plan obligations	1.7	72.3	74.0	1.7	82.4	84.1
Multiemployer pension plans – withdrawal liability	6.9	15.9	22.8	8.8	19.4	28.2
Tax-related liabilities	23.7	11.6	35.3	29.0	18.2	47.2
Restructuring liabilities	14.5	3.7	18.2	24.6	4.2	28.8
Interest and rent liabilities	6.3	2.5	8.8	6.7	1.9	8.6
Other	98.8	37.0	135.8	93.8	31.5	125.3

Total	$272.1	$ 205.7	$477.8	$316.7	$ 225.0	$541.7

(1) Employee-related liabilities consist primarily of payroll, bonus, vacation, health and workers' compensation.

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Note 13. Employee Retirement Plans

Defined Contribution Plans

The Quad/Graphics Employee Stock Ownership Plan ("ESOP") holds profit sharing contributions of Company stock, which are made at the discretion of the Company's Board of Directors. The Company made a non-cash contribution of 1,006,061 shares of Company class A common stock at a stock price of $22.18 per share for a total value of $22.3 million to the ESOP during the six months ended June 30, 2018. There were no profit sharing contributions during the three months ended June 30, 2018, or during the three and six months ended June 30, 2017.

Pension Plans

The Company assumed various funded and unfunded frozen pension plans for a portion of its full-time employees in the United States as part of the acquisition of World Color Press Inc. ("World Color Press") in 2010. Benefits are generally based upon years of service and compensation. These plans are funded in conformity with the applicable government regulations. The Company funds at least the minimum amount required for all qualified plans using actuarial cost methods and assumptions acceptable under government regulations.

The components of net pension income for the three and six months ended June 30, 2018 and 2017, were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Interest cost	$(4.0)	$(4.3)	$(8.0)	$(8.6)
Expected return on plan assets	7.1	6.9	14.2	13.8
Net pension income	$3.1	$2.6	$6.2	$5.2

The Company made $0.5 million in benefit payments to its non-qualified defined benefit pension plans and made $3.4 million in contributions to its qualified defined benefit pension plans during the six months ended June 30, 2018.

Multiemployer Pension Plans ("MEPPs")

The Company has withdrawn from all significant multiemployer pension plans and replaced these union sponsored "promise to pay in the future" defined benefit plans with a Company sponsored "pay as you go" defined contribution plan. The two MEPPs, the Graphic Communications International Union – Employer Retirement Fund ("GCIU") and the Graphic Communications Conference of the International Brotherhood of Teamsters National Pension Fund ("GCC"), are significantly underfunded, and require the Company to pay a withdrawal liability to fund its pro rata share of the underfunding as of the plan year the full withdrawal was completed. As a result of the decision to withdraw, the Company accrued the estimated withdrawal liability based on information provided by each plan's trustee.

The Company has received a notice of withdrawal and demand for payment letter from the GCIU, which is in excess of the reserve established by the Company for the GCIU withdrawal. 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. During April 2017, a Federal district court overturned the arbitration decision in one of the pending disputes in this matter. The Company has appealed the district court's ruling to the Ninth Circuit.

During the fourth quarter of 2016, the Company and the GCC reached a settlement agreement for all claims, with scheduled payments until February 2024.

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The Company made payments totaling $7.3 million and $9.4 million for the six months ended June 30, 2018 and 2017, respectively. The payments are required by the Employee Retirement Income Security Act, although such payments to the GCIU do not waive the Company's rights to object to the withdrawal liabilities submitted by the GCIU plan administrator. The Company has reserved $22.8 million as its estimate of the total MEPPs withdrawal liability as of June 30, 2018, of which $15.9 million was recorded in other long-term liabilities and $6.9 million was recorded in accrued liabilities in the condensed consolidated balance sheets. The withdrawal liability reserved by the Company is within the range of the Company's estimated potential outcomes. This estimate may increase or decrease depending on the final conclusion of the litigation with the GCIU trustees.

Note 14. Earnings Per Share Attributable to Quad/Graphics Common Shareholders

Basic earnings per share attributable to Quad/Graphics common shareholders is computed as net earnings attributable to Quad/Graphics common shareholders divided by the basic weighted average common shares outstanding. The calculation of diluted earnings per share attributable to Quad/Graphics common shareholders includes the effect of any dilutive equity incentive instruments. The Company uses the treasury stock method to calculate the effect of outstanding dilutive equity incentive instruments, which requires the Company to compute total proceeds as the sum of the amount the employee must pay upon exercise of the award and the amount of unearned stock-based compensation costs attributable to future services.

Equity incentive instruments for which the total employee proceeds from exercise exceed the average fair value of the same equity incentive instrument over the period have an anti-dilutive effect on earnings per share during periods with net earnings, and accordingly, the Company excludes them from the calculation. Anti-dilutive equity instruments excluded from the computation of diluted net earnings per share were 0.3 million and 0.6 million class A common shares for the three and six months ended June 30, 2018, respectively, and 0.7 million and 0.8 million class A common shares for the three and six months ended June 30, 2017, respectively.

Reconciliations of the numerator and the denominator of the basic and diluted per share computations for the Company's common stock, for the three and six months ended June 30, 2018 and 2017, are summarized as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Numerator				
Net earnings attributable to Quad/Graphics common shareholders	$9.4	$6.7	$5.9	$32.1
Denominator				
Basic weighted average number of common shares outstanding for all classes of common shares	50.8	49.5	50.5	49.3
Plus: effect of dilutive equity incentive instruments	1.7	2.2	1.8	2.3
Diluted weighted average number of common shares outstanding for all classes of common shares	52.5	51.7	52.3	51.6

Earnings per share attributable to Quad/Graphics common shareholders				
Basic	$0.19	$0.14	$0.12	$0.65
Diluted	$0.18	$0.13	$0.11	$0.62
Cash dividends paid per common share for all classes of common shares	$0.30	$0.30	$0.60	$0.60

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Note 15. Equity Incentive Programs

The shareholders of the Company approved the Quad/Graphics, Inc. 2010 Omnibus Incentive Plan ("Omnibus Plan") for two complementary purposes: (1) to attract and retain outstanding individuals to serve as directors, officers and employees; and (2) to increase shareholder value. The Omnibus Plan provides for an aggregate 10,871,652 shares of class A common stock reserved for issuance under the Omnibus Plan. Awards under the Omnibus Plan may consist of incentive awards, stock options, stock appreciation rights, performance shares, performance share units, shares of class A common stock, restricted stock, restricted stock units, deferred stock units or other stock-based awards as determined by the Company's Board of Directors. Each stock option granted has an exercise price of no less than 100% of the fair market value of the class A common stock on the date of grant. As of June 30, 2018, there were 1,585,002 shares available for issuance under the Omnibus Plan. Authorized unissued shares or treasury shares may be used for issuance under the Company's equity incentive programs. The Company plans to either use treasury shares of its class A common stock or issue shares of class A common stock to meet the stock requirements of its awards in the future.

The Company recognizes compensation expense based on estimated grant date fair values for all share-based awards issued to employees and non-employee directors, including stock options, performance shares, performance share units, restricted stock, restricted stock units and deferred stock units. The Company recognizes these compensation costs for only those awards expected to vest, on a straight-line basis over the requisite three to four year service period of the awards, except deferred stock units, which are fully vested and expensed on the grant date. The Company estimated the number of awards expected to vest based, in part, on historical forfeiture rates and also based on management's expectations of employee turnover within the specific employee groups receiving each type of award. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods, if actual forfeitures differ from those estimates.

Equity Incentive Compensation Expense

The total compensation expense recognized related to all equity incentive programs was $3.7 million and $9.1 million for the three and six months ended June 30, 2018, respectively, and $3.7 million and $9.7 million for the three and six months ended June 30, 2017, respectively, and was recorded primarily in selling, general and administrative expenses in the condensed consolidated statements of operations. Total future compensation expense related to all equity incentive programs granted as of June 30, 2018, was estimated to be $22.3 million, which consists entirely of expense for restricted stock ("RS") and restricted stock unit ("RSU") awards. Estimated future compensation expense is $6.5 million for the remainder of 2018, $9.9 million for 2019, $5.2 million for 2020 and $0.7 million for 2021.

Stock Options

Options vest over four years, with no vesting in the first year and one-third vesting upon the second, third and fourth anniversary dates. As defined in the individual grant agreements, acceleration of vesting may occur under a change in control, death, disability or normal retirement of the grantee. Options expire no later than the tenth anniversary of the grant date, 24 months after termination for death, 36 months after termination for normal retirement or disability and 90 days after termination of employment for any other reason. Options are not credited with dividend declarations, except for the November 18, 2011 grants. Stock options are only to be granted to employees.

There were no stock options granted, and no compensation expense was recognized related to stock options for the three and six months ended June 30, 2018 and 2017. There is no future compensation expense for stock options as of June 30, 2018.

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The following table is a summary of the stock option activity for the six months ended June 30, 2018:

	Shares Under Option	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (millions)
Outstanding at December 31, 2017	1,532,033	$ 23.60	2.3	$ 6.8
Granted	—	—		
Exercised	(271,859)	14.78		
Canceled/forfeited/expired	(330,986)	30.38		
Outstanding and exercisable at June 30, 2018	929,188	$ 23.77	2.3	$ 3.6

The intrinsic value of options outstanding and exercisable at June 30, 2018, and December 31, 2017, was based on the fair value of the stock price. All outstanding options are vested as of June 30, 2018.

The following table is a summary of the stock option exercise activity for the three and six months ended June 30, 2018 and 2017:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Total intrinsic value of stock options exercised	$ —	$ 1.0	$ 3.6	$ 1.7
Proceeds from stock options exercised	—	1.1	4.0	2.4

Restricted Stock and Restricted Stock Units

Restricted stock and restricted stock unit awards consist of shares or the rights to shares of the Company's class A common stock which are awarded to employees of the Company. The awards are restricted such that they are subject to substantial risk of forfeiture and to restrictions on their sale or other transfer by the employee. RSU awards are typically granted to eligible employees outside of the United States. As defined in the individual grant agreements, acceleration of vesting may occur under a change in control, death, disability or normal retirement of the grantee. Grantees receiving RS grants are able to exercise full voting rights and receive full credit for dividends during the vesting period. All such dividends will be paid to the RS grantee within 45 days of full vesting. Grantees receiving RSUs are not entitled to vote, but do earn dividends. Upon vesting, RSUs will be settled either through cash payment equal to the fair market value of the RSUs on the vesting date or through issuance of the Company's class A common stock.

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The following table is a summary of RS and RSU award activity for the six months ended June 30, 2018:

	Restricted Stock			Restricted Stock Units		
	Shares	Weighted-Average Grant Date Fair Value Per Share	Weighted-Average Remaining Contractual Term (years)	Units	Weighted-Average Grant Date Fair Value Per Share	Weighted-Average Remaining Contractual Term (years)
Nonvested at December 31, 2017	2,470,158	$ 16.95	1.2	114,942	$ 16.68	1.3
Granted	663,986	22.56		18,586	22.60	
Vested	(635,399)	21.44		(19,510)	23.11	
Forfeited	(136,123)	16.50		—	—	
Nonvested at June 30, 2018	2,362,622	$ 17.35	1.5	114,018	$ 16.55	1.3

In general, RS and RSU awards will vest on the third anniversary of the grant date, provided the holder of the share is continuously employed by the Company until the vesting date. Compensation expense recognized for RS and RSU awards was $3.7 million and $8.2 million for the three and six months ended June 30, 2018, respectively, and $3.7 million and $8.8 million for the three and six months ended June 30, 2017, respectively.

Deferred Stock Units

Deferred stock units ("DSU") are awards of rights to shares of the Company's class A common stock and are awarded to non-employee directors of the Company. The following table is a summary of DSU award activity for the six months ended June 30, 2018:

	Deferred Stock Units	
	Units	Weighted-Average Grant Date Fair Value Per Share
Outstanding at December 31, 2017	195,913	$ 18.18
Granted	39,360	22.60
Dividend equivalents granted	5,932	22.55
Settled	(12,587)	10.56
Outstanding at June 30, 2018	228,618	$ 19.47

Each DSU award entitles the grantee to receive one share of class A common stock upon the earlier of the separation date of the grantee or the second anniversary of the grant date, but could be subject to acceleration for a change in control, death or disability as defined in the individual DSU grant agreement. Grantees of DSU awards may not exercise voting rights, but are credited with dividend equivalents, and those dividend equivalents will be converted into additional DSU awards based on the closing price of the class A common stock. No compensation expense was recognized for DSU awards during the three months ended June 30, 2018 and 2017. There was $0.9 million of compensation expense recognized for DSU awards during the six months ended June 30, 2018 and 2017. As DSU awards are fully vested on the grant date, all compensation expense was recognized at the date of grant.

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Note 16. Shareholders' Equity

The Company has three classes of common stock as follows (share data in millions):

		Issued Common Stock		
	Authorized Shares	Outstanding	Treasury	Total Issued Shares
Class A stock ($0.025 par value)	80.0			
June 30, 2018		38.2	2.1	40.3
December 31, 2017		38.2	1.8	40.0
Class B stock ($0.025 par value)	80.0			
June 30, 2018		13.5	—	13.5
December 31, 2017		13.8	—	13.8
Class C stock ($0.025 par value)	20.0			
June 30, 2018		—	0.5	0.5
December 31, 2017		—	0.5	0.5

In accordance with the Articles of Incorporation, each class A common share has one vote per share and each class B and class C common share has ten votes per share on all matters voted upon by the Company's shareholders. Liquidation rights are the same for all three classes of common stock.

The Company also has 0.5 million shares of $0.01 par value preferred stock authorized, of which none were issued at June 30, 2018, and December 31, 2017. The Company has no present plans to issue any preferred stock.

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 common stock. During the three and six months ended June 30, 2018, the Company repurchased 1,871,631 shares of its class A common stock at a weighted average price of $19.59 per share for a total purchase price of $36.7 million. As of June 30, 2018, there were $42.5 million of authorized repurchases remaining under the program.

On July 30, 2018, the Company's Board of Directors discontinued the remainder of the September 6, 2011 share repurchase program and authorized a new share repurchase program of up to $100.0 million of the Company's outstanding class A common stock.

On February 16, 2018, the Company's Board of Directors authorized the issuance of 1,006,061 shares of Company class A common stock from treasury to the Company's ESOP, at a stock price of $22.18 per share for a total value of $22.3 million.

In March 2018, 284,845 shares of class B common stock were converted to class A common stock, and the class B common shares were canceled and returned to the status of authorized but unissued shares.

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In accordance with the Articles of Incorporation, dividends are paid equally for all three classes of common shares. The dividend activity related to the then outstanding shares for the six months ended June 30, 2018 and 2017, was as follows:

	Declaration Date	Record Date	Payment Date	Dividend Amount per Share
2018				
Q2 Dividend	May 1, 2018	May 21, 2018	June 8, 2018	$ 0.30
Q1 Dividend	February 21, 2018	March 19, 2018	March 30, 2018	0.30
2017				
Q2 Dividend	May 1, 2017	May 22, 2017	June 2, 2017	$ 0.30
Q1 Dividend	February 17, 2017	February 27, 2017	March 10, 2017	0.30

Activity impacting the Company's shareholders' equity and noncontrolling interests for the six months ended June 30, 2018, was as follows:

	Quad/Graphics' Shareholders' Equity	Noncontrolling Interests	Total Shareholders' Equity and Noncontrolling Interests
Balance at December 31, 2017	$ 522.4	$ —	$ 522.4
Net earnings	5.9	0.1	6.0
Consolidation of Rise	—	18.4	18.4
Accumulated deficit transition adjustment for adoption of Topic 606 (see Note 2)	3.2	—	3.2
Translation adjustments	(10.0)	—	(10.0)
Interest rate swap adjustments, net of tax	3.9	—	3.9
Cash dividends declared	(31.8)	—	(31.8)
Stock-based compensation	9.1	—	9.1
Employee stock ownership plan contribution	22.3	—	22.3
Purchases of treasury stock	(36.7)	—	(36.7)
Stock options exercised	4.0	—	4.0
Equity awards redeemed to pay employees' tax obligations	(7.5)	—	(7.5)
Balance at June 30, 2018	$ 484.8	$ 18.5	$ 503.3

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Note 17. Accumulated Other Comprehensive Loss

The changes in accumulated other comprehensive loss by component, net of tax, for the six months ended June 30, 2018, were as follows:

	Translation Adjustments	Interest Rate Swap Adjustments	Pension Benefit Plan Adjustments	Total
Balance at December 31, 2017	$ (115.9)	$ 1.3	$ (9.8)	$(124.4)
Other comprehensive income (loss) before reclassifications	(10.0)	3.9	—	(6.1)
Amounts reclassified from accumulated other comprehensive loss to net earnings	—	—	—	—
Net other comprehensive income (loss)	(10.0)	3.9	—	(6.1)
Amounts reclassified from accumulated other comprehensive loss to accumulated deficit [1]	(1.1)	0.3	(2.1)	(2.9)
Balance at June 30, 2018	$ (127.0)	$ 5.5	$ (11.9)	$(133.4)

[1] Includes adjustments for the adoption of Accounting Standards Update 2018-02 "Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income".

The changes in accumulated other comprehensive loss by component, net of tax, for the six months ended June 30, 2017, were as follows:

	Translation Adjustments	Interest Rate Swap Adjustments	Pension Benefit Plan Adjustments	Total
Balance at December 31, 2016	$ (130.8)	$ —	$ (21.8)	$(152.6)
Other comprehensive income (loss) before reclassifications	11.4	(0.4)	—	11.0
Amounts reclassified from accumulated other comprehensive loss to net earnings	—	—	—	—
Net other comprehensive income (loss)	11.4	(0.4)	—	11.0
Balance at June 30, 2017	$ (119.4)	$ (0.4)	$ (21.8)	$(141.6)

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Note 18. Segment Information

The Company 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.

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. Unrestricted subsidiaries as defined in the Company's Senior Unsecured Notes indenture represent less than 2.0% of total consolidated assets as of June 30, 2018, and less than 2.0% of total consolidated net sales for the three and six months ended June 30, 2018.

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.

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The following is a summary of segment information for the three and six months ended June 30, 2018 and 2017:

	Net Sales			Restructuring, Impairment and Transaction-Related Charges
	Products	Services	Operating Income (Loss)	
Three months ended June 30, 2018				
United States Print and Related Services	$711.8	$ 207.7	$ 33.3	$ 8.1
International	91.6	4.4	1.6	2.0
Total operating segments	803.4	212.1	34.9	10.1
Corporate	—	—	(14.0)	0.3
Total	$803.4	$ 212.1	$ 20.9	$ 10.4
Three months ended June 30, 2017				
United States Print and Related Services	$733.1	$ 139.2	$ 40.7	$ 2.8
International	86.3	4.6	3.3	1.8
Total operating segments	819.4	143.8	44.0	4.6
Corporate	—	—	(13.9)	0.7
Total	$819.4	$ 143.8	$ 30.1	$ 5.3
Six months ended June 30, 2018				
United States Print and Related Services	$1,418.4	$ 368.9	$ 53.6	$ 28.5
International	186.1	9.6	7.3	3.0
Total operating segments	1,604.5	378.5	60.9	31.5
Corporate	—	—	(32.9)	3.8
Total	$1,604.5	$ 378.5	$ 28.0	$ 35.3
Six months ended June 30, 2017				
United States Print and Related Services	$1,496.2	$ 278.3	$ 103.2	$ 9.9
International	177.5	9.8	8.1	2.8
Total operating segments	1,673.7	288.1	111.3	12.7
Corporate	—	—	(30.2)	1.8
Total	$1,673.7	$ 288.1	$ 81.1	$ 14.5

Restructuring, impairment and transaction-related charges for the three and six months ended June 30, 2018 and 2017, are further described in Note 4, "Restructuring, Impairment and Transaction-Related Charges," and are included in the operating income (loss) results by segment above.

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A reconciliation of operating income to earnings (loss) before income taxes and equity in (earnings) loss of unconsolidated entity as reported in the condensed consolidated statements of operations for the three and six months ended June 30, 2018 and 2017, was as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Operating income	$20.9	$30.1	$28.0	$81.1
Less: interest expense	18.4	17.6	35.7	35.8
Less: net pension income	(3.1)	(2.6)	(6.2)	(5.2)
Less: loss on debt extinguishment	—	—	—	2.6
Earnings (loss) before income taxes and equity in (earnings) loss of unconsolidated entity	$5.6	$15.1	$(1.5)	$47.9

Note 19. Separate Financial Information of Subsidiary Guarantors of Indebtedness

On April 28, 2014, Quad/Graphics completed an offering of the Senior Unsecured Notes (see Note 9, "Debt," for further details on the Senior Unsecured Notes). Each of the Company's Guarantor Subsidiaries fully and unconditionally guarantee or, in the case of future subsidiaries, will guarantee, on a joint and several basis, the Senior Unsecured Notes. 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:

- the designation of any of the Guarantor Subsidiaries as an unrestricted subsidiary;
- 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
- the sale or disposition, including the sale of substantially all the assets, of any of the Guarantor Subsidiaries.

The following condensed consolidating financial information reflects the summarized financial information of Quad/Graphics, the Company's Guarantor Subsidiaries on a combined basis and the Company's non-guarantor subsidiaries on a combined basis.

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Condensed Consolidating Statement of Operations
For the Three Months Ended June 30, 2018

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Net sales	$ 400.1	$ 602.3	$ 115.2	$ (102.1)	$1,015.5
Cost of sales	308.9	527.8	89.5	(99.5)	826.7
Selling, general and administrative expenses	65.0	24.7	12.1	(2.6)	99.2
Depreciation and amortization	25.1	27.2	6.0	—	58.3
Restructuring, impairment and transaction-related charges	(8.7)	17.2	1.9	—	10.4
Total operating expenses	390.3	596.9	109.5	(102.1)	994.6
Operating income (loss)	$ 9.8	$ 5.4	$ 5.7	$ —	$20.9
Interest expense (income)	15.7	0.8	1.9	—	18.4
Net pension income	—	(3.1)	—	—	(3.1)
Earnings (loss) before income taxes and equity in (earnings) loss of consolidated and unconsolidated entities	(5.9)	7.7	3.8	—	5.6
Income tax expense (benefit)	(1.4)	(2.2)	(0.1)	—	(3.7)
Earnings (loss) before equity in (earnings) loss of consolidated and unconsolidated entities	(4.5)	9.9	3.9	—	9.3
Equity in (earnings) loss of consolidated entities	(13.9)	(1.4)	—	15.3	—
Equity in (earnings) loss of unconsolidated entity	—	—	(0.2)	—	(0.2)
Net earnings (loss)	$ 9.4	$ 11.3	$ 4.1	$ (15.3)	$9.5
Net (earnings) loss attributable to noncontrolling interests	—	—	(0.1)	—	(0.1)
Net earnings (loss) attributable to Quad/Graphics common shareholders	$ 9.4	$ 11.3	$ 4.0	$ (15.3)	$9.4

Condensed Consolidating Statement of Comprehensive Income (Loss)
For the Three Months Ended June 30, 2018

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Net earnings (loss)	$ 9.4	$ 11.3	$ 4.1	$ (15.3)	$9.5
Other comprehensive income (loss), net of tax	(14.6)	(2.4)	(13.3)	15.7	(14.6)
Total comprehensive income (loss)	$ (5.2)	$ 8.9	$ (9.2)	$ 0.4	$(5.1)
Less: comprehensive (income) loss attributable to noncontrolling interests	—	—	(0.1)	—	(0.1)
Comprehensive income (loss) attributable to Quad/Graphics common shareholders	$ (5.2)	$ 8.9	$ (9.3)	$ 0.4	$(5.2)

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QUAD/GRAPHICS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018
(In millions, except share and per share data and unless otherwise indicated)

Condensed Consolidating Statement of Operations
For the Three Months Ended June 30, 2017

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Net sales	$ 385.2	$ 562.2	$ 101.2	$ (85.4)	$ 963.2
Cost of sales	284.0	484.3	80.3	(83.6)	765.0
Selling, general and administrative expenses	64.6	32.3	9.2	(1.8)	104.3
Depreciation and amortization	27.4	25.7	5.4	—	58.5
Restructuring, impairment and transaction-related charges	6.5	(3.1)	1.9	—	5.3
Total operating expenses	382.5	539.2	96.8	(85.4)	933.1
Operating income (loss)	$ 2.7	$ 23.0	$ 4.4	$ —	$ 30.1
Interest expense (income)	17.2	(0.6)	1.0	—	17.6
Net pension income	—	(2.6)	—	—	(2.6)
Earnings (loss) before income taxes and equity in (earnings) loss of consolidated and unconsolidated entities	(14.5)	26.2	3.4	—	15.1
Income tax expense (benefit)	(3.9)	6.4	5.8	—	8.3
Earnings (loss) before equity in (earnings) loss of consolidated and unconsolidated entities	(10.6)	19.8	(2.4)	—	6.8
Equity in (earnings) loss of consolidated entities	(17.3)	(0.7)	—	18.0	—
Equity in (earnings) loss of unconsolidated entity	—	—	0.1	—	0.1
Net earnings (loss)	$ 6.7	$ 20.5	$ (2.5)	$ (18.0)	$ 6.7
Net (earnings) loss attributable to noncontrolling interests	—	—	—	—	—
Net earnings (loss) attributable to Quad/Graphics common shareholders	$ 6.7	$ 20.5	$ (2.5)	$ (18.0)	$ 6.7

Condensed Consolidating Statement of Comprehensive Income (Loss)
For the Three Months Ended June 30, 2017

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Net earnings (loss)	$ 6.7	$ 20.5	$ (2.5)	$ (18.0)	$ 6.7
Other comprehensive income (loss), net of tax	2.9	(0.6)	3.5	(2.9)	2.9
Total comprehensive income (loss)	$ 9.6	$ 19.9	$ 1.0	$ (20.9)	$ 9.6
Less: comprehensive (income) loss attributable to noncontrolling interests	—	—	—	—	—
Comprehensive income (loss) attributable to Quad/Graphics common shareholders	$ 9.6	$ 19.9	$ 1.0	$ (20.9)	$ 9.6

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QUAD/GRAPHICS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018
(In millions, except share and per share data and unless otherwise indicated)

Condensed Consolidating Statement of Operations
For the Six Months Ended June 30, 2018

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Net sales	$ 810.8	$ 1,148.7	$ 226.9	$ (203.4)	$ 1,983.0
Cost of sales	640.4	1,000.1	177.0	(198.4)	1,619.1
Selling, general and administrative expenses	118.8	49.8	22.5	(5.0)	186.1
Depreciation and amortization	50.2	52.5	11.8	—	114.5
Restructuring, impairment and transaction-related charges	9.3	23.3	2.7	—	35.3
Total operating expenses	818.7	1,125.7	214.0	(203.4)	1,955.0
Operating income (loss)	$ (7.9)	$ 23.0	$ 12.9	$ —	$ 28.0
Interest expense (income)	31.4	1.7	2.6	—	35.7
Net pension income	—	(6.2)	—	—	(6.2)
Earnings (loss) before income taxes and equity in (earnings) loss of consolidated and unconsolidated entities	(39.3)	27.5	10.3	—	(1.5)
Income tax expense (benefit)	(9.9)	2.2	0.7	—	(7.0)
Earnings (loss) before equity in (earnings) loss of consolidated and unconsolidated entities	(29.4)	25.3	9.6	—	5.5
Equity in (earnings) loss of consolidated entities	(35.3)	(2.9)	—	38.2	—
Equity in (earnings) loss of unconsolidated entity	—	—	(0.5)	—	(0.5)
Net earnings (loss)	5.9	28.2	10.1	(38.2)	6.0
Net (earnings) loss attributable to noncontrolling interests	—	—	(0.1)	—	(0.1)
Net earnings (loss) attributable to Quad/Graphics common shareholders	$ 5.9	$ 28.2	$ 10.0	$ (38.2)	$ 5.9

Condensed Consolidating Statement of Comprehensive Income (Loss)
For the Six Months Ended June 30, 2018

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Net earnings (loss)	$ 5.9	$ 28.2	$ 10.1	$ (38.2)	$ 6.0
Other comprehensive income (loss), net of tax	(6.1)	(2.9)	(9.4)	12.3	(6.1)
Total comprehensive income (loss)	(0.2)	25.3	0.7	(25.9)	(0.1)
Less: comprehensive (income) loss attributable to noncontrolling interests	—	—	(0.1)	—	(0.1)
Comprehensive income (loss) attributable to Quad/Graphics common shareholders	$ (0.2)	$ 25.3	$ 0.6	$ (25.9)	$ (0.2)

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QUAD/GRAPHICS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018
(In millions, except share and per share data and unless otherwise indicated)

Condensed Consolidating Statement of Operations
For the Six Months Ended June 30, 2017

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Net sales	$ 807.5	$ 1,125.6	$ 202.6	$ (173.9)	$ 1,961.8
Cost of sales	587.1	967.9	162.0	(170.9)	1,546.1
Selling, general and administrative expenses	124.8	64.0	17.1	(3.0)	202.9
Depreciation and amortization	54.9	51.6	10.7	—	117.2
Restructuring, impairment and transaction-related charges	17.9	(6.1)	2.7	—	14.5
Total operating expenses	784.7	1,077.4	192.5	(173.9)	1,880.7
Operating income (loss)	$ 22.8	$ 48.2	$ 10.1	$ —	$ 81.1
Interest expense (income)	34.5	(0.6)	1.9	—	35.8
Net pension income	—	(5.2)	—	—	(5.2)
Loss (gain) on debt extinguishment	2.6	—	—	—	2.6
Earnings (loss) before income taxes and equity in (earnings) loss of consolidated and unconsolidated entities	(14.3)	54.0	8.2	—	47.9
Income tax expense (benefit)	(6.7)	20.2	1.5	—	15.0
Earnings (loss) before equity in (earnings) loss of consolidated and unconsolidated entities	(7.6)	33.8	6.7	—	32.9
Equity in (earnings) loss of consolidated entities	(39.7)	(1.2)	—	40.9	—
Equity in (earnings) loss of unconsolidated entity	—	—	0.8	—	0.8
Net earnings (loss)	32.1	35.0	5.9	(40.9)	32.1
Net (earnings) loss attributable to noncontrolling interests	—	—	—	—	—
Net earnings (loss) attributable to Quad/Graphics common shareholders	$ 32.1	$ 35.0	$ 5.9	$ (40.9)	$ 32.1

Condensed Consolidating Statement of Comprehensive Income (Loss)
For the Six Months Ended June 30, 2017

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Net earnings (loss)	$ 32.1	$ 35.0	$ 5.9	$ (40.9)	$ 32.1
Other comprehensive income (loss), net of tax	11.0	(0.2)	10.9	(10.7)	11.0
Total comprehensive income (loss)	43.1	34.8	16.8	(51.6)	43.1
Less: comprehensive (income) loss attributable to noncontrolling interests	—	—	—	—	—
Comprehensive income (loss) attributable to Quad/Graphics common shareholders	$ 43.1	$ 34.8	$ 16.8	$ (51.6)	$ 43.1

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QUAD/GRAPHICS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018
(In millions, except share and per share data and unless otherwise indicated)

Condensed Consolidating Balance Sheet
As of June 30, 2018

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
ASSETS					
Cash and cash equivalents	$ 1.7	$ 0.7	$ 6.5	$ —	$8.9
Receivables, less allowances for doubtful accounts	353.9	70.5	86.0	—	510.4
Intercompany receivables	—	67.6	4.8	(72.4)	—
Inventories	112.6	137.2	40.9	—	290.7
Other current assets	43.7	14.7	9.7	—	68.1
Total current assets	511.9	290.7	147.9	(72.4)	878.1
Property, plant and equipment—net	684.0	468.4	154.4	—	1,306.8
Investment in consolidated entities	756.2	15.0	—	(771.2)	—
Goodwill and intangible assets—net	4.3	123.5	56.8	—	184.6
Intercompany loan receivable	107.6	—	—	(107.6)	—
Other long-term assets	41.8	10.4	48.2	—	100.4
Total assets	$ 2,105.8	$ 908.0	$ 407.3	$ (951.2)	$2,469.9
LIABILITIES AND SHAREHOLDERS' EQUITY					
Accounts payable	$ 213.1	$ 114.9	$ 68.1	$ —	$396.1
Intercompany accounts payable	72.4	—	—	(72.4)	—
Short-term debt and current portion of long-term debt and capital lease obligations	30.0	0.9	11.4	—	42.3
Other current liabilities	161.8	75.0	35.3	—	272.1
Total current liabilities	477.3	190.8	114.8	(72.4)	710.5
Long-term debt and capital lease obligations	994.5	2.1	8.9	—	1,005.5
Intercompany loan payable	—	41.4	66.2	(107.6)	—
Other long-term liabilities	130.7	109.0	10.9	—	250.6
Total liabilities	1,602.5	343.3	200.8	(180.0)	1,966.6
Total shareholders' equity and noncontrolling interests	503.3	564.7	206.5	(771.2)	503.3
Total liabilities and shareholders' equity	$ 2,105.8	$ 908.0	$ 407.3	$ (951.2)	$2,469.9

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QUAD/GRAPHICS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018
(In millions, except share and per share data and unless otherwise indicated)

Condensed Consolidating Balance Sheet
As of December 31, 2017

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
ASSETS					
Cash and cash equivalents	$ 51.7	$ 2.0	$ 10.7	$ —	$64.4
Receivables, less allowances for doubtful accounts	427.9	40.6	84.0	—	552.5
Intercompany receivables	—	85.3	—	(85.3)	—
Inventories	97.0	108.6	40.9	—	246.5
Other current assets	35.2	2.6	7.3	—	45.1
Total current assets	611.8	239.1	142.9	(85.3)	908.5
Property, plant and equipment—net	706.5	508.6	162.5	—	1,377.6
Investment in consolidated entities	578.3	12.1	—	(590.4)	—
Goodwill and intangible assets—net	6.9	25.5	11.0	—	43.4
Intercompany loan receivable	106.3	—	1.7	(108.0)	—
Other long-term assets	60.5	13.5	48.9	—	122.9
Total assets	$ 2,070.3	$ 798.8	$ 367.0	$ (783.7)	$2,452.4
LIABILITIES AND SHAREHOLDERS' EQUITY					
Accounts payable	$ 201.6	$ 115.9	$ 64.1	$ —	$381.6
Intercompany accounts payable	75.1	—	10.2	(85.3)	—
Short-term debt and current portion of long-term debt and capital lease obligations	31.9	1.0	14.7	—	47.6
Other current liabilities	213.9	74.9	27.9	—	316.7
Total current liabilities	522.5	191.8	116.9	(85.3)	745.9
Long-term debt and capital lease obligations	904.3	1.4	11.5	—	917.2
Intercompany loan payable	—	40.9	67.1	(108.0)	—
Other long-term liabilities	121.1	133.4	12.4	—	266.9
Total liabilities	1,547.9	367.5	207.9	(193.3)	1,930.0
Total shareholders' equity and noncontrolling interests	522.4	431.3	159.1	(590.4)	522.4
Total liabilities and shareholders' equity	$ 2,070.3	$ 798.8	$ 367.0	$ (783.7)	$2,452.4

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QUAD/GRAPHICS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018
(In millions, except share and per share data and unless otherwise indicated)

Condensed Consolidating Statement of Cash Flows
For the Six Months Ended June 30, 2018

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
OPERATING ACTIVITIES					
Net cash from (used in) operating activities	$ 45.2	$ (15.7)	$ 11.0	$ —	$40.5
INVESTING ACTIVITIES					
Purchases of property, plant and equipment	(22.2)	(23.9)	(7.7)	—	(53.8)
Acquisition related investing activities	—	(76.3)	4.9	—	(71.4)
Intercompany investing activities	(135.7)	4.6	(0.4)	131.5	—
Other investing activities	14.6	4.7	4.1	—	23.4
Net cash from (used in) investing activities	(143.3)	(90.9)	0.9	131.5	(101.8)
FINANCING ACTIVITIES					
Payments of long-term debt and capital lease obligations	(21.2)	(0.7)	(3.0)	—	(24.9)
Borrowings on revolving credit facilities	886.3	—	10.3	—	896.6
Payments on revolving credit facilities	(778.6)	—	(13.3)	—	(791.9)
Purchases of treasury stock	(36.7)	—	—	—	(36.7)
Payment of cash dividends	(32.2)	—	—	—	(32.2)
Intercompany financing activities	34.0	106.0	(8.5)	(131.5)	—
Other financing activities	(3.5)	—	—	—	(3.5)
Net cash from (used in) financing activities	48.1	105.3	(14.5)	(131.5)	7.4
Effect of exchange rates on cash and cash equivalents	—	—	(1.6)	—	(1.6)
Net increase (decrease) in cash and cash equivalents	(50.0)	(1.3)	(4.2)	—	(55.5)
Cash and cash equivalents at beginning of period	51.7	2.0	10.7	—	64.4
Cash and cash equivalents at end of period	$ 1.7	$ 0.7	$ 6.5	$ —	$8.9

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QUAD/GRAPHICS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018
(In millions, except share and per share data and unless otherwise indicated)

Condensed Consolidating Statement of Cash Flows
For the Six Months Ended June 30, 2017

	Quad/Graphics, Inc.	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
OPERATING ACTIVITIES					
Net cash from (used in) operating activities	$ 68.8	$ 31.8	$ 11.6	$ —	$ 112.2
INVESTING ACTIVITIES					
Purchases of property, plant and equipment	(11.4)	(27.2)	(4.2)	—	(42.8)
Intercompany investing activities	(6.7)	(31.4)	0.9	37.2	—
Other investing activities	(5.0)	25.5	1.3	—	21.8
Net cash from (used in) investing activities	(23.1)	(33.1)	(2.0)	37.2	(21.0)
FINANCING ACTIVITIES					
Proceeds from issuance of long-term debt	375.0	—	—	—	375.0
Payments of long-term debt and capital lease obligations	(409.8)	(1.6)	(2.0)	—	(413.4)
Borrowings on revolving credit facilities	266.9	—	3.7	—	270.6
Payments on revolving credit facilities	(279.4)	—	(8.0)	—	(287.4)
Payment of cash dividends	(31.7)	—	—	—	(31.7)
Intercompany financing activities	41.9	0.1	(4.8)	(37.2)	—
Other financing activities	(8.2)	(4.1)	—	—	(12.3)
Net cash from (used in) financing activities	(45.3)	(5.6)	(11.1)	(37.2)	(99.2)
Effect of exchange rates on cash and cash equivalents	—	(0.2)	(0.3)	—	(0.5)
Net increase (decrease) in cash and cash equivalents	0.4	(7.1)	(1.8)	—	(8.5)
Cash and cash equivalents at beginning of period	0.3	12.1	6.8	—	19.2
Cash and cash equivalents at end of period	$ 0.7	$ 5.0	$ 5.0	$ —	$ 10.7

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QUAD/GRAPHICS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
FOR THE THREE AND SIX MONTHS ENDED JUNE 30, 2018
(In millions, except share and per share data and unless otherwise indicated)

Note 20. New Accounting Pronouncements

In June 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update 2016-13 "Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments" ("ASU 2016-13"), which changes the impairment model for most financial assets and certain other instruments. Under the new guidance, entities will be required to measure expected credit losses for financial instruments, including trade receivables, based on historical experience, current conditions and reasonable forecasts. This guidance is effective for interim and annual periods beginning after December 15, 2019, with early adoption permitted for interim and annual periods beginning after December 15, 2018. This new guidance will require a modified retrospective transition approach, where the entity will need to apply a cumulative-effect adjustment to retained earnings (accumulated deficit) as of the beginning of the first reporting period in which the guidance is adopted. The Company is evaluating the impact of the adoption of ASU 2016-13 on the condensed consolidated financial statements.

In February 2016, the FASB issued Accounting Standards Update 2016-02 "Leases (Topic 842)" ("ASU 2016-02"), which establishes a right-of-use model requiring a lessee to record a right-of-use asset and a lease liability on the balance sheet for all leases with terms longer than twelve months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition. The guidance also requires additional disclosures to enable users of financial statements to understand the amount, timing and uncertainty of cash flows arising from leases. This guidance is effective for interim and annual periods beginning after December 15, 2018, with early adoption permitted. The Company plans to adopt the standard in the first quarter of 2019. This new guidance will require a modified retrospective transition approach for all leases existing at, or entered into after, the date of initial application, with an option to elect to use certain transition relief. The modified retrospective transition approach would require the application of the new accounting model for the earliest year presented in the financial statements. The FASB issued Accounting Standards Update 2018-11 in July 2018, with targeted improvements to ASU 2016-02 that would allow a prospective transition approach in which only the current year financial statements would need to be reported under the new accounting model.

The Company has established a cross-functional implementation team to evaluate the impact of ASU 2016-02 on the consolidated financial statements. The Company has completed its initial scoping review and is in process of implementing a system that will assist in meeting the standard's reporting and disclosure requirements. The Company is also in the process of implementing changes to its processes and internal controls. The Company continues to assess all potential impacts of the standard.

Note 21. Subsequent Events

Declaration of Quarterly Dividend

On July 31, 2018, the Company declared a quarterly dividend of $0.30 per share, which will be paid on September 7, 2018, to shareholders of record as of August 20, 2018.

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ITEM 2. 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 (1) the Quad/Graphics condensed consolidated financial statements for the three and six months ended June 30, 2018 and 2017, including the notes thereto, included in Item 1, "Condensed Consolidated Financial Statements (Unaudited)," of this Quarterly Report on Form 10-Q; and (2) the audited consolidated annual financial statements as of and for the year ended December 31, 2017, and notes thereto included in the Company's Annual Report on Form 10-K, filed with the SEC on February 21, 2018.

Management's discussion and analysis of financial condition and results of operations is provided as a supplement to the Company's condensed 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:

- Cautionary Statement Regarding Forward-Looking Statements.

- 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 three months ended June 30, 2018, to the three months ended June 30, 2017; and (2) the six months ended June 30, 2018, to the six months ended June 30, 2017. The comparability of the Company's results of operations between periods was impacted by the 2018 acquisition of Ivie and the 2018 additional investment in and consolidation of Rise. The results of operations of the acquisition of Ivie and the investment in Rise are included in the Company's condensed 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 GAAP ("non-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 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.

- New Accounting Pronouncements.

Cautionary Statement Regarding Forward-Looking Statements

To the extent any statements in this Quarterly Report on Form 10-Q 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 the Company, 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 the Company's 2017 Annual Report on Form 10-K, filed with the SEC on February 21, 2018, as such may be amended or supplemented in Part II, "Other Information," Item 1A, "Risk Factors," of the Company's subsequently filed Quarterly Reports on Form 10-Q (including this report), and the following:

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- The impact of decreasing demand for printed materials and significant overcapacity in the highly competitive commercial printing industry creates downward pricing pressures and potential underutilization 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 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 Quarterly Report on Form 10-Q. 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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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.

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 Our 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 the Company's current evolution, 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.

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. The Company's goal is to remain the high-quality, low-cost producer across the continuum, from traditional print to multichannel execution.

- 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.

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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 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.

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.

Segments

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

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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% and 90% of the Company's consolidated net sales during the three and six months ended June 30, 2018, 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% and 10% of the Company's consolidated net sales during the three and six months ended June 30, 2018, respectively.

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.

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 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.

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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 United States 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, offers 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.

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 continues to remain disciplined with its debt leverage. The Company's consolidated debt and capital leases increased by $83 million during the six months ended June 30, 2018, primarily to fund the acquisition of Ivie and additional investment in Rise. Since the Company completed the World Color Press acquisition in July 2010, the Company has reduced debt and capital leases by $692 million and has reduced the obligations for pension, postretirement and MEPPs by $465 million, for a total obligation reduction since July of 2010 of over $1.1 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

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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 42 plant closures and a reduction in headcount by approximately 12,600 employees through June 30, 2018. The Company intends to continue to reduce costs, as evidenced by the fourth quarter of 2017 announcements of four plant closures that have already ceased operations, and the announcement of an additional plant closure in the first quarter of 2018 that ceased operations in the second quarter of 2018.

The United States Department of Commerce and the International Trade Commission ("ITC") are in the process of conducting an investigation into determining if manufacturers of uncoated groundwood paper based in the United States 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 that the Canadian paper manufacturers are improperly exporting less expensive paper into the United States.

The United States Department of Commerce has issued a "preliminary" decision on the countervailing duty and the anti-dumping duty, including a "post-preliminary" determination of the countervailing duty in June 2018. That preliminary decision has recommended a combined tariff ranging from 0% to as much as 35%, depending on the company (each company is assessed a duty specific to their own unique circumstances which results in varying duty amounts). Suppliers for uncoated groundwood paper have announced and have already begun to add these duties to the price of their products. While these tariffs are currently only "preliminary," if they are ultimately approved by the ITC, they are retroactive to the date of the preliminary decision, which results in immediate price increases to cover the duty. The ITC is currently conducting its own investigation, which will include public hearings and testimony. The ITC has announced its intention to complete its investigation (including public comments) by August 22, 2018. A final determination date has not been announced. However, it is expected that a decision could come from the ITC in September 2018.

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 are only 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, producers based in the United States have to import a substantial portion of their uncoated groundwood paper needs. The end result is producers based in the United States 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 United States paper mills. This could lead to a significant drop in demand for products printed on uncoated groundwood paper in the United States.

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 United States Postal Service ("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 Postal Regulatory Commission ("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. An additional round of comments was due March 30, 2018. The Company provided comments in both rounds. 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. On April 12, 2018, an executive order was issued for a presidential task force to review the United States postal system with a provided time frame of 120 days. The Company has had meetings and correspondence with the presidential task force during this time. Other initiatives, such as postal reform legislation and PRC response, have been temporarily delayed, pending the outcome of this review.

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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.

When making capital investment decisions, management undertakes a thorough process aimed at driving the strongest contribution to long-term profitability, whether those are property, plant and equipment additions; organic growth opportunities; or acquisitions. Some recent examples of the Company's acquisition activities are as follows:

- The Company completed the acquisition of Ivie on February 21, 2018, for a net purchase price of $92 million, excluding acquired cash. Ivie is headquartered in Flower Mound, Texas and provides a full array of marketing services, including creative and production services, studio services, sourcing, procurement, staff enhancement, media services, public relations, digital, technology solutions and project management for many leading brands throughout the world.

- The Company increased its equity position in Rise from 19% to 57% on March 14, 2018, for $9 million cash paid and the conversion of previously provided loans to equity ownership. Rise is a digital marketing agency headquartered in Chicago, Illinois, that specializes in media, analytics and customer experience, and helps enterprise marketers see, shape, and act on opportunities in digital media.

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 Three Months Ended June 30, 2018, Compared to the Three Months Ended June 30, 2017

Summary Results

The Company's operating income, operating margin, net earnings attributable to Quad/Graphics common shareholders and diluted earnings per share attributable to Quad/Graphics common shareholders for the three months ended June 30, 2018, changed from the three months ended June 30, 2017, as follows (dollars in millions, except margin and per share data). Net earnings attributable to Quad/Graphics common shareholders is computed using a 25% normalized tax rate as adjusted for the Tax Act that was enacted in 2017 for all items subject to tax for the three months ended June 30, 2018, and is computed using a 40% normalized tax rate for all items subject to tax for the three months ended June 30, 2017, which is the normalized rate used by the Company prior to the enactment of the Tax Act:

	Operating Income	Operating Margin	Net Earnings Attributable to Quad/Graphics Common Shareholders	Diluted Earnings Per Share Attributable to Quad/Graphics Common Shareholders
For the Three Months Ended June 30, 2017	$ 30.1	3.1 %	$ 6.7	$ 0.13
2018 restructuring, impairment and transaction-related charges [1]	(10.4)	(1.0)%	(7.8)	(0.15)
2017 restructuring, impairment and transaction-related charges [2]	5.3	0.6 %	3.2	0.06
Interest expense [3]	N/A	N/A	(3.2)	(0.05)
Net pension income [4]	N/A	N/A	0.7	0.01
Income taxes [5]	N/A	N/A	7.3	0.14
Investments in unconsolidated entity and noncontrolling interests, net of tax [6]	N/A	N/A	0.2	—
Operating income [7]	(4.1)	(0.6)%	2.3	0.04
For the Three Months Ended June 30, 2018	$ 20.9	2.1 %	$ 9.4	$ 0.18

(1) Restructuring, impairment and transaction-related charges of $10.4 million ($7.8 million, net of tax) incurred during the three months ended June 30, 2018, included the following:

a. $2.5 million of employee termination charges related to workforce reductions through facility consolidations and separation programs;

b. $3.6 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations;

c. $0.1 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.

$4.1 million of various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges.

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 $5.3 million ($3.2 million, net of tax) incurred during the three months ended June 30, 2017, included the following:

a. $3.0 million of employee termination charges related to workforce reductions through facility consolidations and separation programs;

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b. $0.3 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations;

c. $0.4 million of transaction-related charges, consisting of professional service fees for business acquisition and divestiture activities;

d. $1.6 million of various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges, net of a $3.4 million gain from the sale of the Atglen, Pennsylvania; Dickson, Tennessee; and Lenexa, Kansas plants.

(3) Interest expense increased $0.8 million ($3.2 million, net of tax impact due to the change in the normalized tax rate) during the three months ended June 30, 2018, to $18.4 million. This change was due to a higher weighted average interest rate on borrowings in the second quarter of 2018 as compared to the second quarter of 2017.

(4) Net pension income increased $0.5 million ($0.7 million, net of tax impact due to the change in the normalized tax rate) during the three months ended June 30, 2018, to $3.1 million. This change was due to a $0.3 million decrease from interest cost on pension plan liabilities and a $0.2 million increase from the expected return on pension plan assets.

(5) The $7.3 million increase in income tax benefit as calculated in the following table is primarily due to a $4.9 million increased tax benefit from a decrease in the Company's liability for unrecognized tax benefits and a $3.1 million increased tax benefit from foreign receivables, partially offset by a $0.6 million decreased tax benefit from equity award activity:

	Three Months Ended June 30,		
	2018	2017	$ Change
Earnings before income taxes and equity in loss of unconsolidated entity	$5.6	$15.1	$ (9.5)
Normalized tax rate in 2017	40.0%	40.0%	
Income tax (benefit) expense at normalized tax rate in 2017	2.2	6.1	(3.9)
Impact of change in normalized tax rate to 25% in 2018	(0.8)	—	(0.8)
Income tax (benefit) expense at normalized tax rate of 25% in 2018 and 40% in 2017	1.4	6.1	(4.7)
Income tax (benefit) expense from the condensed consolidated statements of operations	(3.7)	8.3	(12.0)
Impact of income taxes	$5.1	$(2.2)	$ 7.3

(6) The increase in net earnings attributable to investments in unconsolidated entity and noncontrolling interests, net of tax, of $0.2 million during the three months ended June 30, 2018, was related to a $0.3 million increase in earnings at the Company's investment in Plural Industria Gráfica Ltda. ("Plural"), the Company's Brazilian joint venture, partially offset by $0.1 million of noncontrolling interests in the Company's condensed consolidated statements of operations related to the Company's 57% ownership of Rise.

(7) Operating income, excluding restructuring, impairment and transaction-related charges, decreased $4.1 million (increased $2.3 million, net of tax impact due to the change in the normalized tax rate) primarily due to lower print volume and pricing due to ongoing industry pressures and a $3.9 million net benefit in 2017 in gain from insurance claims, partially offset by savings from cost reduction initiatives, earnings from the Ivie acquisition and the investment in Rise and a $0.2 million decrease in depreciation and amortization expense.

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Operating Results

The following table sets forth certain information from the Company's condensed 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:

	Three Months Ended June 30,					
	2018		2017			
	(dollars in millions)					
	Amount	% of Sales	Amount	% of Sales	$ Change	% Change
Net sales:						
Products	$803.4	79.1 %	$819.4	85.1 %	$ (16.0)	(2.0)%
Services	212.1	20.9 %	143.8	14.9 %	68.3	47.5 %
Total net sales	1,015.5	100.0%	963.2	100.0%	52.3	5.4 %
Cost of sales:						
Products	664.4	65.4 %	663.4	68.9 %	1.0	0.2 %
Services	162.3	15.9 %	101.6	10.5 %	60.7	59.7 %
Total cost of sales	826.7	81.3 %	765.0	79.4 %	61.7	8.1 %
Selling, general & administrative expenses	99.2	9.8 %	104.3	10.8 %	(5.1)	(4.9)%
Depreciation and amortization	58.3	5.7 %	58.5	6.1 %	(0.2)	(0.3)%
Restructuring, impairment and transaction-related charges	10.4	1.0 %	5.3	0.6 %	5.1	96.2 %
Total operating expenses	994.6	97.8 %	933.1	96.9 %	61.5	6.6 %
Operating income	$20.9	2.1 %	$30.1	3.1 %	$ (9.2)	(30.6)%

Net Sales

Product sales decreased $16.0 million, or 2.0%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to a $29.7 million decrease in sales in the Company's print product lines due to ongoing industry volume and pricing pressures and $1.9 million in unfavorable foreign exchange impacts, partially offset by a $15.6 million increase in pass-through paper sales.

Service sales, which primarily consist of logistics, distribution, marketing services, imaging and medical services, increased $68.3 million, or 47.5%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to a $59.9 million increase in net sales from the Ivie acquisition and investment in Rise and a $10.9 million increase in logistics sales, partially offset by a $2.5 million decrease in sales of imaging services.

Cost of Sales

Cost of product sales increased $1.0 million for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to an increase in paper costs, partially offset by lower print and paper volume and cost reduction initiatives.

Cost of product sales as a percentage of total net sales decreased to 65.4% for the three months ended June 30, 2018, compared to 68.9% for the three months ended June 30, 2017, primarily due to the reasons provided above.

Cost of service sales increased $60.7 million, or 59.7%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to the Ivie acquisition and investment in Rise and increased logistics freight costs.

Cost of service sales as a percentage of total net sales increased to 15.9% for the three months ended June 30, 2018, compared to 10.5% for the three months ended June 30, 2017, primarily due to the reasons provided above.

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Selling, General and Administrative Expenses

Selling, general and administrative expenses decreased $5.1 million, or 4.9%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to an $8.2 million decrease in employee-related expenses and savings from other cost reduction initiatives, partially offset by a $3.9 million net benefit in 2017 in gain from insurance claims. Selling, general and administrative expenses as a percentage of net sales decreased to 9.8% for the three months ended June 30, 2018, compared to 10.8% for the three months ended June 30, 2017, primarily due to the reasons stated above.

Depreciation and Amortization

Depreciation and amortization decreased $0.2 million, or 0.3%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, due to a $3.8 million decrease in depreciation expense, primarily related to property, plant and equipment becoming fully depreciated over the past year, offset by a $3.6 million increase in amortization expense, primarily related to amortization expense for intangible assets acquired through the Ivie acquisition.

Restructuring, Impairment and Transaction-Related Charges

Restructuring, impairment and transaction-related charges increased $5.1 million, or 96.2%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to the following: (1) a $3.3 million increase in impairment charges; (2) a $0.1 million increase in integration costs; and (3) a $2.5 million increase in other restructuring costs. The increase was partially offset by a $0.5 million decrease in employee termination charges and a $0.3 million decrease in transaction-related charges.

Restructuring, impairment and transaction-related charges of $10.4 million incurred in the three months ended June 30, 2018, included the following: (1) $2.5 million of employee termination charges related to workforce reductions through facility consolidations and announced separation programs; (2) $3.6 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations; (3) $0.1 million of transaction-related charges, consisting of professional service fees for business acquisition and divestiture activities; (4) $0.1 million of acquisition-related integration costs, primarily related to the integration of acquired companies; and (5) $4.1 million of other restructuring charges,including costs to maintain and exit closed facilities, as well as lease exit charges.

Restructuring, impairment and transaction-related charges of $5.3 million incurred in the three months ended June 30, 2017, included the following: (1) $3.0 million of employee termination charges related to workforce reductions through facility consolidations and separation programs; (2) $0.3 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations; (3) $0.4 million of transaction-related charges, consisting of professional service fees for business acquisition and divestiture activities; and (4) $1.6 million of various other restructuring charges,including costs to maintain and exit closed facilities, as well as lease exit charges, net of a $3.4 million gain from the sale of the Atglen, Pennsylvania; Dickson, Tennessee; and Lenexa, Kansas plants.

EBITDA and EBITDA Margin—Consolidated

EBITDA and EBITDA margin for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, were as follows:

	Three Months Ended June 30,	
	2018	2017

	Amount	% of Net Sales	Amount	% of Net Sales
	(dollars in millions)			
EBITDA and EBITDA margin	$82.4	8.1 %	$91.1	9.5 %

EBITDA decreased $8.7 million for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to lower print volume and pricing due to ongoing industry pressures, $5.1 million of increased restructuring, impairment and transaction-related charges and a $3.9 million net benefit in 2017 in gain from insurance claims, partially offset by savings from cost reduction initiatives and earnings from the Ivie acquisition and investment in Rise.

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EBITDA is defined as net earnings (loss) attributable to Quad/Graphics common shareholders, 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 non-GAAP financial measures and 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 attributable to Quad/Graphics common shareholders for the three months ended June 30, 2018 and 2017, was as follows:

	Three Months Ended June 30,	
	2018	2017
	(dollars in millions)	
Net earnings attributable to Quad/Graphics common shareholders [1]	$ 9.4	$ 6.7
Interest expense	18.4	17.6
Income tax (benefit) expense	(3.7)	8.3
Depreciation and amortization	58.3	58.5
EBITDA	$ 82.4	$ 91.1

[1] Net earnings attributable to Quad/Graphics common shareholders included the following:

a. Restructuring, impairment and transaction-related charges of $10.4 million and $5.3 million for the three months ended June 30, 2018 and 2017, respectively;

b. Net pension income of $3.1 million and $2.6 million for the three months ended June 30, 2018 and 2017, respectively; and

c. Equity in earnings of unconsolidated entity of $0.2 million and equity in loss of unconsolidated entity of $0.1 million for the three months ended June 30, 2018 and 2017, respectively.

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:

	Three Months Ended June 30,			
	2018	2017		
	(dollars in millions)			
	Amount	Amount	$ Change	% Change
Net sales:				
Products	$711.8	$733.1	$ (21.3)	(2.9)%
Services	207.7	139.2	68.5	49.2 %
Operating income (including restructuring, impairment and transaction-related charges)	33.3	40.7	(7.4)	(18.2)%
Operating margin	3.6 %	4.7 %	N/A	N/A
Restructuring, impairment and transaction-related charges	$8.1	$2.8	$ 5.3	189.3 %

Net Sales

Product sales for the United States Print and Related Services segment decreased $21.3 million, or 2.9%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to a $35.1 million decrease in sales in the Company's print product lines (predominantly due to ongoing industry volume and pricing pressures from excess capacity in the printing industry), partially offset by a $13.8 million increase in pass-through paper sales.

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Service sales for the United States Print and Related Services segment increased $68.5 million, or 49.2%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to a $59.9 million increase in net sales from the Ivie acquisition and investment in Rise and an $11.1 million increase in logistics sales, partially offset by a $2.5 million decrease in sales of imaging services

Operating Income

Operating income for the United States Print and Related Services segment decreased $7.4 million, or 18.2%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to lower print volume and pricing due to ongoing industry pressures, $5.3 million of increased restructuring, impairment and transaction-related charges and a $3.9 million net benefit in 2017 in gain from insurance claims, partially offset by savings from cost reduction initiatives and earnings from the Ivie acquisition and the investment in Rise.

Operating margin for the United States Print and Related Services segment decreased to 3.6% for the three months ended June 30, 2018, from 4.7% for the three months ended June 30, 2017, 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 three months ended June 30, 2018, were $8.1 million, consisting of the following: (1) $1.2 million of employee termination charges related to workforce reductions through facility consolidations and separation programs; (2) $3.6 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations; (3) $0.1 million of acquisition-related integration costs, primarily related to the integration of acquired companies; and (4) $3.2 million of various other restructuring charges to maintain and exit closed facilities.

Restructuring, impairment and transaction-related charges for the United States Print and Related Services segment for the three months ended June 30, 2017, were $2.8 million, consisting of the following: (1) $1.6 million of employee termination charges related to workforce reductions through facility consolidations and separation programs; (2) $0.2 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations; and (3) $1.0 million of various other restructuring charges to maintain and exit closed facilities, net of a $3.4 million gain from the sale of the Atglen, Pennsylvania; Dickson, Tennessee; and Lenexa, Kansas plants.

International

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

	Three Months Ended June 30,			
	2018	2017		
	(dollars in millions)			
	Amount	Amount	$ Change	% Change
Net sales:				
Products	$91.6	$86.3	$ 5.3	6.1 %
Services	4.4	4.6	(0.2)	(4.3)%
Operating income (including restructuring, impairment and transaction-related charges)	1.6	3.3	(1.7)	(51.5)%

Operating margin	1.7	%	3.6	%	N/A		N/A	
Restructuring, impairment and transaction-related charges	$2.0		$1.8		$ 0.2		11.1	%
Equity in (earnings) loss of unconsolidated entity	(0.2	)	0.1		0.3		300.0	%

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Net Sales

Product sales for the International segment increased $5.3 million, or 6.1%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to a $5.4 million increase in volume and pricing, primarily in Mexico and Europe, and a $1.8 million increase in pass-through paper sales, partially offset by $1.9 million in unfavorable foreign exchange impacts, primarily in Argentina.

Service sales for the International segment decreased $0.2 million, or 4.3%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to a decrease in logistics sales in Europe.

Operating Income

Operating income for the International segment decreased $1.7 million, or 51.5%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, due to the following: (1) a $1.1 million decrease in operating income, primarily in Europe; (2) a $0.4 million unfavorable foreign exchange impact; and (3) a $0.2 million increase in restructuring, impairment and transaction-related charges.

Restructuring, Impairment and Transaction-Related Charges

Restructuring, impairment and transaction-related charges for the International segment for the three months ended June 30, 2018, were $2.0 million, consisting of $1.1 million of employee termination charges related to workforce reductions through facility consolidations and separation programs and $0.9 million of various other restructuring charges to maintain and exit closed facilities.

Restructuring, impairment and transaction-related charges for the International segment for the three months ended June 30, 2017, were $1.8 million, consisting of the following: (1) $1.4 million of employee termination charges related to workforce reductions through facility consolidations and separation programs; (2) $0.1 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations; and (3) $0.3 million of various other restructuring charges to maintain and exit closed facilities.

Equity in (Earnings) Loss of Unconsolidated Entity

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 earnings of unconsolidated entity in the International segment increased $0.3 million for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, due to an increase in earnings at 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 three months ended June 30, 2018.

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Corporate

The following table summarizes unallocated operating expenses presented as Corporate:

	Three Months Ended June 30,			
	2018	2017		
	(dollars in millions)			
	Amount	Amount	$ Change	% Change
Operating expenses (including restructuring, impairment and transaction-related charges)	$ 14.0	$ 13.9	$ 0.1	0.7 %
Restructuring, impairment and transaction-related charges	0.3	0.7	(0.4)	(57.1)%

Operating Expenses

Corporate operating expenses increased $0.1 million, or 0.7%, for the three months ended June 30, 2018, compared to the three months ended June 30, 2017, primarily due to a $0.5 million increase in employee-related expenses, partially offset by a $0.4 million decrease in restructuring, impairment and transaction-related charges.

Restructuring, Impairment and Transaction-Related Charges

Corporate restructuring, impairment and transaction-related charges for the three months ended June 30, 2018, were $0.3 million, consisting of $0.2 million of employee termination charges related to workforce reductions through separation programs and $0.1 million of transaction-related charges, consisting of professional service fees for business acquisition and divestiture activities.

Corporate restructuring, impairment and transaction-related charges for the three months ended June 30, 2017, were $0.7 million, including $0.4 million of transaction-related charges, consisting of professional service fees for business acquisition and divestiture activities, and $0.3 million of other restructuring charges.

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Results of Operations for the Six Months Ended June 30, 2018, Compared to the Six Months Ended June 30, 2017

Summary Results

The Company's operating income, operating margin, net earnings attributable to Quad/Graphics common shareholders and diluted earnings per share attributable to Quad/Graphics common shareholders for the six months ended June 30, 2018, changed from the six months ended June 30, 2017, as follows (dollars in millions, except margin and per share data). Net earnings attributable to Quad/Graphics common shareholders is computed using a 25% normalized tax rate as adjusted for the Tax Act that was enacted in 2017 for all items subject to tax for the six months ended June 30, 2018, and is computed using a 40% normalized tax rate for all items subject to tax for the six months ended June 30, 2017, which is the normalized rate used by the Company prior to the enactment of the Tax Act:

	Operating Income	Operating Margin	Net Earnings Attributable to Quad/Graphics Common Shareholders	Diluted Earnings Per Share Attributable to Quad/Graphics Common Shareholders
For the six months ended June 30, 2017	$ 81.1	4.1 %	$ 32.1	$ 0.62
2018 restructuring, impairment and transaction-related charges [1]	(35.3)	(1.8)%	(26.5)	(0.51)
2017 restructuring, impairment and transaction-related charges [2]	14.5	0.7 %	8.7	0.17
Interest expense [3]	N/A	N/A	(5.3)	(0.09)
Net pension income [4]	N/A	N/A	1.5	0.03
2017 loss on debt extinguishment [5]	N/A	N/A	1.6	0.03
Income taxes [6]	N/A	N/A	2.5	0.05
Investments in unconsolidated entity and noncontrolling interests, net of tax [7]	N/A	N/A	1.2	0.03
Operating income [8]	(32.3)	(1.6)%	(9.9)	(0.22)
For the six months ended June 30, 2018	$ 28.0	1.4 %	$ 5.9	$ 0.11

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(1) Restructuring, impairment and transaction-related charges of $35.3 million ($26.5 million, net of tax) incurred during the six months ended June 30, 2018, included the following:

a. $13.1 million of employee termination charges related to workforce reductions through facility consolidations and separation programs;

b. $11.5 million of impairment charges, including $2.4 million of impairment charges for land and building and $9.1 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, as well as other capacity reduction restructuring activities;

c. $0.8 million of transaction-related charges, consisting of professional service fees for business acquisition and divestiture activities;

d. $0.2 million of acquisition-related integration costs; and

e.

$9.7 million of various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges, net of a $2.2 million gain from the sale of the San Ixhuatepec, Mexico facility.

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.

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(2) Restructuring, impairment and transaction-related charges of $14.5 million ($8.7 million, net of tax) incurred during the six months ended June 30, 2017, included the following:

a. $5.9 million of employee termination charges related to workforce reductions through facility consolidations and separation programs;

b. $0.7 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, as well as other capacity reduction restructuring activities;

c. $1.2 million of transaction-related charges consisting of professional service fees for business acquisition and divestiture activities; and

d. $6.7 million of various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges, net of a $7.1 million gain from the sale of the Atglen, Pennsylvania; Dickson, Tennessee; East Greenville, Pennsylvania; Lenexa, Kansas; and Marengo, Iowa plants.

(3) Interest expense decreased $0.1 million (increased $5.3 million, net of tax impact due to the change in the normalized tax rate) during the six months ended June 30, 2018, to $35.7 million. This change was due to lower average debt levels, partially offset by a higher weighted average interest rate on borrowings in the six months ended June 30, 2018, as compared to the six months ended June 30, 2017.

(4) Net pension income increased $1.0 million ($1.5 million, net of tax impact due to the change in the normalized tax rate) during the six months ended June 30, 2018, to $6.2 million. This change was due to a $0.6 million decrease from interest cost on pension plan liabilities and a $0.4 million increase from the expected return on pension plan assets.

(5) A $2.6 million loss on debt extinguishment ($1.6 million, net of tax) was recognized during the six months ended June 30, 2017, from the refinancing of the Senior Secured Credit Facility, completed on February 10, 2017.

(6) The $2.5 million increase in income tax benefit as calculated in the following table is primarily due to a $4.2 million increased tax benefit from a decrease in the Company's liability for unrecognized tax benefits, partially offset by a $1.6 million decreased tax benefit from equity award activity:

	Six Months Ended June 30,		
	2018	2017	$ Change
Earnings (loss) before income taxes and equity in loss of unconsolidated entity	$(1.5)	$47.9	$(49.4)
Normalized tax rate in 2017	40.0 %	40.0 %	
Income tax (benefit) expense at normalized tax rate in 2017	(0.6)	19.1	(19.7)
Impact of change in normalized tax rate to 25% in 2018	0.2	—	0.2
Income tax (benefit) expense at normalized tax rate of 25% in 2018 and 40% in 2017	(0.4)	19.1	(19.5)
Income tax (benefit) expense from the condensed consolidated statements of operations	(7.0)	15.0	(22.0)
Impact of income taxes	$6.6	$4.1	$2.5

(7) The increase in net earnings attributable to investments in unconsolidated entity and noncontrolling interests, net of tax, of $1.2 million during the six months ended June 30, 2018, was related to a $1.3 million increase in earnings at

the Company's investment in Plural, partially offset by $0.1 million of noncontrolling interests in the Company's condensed consolidated statements of operations related to the Company's 57% ownership of Rise.

(8) Operating income, excluding restructuring, impairment and transaction-related charges, decreased $32.3 million ($9.9 million, net of tax impact) during the six months ended June 30, 2018, primarily due to the following: (1) lower print volume and pricing due to ongoing industry pressures; (2) a $22.3 million non-cash expense related to a special employee retirement contribution in 2018 resulting from the benefit of tax reform; and (3) an $11.4 million net benefit in 2017 from changes in employee vacation policies. These decreases were partially offset by the following: (1) a $13.3 million net benefit in 2018 in gain from property insurance claims; (2) savings from cost reduction initiatives, including employee-related costs; and (3) earnings from the Ivie acquisition and investment in Rise.

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Operating Results

The following table sets forth certain information from the Company's condensed 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:

	Six Months Ended June 30,					
	2018		2017			
	(dollars in millions)					
	Amount	% of Sales	Amount	% of Sales	$ Change	% Change
Net sales:						
Products	$1,604.5	80.9 %	$1,673.7	85.3 %	$ (69.2)	(4.1)%
Services	378.5	19.1 %	288.1	14.7 %	90.4	31.4 %
Total net sales	1,983.0	100.0%	1,961.8	100.0%	21.2	1.1 %
Cost of sales:						
Products	1,329.6	67.0 %	1,345.8	68.6 %	(16.2)	(1.2)%
Services	289.5	14.6 %	200.3	10.2 %	89.2	44.5 %
Total cost of sales	1,619.1	81.6 %	1,546.1	78.8 %	73.0	4.7 %
Selling, general & administrative expenses	186.1	9.4 %	202.9	10.4 %	(16.8)	(8.3)%
Depreciation and amortization	114.5	5.8 %	117.2	6.0 %	(2.7)	(2.3)%
Restructuring, impairment and transaction-related charges	35.3	1.8 %	14.5	0.7 %	20.8	143.4 %
Total operating expenses	1,955.0	98.6 %	1,880.7	95.9 %	74.3	4.0 %
Operating income	$28.0	1.4 %	$81.1	4.1 %	$ (53.1)	(65.5)%

Net Sales

Product sales decreased $69.2 million, or 4.1%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to an $83.7 million decrease in sales in the Company's print product lines due to ongoing industry volume and pricing pressures, partially offset by a $14.0 million increase from pass-through paper sales and $0.5 million in favorable foreign exchange impacts.

Service sales, which primarily consist of imaging, logistics, distribution and medical services, increased $90.4 million, or 31.4%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to an $80.2 million increase in net sales from the Ivie acquisition and investment in Rise and a $14.6 million increase in logistics sales, partially offset by a $4.4 million decrease in sales of imaging services.

Cost of Sales

Cost of product sales decreased $16.2 million, or 1.2%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to lower print volume and cost reduction initiatives. These reductions were partially offset by a $14.0 million non-cash expense related to a special employee retirement contribution in 2018, an increase in paper costs and a $1.7 million net benefit in 2017 from changes in employee vacation policies.

Cost of product sales as a percentage of total net sales decreased to 67.0% for the six months ended June 30, 2018, from 68.6% for the six months ended June 30, 2017, primarily due to the reasons provided above.

Cost of service sales increased $89.2 million, or 44.5%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to the Ivie acquisition and investment in Rise, increased logistics freight

costs and a $2.6 million non-cash expense related to a special employee retirement contribution in 2018.

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Cost of service sales as a percentage of total net sales increased to 14.6% for the six months ended June 30, 2018, from 10.2% for the six months ended June 30, 2017, primarily due to the reasons provided above.

Selling, General and Administrative Expenses

Selling, general and administrative expenses decreased $16.8 million, or 8.3%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to a $13.3 million net benefit in 2018 in gain from property insurance claims and savings from cost reduction initiatives, including employee-related costs, partially offset by an $8.5 million benefit in 2017 from a change in the salaried employee vacation policy that did not repeat in 2018 and a $5.7 million non-cash expense related to a special employee retirement contribution in 2018. Selling, general and administrative expenses as a percentage of net sales decreased from 10.4% for the six months ended June 30, 2017, to 9.4% for the six months ended June 30, 2018, primarily due to the reasons stated above.

Depreciation and Amortization

Depreciation and amortization decreased $2.7 million, or 2.3%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, due to a $7.6 million decrease in depreciation expense from property, plant and equipment becoming fully depreciated over the past year, partially offset by a $4.9 million increase in amortization expense primarily related to amortization expense for intangible assets acquired through the Ivie acquisition.

Restructuring, Impairment and Transaction-Related Charges

Restructuring, impairment and transaction-related charges increased $20.8 million, or 143.4%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to the following: (1) a $10.8 million increase in impairment charges; (2) a $7.2 million increase in employee termination charges; (3) a $0.2 million increase in acquisition-related integration costs; and (4) a $3.0 million increase in other restructuring costs. These increases were partially offset by a $0.4 million decrease in transaction-related charges.

Restructuring, impairment and transaction-related charges of $35.3 million incurred in the six months ended June 30, 2018, included the following: (1) $13.1 million of employee termination charges related to workforce reductions through facility consolidations and separation programs; (2) $11.5 million of impairment charges, including $2.4 million of impairment charges for land and building and $9.1 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, as well as other capacity reduction restructuring activities; (3) $0.8 million of transaction-related charges, consisting of professional service fees related to business acquisition and divestiture activities; (4) $0.2 million of acquisition-related integration costs, primarily related to the integration of acquired companies; and (5) $9.7 million of various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges, net of a $2.2 million gain from the sale of the San Ixhuatepec, Mexico facility.

Restructuring, impairment and transaction-related charges of $14.5 million incurred in the six months ended June 30, 2017, included the following: (1) $5.9 million of employee termination charges related to workforce reductions through facility consolidations and separation programs; (2) $0.7 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, as well as other capacity reduction restructuring activities; (3) $1.2 million of transaction-related charges, consisting of professional service fees related to business acquisition and divestiture activities; and (4) $6.7 million of various other restructuring charges, including costs to maintain and exit closed facilities, as well as lease exit charges, net of a $7.1 million gain from the sale of the Atglen, Pennsylvania; Dickson, Tennessee; East Greenville, Pennsylvania; Lenexa, Kansas; and Marengo, Iowa plants.

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EBITDA and EBITDA Margin—Consolidated

EBITDA and EBITDA margin for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, were as follows:

	Six Months Ended June 30,			
	2018		2017	
	Amount	% of Net Sales	Amount	% of Net Sales
	(dollars in millions)			
EBITDA and EBITDA margin	$149.1	7.5 %	$200.1	10.2 %

EBITDA decreased $51.0 million for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to the following: (1) lower print volume and pricing due to ongoing industry pressures; (2) a $22.3 million non-cash expense related to a special employee retirement contribution in 2018; (3) $20.8 million of increased restructuring, impairment and transaction-related charges; and (4) an $11.4 million net benefit in 2017 from changes in employee vacation policies. These impacts were partially offset by the following: (1) a $13.3 million net benefit in 2018 in gain from property insurance claims; (2) savings from cost reduction initiatives, including employee-related costs; and (3) earnings from the Ivie acquisition and investment in Rise.

EBITDA is defined as net earnings (loss) attributable to Quad/Graphics common shareholders, 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 non-GAAP financial measures and 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 attributable to Quad/Graphics common shareholders for the six months ended June 30, 2018 and 2017, was as follows:

	Six Months Ended June 30,	
	2018	2017
	(dollars in millions)	
Net earnings attributable to Quad/Graphics common shareholders [1]	$ 5.9	$ 32.1
Interest expense	35.7	35.8
Income tax (benefit) expense	(7.0)	15.0
Depreciation and amortization	114.5	117.2
EBITDA	$ 149.1	$ 200.1

[1] Net earnings attributable to Quad/Graphics common shareholders included the following:

a. Restructuring, impairment and transaction-related charges of $35.3 million and $14.5 million for the six months ended June 30, 2018 and 2017, respectively;

b. Employee stock ownership plan non-cash expense related to a special employee retirement contribution of $22.3 million for the six months ended June 30, 2018;

c. Net pension income of $6.2 million and $5.2 million for the six months ended June 30, 2018 and 2017, respectively;

d. Loss on debt extinguishment of $2.6 million for the six months ended June 30, 2017; and

e. Equity in earnings of unconsolidated entity of $0.5 million and equity in loss of unconsolidated entity of $0.8 million for the six months ended June 30, 2018 and 2017, respectively.

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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:

	Six Months Ended June 30,			
	2018	2017		
	(dollars in millions)			
	Amount	Amount	$ Change	% Change
Net sales:				
Products	$1,418.4	$1,496.2	$ (77.8)	(5.2)%
Services	368.9	278.3	90.6	32.6 %
Operating income (including restructuring, impairment and transaction-related charges)	53.6	103.2	(49.6)	(48.1)%
Operating margin	3.0 %	5.8 %	N/A	N/A
Restructuring, impairment and transaction-related charges	$28.5	$9.9	$ 18.6	187.9 %

Net Sales

Product sales for the United States Print and Related Services segment decreased $77.8 million, or 5.2%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to an $86.7 million decrease in sales in the Company's print product lines (predominantly due to ongoing volume and pricing pressures from excess capacity in the printing industry), partially offset by an $8.9 million increase in pass-through paper sales.

Service sales for the United States Print and Related Services segment increased $90.6 million, or 32.6%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to an $80.2 million increase in net sales from the Ivie acquisition and the investment in Rise and a $14.8 million increase in logistics sales, partially offset by a $4.4 million decrease in sales of imaging services.

Operating Income

Operating income for the United States Print and Related Services segment decreased $49.6 million, or 48.1%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to the following: (1) lower print volume and pricing due to ongoing industry pressures; (2) a $21.9 million non-cash expense related to a special employee retirement contribution in 2018; (3) a $18.6 million increase in restructuring, impairment and transaction-related charges; and (4) an $11.4 million net benefit in 2017 from changes in employee vacation policies. These impacts were partially offset by the following: (1) a $13.3 million net benefit in 2018 in gain from property insurance claims; (2) savings from cost reduction initiatives, including employee-related costs; and (3) earnings from the Ivie acquisition and the investment in Rise.

Operating margin for the United States Print and Related Services segment decreased to 3.0% for the six months ended June 30, 2018, compared to 5.8% for the six months ended June 30, 2017, 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 six months ended June 30, 2018, were $28.5 million, consisting of the following: (1) $8.2 million of employee

termination charges related to workforce reductions through facility consolidations and separation programs; (2) $9.1 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations, as well as other capacity reduction restructuring activities; (3) $0.2 million of acquisition-related integration costs primarily related to the integration of acquired companies; and (4) $11.0 million of various other restructuring charges to maintain and exit closed facilities.

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Restructuring, impairment and transaction-related charges for the United States Print and Related Services segment for the six months ended June 30, 2017, were $9.9 million, consisting of the following: (1) $3.7 million of employee termination charges related to workforce reductions through facility consolidations and 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, as well as other capacity reduction restructuring activities; and (3) $5.7 million of various other restructuring charges to maintain and exit closed facilities, net of a $7.1 million gain from the sale of the Atglen, Pennsylvania; Dickson, Tennessee; East Greenville, Pennsylvania; Lenexa, Kansas; and Marengo, Iowa plants.

International

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

	Six Months Ended June 30,			
	2018	2017		
	(dollars in millions)			
	Amount	Amount	$ Change	% Change
Net sales:				
Products	$186.1	$177.5	$ 8.6	4.8 %
Services	9.6	9.8	(0.2)	(2.0)%
Operating income (including restructuring, impairment and transaction-related charges)	7.3	8.1	(0.8)	(9.9)%
Operating margin	3.7 %	4.3 %	N/A	N/A
Restructuring, impairment and transaction-related charges	$3.0	$2.8	$ 0.2	7.1 %
Equity in (earnings) loss of unconsolidated entity	(0.5)	0.8	1.3	162.5 %

Net Sales

Product sales for the International segment increased $8.6 million, or 4.8%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to a $5.1 million increase in pass-through paper sales, a $3.0 million increase in volume and pricing, primarily in Mexico, and $0.5 million in favorable foreign exchange impacts.

Service sales for the International segment decreased $0.2 million, or 2.0%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to a decrease in logistics sales in Europe.

Operating Income

Operating income for the International segment decreased $0.8 million, or 9.9%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to the following: (1) a $0.5 million increase in depreciation and amortization expense; (2) a $0.4 million unfavorable impact from foreign currency impacts; and (3) a $0.2 million increase in restructuring, impairment and transaction-related charges. These impacts were partially offset by a $0.3 million increase in operating income, primarily in Mexico.

Restructuring, Impairment and Transaction-Related Charges

Restructuring, impairment and transaction-related charges for the International segment for the six months ended June 30, 2018, were $3.0 million, consisting of the following: (1) $1.8 million of employee termination charges

related to workforce reductions through facility consolidations and separation programs; (2) $2.4 million of impairment charges for land and building; and (3) $1.2 million of various other restructuring income, primarily related to a $2.2 million gain from the sale of the San Ixhuatepec, Mexico facility, partially offset by charges to maintain and exit closed facilities.

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Restructuring, impairment and transaction-related charges for the International segment for the six months ended June 30, 2017, were $2.8 million, consisting of the following: (1) $2.1 million of employee termination charges related to workforce reductions through facility consolidations and separation programs; (2) $0.2 million of impairment charges for machinery and equipment no longer being utilized in production as a result of facility consolidations; and (3) $0.5 million of various other restructuring charges to maintain and exit closed facilities.

Equity in (Earnings) Loss of Unconsolidated Entity

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 earnings of unconsolidated entity in the International segment increased $1.3 million for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, due to an increase in earnings at 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 six months ended June 30, 2018.

Corporate

The following table summarizes unallocated operating expenses presented as Corporate:

	Six Months Ended June 30,			
	2018	2017		
	(dollars in millions)			
	Amount	Amount	$ Change	% Change
Operating expenses (including restructuring, impairment and transaction-related charges)	$ 32.9	$ 30.2	$ 2.7	8.9 %
Restructuring, impairment and transaction-related charges	3.8	1.8	2.0	111.1 %

Operating Expenses

Corporate operating expenses increased $2.7 million, or 8.9%, for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to a $2.0 million increase in restructuring, impairment and transaction-related charges and a $0.4 million non-cash expense related to a special employee retirement contribution in 2018.

Restructuring, Impairment and Transaction-Related Charges

Corporate restructuring, impairment and transaction-related charges for the six months ended June 30, 2018, were $3.8 million, consisting of (1) $3.1 million of employee termination charges related to workforce reductions through separation programs; (2) $0.8 million of transaction-related charges which primarily included professional service fees; and (3) $0.1 million of other restructuring income.

Corporate restructuring, impairment and transaction-related charges for the six months ended June 30, 2017, were $1.8 million, consisting of the following: (1) $0.1 million of employee termination charges related to workforce

reductions through separation programs; (2) $1.2 million of transaction-related charges which primarily included professional service fees; and (3) $0.5 million of other restructuring charges.

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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 June 30, 2018, the Company had cash and cash equivalents of $8.9 million. In addition to cash and cash equivalents, the Company had $585.0 million of unused capacity under its revolving credit arrangement at June 30, 2018, which was net of $32.3 million of issued letters of credit. The Company believes its expected future cash flows from operating activities, $585.0 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. Borrowings under the $725.0 million revolving credit facility were $107.7 million as of June 30, 2018, and peak borrowings were $201.9 million during the three and six months ended June 30, 2018.

Net Cash Provided by Operating Activities

Six Months Ended June 30, 2018, Compared to Six Months Ended June 30, 2017

Net cash provided by operating activities decreased $71.7 million, from $112.2 million for the six months ended June 30, 2017, to $40.5 million for the six months ended June 30, 2018. This decrease was due to a $57.8 million decrease in cash flows from changes in operating assets and liabilities and a $13.9 million decrease in cash from earnings.

Net Cash Used in Investing Activities

Six Months Ended June 30, 2018, Compared to Six Months Ended June 30, 2017

Net cash used in investing activities increased $80.8 million, from $21.0 million for the six months ended June 30, 2017, to $101.8 million for the six months ended June 30, 2018. The increase was primarily due to a $71.4 million increase from the acquisition of businesses, a $12.9 million decrease in proceeds from the sale of property, plant, and equipment and an $11.0 million increase in purchases of property, plant and equipment. These increases were offset by a $9.5 million increase in proceeds from property insurance claims and a $5.0 million decrease in a loan to an unconsolidated entity.

Net Cash Provided by (Used in) Financing Activities

Six Months Ended June 30, 2018, Compared to Six Months Ended June 30, 2017

Net cash provided by financing activities increased $106.6 million, from cash used in financing activities of $99.2 million for the six months ended June 30, 2017, to cash provided by financing activities of $7.4 million for the six months ended June 30, 2018. The increase was primarily due to a $135.0 million increase in net borrowings of debt and lease obligations in 2018 as compared to 2017, a $4.7 million decrease in payments of debt issuance costs and financing fees and a $3.6 million increase in cash provided by other financing activities. The increase was partially offset by a $36.7 million increase in purchases of treasury stock.

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 financial measure and 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.

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Free Cash Flow for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, was as follows:

	Six Months Ended June 30,	
	2018	2017
	(dollars in millions)	
Net cash provided by operating activities	$ 40.5	$ 112.2
Less: purchases of property, plant and equipment	(53.8)	(42.8)
Free Cash Flow	$ (13.3)	$ 69.4

Free Cash Flow decreased $82.7 million for the six months ended June 30, 2018, compared to the six months ended June 30, 2017, primarily due to a $71.7 million decrease in net cash provided by operating activities and an $11.0 million increase in capital expenditures. See the "Net Cash Provided by Operating Activities" section above for further explanations of the change 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) attributable to Quad/Graphics common shareholders to EBITDA in the "Results of Operations" section above); (2) restructuring, impairment and transaction-related charges; (3) net pension income; (4) employee stock ownership plan contribution; (5) loss (gain) on debt extinguishment; and (6) equity in (earnings) loss of unconsolidated entity.

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 the senior secured leverage ratio included in the Company's debt covenant calculations (see Note 9, "Debt," to the condensed consolidated financial statements in Item 1, "Condensed Consolidated Financial Statements (Unaudited)," of this Quarterly Report on Form 10-Q 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 (earnings) 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.

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The Debt Leverage Ratio at June 30, 2018, and December 31, 2017, was as follows:

	June 30, 2018	December 31, 2017
	(dollars in millions)	
Total debt and capital lease obligations on the condensed consolidated balance sheets	$1,047.8	$ 964.8
Divided by:		
Quad/Graphics EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio	$435.4	$ 448.2
Ivie pro forma EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio [1]	12.1	—
EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio	$447.5	$ 448.2
Debt Leverage Ratio	2.34 x	2.15 x

(1) As permitted by the Senior Secured Credit Facility, certain pro forma financial information related to the acquisition of Ivie was included when calculating the Debt Leverage Ratio as of June 30, 2018. As the acquisition of Ivie was completed on February 21, 2018, the $12.1 million pro forma EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio represents the period from July 1, 2017 to February 20, 2018. Pro forma EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio for Ivie was calculated in a consistent manner with the calculation above for Quad/Graphics. Ivie's financial information subsequent to the February 21, 2018 acquisition has been included within the Quad/Graphics EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio as the results of Ivie have been consolidated with Quad/Graphics' financial results since that date. If the eight months of pro forma EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio for Ivie was not included in the calculation, the Company's Debt Leverage Ratio would have been 2.41x as of June 30, 2018.

The calculation of EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio for the trailing twelve months ended June 30, 2018, and December 31, 2017, was as follows:

	Year Ended	Add Six Months Ended	Subtract	Trailing Twelve Months Ended
	December 31, 2017 [1]	June 30, 2018	June 30, 2017	June 30, 2018
Net earnings attributable to Quad/Graphics common shareholders	$ 107.2	$5.9	$32.1	$81.0
Interest expense	71.1	35.7	35.8	71.0
Income tax (benefit) expense	(16.0)	(7.0)	15.0	(38.0)
Depreciation and amortization	232.5	114.5	117.2	229.8
EBITDA	$ 394.8	$149.1	$200.1	$343.8
Restructuring, impairment and transaction-related charges	60.4	35.3	14.5	81.2
Net pension income [2]	(9.6)	(6.2)	(5.2)	(10.6)
Employee stock ownership plan contribution	—	22.3	—	22.3
Loss on debt extinguishment	2.6	—	2.6	—
Equity in (earnings) loss of unconsolidated entity	—	(0.5)	0.8	(1.3)
EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio	$ 448.2	$200.0	$212.8	$435.4

(1) Financial information for the year ended December 31, 2017, is included as reported in the Company's 2017 Annual Report on Form 10-K filed with the SEC on February 21, 2018.

(2) As a result of the adoption of ASU 2017-07, pension components other than service cost are required to be excluded from operating income. The Company has also excluded pension income from the calculation of EBITDA as adjusted for purposes of calculating the Debt Leverage Ratio, which is reflected in all periods presented.

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The Debt Leverage Ratio increased 0.19x at June 30, 2018, compared to December 31, 2017, primarily due to an $83.0 million increase in debt and capital lease obligations, primarily related to $71.4 million of borrowings for acquisitions, net of cash acquired. The Debt Leverage Ratio at June 30, 2018, of 2.34x 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.

Debt Obligations

The Company completed the second amendment to its 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 with a term of just under four years, maturing on January 4, 2021. The Term Loan A was lowered to an aggregate amount of $375.0 million with a term of just under four years, maturing on January 4, 2021, subject to certain required amortization. Borrowings under the revolving credit facility and Term Loan A made under the Senior Secured Credit Facility at June 30, 2018, bear interest at 1.75% in excess of reserve adjusted LIBOR, or 0.75% in excess of an alternate base rate. This amendment to the Senior Secured Credit Facility does not have an impact on the quarterly financial covenant requirements the Company is subject to.

The Senior Secured Credit Facility remains 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. See Note 9, "Debt," to the condensed consolidated financial statements in Item 1, "Condensed Consolidated Financial Statements (Unaudited)," of this Quarterly Report on Form 10-Q for additional information.

As of June 30, 2018, 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 ($107.7 million outstanding as of June 30, 2018);

$375.0 million Term Loan A ($281.3 million outstanding as of June 30, 2018); and

$300.0 million Term Loan B ($279.3 million outstanding as of June 30, 2018);

- Senior Unsecured Notes ($243.5 million outstanding as of June 30, 2018); and

- Master Note and Security Agreement ($105.3 million outstanding as of June 30, 2018).

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 June 30, 2018:

•

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 June 30, 2018, the Company's total leverage ratio was 2.27 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 June 30, 2018, the Company's senior secured leverage ratio was 1.75 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 June 30, 2018, the Company's minimum interest coverage ratio was 6.87 to 1.00).

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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 June 30, 2018. 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.

- 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.

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 common 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 three months ended June 30, 2018, the Company repurchased 1,871,631 shares of its class A common stock at a weighted average price of $19.59 per share for a total purchase price of $36.7 million. As of June 30, 2018, there were $42.5 million of authorized repurchases remaining under the program.

On July 30, 2018, the Company's Board of Directors discontinued the remainder of the September 6, 2011 share repurchase program and authorized a new share repurchase program of up to $100.0 million of the Company's outstanding class A common stock.

Risk Management

For a discussion of the Company's exposure to market risks and management of those market risks, see Item 3, "Quantitative and Qualitative Disclosures About Market Risk," of this Quarterly Report on Form 10-Q.

Contractual Obligations and Off-Balance Sheet Arrangements

As of June 30, 2018, the Company's contractual obligations and off-balance sheet arrangements have not changed materially from that listed in the "Contractual Obligations and Other Commitments" table and related notes to the table listed in the Company's Annual Report on Form 10-K filed on February 21, 2018.

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New Accounting Pronouncements

See Note 20, "New Accounting Pronouncements," to the condensed consolidated financial statements in Item 1, "Condensed Consolidated Financial Statements (Unaudited)," of this Quarterly Report on Form 10-Q.

ITEM 3. Quantitative and Qualitative Disclosures About Market Risk

The Company is exposed to a variety of market risks which may adversely impact the Company's results of operations and financial condition, including changes in interest and foreign currency exchange rates, changes in the economic environment that would impact credit positions and changes in the prices of certain commodities. The Company's management takes an active role in the risk management process and has developed policies and procedures that require specific administrative and business functions to assist in the identification, assessment and control of various risks. These risk management strategies may not fully insulate the Company from adverse impacts due to market risks.

Interest Rate Risk

The Company is exposed to interest rate risk on variable rate debt obligations and price risk on fixed rate debt and capital leases. The variable rate debt outstanding at June 30, 2018, is primarily comprised of $281.3 million outstanding on the Term Loan A and $279.3 million outstanding on the Term Loan B. As of June 30, 2018, there was $107.7 million outstanding on the revolving credit facility. In order to reduce the variability of cash flows from interest payments related to a portion of Quad/Graphics' variable-rate debt, the Company entered into a $250.0 million interest rate swap during February 2017, and has classified $250.0 million of the Company's variable rate debt as fixed rate debt. Including the impact of the $250.0 million interest rate swap of variable rate to fixed rate debt, Quad/Graphics had variable rate debt outstanding of $419.5 million at a current weighted average interest rate of 4.5% and fixed rate debt and capital leases outstanding of $628.3 million at a current weighted average interest rate of 5.7% as of June 30, 2018. The Term Loan B bears interest primarily based on LIBOR; however, it is subject to a 1.0% LIBOR minimum rate, and thus the interest rate on the Term Loan B will not begin to fluctuate until LIBOR exceeds that percentage. At June 30, 2018, LIBOR was 2.1% and, as a result, the interest on the Term Loan B would fluctuate with a 10% increase in the market interest rate. Including the Term Loan B, a hypothetical 10% increase in the market interest rates impacting the Company's current weighted average interest rate on variable rate debt obligations would not have a material impact on the Company's interest expense. A hypothetical 10% change in market interest rates would change the fair value of fixed rate debt at June 30, 2018, by approximately $8 million.

Foreign Currency Risk and Translation Exposure

The Company is exposed to the impact of foreign currency fluctuations in certain countries in which it operates. The exposure to foreign currency movements is limited in most countries because the operating revenues and expenses of its various subsidiaries and business units are substantially in the local currency of the country in which they operate. 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.

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, rate fluctuations may impact the consolidated financial position as the assets and liabilities of its foreign operations are translated into United States dollars in preparing the Company's condensed consolidated balance sheets. As of June 30, 2018, the Company's foreign subsidiaries had net current assets (defined as current assets less current liabilities) subject to foreign currency translation risk of $38.6 million. The potential decrease in net current assets as of June 30, 2018, from a hypothetical 10% adverse change in quoted foreign currency exchange rates, would be approximately $3.9 million. This sensitivity analysis assumes a parallel shift in all major foreign currency exchange rates versus the United States dollar.

Exchange rates rarely move in the same direction relative to the United States dollar due to positive and negative correlations of the various global currencies. This assumption may overstate or understate the impact of changing exchange rates on individual assets and liabilities denominated in a foreign currency.

The Company's hedging operations have historically not been material, and gains or losses from these operations have not been material to the Company's results of operations, financial position or cash flows. The Company does not use derivative financial instruments for trading or speculative purposes.

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These international operations are subject to risks typical of international operations, including, but not limited to, differing economic conditions, changes in political climate, potential restrictions on the movement of funds, differing tax structures, and other regulations and restrictions. Accordingly, future results could be adversely impacted by changes in these or other factors.

Credit Risk

Credit risk is the possibility of loss from a customer's failure to make payments according to contract terms. Prior to granting credit, each customer is evaluated in an underwriting process, taking into consideration the prospective customer's financial condition, past payment experience, credit bureau information and other financial and qualitative factors that may affect the customer's ability to pay. Specific credit reviews and standard industry credit scoring models are used in performing this evaluation. Customers' financial condition is continuously monitored as part of the normal course of business. Some of the Company's customers are highly leveraged or otherwise subject to their own operating and regulatory risks. Based on those customer account reviews and due to the continued uncertainty of the global economy, the Company has established an allowance for doubtful accounts of $27.0 million as of June 30, 2018, and $28.9 million as of December 31, 2017.

The Company has a large, diverse customer base and does not have a high degree of concentration with any single customer account. During the three and six months ended June 30, 2018, the Company's largest customer accounted for less than 5% of the Company's net sales. Even if the Company's credit review and analysis mechanisms work properly, the Company may experience financial losses in its dealings with customers and other parties. Any increase in nonpayment or nonperformance by customers could adversely impact the Company's results of operations and financial condition. Economic disruptions could result in significant future charges.

Commodity Risk

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 in the printing process is supplied directly by the Company's 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, as well as changes in the United States import or trade regulations 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.

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.

As a result, management believes a hypothetical 10% change in the price of paper and other raw materials would not have a significant direct impact on the Company's consolidated annual results of operations or cash flows; however, significant increases in commodity pricing or tight supply could influence future client demand for printed products.

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ITEM 4. Controls and Procedures

Disclosure Controls and Procedures

The Company's management, with the participation of the Company's principal executive officer and principal financial officer, has evaluated the effectiveness of the design and operation of the Company's disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934) as of the end of the period covered by this report and has concluded that, as of the end of such period, the Company's disclosure controls and procedures were effective.

Changes in Internal Control Over Financial Reporting

There were no changes in the Company's internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934) that occurred during the fiscal quarter ended June 30, 2018, that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

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PART II — OTHER INFORMATION

ITEM 1. Legal Proceedings

See Note 8, "Commitments and Contingencies — Litigation," to the condensed consolidated financial statements in Item 1, "Condensed Consolidated Financial Statements (Unaudited)," of this Quarterly Report on Form 10-Q.

ITEM 1A. Risk Factors

Risk factors relating to the Company are contained in Item 1A, "Risk Factors," of the Company's 2017 Annual Report on Form 10-K, filed with the SEC on February 21, 2018. No material changes to such risk factors occurred during the period from January 1, 2018, through June 30, 2018.

ITEM 2. Unregistered Sales of Equity Securities and Use of Proceeds

(a) None.

(b) Not applicable.

(c) Information about the Company's repurchases of its class A common stock in the quarter ended June 30, 2018, were as follows:

	Issuer Purchases of Equity Securities			
Period	Total Number of Shares Purchased[1]	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs[1]	Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs[2]
April 1, 2018 to April 30, 2018	—	$ ——	——	$79,158,311
May 1, 2018 to May 31, 2018	1,271,754	19.34	1,271,754	54,566,459
June 1, 2018 to June 30, 2018	599,877	20.12	599,877	42,495,213
Total	1,871,631		1,871,631	

(1) Represents shares of the Company's class A common 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 common 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 three months ended June 30, 2018, the Company repurchased 1,871,631 shares of its class A common stock at a weighted average price of $19.59 per share for a total purchase price of $36.7 million. As of June 30, 2018, there were $42.5 million of authorized repurchases remaining under the program. On July 30, 2018, the Company's Board of Directors discontinued the remainder of the September 6, 2011 share repurchase program and authorized a new share repurchase program of up to $100.0 million of the Company's outstanding class A common stock.

See Item 2, "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Covenants and Compliance," of this Quarterly Report on Form 10-Q, for a discussion of covenants under the Company's debt agreements that may restrict the Company's ability to pay dividends.

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ITEM 6. Exhibits

The exhibits listed in the exhibit index below are filed as part of this Quarterly Report on Form 10-Q.

EXHIBIT INDEX

Exhibit Number	Exhibit Description
(31.1)	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934.
(31.2)	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934.
(32)	Written Statement of the Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350.
(101)	Financial statements from the Quarterly Report on Form 10-Q of Quad/Graphics, Inc. for the quarter ended June 30, 2018 formatted in eXtensible Business Reporting Language (XBRL): (i) the Condensed Consolidated Statements of Operations (Unaudited), (ii) the Condensed Consolidated Statements of Comprehensive Income (Loss) (Unaudited), (iii) the Condensed Consolidated Balance Sheets (Unaudited), (iv) the Condensed Consolidated Statements of Cash Flows (Unaudited), (v) the Notes to Condensed Consolidated Financial Statements (Unaudited), and (vi) document and entity information.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

QUAD/GRAPHICS, INC.

Date: August 1, 2018 By: /s/ J. Joel Quadracci
J. Joel Quadracci
Chairman, President and Chief Executive Officer
(Principal Executive Officer)

Date: August 1, 2018 By: /s/ David J. Honan
David J. Honan
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)